# SECTION LAN SYSTEM

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# PRECAUTION PRECAUTIONS

Precautions for Trouble Diagnosis

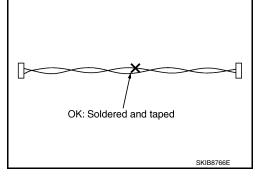
#### CAUTION:

- 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

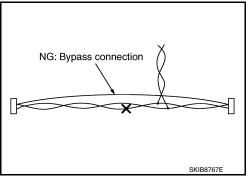
• Solder the repaired area and wrap tape around the soldered area. **NOTE:** 

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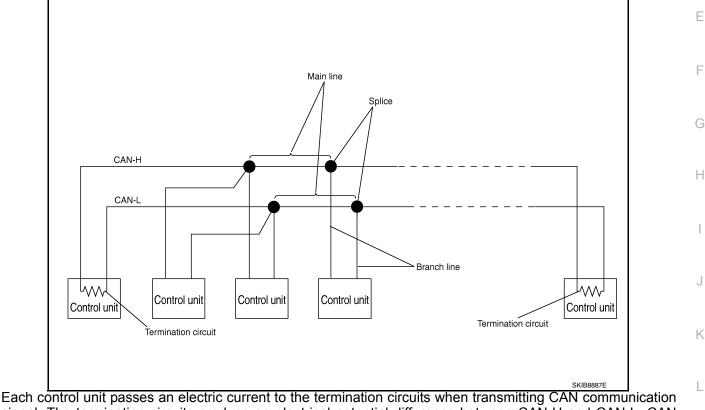
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- CAN communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network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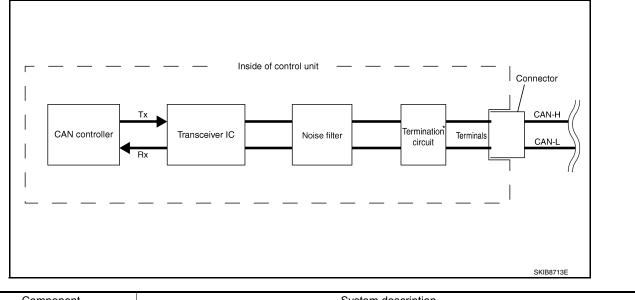
LAN

#### < 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 <sup>*</sup> (Resistance of approx. 120 $\Omega$ )	It produces potential difference.

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

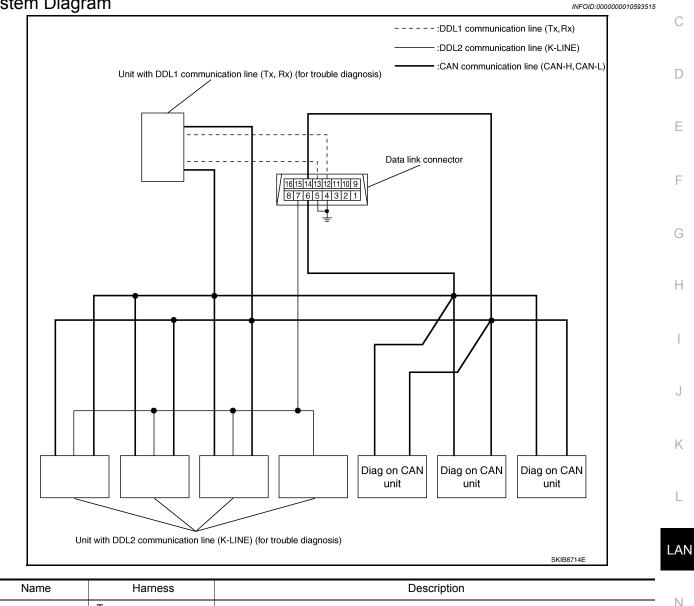
#### < SYSTEM DESCRIPTION >

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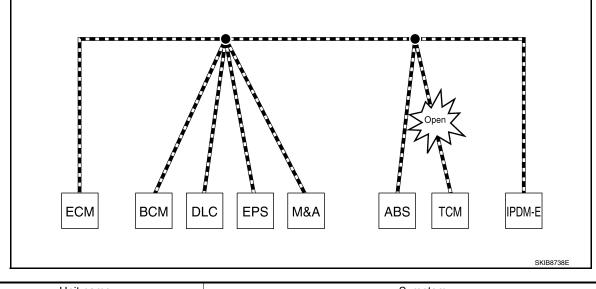
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

## 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



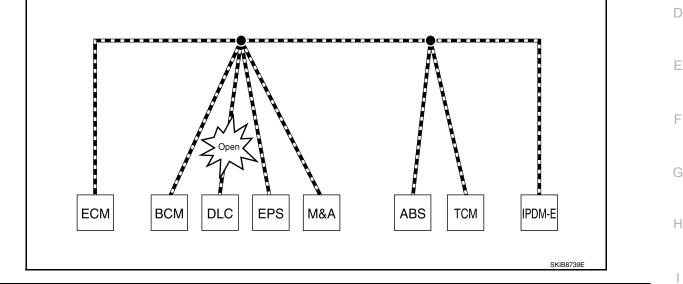
Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning chime does not sound.

#### < SYSTEM DESCRIPTION >

#### [CAN FUNDAMENTAL]

Unit name	Symptom	٥
EPS control unit	Normal operation.	A
Combination meter	<ul> <li>Shift position indicator and OD OFF indicator turn OFF.</li> <li>Warning lamps turn ON.</li> </ul>	R
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)	_	
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.

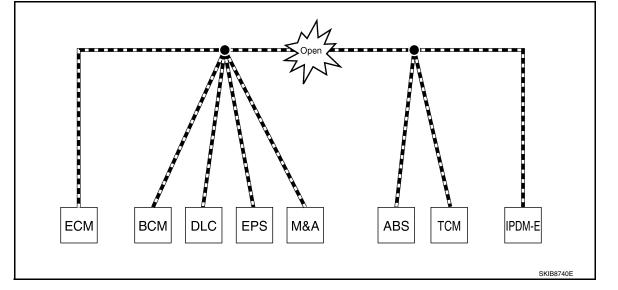
		N
Error	Difference of symptom	
Data link connector branch line open circuit	Normal operation.	
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.	0

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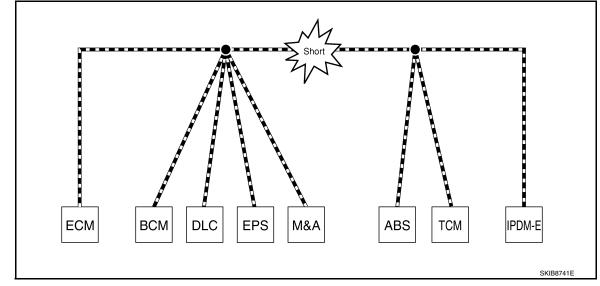
#### < SYSTEM DESCRIPTION >

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	<ul> <li>Reverse warning chime does not sound.</li> <li>The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> </ul>
EPS control unit	The steering effort increases.
Combination meter	<ul> <li>The shift position indicator and OD OFF indicator turn OFF.</li> <li>The speedometer is inoperative.</li> <li>The odo/trip meter stops.</li> </ul>
ABS actuator and electric unit (control unit)	Normal operation.
ТСМ	No impact on operation.
IPDM E/R	<ul><li>When the ignition switch is ON,</li><li>The headlamps (Lo) turn ON.</li><li>The cooling fan continues to rotate.</li></ul>

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



#### < SYSTEM DESCRIPTION >

#### [CAN FUNDAMENTAL]

Unit name	Symptom
ECM	<ul> <li>Engine torque limiting is affected, and shift harshness increases.</li> <li>Engine speed drops.</li> </ul>
ВСМ	<ul> <li>Reverse warning chime does not sound.</li> <li>The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> <li>The room lamp does not turn ON.</li> <li>The engine does not start (if an error or malfunction occurs while turning the ignition switch OFF.)</li> <li>The steering lock does not release (if an error or malfunction occurs while turning the ignition switch OFF.)</li> </ul>
EPS control unit	The steering effort increases.
Combination meter	<ul> <li>The tachometer and the speedometer do not move.</li> <li>Warning lamps turn ON.</li> <li>Indicator lamps do not turn ON.</li> </ul>
ABS actuator and electric unit (control unit)	Normal operation.
ТСМ	No impact on operation.
IPDM E/R	<ul><li>When the ignition switch is ON,</li><li>The headlamps (Lo) turn ON.</li><li>The cooling fan continues to rotate.</li></ul>

#### 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
		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	When ECM is not transmitting or receiving CAN communi- cation signal other than OBD (emission-related diagnosis) for 2 seconds or more.		control unit.	0
U1002	SYSTEM COMM		control unit is not transmitting or receiving CAN ication 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)

INFOID:000000010593520

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

#### With PAST

Item	PRESENT	PAST	Description
Transmission diagnosis	ОК	OK	Normal at present and in the past
		1 – 39	Normal at present, but unable to transmit signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	UNKWN	0	Unable to transmit signals for 2 seconds or more at present.
Control unit name (Reception diagnosis)		OK	Normal at present and in the past
	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.
	Net discound		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.

#### < SYSTEM DESCRIPTION >

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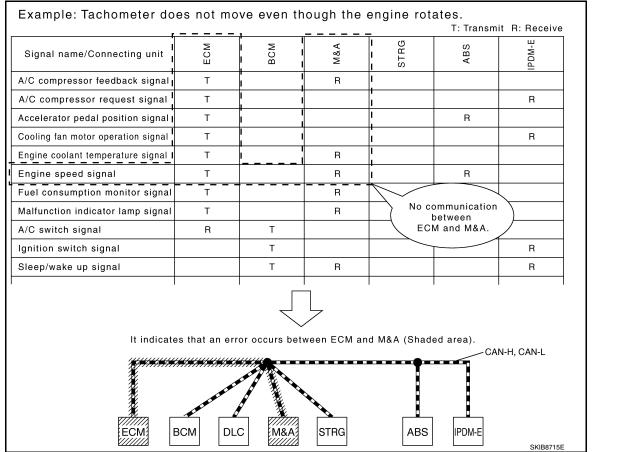
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Item	Result indi- cated	Error counter	Description					
	OK	0	Normal at present					
CAN_COMM (Initial diagnosis)	NG	1 – 50	Control unit error (The number indicates how many times diagnosis has been run.)					
	OK	0	Normal at present					
CAN_CIRC_1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

#### How to Use CAN Communication Signal Chart

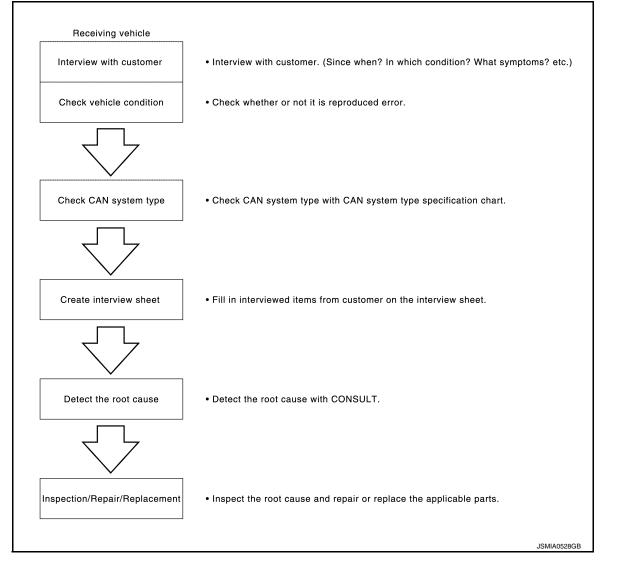
The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

#### Trouble Diagnosis Flow Chart

INFOID:000000010593522



#### Trouble Diagnosis Procedure

INFOID:000000010593523

#### 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.

#### **Revision: February 2015**

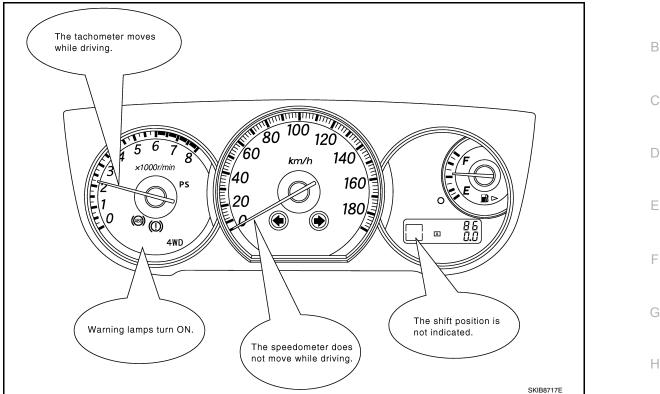
#### LAN-16

#### < 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 >

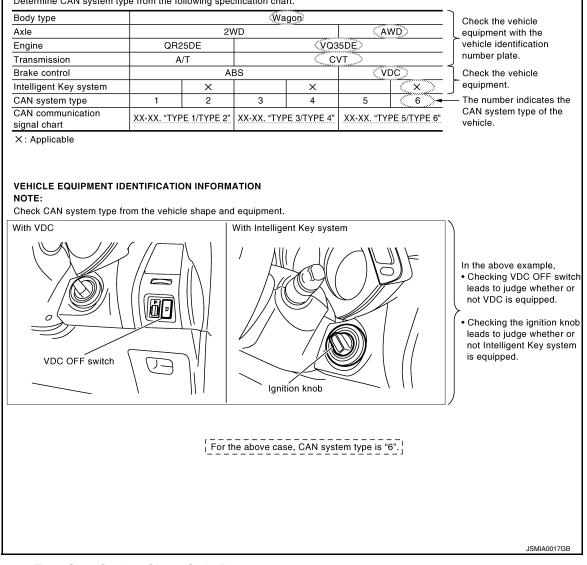
#### CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

#### 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**

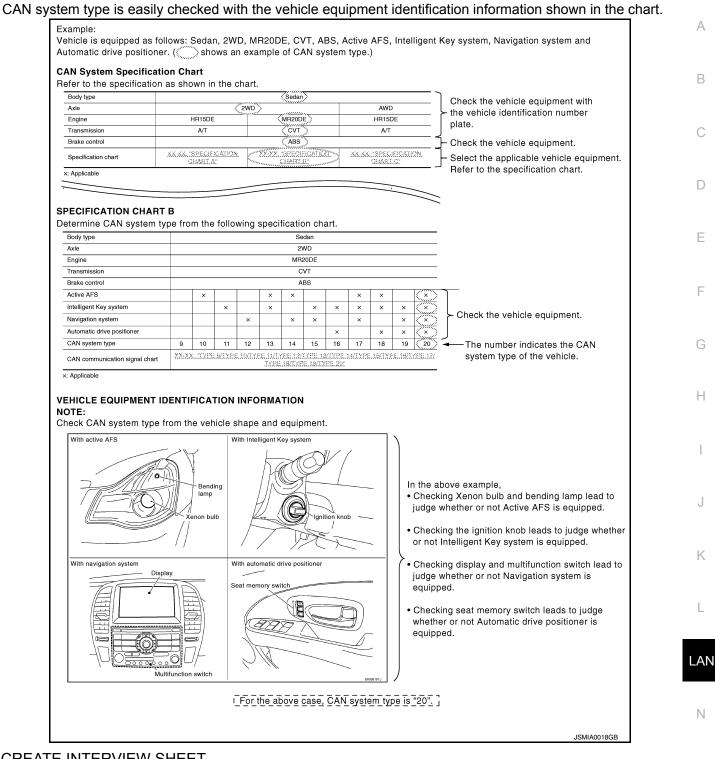
Determine CAN system type from the following specification chart.



CAN System Type Specification Chart (Style B) NOTE:

#### < BASIC INSPECTION >

#### [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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#### < BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

CAN Communication System	n Diagnosis Interview Sheet
	Date received: 3, Feb. 2006
Type: DBA-KG11	VIN No.: KG11-005040
Model: BDRARGZ397EDA-E-J-	
First registration: 10, Jan. 2001	Mileage: 62,140
CAN system type: Type 19	
Symptom (Results from interview with custor	mer)
Headlamps suddenly turn ON while drivin     The engine does not restart after stoppin     switch OFF.	
•The cooling fan continues rotating while t	turning the ignition switch ON.
Condition at inspection	
Error Symptom: Present / Past	
The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the co • The interior lamp does not turn ON.	poling fan continues rotating.

#### 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.

Abbreviation	Unit name	
4WD	AWD control unit	
A-BAG	Air bag diagnosis sensor unit	
ABS	ABS actuator and electric unit (control unit)	
ADP	Driver seat control unit	
AFS	AFS control unit	
APA	Accelerator pedal actuator	
AV	AV control unit	
BCM	BCM	
BCU	Brake booster control unit	
BSW	BSW control module	
DLC	Data link connector	
ECM	ECM	
ICC	ICC sensor integrated unit	
IPDM-E	IPDM E/R	
LANE	Lane camera unit	
M&A	Unified meter and A/C amp.	
RDR-L	Side radar LH	
RDR-R	Side radar RH	
STRG	Steering angle sensor	
ТСМ	ТСМ	

**LAN-21** 

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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.

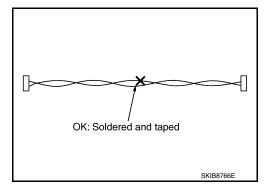
#### Precautions for Harness Repair

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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).



#### **Revision: February 2015**

#### PRECAUTIONS

# Bypass connection is never allowed at the repaired area. NOTE:

< PRECAUTION >

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.

#### Precautions for Removing Battery Terminal

 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
 NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

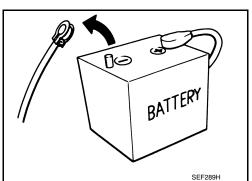
• For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch. **NOTE:** 

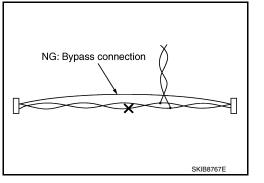
If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

**LAN-23** 

The removal of 12V battery may cause a DTC detection error.





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< BASIC INSPECTION >

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# BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

#### **Interview Sheet**

ew Sneet	INFOID:000000010
CAN Communication System Diagnosis Interview Shee	t
Date received:	
Type: VIN No.:	
Model:	
First registration: Mileage:	
CAN system type:	
Symptom (Results from interview with customer)	
Condition at inspection	
Error symptom : Present / Past	
	SKIB8898E

# SYSTEM DESCRIPTION

## CAN COMMUNICATION SYSTEM

#### **CAN System Specification Chart**

#### Determine CAN system type from the following specification chart.

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

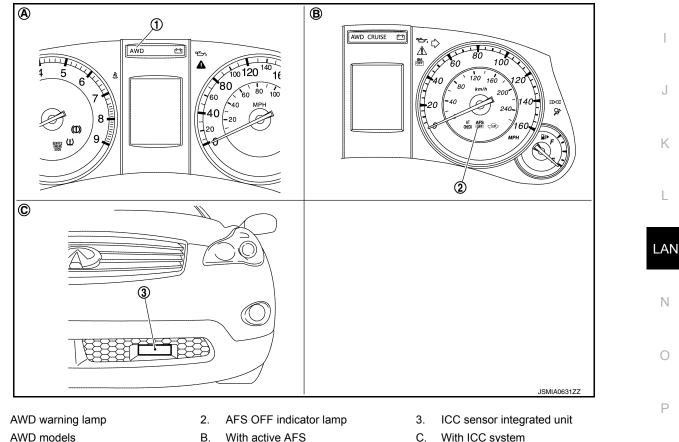
Body type		Wagon												
Axle		2WD AWI												
Engine		VQ37VHR												
Transmission		A/T												
Brake control		VDC												
Active AFS		×	×		×	×	-							
ICC system			×			×	_							
CAN system type	1	2	3	4	5	6	_							

×: Applicable

# VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

#### NOTE:

Check CAN system type from the vehicle shape and equipment.



AWD models Α.

1.

#### With active AFS Β.

With ICC system

#### **CAN Communication Signal Chart**

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

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#### < SYSTEM DESCRIPTION >

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

[CAN]

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	ABS	ICC	IPDM-E
5	ш	4		L L	4	В	F	2	S	A	В	4	-	ЪЦ
A/C compressor request signal	Т													R
Accelerator pedal position signal	Т				R		R					R	R	
ASCD OD cancel request signal	Т						R							
ASCD operation signal	Т						R							
ASCD status signal	Т							R						
Closed throttle position signal	Т						R						R	
Cooling fan speed request signal	Т													R
Engine and A/T integrated control sig- nal	T R						R T							
Engine coolant temperature signal	Т							R						
Engine speed signal	T	R			R		R	R			R	R	R	
Engine status signal	T		R			R								
Fuel filler cap warning display signal	T							R						<u> </u>
Fuel consumption monitor signal	T		R					R						
ICC brake switch signal	T												R	
ICC prohibition signal	T												R	
ICC steering switch signal	T											R <sup>*2</sup>	R	
Malfunctioning indicator lamp signal	, Т							R				ĸ		
Power generation command value sig-	-							ĸ						
nal	Т													R
Snow mode switch signal	Т											R	R	
	Т												R	
Stop lamp switch signal						Т	R							
					R							Т		
Wide open throttle position signal	Т						R							
AFS OFF indicator lamp signal		Т						R						
A/C switch/indicator signal			Т					R						
			R					Т						
A/C switch operation signal			Т					R						
Rear window defogger switch signal			Т			R								
System selection signal			Т										R	
			Т			R				R				
System setting signal			R			Т								
			R							Т				
Voice recognition signal <sup>*1</sup>			Т					R						
Detected lane condition signal				Т								R		
Lane camera status signal				Т								R		
Lane departure buzzer operation sig- nal				Т								R		
Lane departure warning lamp signal				Т				R				R		
LDP ON indicator lamp signal				Т				R				R		
LDW operation signal				Т								R		

**Revision: February 2015** 

#### < SYSTEM DESCRIPTION >

ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	ABS	CC	IPDM-E	A
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**Revision: February 2015** 

[CAN]

#### < SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	ABS	ICC	IPDM-E
Input speed signal	R						Т					R*2	R	
Manual mode indicator signal							Т	R						
Manual mode shift refusal signal							Т	R						
N range signal						R	Т							
Output shaft revolution signal	R						т					R*2	R	
P range signal						R	Т			R				
R range signal							Т			R				
Shift position signal		R					Т	R			R	R	R	
A/C evaporator temperature signal	R							Т						
A/C switch signal	R							Т						
Blower fan motor switch signal	R							Т						
Distance to empty signal			R					Т						
Fuel filler cap warning reset signal	R							Т						
Fuel level low warning signal			R					Т						
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						
Parking brake switch signal					R	R		Т				R	R	
Seat belt buckle switch signal						R		Т						
Sleep-ready signal						R R		Т						Т
Target A/C evaporator temperature sig- nal	R							Т						
Vehicle aread signal	R	R	R			R	R	Т		R				R
Vehicle speed signal	R			R	R	R		R			R	Т	R	
Wake up signal						R		Т						
Steering angle sensor signal		R	R						Т			R	R	
BSW warning lamp signal								R			Т			
A/T shift schedule change demand sig- nal							R					Т		
ABS malfunction signal												Т	R	
ABS operation signal							R					Т	R	
ABS warning lamp signal								R				Т		
Brake warning lamp signal								R				Т		
Front wiper status signal				R								Т		
LDP buzzer request signal				R								Т		
LDP condition signal				R								Т		
LDP malfunction signal				R								Т		
LDP meter indication request signal				R								Т		
LDP operation signal				R								Т		

**Revision: February 2015** 

#### < SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	ABS	ICC	IPDM-E	
Side G sensor signal							R					Т			
TCS malfunction signal												Т	R		-
TCS operation signal												Т	R		•
VDC malfunction signal												Т	R		-
VDC OFF indicator lamp signal								R				Т			•
VDC OFF switch signal												Т	R		•
VDC operation signal												Т	R		-
VDC warning lamp signal								R				Т			•
IBA OFF indicator lamp signal								R					Т		-
ICC operation signal	R											R	Т		
ICC warning lamp signal								R					Т		•
LDP ON signal												R	Т		_
Target approach warning signal												R	Т		•
A/C compressor feedback signal	R							R						Т	
Detention switch signal						R								Т	(
Front wiper stop position signal						R								Т	•
High beam status signal	R	R												Т	
Hood switch signal						R								Т	•
Low beam status signal	R	R												Т	•
Push-button ignition switch status sig- nal						R								т	

<sup>1</sup>: Models with navigation system

\*2: Models with LDP

NOTE:

CAN data of the air bag diagnosis sensor unit is not used by usual service work, thus it is omitted.

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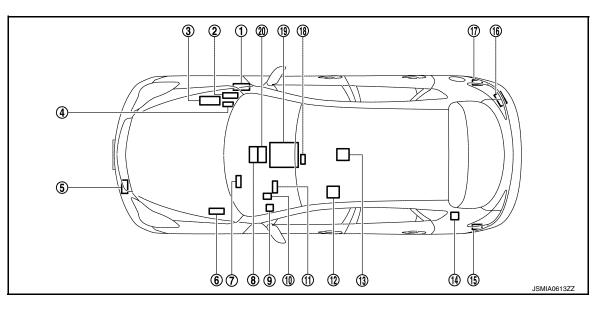
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DTC/CIRCUIT DIAGNOSIS CAN COMMUNICATION SYSTEM

**Component Parts Location** 

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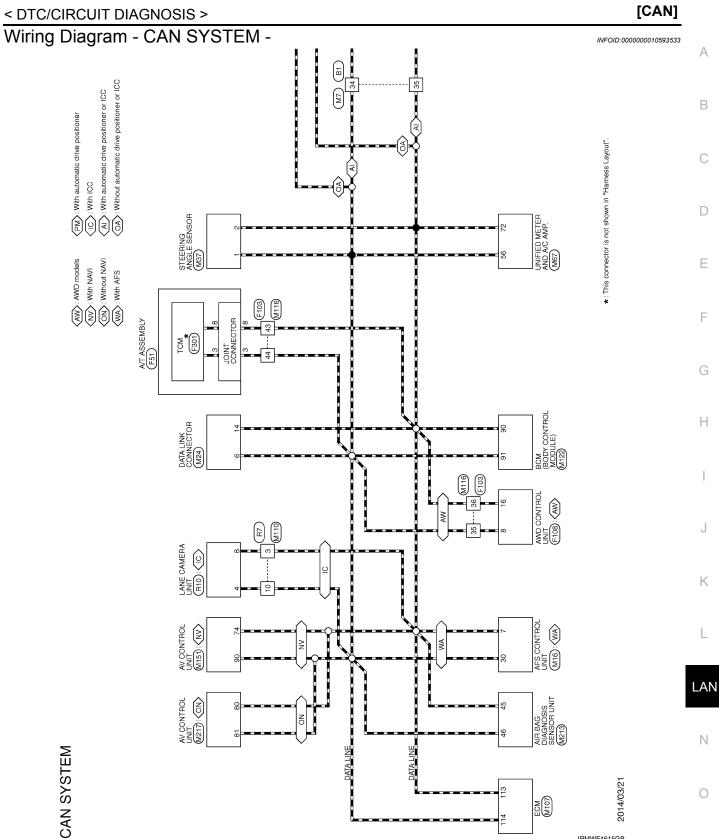


- 1. BCM M122
- 4. AWD control unit F108
- 7. Accelerator pedal actuator E113
- 10. Data link connector M24
- 13. Air bag diagnosis sensor unit M213
- 16. Brake booster control unit B250
- 19. A/T assembly F51

- 2. ECM M107
- 5. ICC sensor integrated unit E67
- 8. Unified meter and A/C amp. M67
- 11. Steering angle sensor M37
- 14. BSW control module B50
- 17. Side radar RH B107
- 20. AV control unit
  - M217: Without navigation system M151: With navigation system

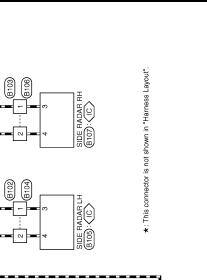
- 3. IPDM E/R E6
- 6. ABS actuator and electric unit (control unit) E41
- 9. AFS control unit M16
- 12. Driver seat control unit B451
- 15. Side radar LH B105
- 18. Lane camera unit R10

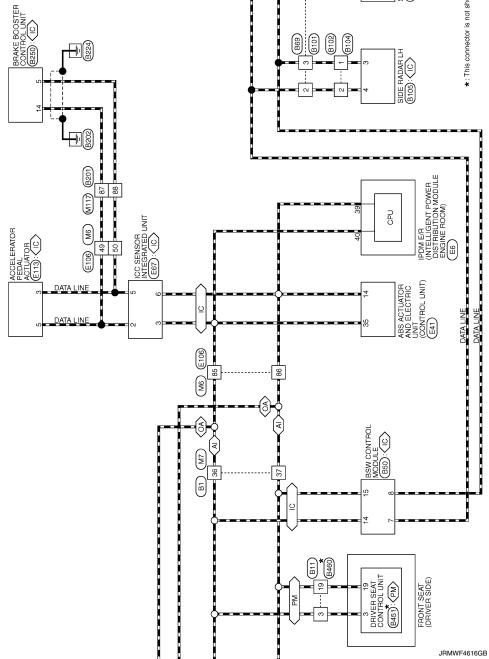
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#### < DTC/CIRCUIT DIAGNOSIS >

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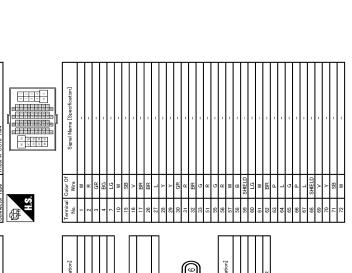
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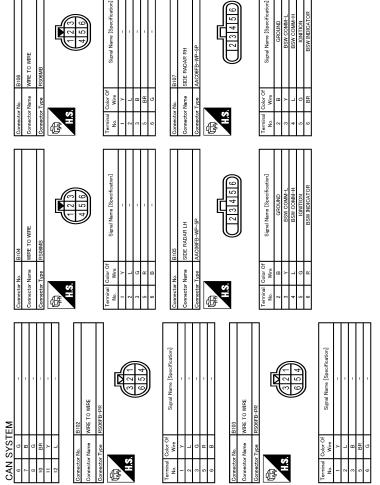


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#### < DTC/CIRCUIT DIAGNOSIS >

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Connector Type	e RS06FB-PR	21		1	78	_	- [With ICC]	Connector Type	RK10FG-DGY
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е 9	CAN-L	39	┝	'	94	re		9	IGNITION POWER SUPPLY
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Connector No.         F301           Connector Num         T0M           Connector Num         T0M	Terminal         Color Of Mon         Signal Mane [Specification]           1         -         IGMITION POWER SUPPLY           2         -         BATTERY POWER SUPPLY           3         -         BATTERY POWER SUPPLY           3         -         BATTERY POWER SUPPLY           6         -         CAN+H           7         -         BACKERY POWER SUPPLY           6         -         CAN+H           7         -         CAN+H           8         -         CAN+H           9         -         IGMITION POWER SUPPLY           9         -         SAN+H           9         -         SAN+L           9         -         SAN+L           10         -         SAN+L	Connector Name         Mill           Connector Name         WRE TO WRE           Connector Name         WRE TO WRE           Connector Yapa         THEOMIN-CSI8-TMA           Theodom         Theodom-CSI8-TMA           Theodom         Theodom-CSI8-TMA	
CAN SYSTEM           10         10           13         0           14         10           15         10           16         10           17         10           18         10           19         10           10         10           11         10           12         1           13         1           14         10           15         1           16         1           17         1           18         1           19         1           10         1           10         1           11         1           12         1           13         1		Terminal No.         Color Of Wres         Signal Mame [Specification]           1         Hr         Auto Scill (-)           2         Y         Auto Scill (-)           3         W         FLUID Finder(-)           1         G         OLINITIAL           8         L         Auto Scill (-)           1         G         OLINITIAL           8         L         COLINITIAL           10         G         COLINITIAL           11         CR         Autority           13         L         COLINITIAL           14         P         OLINITIAL           15         L         COLINITIAL           16         P         COLINIT	

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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N SYSTEM           I	20 RG PS-I Terminal Color OF .	C CAN-H	. J	34 W SMR-1 (+) 2 P CAN-L	36 R SML-2(-) 7 B GROUND	38 B SML-1(-) 8 G ION	40 L AMDS-L		Connector No. M67	Connector No. M24 Connector No. M24	Connector Name	Connector Name DATA LINK CONNECT OR Connector Type TH32FW-NH	Connector Type BD16FW					8	-		Terminal	al Color Of Signal Name [Specification] No. Wire	41 V	3 LG - 42 Y FUEL LEVEL SENSOR SIGNAL	4 B 43 R INTAKE SENSOR SIGNAL	5 B 44 LG IN-VEHICLE SENSOR SIGNAL	6 L 45 P AMBIENT SENSOR SIGNAL	7 V 46 BG SUNLOAD SENSOR SIGNAL	- 47 G EXHAUST C	- 53 G	14 P – 54 Y BATTERY POWER SUPPLY	8		57 W BR	- 	Connector Name STEERING ANGLE SENSOR 39 GK IN IAKE SENSOR GHOUND			3 a			1 2 8 FEACH DO	œ					
	, α	- -	GR -	BG -	FG	-	- ×	-	BR -	BG -		- ^	BR -	- ^	G –	Y -	M	R -		ſ	T						R		24 25 27 28 28 30 20 28 28 28 28 20 28 20 20 20 20 20 20 20 20 20 20 20 20 20				Color Of															B GROUND
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< DTC/CIRCUIT DIAGNOSIS >

		Mutter Biddu (BODY CONTROL MODULE) HIMM BIDT HIMM Control The HIMM Final Manne Control HIMM Control HIMM Signal Manne Control HIMM Control HIMM PASSENGER DOOR ANT- PASSENGER DOOR ANT-
LG SHIELD SB SB SB SB SB SB SB SB SB SB SB SC SC SC SC SC SC SC SC SC SC SC SC SC	<u></u>	
64 65 67 67 68 68 68 68 69 70 73 73 73 73 73	31         32           82         32           83         32           84         1           86         1           87         1           87         1           87         1           87         1           87         1           87         1           87         1           87         1           98         9           99         9           99         1           99         1           99         1           91         1           93         1           94         1           93         1           94         1           95         1           96         1           97         1           98         1           99         1           90         1           91         1           91         1           91         1           91         1           91         1           91         1	Commentor Mana Commentor Mana Commentor Mana Na Na Na Na Na Na Na Na Na Na Na Na Na
36         P         -           33         Y         -           31         Y         -           43         P         -           43         P         -           44         L         -           45         BR         -           46         BR         -	Connector Tagoa         THRAMM-CS18-TMA           THRAMM-CS18-TMA         THRAMM-CS18-TMA           Thread         Thread           Thread         Thread <td></td>	
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CAN SYSTEM Connector Name Connector Name Co	al Color of a Color o	+++++++++++++++++++++++++++++++++++++++

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< DTC/CIRCUIT DIAGNOSIS >

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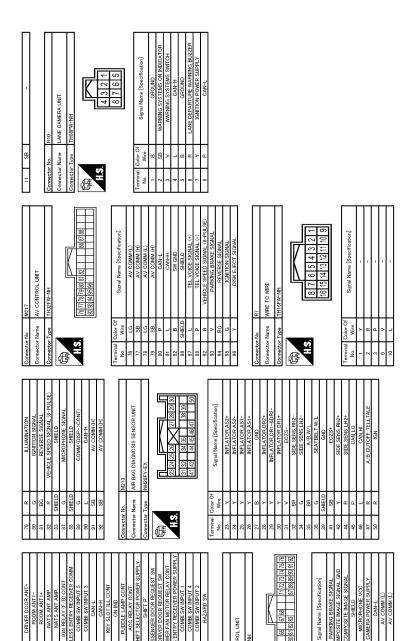
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# **CAN COMMUNICATION SYSTEM**

JRMWF4765GB

CAN SYSTEM

AV CONTROL UNIT

nector Name

KEYLESS

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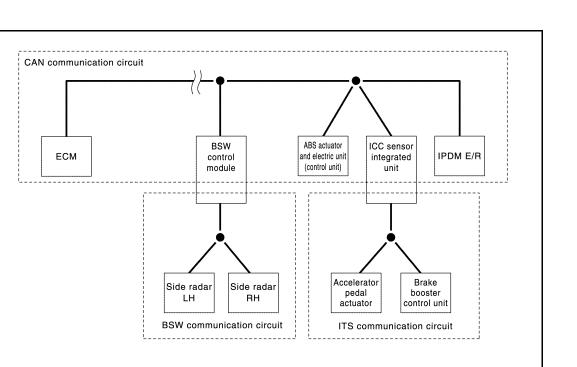
rminal No.

## **MALFUNCTION AREA CHART**

#### < DTC/CIRCUIT DIAGNOSIS >

# MALFUNCTION AREA CHART

System Diagram



 : CAN communication line (CAN-H, CAN-L) ITS communication line (ITS COMM-H, ITS COMM-L) BSW communication line (BSW COMM-H, BSW COMM-L)

## **CAN** Communication Circuit

MAIN LINE

Malfunction area	Reference	
Main line between AV control unit and data link connector	LAN-43. "Diagnosis Procedure"	
Main line between data link connector and unified meter and A/C amp.	LAN-44, "Diagnosis Procedure"	
Main line between unified meter and A/C amp. and ABS actuator and electric unit (control unit)	LAN-45, "Diagnosis Procedure"	
Main line between unified meter and A/C amp. and driver seat control unit	LAN-46, "Diagnosis Procedure"	
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-47, "Diagnosis Procedure"	
Main line between driver seat control unit and BSW control module	LAN-49, "Diagnosis Procedure"	
Main line between BSW control module and ABS actuator and electric unit (control unit)	LAN-50, "Diagnosis Procedure"	

#### **BRANCH LINE**

Malfunction area	Reference
ECM branch line circuit	LAN-52, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-53, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-54, "Diagnosis Procedure"

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# MALFUNCTION AREA CHART

#### < DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
AV control unit branch line circuit	LAN-55, "Diagnosis Procedure"
Lane camera unit branch line circuit	LAN-56. "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-57. "Diagnosis Procedure"
BCM branch line circuit	LAN-58. "Diagnosis Procedure"
Data link connector branch line circuit	LAN-59, "Diagnosis Procedure"
TCM branch line circuit	LAN-60, "Diagnosis Procedure"
Unified meter and A/C amp. branch line circuit	LAN-61, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-62, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-63, "Diagnosis Procedure"
BSW control module branch line circuit	LAN-64, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-65, "Diagnosis Procedure"
ICC sensor integrated unit branch line circuit	LAN-66, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-67. "Diagnosis Procedure"

#### SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit	LAN-72, "Diagnosis Procedure"

## **ITS Communication Circuit**

#### **BRANCH LINE**

Malfunction area	Reference
Accelerator pedal actuator branch line circuit	LAN-68, "Diagnosis Procedure"
Brake booster control unit branch line circuit	LAN-69. "Diagnosis Procedure"

#### SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	LAN-74, "Diagnosis Procedure"

## **BSW Communication Circuit**

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#### **BRANCH LINE**

Malfunction area	Reference
Side radar LH branch line circuit	LAN-70, "Diagnosis Procedure"
Side radar RH branch line circuit	LAN-71, "Diagnosis Procedure"

#### SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
BSW communication circuit	LAN-76. "Diagnosis Procedure"

< DTC/CIRCUIT DIA		TWEEN AV AND	DLC CIRCUIT	[CAN]
MAIN LINE BE		D DLC CIRCUI	Г	
Diagnosis Proced	lure			INFOID:000000010593538
1.CHECK HARNESS				
<ol> <li>Turn the ignition s</li> <li>Disconnect the basis</li> <li>Disconnect the fo</li> <li>ECM</li> <li>AV control unit</li> </ol>	witch OFF. attery cable from the ne llowing harness conne uity between the AV co	egative terminal. ctors.	nector and the data li	nk connector.
AV control unit	narness connector	Data link	connector	Operations its
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M151	90	M24	6	Existed
INTO I	74	WI24	14	Existed
- Models without na	avigation system			
AV control unit	narness connector	Data link	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M217	81	M24	6	Existed
	80	WIZ4	14	Existed
YES (Past error)>>E tor.	>Check CAN system	e main line between t		d the data link connec- or.

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## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### **Diagnosis** Procedure

INFOID:000000010593539

[CAN]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Unified meter and A/C amp.
- 4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector Unified		Unified meter and A/C	amp. harness connector	Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M24	6	M67	56	Existed	
	14		72	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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

COTC/CIRCUIT DIA		WEEN M&A AN	D ABS CIRCUIT	[CAN]
	WEEN M&A A	ND ABS CIRCU	JIT	[0, 11]
Diagnosis Proced			-	INFOID:000000010593540
LCHECK CONNECT				
<ul> <li>Check the following and harness side)</li> <li>Harness connectore</li> <li>Harness connectore</li> <li>Sthe inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> </ul>	ttery cable from the ne ng terminals and conr r M6 r E106	nectors for damage, b	pend and loose conn	ection (connector side
Unified meter and Harness connecto	rs M6 and E106		p. harness connector	and the harness con-
Unified meter and A/C	amp. harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M67	56	M6	85	Existed
	72		86	Existed
CHECK HARNESS Disconnect the co Check the continu harness connecto		I CIRCUIT) or and electric unit (co ss connector and the ABS actuator and ele	ontrol unit).	ess connector M6. ectric unit (control unit) Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
	86		14	Existed
YES (Past error)>>E actuator a	Check CAN system ror was detected in th nd electric unit (contro main line between th	e main line between t I unit).		A/C amp. and the ABS tuator and electric unit

## MAIN LINE BETWEEN M&A AND ADP CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN M&A AND ADP CIRCUIT

#### Diagnosis Procedure

INFOID:000000010593541

[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 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 following harness connectors.
- Unified meter and A/C amp.
- Harness connectors M7 and B1
- Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness	connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
MGZ	56	MZ	34	Existed
M67	72	M7	35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M7.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors B11 and B460.
- 2. Check the continuity between the harness connectors.

Harness connector		Harness	Harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
B1	34	B11	3	Existed
DI	35		19	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 unified meter and A/C amp. and the driver seat control unit.

NO >> Repair the main line between the harness connectors B1 and B11.

MAIN LINE BET	WEEN ADP A	ND ABS	CIRCUI	Т	
Diagnosis Proced	ure				INFOID:000000010593542
1.снеск соллест	OR				
<ol> <li>Check the followir and harness side)</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Source</li> <li>Source</li> <li>Source</li> <li>CHECK HARNESS</li> <li>Disconnect the ha</li> </ol>	ttery cable from the ne ng terminals and coni r B1 r M7 r M6 r E106 <u>normal?</u> terminal and connect	tor. N CIRCUIT) and M7.	amage, be	nd and loose cor	nnection (connector side
Connector No.		Terminal			Continuity
	36	Termina	-	34	Existed
B1	37		:	35	Existed
<b>3.</b> CHECK HARNESS	main line between th CONTINUITY (OPE) rness connectors M6 ity between the harne	N CIRCUIT) and E106.		t and the harness	connector B1.
Harness	connector		Harness co	nnector	
Connector No.	Terminal No.	Connecto	r No.	Terminal No.	Continuity
M7	36	M6		85	Existed
<b>1.</b> CHECK HARNESS	main line between th CONTINUITY (OPE) nnector of ABS actua ity between the harne	N CIRCUIT) tor and electress connector	ic unit (con and the A	trol unit). BS actuator and	Existed
		ABS actua	tor and electr	ic unit (control unit)	
Harness		Connocto	harness cor		Continuity
Harness Connector No.	Connector Terminal No. 85	Connecto		nnector Terminal No. 35	Continuity

Is the inspection result normal?

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

86

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).

14

Existed

#### < DTC/CIRCUIT DIAGNOSIS >

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

I I				
< DTC/CIRCUIT DIAG	[CAN]			
MAIN LINE BET	WEEN ADP A	ND BSW CIRC	UIT	
Diagnosis Procedu	ure			INFOID:000000010593543
1.CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)		
<ul> <li>3. Disconnect the follo</li> <li>ECM</li> <li>Harness connector</li> <li>BSW control modu</li> </ul>	tery cable from the n owing harness conne is B460 and B11 le		BSW control module	harness connector.
Harness of	Harness connector BSW control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B11 -	3	RE0	14	Existed
BII	1 B50	15	Existed	

MAIN LINE BETWEEN ADP AND BSW CIRCUIT

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 BSW con-G trol module.

NO >> Repair the main line between the harness connector B11 and the BSW control module.

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## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN BSW AND ABS CIRCUIT

## Diagnosis Procedure

INFOID:000000010593544

[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 following harness connectors.

- BSW control module
- Harness connectors B1 and M7
- 2. Check the continuity between the BSW control module harness connector and the harness connector.

BSW control module harness connector		Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B50	14	B1	36	Existed
650	15		37	Existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the BSW control module 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 Harness d		connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M7	36	M6	85	Existed
M17	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 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	
Connector No.	Terminal No.	Connector No.	Terminal No.	-
E106	85	E41	35	Existed
E 106	86		14	Existed

Is the inspection result normal?

## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN]
YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the BSW con tor and electric unit (control unit).	trol module and the ABS actua-
NO >> Repair the main line between the harness connector E106 and the (control unit).	e ABS actuator and electric 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.

	Resistance (Ω)		
Connector No.	Termi		
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-17. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT (ECM) : Special Repair Requirement"</u>.

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

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

## **A-BAG BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS > [CAN]	
A-BAG BRANCH LINE CIRCUIT	А
Diagnosis Procedure	A
<ul> <li>WARNING:</li> <li>Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)</li> <li>Never use unspecified tester or other measuring device.</li> <li>CHECK CONNECTOR</li> </ul>	B
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).</li> </ol>	D
<u>Is the inspection result normal?</u> YES >> GO TO 2.	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 <u>SRC-3, "Work Flow"</u> . <u>Is the inspection result normal?</u>	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	G
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## **AFS BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

## AFS 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 AFS 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 AFS control unit.
- 2. Check the resistance between the AFS control unit harness connector terminals.

ŀ	AFS control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M16	30 7		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-65, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".

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

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

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## **AV BRANCH LINE CIRCUIT**

DTC/CIRCUIT DIAGNOSIS	;>		[CAN]
V BRANCH LINE C	RCUIT		
iagnosis Procedure			INFOID:000000010593548
CHECK CONNECTOR			
<ul> <li>Turn the ignition switch O</li> <li>Disconnect the battery ca</li> <li>Check the terminals and side and connector side).</li> </ul>	ble from the negative term		and and loose connection (unit
s the inspection result normal	<u>?</u>		
YES >> GO TO 2.	l and connector		
NO >> Repair the termina CHECK HARNESS FOR O Disconnect the connector	PEN CIRCUIT of AV control unit.		
NO >> Repair the termina CHECK HARNESS FOR O Disconnect the connector Check the resistance betw Models with navigation sy	PEN CIRCUIT of AV control unit. reen the AV control unit has stem	arness connector termir	nals.
NO >> Repair the termina 2.CHECK HARNESS FOR O 1. Disconnect the connector 2. Check the resistance betw Models with navigation sy AV	PEN CIRCUIT of AV control unit. veen the AV control unit ha stem		nals. Resistance (Ω)
NO >> Repair the termina 2.CHECK HARNESS FOR O 1. Disconnect the connector 2. Check the resistance betw Models with navigation sy	PEN CIRCUIT of AV control unit. reen the AV control unit has stem		— Resistance (Ω)
NO >> Repair the termina 2.CHECK HARNESS FOR O 1. Disconnect the connector 2. Check the resistance betw Models with navigation sy AV Connector No.	PEN CIRCUIT of AV control unit. veen the AV control unit ha stem control unit harness connector Termina 90	al No.	
NO       >> Repair the terminal         2.CHECK HARNESS FOR O         1. Disconnect the connector         2. Check the resistance between the maximum set of the	PEN CIRCUIT of AV control unit. veen the AV control unit ha stem control unit harness connector Termina 90	al No.	Resistance (Ω) Approx. 54 – 66
NO       >> Repair the terminal         2.CHECK HARNESS FOR O         1. Disconnect the connector         2. Check the resistance between the maximum set of the	PEN CIRCUIT of AV control unit. veen the AV control unit has stem control unit harness connector Termina 90 system	al No. 74	— Resistance (Ω)

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

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

- Base audio without navigation: <u>AV-93, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-268, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-477, "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 navigation: <u>AV-128. "Exploded View"</u>
- BOSE audio without navigation: <u>AV-316. "Exploded View"</u>
- BOSE audio with navigation: <u>AV-520</u>, "Exploded View"

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

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

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# LANE 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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R7
- Harness connector M110

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 lane camera unit.

#### 2. Check the resistance between the lane camera unit harness connector terminals.

L	Lane camera unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
R10	4 8		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

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

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-298</u>, "LANE CAMERA <u>UNIT</u> : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-334, "Exploded View".

YES (Past error)>>Error was detected in the lane camera unit branch line.

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

## **4WD BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
4WD BRANCH LINE (	SIRCUIT		
Diagnosis Procedure			INFOID:000000010593550
1.CHECK CONNECTOR			
	_		
<ol> <li>Turn the ignition switch OFF</li> <li>Disconnect the battery cable</li> <li>Check the following terminal nector side).</li> <li>AWD control unit</li> <li>Harness connector F103</li> <li>Harness connector M116</li> </ol>	e from the negative term		onnection (unit side and con-
Is the inspection result normal?			
YES >> GO TO 2.			
NO >> Repair the terminal			
2.CHECK HARNESS FOR OP			
<ol> <li>Disconnect the connector o</li> <li>Check the resistance betwee</li> </ol>		harness connector termir	nals.
AWD	control unit harness connector		Resistance (Ω)
Connector No.	Termina	l No.	
F108	8	16	Approx. 54 – 66
Is the measurement value within YES >> GO TO 3. NO >> Repair the AWD cor <b>3.</b> CHECK POWER SUPPLY A	ntrol unit branch line. ND GROUND CIRCUIT		
Check the power supply and th <u>dure"</u> .	e ground circuit of the A	WD control unit. Refer to	DLN-47, "Diagnosis Proce-
Is the inspection result normal?			
YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su		rol unit branch line.	<u>I and Installation"</u> .

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## **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 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 ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-46, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-97, "Exploded View"</u>.

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

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

INFOID:000000010593551

## **DLC BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS > [CAN]	
DLC BRANCH LINE CIRCUIT	٨
Diagnosis Procedure	A
1.CHECK CONNECTOR	В
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).</li> </ol>	С
<u>Is the inspection result normal?</u> 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.	E
Data link connector	

		Resistance ( $\Omega$ )	_		
	Connector No.	Terminal No.			F
	M24	6	6 14		
ls	s the measurement value w	vithin the specification?			G

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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## TCM 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 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 ( $\Omega$ )
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-185, "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-125</u>, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-185, "Removal and Installation".

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

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

## **M&A BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
M&A BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000010593554
			NN 012.00000010030004
1.CHECK CONNECTOR			
1. Turn the ignition switch		ninal	
	cable from the negative tern d connectors of the unified		amage, bend and loose con-
nection (unit side and c			
Is the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector		
•	inal and connector.		
2.CHECK HARNESS FOR			
	or of unified meter and A/C etween the unified meter ar		octor torminals
2. Check the resistance b		iu A/C amp. namess com	
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 v	vithin the specification?		
YES >> GO TO 3. NO >> Repair the unifi	ed meter and A/C amp. bra	nah lina	
3.CHECK POWER SUPPL	•		
METER AND A/C AMP. : Di		nified meter and A/C amp	. Refer to <u>MWI-55, "UNIFIED</u>
Is the inspection result norn			
	lace the unified meter and .	A/C amp. Refer to MWI-13	37, "Exploded View".
YES (Past error)>>Error w	as detected in the unified n	neter and A/C amp. branch	
NO >> Repair the pow	er supply and the ground ci	rcuit.	

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## STRG BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## STRG 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 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 ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-134, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-159</u>, "Exploded View".

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

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

Revision: February 2015

## **ADP BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
ADP BRANCH LINE (	CIRCUIT		
Diagnosis Procedure			INFOID:000000010593556
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cab</li> <li>Obset the fallowing terminal</li> </ol>	le from the negative termin		
3. Check the following termin nector side).	als and connectors for dar	nage, bend and loose cor	nnection (unit side and con-
- Driver seat control unit			
<ul> <li>Harness connector B460</li> <li>Harness connector B11</li> </ul>			
Is the inspection result normal?	, -		
YES >> GO TO 2.			
NO >> Repair the terminal			
2.CHECK HARNESS FOR OF			
<ol> <li>Disconnect the connector of</li> <li>Check the resistance between</li> </ol>		unit hornoon connector to	rminolo
2. Check the resistance betw			inninais.
Driver s	eat control unit harness connect	or	Posistance (O)
Connector No.	Terminal No.		Resistance ( $\Omega$ )
B451	3	19	Approx. 54 – 66
Is the measurement value with	n the specification?		
YES >> GO TO 3. NO >> Repair the driver set	eat control unit branch line		
3. CHECK POWER SUPPLY A	ND GROUND CIRCUIT		
Check the power supply and the		er seat control unit. Refer	to <u>ADP-56, "DRIVER SEAT</u>
CONTROL UNIT : Diagnosis F			
Is the inspection result normal?			
YES (Present error)>>Replace YES (Past error)>>Error was			ploded View".
	upply and the ground circl		
	···· •		

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## **BSW BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## **BSW 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 BSW control module 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 BSW control module.
- 2. Check the resistance between the BSW control module harness connector terminals.

BS	BSW control module harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
B50	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BSW control module branch line (CAN communication circuit side). Refer to <u>LAN-41.</u> <u>"System Diagram"</u>.

# **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BSW control module. Refer to <u>DAS-409</u>, "<u>BSW CON-</u> <u>TROL MODULE : Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the BSW control module. Refer to DAS-418, "Removal and Installation".

YES (Past error)>>Error was detected in the BSW control module branch line.

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

## **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.

## 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-48, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-156</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.

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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 s	ICC sensor integrated unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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 (CAN communication circuit side). Refer to LAN-41, "System Diagram".

# **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-134</u>, "ICC <u>SENSOR INTEGRATED UNIT : Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-174, "Exploded View".

YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.

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

## **IPDM-E BRANCH LINE CIRCUIT**

	SIS >		[CAN]
PDM-E BRANCH L	INE CIRCUIT		
iagnosis Procedure			INFOID:000000010593560
.CHECK CONNECTOR			
	OFF. cable from the negative termir d connectors of the IPDM E/I		loose connection (unit side
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the term			
CHECK HARNESS FOR	OPEN CIRCUIT		
Disconnect the connect . Check the resistance be	etween the IPDM E/R.	s connector terminals	
Connector No.	IPDM E/R harness connector Terminal		Resistance (Ω)
Connector No. E6 s the measurement value w	IPDM E/R harness connector Terminal 40		Resistance (Ω) Approx. 108 – 132

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## **APA BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## APA 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 accelerator pedal actuator 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 accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
E113	5	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator branch line.

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

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to <u>DAS-141, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal actuator. Refer to DAS-197, "Exploded View".

YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.

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

INFOID:000000010593561

## **BCU BRANCH LINE CIRCUIT**

#### [CAN] < DTC/CIRCUIT DIAGNOSIS > **BCU BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000010593562 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Brake booster control unit Harness connector B201 D Harness connector M117 Harness connector M6 Harness connector E106 Е Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. F 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of brake booster control unit. 2. Check the resistance between the brake booster control unit harness connector terminals. Brake booster control unit harness connector Resistance $(\Omega)$ Connector No. Terminal No. Н B250 14 5 Approx. 108 - 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair or replace (if shield line is open) the brake booster control unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the brake booster control unit. Refer to CCS-134, "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? Κ YES (Present error)>>Replace the brake booster control unit. Refer to CCS-175, "Exploded View". YES (Past error)>>Error was detected in the brake booster control unit branch line. NO >> Repair the power supply and the ground circuit. L LAN Ν

## **RDR-L 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).
- Side radar LH
- Harness connector B104
- Harness connector B102
- Harness connector B101
- Harness connector B69

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 side radar LH.

2. Check the resistance between the side radar LH harness connector terminals.

Side radar LH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B105	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-409</u>, "SIDE RADAR LH : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to <u>DAS-419. "Removal and Installation"</u>.

- YES (Past error)>>Error was detected in the side radar LH branch line.
- NO >> Repair the power supply and the ground circuit.

## **RDR-R BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOS			[CAN]	
RDR-R BRANCH L	NE CIRCUIT			А
Diagnosis Procedure			INFOID:000000010593564	
1.CHECK CONNECTOR				В
	cable from the negative terr ninals and connectors for d 6 3 1 <u>al?</u> nal and connector.		nnection (unit side and con-	C D F
	tween the side radar RH h	arness connector terminals	). 	G
Connector No.	Side radar RH harness connector	nal No.	Resistance ( $\Omega$ )	
B107	4	3	Approx. 108 – 132	H
<b>^</b>	radar RH branch line.			I
3.CHECK POWER SUPPL Check the power supply and Diagnosis Procedure".			S-410, "SIDE RADAR RH :	J
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	ace the side radar RH. Ret		and Installation".	K
	er supply and the ground ci			L
				LA
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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
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.

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

# LKIA0037E

ECM and IPDM E/R

INFOID:000000010593565

### **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 detected.	А
6.CHECK UNIT REPRODUCTION	В
Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF.	
<ol> <li>Disconnect the battery cable from the negative terminal.</li> <li>Disconnect one of the unit connectors of CAN communication system.</li> </ol>	С
<ul> <li>NOTE: ECM and IPDM E/R have a termination circuit. Check other units first.</li> <li>4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.</li> </ul>	D
<b>NOTE:</b> Although unit-related error symptoms occur, do not confuse them with other symptoms.	Ε
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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## **ITS COMMUNICATION CIRCUIT**

### Diagnosis Procedure

**1.**CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit has no malfunction.

NOTE:

For identification of CAN communication circuit, ITS communication circuit and BSW communication circuit, refer to <u>LAN-41, "System Diagram"</u>.

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

#### 2.connector inspection

- 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).
- ICC sensor integrated unit
- Accelerator pedal actuator
- Brake booster control unit
- Harness connector B201
- Harness connector M117
- Harness connector M6
- Harness connector E106

#### Is the inspection result normal?

NO >> Repair the terminal and connector.

**3.** CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ICC sensor integrated unit
- Brake booster control unit
- 2. Check the continuity between the ICC sensor integrated unit harness connector and the brake booster control unit harness connector.

ICC sensor integrated	CC sensor integrated unit harness connector Brake booster control		Brake booster control unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E67	2	B250	14	Existed
207	5	6250	5	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line (ITS communication circuit side). Refer to <u>LAN-</u> <u>41. "System Diagram"</u>.

#### **4.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the continuity between the ICC sensor integrated unit harness connector terminals.

ICC s	Continuity		
Connector No.	Termir	Continuity	
E67	2	5	Not existed

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line is short) the root cause.

#### Revision: February 2015

#### **LAN-74**



## **ITS COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

**5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

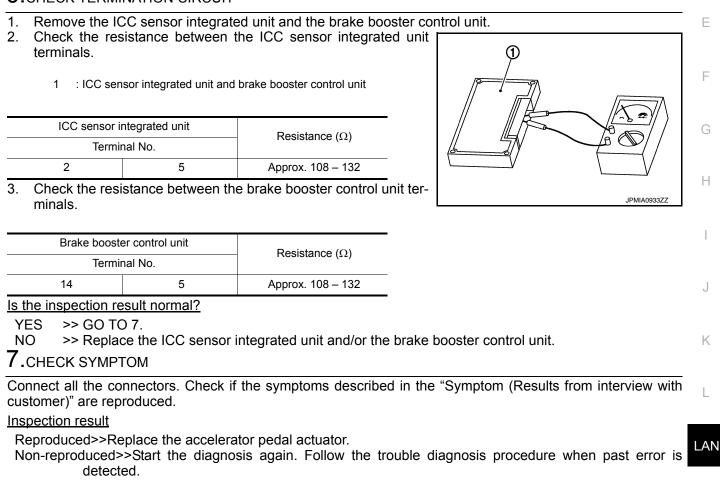
ICC sensor integrated unit harness connector			Continuity	B
Connector No.	Terminal No.	Ground	Continuity	
E67	2	Ground	Not existed	
E67	5		Not existed	С

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line is short) the root cause.

6.CHECK TERMINATION CIRCUIT



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## **BSW COMMUNICATION CIRCUIT**

### Diagnosis Procedure

**1.**CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit has no malfunction.

NOTE:

For identification of CAN communication circuit, ITS communication circuit, and BSW communication circuit, refer to <u>LAN-41, "System Diagram"</u>.

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

#### 2.connector inspection

- 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).
- BSW control module
- Side radar LH
- Side radar RH
- Harness connector B69
- Harness connector B101
- Harness connector B103
- Harness connector B106

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- BSW control module
- Side radar RH
- 2. Check the continuity between the BSW control module harness connector and the side radar RH harness connector.

BSW control modu	le harness connector	Side radar RH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B50	7	B107	4	Existed
630	8		3	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the BSW control module branch line (BSW communication circuit side). Refer to <u>LAN-41</u>, <u>"System Diagram"</u>.

#### **4.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the connector of side radar LH.
- 2. Check the continuity between the BSW control module harness connector terminals.

BS	Continuity		
Connector No.	Termi	Continuity	
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair the root cause.

### **BSW COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# **5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the BSW control module harness connector and the ground.

BSW control module harness connector			Continuity	F
Connector No.	Terminal No.	Ground	Continuity	_
B50	7	Giouna	Not existed	
	8		Not existed	(

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair the root cause.

**6.**CHECK TERMINATION CIRCUIT

1. Remove the BSW control module and the side radar RH.

Check the resistance between the BSW control module terminals.

1 : BSW control module and side radar RH

BSW cont	rol module	Resistance ( $\Omega$ )
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the side radar RH terminals.

Side ra	Resistance ( $\Omega$ )	
Terminal No.		
4 3		Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the BSW control module and/or the side radar RH.

#### **1**.CHECK SYMPTOM

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

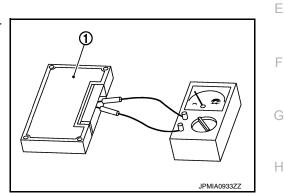
#### Inspection result

Reproduced>>Replace the side radar LH.

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

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#### MAIN LINE BETWEEN AV AND DLC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

#### **Diagnosis** Procedure

INFOID:000000011038860

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with navigation system

AV control unit h	AV control unit harness connector		Data link connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M151	90	M24	6	Existed	
	74	10124	14	Existed	

Models without navigation system

AV control unit h	arness connector	Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M217	81	M24	6	Existed
	80	10124	14	Existed

#### Is the inspection result normal?

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

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

< DTC/CIRCUIT DIA		WEEN DLC ANI		SYSTEM (TYPE 1)]	
MAIN LINE BE	FWEEN DLC A	ND M&A CIRC	UIT		٨
Diagnosis Proced	lure			INFOID:000000011038861	A
1.CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)			В
<ul> <li>3. Disconnect the following</li> <li>ECM</li> <li>Unified meter and</li> </ul>	ttery cable from the n lowing harness conne A/C amp.	ectors.	e unified meter and <i>F</i>	VC amp. harness con-	C
Data link	connector	Unified meter and A/C amp. harness connector		Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
M24	6	M67	56	Existed	
IVIZ4		IVIO7			

Is the inspection result normal?

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

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YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter G and A/C amp.

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NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

### MAIN LINE BETWEEN M&A AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN M&A AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038862

[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 following harness connectors.
- Unified meter and A/C amp.
- Harness connectors M6 and E106
- Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C	amp. harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
MGZ	56	M6	85	Existed
M67	72	IVIO	86	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. 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 85		E41	35	Existed
E100	86		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 unified meter and A/C amp. 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 1)]

Diagnosis Procedure
.CHECK CONNECTOR
<ul> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).</li> </ul>
<u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector.
CHECK HARNESS FOR OPEN CIRCUIT
<ul> <li>Disconnect the connector of ECM.</li> <li>Check the resistance between the ECM harness connector terminals.</li> </ul>
ECM harness connector Resistance (Ω)
Connector No.         Terminal No.         Terminal No.           M107         114         113         Approx. 108 – 132
Connector No. Terminal No.
Connector No.     Terminal No.       M107     114       113     Approx. 108 – 132       a the measurement value within the specification?       YES     >> GO TO 3.       NO     >> Repair the ECM branch line.

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< DTC/CIRCUIT DIAGNOSIS >

## A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011038864

[CAN SYSTEM (TYPE 1)]

#### 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-3, "Work Flow".

Is the inspection result normal?

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

## **AV BRANCH LINE CIRCUIT**

DIC/CIRCUIT DIAGNOSIS >			
/ BRANCH LINE CIR	CUIT		
agnosis Procedure			INFOID:000000011038865
CHECK CONNECTOR			
Turn the ignition switch OFF. Disconnect the battery cable Check the terminals and con side and connector side). the inspection result normal? ES >> GO TO 2. O >> Repair the terminal a CHECK HARNESS FOR OPE	from the negative termination from the negative termination of the AV contro		and loose connection (unit
Disconnect the connector of			
Check the resistance betwee Models with navigation syste	en the AV control unit harr	ness connector terminal	S.
AV co	ntrol unit harness connector		Resistance ( $\Omega$ )
Connector No.	Terminal N	١٥.	
M151	90	74	Approx. 54 – 66
Models without navigation sy	/STEM		· · · · · · · · · · · · · · · · · · ·
Connector No.	Terminal N	No.	Resistance (Ω)
M217	81	80	Approx. 54 – 66
the measurement value within (ES >> GO TO 3. IO >> Repair the AV contro CHECK POWER SUPPLY AN	l unit branch line. ID GROUND CIRCUIT		
neck the power supply and the Base audio without navigation: BOSE audio without navigation BOSE audio with navigation: <u>A</u>	AV-93, "AV CONTROL U : AV-268, "AV CONTROL	NIT : Diagnosis Procedu . UNIT : Diagnosis Proce	ure" edure"
the inspection result normal? ES (Present error)>>Replace		-	
<ul><li>Base audio withou</li><li>BOSE audio witho</li></ul>	t navigation: <u>AV-128, "Exp</u> ut navigation: <u>AV-316, "Ex</u> avigation: <u>AV-520, "Explo</u>	oloded View" cploded View" oded View"	
	pply and the ground circui		

< DTC/CIRCUIT DIAGNOSIS >

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## BCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038866

[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 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 ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-46, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-97, "Exploded View"</u>.

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

### **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 1)]

INFOID:000000011038867
e, bend and loose connection
Resistance (Ω)
Approx. 54 – 66

## TCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038868

[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 (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-185, "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-125</u>. "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-185, "Removal and Installation".

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

### **M&A BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:000000011038869
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> </ol>	cable from the negative tern d connectors of the unified		mage, bend and loose con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	inal and connector.		
	or of unified meter and A/C etween the unified meter an		ector terminals.
	I meter and A/C amp. harness cor		Resistance ( $\Omega$ )
Connector No. M67	Termin 56	72	Approx. 54 – 66
<b>B.</b> CHECK POWER SUPPL	t the ground circuit of the un agnosis Procedure".	-	Refer to <u>MWI-55, "UNIFIED</u>
YES (Past error)>>Error wa	lace the unified meter and A as detected in the unified m er supply and the ground cir	eter and A/C amp. branch	

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#### < DTC/CIRCUIT DIAGNOSIS >

## STRG BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038870

[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 ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-134, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-159</u>, "Exploded View".

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

### **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:000000011038871
1.CHECK CONNECTOR			
<ol> <li>Check the terminals and and loose connection (u</li> </ol>	able from the negative terr I connectors of the ABS ac nit side and connector side	tuator and electric unit (cor	itrol unit) for damage, bend
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
<ol> <li>Disconnect the connector</li> <li>Check the resistance be nals.</li> </ol>	or of ABS actuator and elected etween the ABS actuator a	nd electric unit (control uni	t) harness connector termi-
	and electric unit (control unit) harr		Resistance ( $\Omega$ )
Connector No.	Termir	nal No.	
E41	35	14	Approx $54 - 66$
E41	35	14	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL	ithin the specification? actuator and electric unit ( Y AND GROUND CIRCUIT	control unit) branch line.	
Is the measurement value w YES >> GO TO 3.	ithin the specification? actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the ure".	control unit) branch line.	
Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply and BRC-48, "Diagnosis Procedu Is the inspection result norm YES (Present error)>>Repl View".	ithin the specification? actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the are". al? ace the ABS actuator and e	control unit) branch line. - ABS actuator and electric electric unit (control unit). Re	unit (control unit). Refer to efer to <u>BRC-156, "Exploded</u>
Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply and BRC-48. "Diagnosis Procedu Is the inspection result norm YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error wa	ithin the specification? actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the are". al? ace the ABS actuator and e	control unit) branch line. ABS actuator and electric electric unit (control unit). Re	unit (control unit). Refer to efer to <u>BRC-156, "Exploded</u>
Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply and BRC-48. "Diagnosis Procedu Is the inspection result norm YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error wa	ithin the specification? actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . al? ace the ABS actuator and e	control unit) branch line. ABS actuator and electric electric unit (control unit). Re	unit (control unit). Refer to efer to <u>BRC-156, "Exploded</u>

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## **IPDM-E BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011038872

[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		
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-19, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Exploded View".

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

### CAN COMMUNICATION CIRCUIT

## [CAN SYSTEM (TYPE 1)]

CAN COMMUNICAT			
)iagnosis Procedure			
_			INFOID:000000011038873
.CONNECTOR INSPECTI	ON		
Disconnect all the unit concern. Check terminals and cor	able from the negative terr onnectors on CAN commu nnectors for damage, benc	inication system.	
s the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termin	nal and connector.		
CHECK HARNESS CON		T)	
Check the continuity betwee			
	Data link connector		Continuity
Connector No.		nal No.	Not ovieted
M24 s the inspection result norm	6	14	Not existed
<b>5.</b> CHECK HARNESS CON Check the continuity betwee			
Data link o	connector	-	Continuity
Connector No.	Terminal No.	Ground	
M24	6		Not existed
	14		Not existed
. CHECK ECM AND IPDM	ess and repair the root cau E/R TERMINATION CIRC	UIT	
ECM Terminal No.	Resistance (	2)	ECM and IPDM E/R
114 11		//	
. Check the resistance be	tween the IPDM E/R termi	nals.	
IPDM E/R	Resistance (	2)	
Terminal No.			LKIA0037E
40 39		132	
<u>s the measurement value wi</u> YES >> GO TO 5. NO >> Replace the ECI	M and/or the IPDM E/R.		

< 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.

#### MAIN LINE BETWEEN AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 2)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:000000011038874 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. 3. ECM \_ D AV control unit 4. Check the continuity between the AV control unit harness connector and the data link connector. Models with navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M151 M24 Existed 74 14 Models without navigation system AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M217 M24 80 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 connec-J tor. NO >> Repair the main line between the AV control unit and the data link connector. Κ L LAN

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#### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038875

[CAN SYSTEM (TYPE 2)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Unified meter and A/C amp.
- 4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link	connector	Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M67	56	Existed
11/24	14		72	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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

/IAIN LINE BE7	TWEEN M&A A	ND ADP CIRCI	JIT	
Diagnosis Proced	lure			INFOID:000000011038876
1.CHECK CONNECT				
I. Turn the ignition s				
<ol> <li>Disconnect the ba</li> <li>Check the following and harness side)</li> <li>Harness connector Harness connectors</li> <li>s the inspection result YES &gt;&gt; GO TO 2.</li> </ol>	ittery cable from the ne ng terminals and conr or M7 or B1 <u>t normal?</u>	nectors for damage, b	end and loose conn	ection (connector side
CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
nector.		ed meter and A/C amp		and the harness con-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	56		34	Existed
M67	72	M7	35	Existed
· · · · · · · · · · · · · · · · · · ·	t normal?			
YES >> GO TO 3. NO >> Repair the <b>3.</b> CHECK HARNESS 1. Disconnect the ha 2. Check the continu	e main line between the CONTINUITY (OPEN Inness connectors B11 ity between the harnes	I CIRCUIT) and B460. ss connectors.		ess connector M7.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continue Harness	e main line between the CONTINUITY (OPEN Inness connectors B11 ity between the harnes	I CIRCUIT) and B460. ss connectors. Harness c	connector	ess connector M7.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha	e main line between the CONTINUITY (OPEN inness connectors B11 ity between the harnes connector Terminal No.	I CIRCUIT) and B460. ss connectors.	connector Terminal No.	Continuity
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continue Harness	e main line between the CONTINUITY (OPEN Inness connectors B11 ity between the harnes	I CIRCUIT) and B460. ss connectors. Harness c	connector	
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No.	e main line between the CONTINUITY (OPEN inness connectors B11 ity between the harnes connector Terminal No.	I CIRCUIT) and B460. ss connectors. Harness of Connector No.	connector Terminal No.	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:000000011038877

[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.	Termiı	Continuity	
<b>P1</b>	36	34	Existed
ы	37	35	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	36	M6	85	Existed
1017	37	MO	86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	85	E41	35	Existed	
EIUO	86	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 >

[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:000000011038880

## 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.	Termi	Resistance (32)	
M107	114 113		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-17, "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT (ECM) : Special Repair Requirement"</u>.

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

### [CAN SYSTEM (TYPE 2)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000011038881 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. 2. Disconnect the battery cable from the negative terminal. 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? Ε 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-3, "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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< DTC/CIRCUIT DIAGNOSIS >

## AFS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038882

[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 AFS 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 AFS control unit.

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

ŀ	AFS control unit harness connector		
Connector No.	Termi	Resistance (Ω)	
M16	30 7		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-65</u>, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".

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

## **AV BRANCH LINE CIRCUIT**

DIC/CIRCUIT DIAGNOSIS	-	L	o/ (( 0 / 0 / 2 // ( / / 2 //)
AV BRANCH LINE CIP	RCUIT		
Diagnosis Procedure			INFOID:000000011038883
.CHECK CONNECTOR			
<ul> <li>Turn the ignition switch OFF</li> <li>Disconnect the battery cabl</li> <li>Check the terminals and conside and connector side).</li> <li>the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal</li> </ul>	e from the negative terminal onnectors of the AV control and connector.		and loose connection (unit
.CHECK HARNESS FOR OP	EN CIRCUIT		
<ul> <li>Disconnect the connector o</li> <li>Check the resistance betwee Models with navigation syst</li> </ul>	en the AV control unit harne	ess connector terminals	\$.
-	ontrol unit harness connector		Resistance (Ω)
Connector No.	Terminal No		
M151	90	74	Approx. 54 – 66
Models without navigation s	ontrol unit harness connector		Resistance (Ω)
Connector No.	Terminal No	).	
M217	81	80	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the AV contr CHECK POWER SUPPLY A heck the power supply and the Base audio without navigation BOSE audio without navigation BOSE audio with navigation: <u>A</u> the inspection result normal?	ND GROUND CIRCUIT e ground circuit of the AV co : <u>AV-93, "AV CONTROL UN</u> n: <u>AV-268, "AV CONTROL UNI</u> AV-477, "AV CONTROL UNI	IT : Diagnosis Procedu JNIT : Diagnosis Proce T : Diagnosis Procedui	<u>ire"</u> edure"
<ul> <li>BOSE audio with</li> </ul>	ut navigation: <u>AV-128, "Explo</u> out navigation: <u>AV-316, "Exp</u> navigation: <u>AV-520, "Explod</u>	oded View" bloded View" led View"	
	upply and the ground circuit.		

< DTC/CIRCUIT DIAGNOSIS >

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## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011038884

[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 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 ( $\Omega$ )
Connector No.	Termi		
M122	91 90		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-46, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-97, "Exploded View"</u>.

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

### **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 2)]

DTC/CIRCUIT DIAGNOS			[CAN SYSTEM (TYPE 2)]
DLC BRANCH LINE	CIRCUIT		
iagnosis Procedure			INFOID:00000001103888
.CHECK CONNECTOR			
	able from the negative ter d connectors of the data ness side). <u>al?</u> nal and connector.		ge, bend and loose connectior
heck the resistance betwee		terminals.	
	Data link connector		
Connector No.		inal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66
YES (Past error)>>Error wa	ck CAN system type decis as detected in the data link link connector branch line	connector branch line	circuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line	circuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line	circuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line	circuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line	circuit.
YES (Present error)>>Chec YES (Past error)>>Error wa NO >> Repair the data I	as detected in the data link	connector branch line	circuit.

## TCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038886

[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 (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.	Termi		
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-185, "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		
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-125</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-185, "Removal and Installation".

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

### **M&A BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INFOID:000000011038887
1.CHECK CONNECTOR			
	able from the negative term d connectors of the unified r		damage, bend and loose con-
the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of unified meter and A/C at the unified meter and a contract of the unified meter and		nector terminals.
	meter and A/C amp. harness con		Resistance (Ω)
Connector No. M67	Termina 56	al No. 72	Approx. 54 – 66
heck the power supply and IETER AND A/C AMP. : Dia the inspection result norm YES (Present error)>>Rep	agnosis Procedure".	/C amp. Refer to <u>MWI-1</u>	
NO >> Repair the powe	er supply and the ground cire	cuit.	

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#### < DTC/CIRCUIT DIAGNOSIS >

## STRG BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038888

[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.

Steering angle sensor harness connector			Resistance ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-134, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-159</u>, "Exploded View".

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

## ADP BRANCH LINE CIRCUIT

## [CAN SYSTEM (TYPE 2)]

DP BRANCH LINE	CIRCUIT			
iagnosis Procedure			INFOID:000000011038889	
.CHECK CONNECTOR				
	able from the negative terr ninals and connectors for d		nnection (unit side and con-	
<pre>/ES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the termi .CHECK HARNESS FOR</pre>				
Disconnect the connect	or of driver seat control unit	t. ol unit harness connector t	erminals.	
	er seat control unit harness connector		Resistance ( $\Omega$ )	
Connector No.		nal No.		
B451	3	19	Approx. 54 – 66	
CHECK POWER SUPPL	r seat control unit branch li Y AND GROUND CIRCUIT the ground circuit of the dr <u>B Procedure</u> ".	-	to <u>ADP-56, "DRIVER SEAT</u>	
YES (Present error)>>Repl YES (Past error)>>Error wa			<u>kploded View"</u> .	

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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 ( $\Omega$ )	
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-48</u>, "<u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-156</u>, "Exploded <u>View"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

#### **IPDM-E BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 2)]

< DTC/CIRCUIT DIAGNOS	S >		[CAN SYSTEM (TYPE 2)]
IPDM-E BRANCH L	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000001103889
1.CHECK CONNECTOR			
	able from the negative termin		nd loose connection (unit side
Is the inspection result normative YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR	nal and connector.		
<ol> <li>Disconnect the connecto</li> <li>Check the resistance bet</li> </ol>	ween the IPDM E/R.	s connector terminals.	
	IPDM E/R harness connector		
Connector No.	Terminal	No.	Resistance (Ω)
E6	40	39	Approx. 108 – 132
Is the measurement value wi YES >> GO TO 3. NO >> Repair the IPDM <b>3.</b> CHECK POWER SUPPLY	E/R branch line.		
Check the power supply and Is the inspection result norma		M E/R. Refer to PCS-	19, "Diagnosis Procedure".
YES (Present error)>>Repla YES (Past error)>>Error wa	ace the IPDM E/R. Refer to	branch line.	<u>ew"</u> .

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#### < 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.	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 lin	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M24	6	Giouna	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 ( $\Omega$ )	
Terminal No.		
114	113	Approx. 108 – 132

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

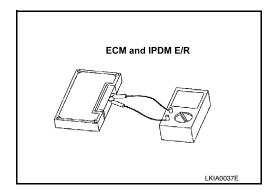
IPDI	Resistance (Ω)		
Terminal No.			
40	39	Approx. 108 – 132	

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-110

INFOID:000000011038893

#### **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. 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 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: Ε 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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#### MAIN LINE BETWEEN AV AND DLC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

#### **Diagnosis** Procedure

INFOID:000000011038894

### 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with navigation system

AV control unit h	control unit harness connector Data link connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M151	90	M24	6	Existed	
WIGT	74	1012-4	14	Existed	

Models without navigation system

AV control unit h	arness connector	Data link connector		- Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M217	81	M24	6	Existed	
	80	10124	14	Existed	

#### Is the inspection result normal?

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

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

< DTC/CIRCUIT DIA		WEEN DLC ANI		N SYSTEM (TYPE 3)]	
MAIN LINE BE	TWEEN DLC A	ND M&A CIRC	UIT		А
Diagnosis Proced	lure			INFOID:000000011038895	A
1.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)			В
<ul> <li>3. Disconnect the fo</li> <li>- ECM</li> <li>- Unified meter and</li> </ul>	Ittery cable from the n lowing harness conne A/C amp.	ectors.	e unified meter and <i>F</i>	VC amp. harness con-	C
Data link	connector	Unified meter and A/C	amp. harness connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	- M67	56	Existed	
IVIZ4		10107			

Is the inspection result normal?

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

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YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter G and A/C amp.

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NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

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Existed

#### MAIN LINE BETWEEN M&A AND ADP CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### MAIN LINE BETWEEN M&A AND ADP CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038897

[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 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 following harness connectors.
- Unified meter and A/C amp.
- Harness connectors M7 and B1
- Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C	amp. harness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M67	56	M7	34	Existed	
WO7	72	IVI7	35	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M7.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors B11 and B460.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	34	B11	3	Existed
П	35		19	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 unified meter and A/C amp. and the driver seat control unit.

NO >> Repair the main line between the harness connectors B1 and B11.

COTC/CIRCUIT DIAG	DTC/CIRCUIT DIAGNOSIS >			SYSTEM (TYPE 3)]
/IAIN LINE BET	WEEN ADP A	ND BSW CIRC	UIT	
Diagnosis Proced	ure			INFOID:000000011038898
CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
<ol> <li>Disconnect the foll ECM Harness connector BSW control modu</li> </ol>	tery cable from the n owing harness conne is B460 and B11 le ty between the harne			harness connector.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	3		14	Existed
B11 -	19	B50	15	Existed
s the inspection result YES (Present error)>>	normal?	1		

MAIN LINE BETWEEN ADP AND BSW CIRCUIT

NO >> Repair the main line between the harness connector B11 and the BSW control module.

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#### MAIN LINE BETWEEN BSW AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### MAIN LINE BETWEEN BSW AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038899

[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 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 following harness connectors.

- BSW control module
- Harness connectors B1 and M7
- 2. Check the continuity between the BSW control module harness connector and the harness connector.

BSW control modu	le harness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B50	14	B1	36	Existed	
650	15		37	Existed	

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the BSW control module 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		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	36	M6	85	Existed
1017	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	Harness connector		ABS actuator and electric unit (control unit) harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	-
E106	85	E41	35	Existed
L100	86		14	Existed

Is the inspection result normal?

### MAIN LINE BETWEEN BSW AND ABS CIRCUIT

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< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 3)	]
YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the BSW control module and the ABS actuator and electric unit (control unit).	а- А
NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric un (control unit).	it B
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### ECM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038900

### 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 ( $\Omega$ )		
Connector No.	Termi		
M107	114 113		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-17, "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT (ECM) : Special Repair Requirement"</u>.

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

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

#### [CAN SYSTEM (TYPE 3)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000011038901 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. 2. Disconnect the battery cable from the negative terminal. 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? Ε 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-3, "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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### AFS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011038902

[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 AFS 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 AFS control unit.
- 2. Check the resistance between the AFS control unit harness connector terminals.

ŀ	Resistance (Ω)		
Connector No.	Termi		
M16	30 7		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-65</u>, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".

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

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

### **AV BRANCH LINE CIRCUIT**

/ BRANCH LINE C			
	CIRCUIT		
agnosis Procedure			INFOID:000000011038903
CHECK CONNECTOR			
Turn the ignition switch C Disconnect the battery ca Check the terminals and side and connector side) the inspection result norma ES >> GO TO 2. O >> Repair the termin CHECK HARNESS FOR 0	able from the negative te connectors of the AV co al? nal and connector.		nd and loose connection (unit
Disconnect the connecto	r of AV control unit. ween the AV control unit	harness connector termina	als.
	V control unit harness connect		Resistance (Ω)
Connector No.		ninal No.	
M151	90	74	Approx. 54 – 66
Models without navigatio	n system		
A	V control unit harness connect	tor	Resistance (Ω)
Connector No.		ninal No.	
M017	81		
M217 he measurement value wi	-	80	Approx. 54 – 66
the measurement value withe measurement value wither service of the action of the action of the action of the power supply and the action without navigate audio without navigate audio without navigate audio without navigation the inspection result normation the inspection result normation of the action of the	thin the specification? ontrol unit branch line. Y AND GROUND CIRCU the ground circuit of the ion: <u>AV-93</u> , "AV CONTRO ation: <u>AV-268</u> , "AV CONTRO ation: <u>AV-477</u> , "AV CONTRO al? ace the AV control unit. R hout navigation: <u>AV-128</u> , ithout navigation: <u>AV-316</u> ith navigation: <u>AV-520</u> , "E	IT AV control unit. Refer to th DL UNIT : Diagnosis Proce ROL UNIT : Diagnosis Proce L UNIT : Diagnosis Procec Refer to the following. "Exploded View" 5. "Exploded View" Exploded View"	e following. <u>dure"</u> cedure"

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## LANE BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038904

[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 (unit side and connector side).
- Lane camera unit
- Harness connector R7
- Harness connector M110
- 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 lane camera unit.

#### 2. Check the resistance between the lane camera unit harness connector terminals.

L	Resistance ( $\Omega$ )		
Connector No.	Termi	Resistance (22)	
R10	4 8		Approx. 54 – 66

#### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

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

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-298</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to <u>DAS-334</u>, "Exploded View".

YES (Past error)>>Error was detected in the lane camera unit branch line.

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

#### **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOS	ilS >		[CAN SYSTEM (TYPE 3)]
BCM BRANCH LINI	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011038905
1.CHECK CONNECTOR			
	able from the negative ter		se connection (unit side and
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	nal and connector.		
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of BCM. tween the BCM harness c	onnector terminals.	
	BCM harness connector		– Resistance (Ω)
Connector No.	Termi	nal No.	
M122	91	90	Approx. 54 – 66
Is the measurement value wYES>> GO TO 3.NO>> Repair the BCM <b>3.</b> CHECK POWER SUPPL	branch line.	г	
Check the power supply and	the ground circuit of the E	BCM. Refer to BCS-46, "Di	agnosis Procedure".
Is the inspection result norm	al?		
YES (Present error)>>Rep YES (Past error)>>Error wants NO >> Repair the power		anch line.	

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## **DLC BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011038906

[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.

#### **TCM BRANCH LINE CIRCUIT**

Diagnosis Procedure				INFOID:000000011038
.CHECK CONNECTOR				
<ul> <li>Turn the ignition switch</li> <li>Disconnect the battery</li> <li>Check the following terr nector side).</li> <li>A/T assembly</li> <li>Harness connector F10</li> <li>Harness connector M11</li> <li>the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ul>	cable from minals and 03 16 <u>nal?</u> ninal and co R OPEN CII tor of A/T a	connectors for da onnector. RCUIT issembly.	amage, bend and lo	ction (unit side and co
Check the resistance be		ly harness connector		
Connector No.		Termin	al No.	 Resistance ( $\Omega$ )
F51 <u>s the measurement value v</u> YES >> GO TO 3. NO >> Repair the TCM	I branch lir	ie.	8	Approx. 54 – 66
s the measurement value v YES >> GO TO 3.	I branch lir COPEN CII ector. Refer etween the	pecification? ne. RCUIT r to <u>TM-185, "Ren</u>	noval and Installatio	
s the measurement value v         YES       >> GO TO 3.         NO       >> Repair the TCM         CHECK HARNESS FOR         . Remove the joint connect         . Check the continuity be	I branch lin R OPEN CII ector. Refer etween the tor.	pecification? ne. RCUIT r to <u>TM-185, "Ren</u>	noval and Installation rness connector sig	TCM harness connecte
s the measurement value v         YES       >> GO TO 3.         NO       >> Repair the TCM         .CHECK HARNESS FOR         . Remove the joint connect         . Check the continuity be side of the joint connect	I branch lin R OPEN CII ector. Refer etween the tor.	pecification? ne. RCUIT r to <u>TM-185, "Ren</u> A/T assembly ha	noval and Installation rness connector side	
a the measurement value v         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	I branch lin R OPEN CII ector. Refer etween the tor.	pecification? ne. RCUIT to <u>TM-185, "Ren</u> A/T assembly ha	noval and Installation rness connector side connector side al No.	TCM harness connecte
<ul> <li>s the measurement value was experienced with the second sec</li></ul>	I branch lin R OPEN CII ector. Refer etween the tor.	pecification? ne. RCUIT to <u>TM-185, "Ren</u> A/T assembly ha TCM harness o Termin	noval and Installation rness connector side al No.	TCM harness connecto

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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	Resistance ( $\Omega$ )		
Connector No.	Termi		
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-55, "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-137, "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:000000011038908

#### STRG BRANCH LINE CIRCUIT

CONCIRCUTI DIAGNOS			L	
STRG BRANCH LIN				
Diagnosis Procedure				INFOID:000000011038909
1.CHECK CONNECTOR				
1. Turn the ignition switch				
<ol> <li>Disconnect the battery of Check the terminals and (unit side and connector)</li> </ol>	able from the negative I connectors of the ste		or damage, bend a	and loose connection
Is the inspection result norm	<u>al?</u>			
YES >> GO TO 2. NO >> Repair the termi	nal and connector			
NO >> Repair the termi 2.CHECK HARNESS FOR				
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>			onnector terminal	S
Stee	ering angle sensor harness of	connector		Resistance (Ω)
Connector No.	1	erminal No.		
M37	1	2		Approx. 54 – 66
Is the measurement value w	ithin the specification?			
YES >> GO TO 3. NO >> Repair the steer	ing angle sensor brand	ch line		
3. CHECK POWER SUPPL				
Check the power supply and			ensor Refer to B	RC-134 "Wiring Dia-
gram - BRAKE CONTROL S		the steering angle s		(O 104, Wining Dia
Is the inspection result norm	al?			
YES (Present error)>>Repl				View".
YES (Past error)>>Error wa	er supply and the grour		anch line.	

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### ADP BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011038910

[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 (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

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	Driver seat control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-56, "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 ADP-219, "Exploded View".

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

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

#### **BSW BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:00000001103891
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the BSW c side). <u>al?</u> nal and connector.		bend and loose connectior
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of BSW control module.	odule harness connector te	rminals.
Connector No.		nal No.	Resistance ( $\Omega$ )
	14 ithin the specification?	15	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the BSW <u>"System Diagran</u> 3.CHECK POWER SUPPL"	ithin the specification? / control module branch lin <u>m"</u> . Y AND GROUND CIRCUIT	15 le (CAN communication cir	cuit side). Refer to <u>LAN-41</u>
Is the measurement value w YES >> GO TO 3. NO >> Repair the BSW "System Diagran 3.CHECK POWER SUPPL" Check the power supply and TROL MODULE : Diagnosis Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? / control module branch lin m". Y AND GROUND CIRCUIT d the ground circuit of the <u>Procedure"</u> . al? ace the BSW control modu	15 ne (CAN communication cir BSW control module. Refe ule. Refer to <u>DAS-418, "Re</u> ntrol module branch line.	cuit side). Refer to <u>LAN-41</u> er to <u>DAS-409, "BSW CON</u>

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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	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.		Resistance (Ω)
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-48</u>, "<u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-156</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.

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### ICC BRANCH LINE CIRCUIT

ICC BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:000000011038913
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cab</li> <li>Check the terminals and connection (unit side and connection)</li> </ol>	le from the negative ter onnectors of the ICC s	minal. ensor integrated unit for dar	nage, bend and loose con-
Is the inspection result normal?	-		
YES >> GO TO 2. NO >> Repair the termina	l and connector.		
2.CHECK HARNESS FOR OF	PEN CIRCUIT		
	een the ICC sensor inte	egrated unit harness connect	tor terminals.
	or integrated unit harness co		Resistance (Ω)
Connector No.		inal No.	
E67	3	6	Approx. 54 – 66
LAN-41. "System I 3.CHECK POWER SUPPLY A	ensor integrated unit be <u>Diagram</u> ". AND GROUND CIRCUI		
Check the power supply and the SENSOR INTEGRATED UNIT			it. Refer to <u>CCS-134, "ICC</u>
Is the inspection result normal? YES (Present error)>>Replac YES (Past error)>>Error was NO >> Repair the power s	e the ICC sensor integr	sor integrated unit branch lir	
	supply and the ground e	incuit.	

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## **IPDM-E BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011038914

[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	Resistance ( $\Omega$ )	
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-19, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Exploded View".

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

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

### **APA BRANCH LINE CIRCUIT**

#### [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:000000011038915
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch (2. Disconnect the battery of 3. Check the terminals and nection (unit side and constitution (unit side and constitution) (</li></ol>	able from the negative d connectors of the ac onnector side). <u>al?</u>	e terminal. celerator pedal actuator for dar	nage, bend and loose con-
2. CHECK HARNESS FOR			
<ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>		actuator. pedal actuator harness connect	or terminals.
Accelerator pedal actuator harness connector         Resistance (Ω)           Connector No.         Terminal No.		Resistance ( $\Omega$ )	
Connector No.			
	5 ithin the specification?	3	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the accel CHECK POWER SUPPL Check the power supply and ERATOR PEDAL ACTUATO s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? erator pedal actuator by Y AND GROUND CIRC the ground circuit of t R : Diagnosis Procedu al? ace the accelerator pe as detected in the acce	branch line. CUIT the accelerator pedal actuator. F <u>ure"</u> . edal actuator. Refer to <u>DAS-197,</u> elerator pedal actuator branch lir	Refer to DAS-141, "ACCEL-
Is the measurement value w YES >> GO TO 3. NO >> Repair the accel 3.CHECK POWER SUPPL Check the power supply and ERATOR PEDAL ACTUATO Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? erator pedal actuator by Y AND GROUND CIRC the ground circuit of t R : Diagnosis Procedu al? ace the accelerator pe	branch line. CUIT the accelerator pedal actuator. F <u>ure"</u> . edal actuator. Refer to <u>DAS-197,</u> elerator pedal actuator branch lir	Refer to DAS-141, "ACCEL-

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## BCU BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038916

[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 (unit side and connector side).
- Brake booster control unit
- Harness connector B201
- Harness connector M117
- Harness connector M6
- Harness connector E106

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 brake booster control unit.

2. Check the resistance between the brake booster control unit harness connector terminals.

Brake booster control unit harness connector		
Terminal No.		Resistance (Ω)
14 5		Approx. 108 – 132
	Termi	Terminal No.

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair or replace (if shield line is open) the brake booster control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the brake booster control unit. Refer to <u>CCS-134</u>, "<u>BRAKE</u> <u>BOOSTER CONTROL UNIT</u> : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the brake booster control unit. Refer to CCS-175, "Exploded View".

- YES (Past error)>>Error was detected in the brake booster control unit branch line.
- NO >> Repair the power supply and the ground circuit.

RDR-L BRANCH LINE CIRCUIT Diagnosis Procedure 1.check connector	INFOID:000000011038917
1.CHECK CONNECTOR	INFOID:000000011038917
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the following terminals and connectors for damage, bend and lonector side).</li> <li>Side radar LH</li> <li>Harness connector B104</li> <li>Harness connector B102</li> <li>Harness connector B101</li> <li>Harness connector B69</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>CHECK HARNESS FOR OPEN CIRCUIT</li> <li>Disconnect the connector of side radar LH.</li> <li>Check the resistance between the side radar LH harness connector terminal</li> </ol>	
Side radar LH harness connector Connector No. Terminal No.	Resistance (Ω)
B105 4 3	Approx. 54 – 66
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the side radar LH branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT	
Check the power supply and the ground circuit of the side radar LH. Refe Diagnosis Procedure".	r to <u>DAS-409, "SIDE RADAR LH :</u>
Is the inspection result normal? YES (Present error)>>Replace the side radar LH. Refer to <u>DAS-419</u> , "Rer YES (Past error)>>Error was detected in the side radar LH branch line.	noval and Installation".
NO >> Repair the power supply and the ground circuit.	

Ρ

### **RDR-R BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011038918

[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 (unit side and connector side).
- Side radar RH
- Harness connector B106
- Harness connector B103
- Harness connector B101
- Harness connector B69

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 side radar RH.

#### 2. Check the resistance between the side radar RH harness connector terminals.

	Side radar RH harness connecto	Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
B107	4 3		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar RH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-410. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to <u>DAS-419</u>, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar RH branch line.

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

#### CAN COMMUNICATION CIRCUIT

### [CAN SYSTEM (TYPE 3)]

CAN COMMUNICAT	TION CIRCUIT		
Diagnosis Procedure			INFOID:000000011038919
.connector inspecti	ON		114 GID.000000011030915
<ol> <li>Disconnect all the unit co</li> </ol>	able from the negative terr onnectors on CAN commu	nication system.	
	nectors for damage, benc	and loose connection.	
s the inspection result norma YES >> GO TO 2. NO >> Repair the termin			
CHECK HARNESS CON	FINUITY (SHORT CIRCUI	T)	
Check the continuity betweer	n the data link connector to	erminals.	
	Data link connector		
Connector No.		nal No.	Continuity
M24	6	14	Not existed
s the inspection result norma	-	••	
CHECK HARNESS CON		T)	
Check the continuity betweer	n the data link connector a	ind the ground.	
Data link c	connector		Continuity
Connector No.	Terminal No.	Ground	
M24	6		Not existed
	14		Not existed
CHECK ECM AND IPDM	ss and repair the root cau E/R TERMINATION CIRC		
ECM	Desistance //		ECM and IPDM E/R
Terminal No.	Resistance (	2)	
114 11	3 Approx. 108 – 1	132	Ren M
6. Check the resistance be	tween the IPDM E/R termi	nals.	A FOR
IPDM E/R	Resistance (	2)	
Terminal No.			LKIA0037E
40 39	9 Approx. 108 – 7	132	
<u>s the measurement value wi</u> YES >> GO TO 5.	thin the specification? M and/or the IPDM E/R.		

#### **Revision: February 2015**

< DTC/CIRCUIT DIAGNOSIS >

### LAN-137

< 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.

#### **ITS COMMUNICATION CIRCUIT**

<b>TS COMMUNI</b>				
Diagnosis Proce	Jure			INFOID:000000011038920
CHECK CAN DIA	GNOSIS			
	osis results from CON	ISULT to see that the C	CAN communication	circuit has no malfunc-
ion. NOTE:				
For identification of C		rcuit, ITS communicati	on circuit and BSW	communication circuit,
efer to <u>LAN-41, "Sys</u>				
<u>s the CAN communic</u> YES >> GO TO 2	cation circuit normal?			
	 nd repair CAN commun	nication circuit.		
2. CONNECTOR INS	SPECTION			
1. Turn the ignition				
	attery cable from the ne		nd and loose connec	tion (unit side and con-
nector side).	-	Second for damage, bei		
ICC sensor integr Accelerator peda				
Brake booster co	ntrol unit			
Harness connect Harness connect				
<ul> <li>Harness connect</li> </ul>				
- Harness connect				
s the inspection resu	It normal?			
s the inspection resu YES >> GO TO 3	It normal?	tor.		
s the inspection resu YES >> GO TO 3 NO >> Repair th	It normal? e terminal and connect			
s the inspection resurveYES>> GO TO 3NO>> Repair th3.CHECK HARNES1.Disconnect the formation	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conne	N CIRCUIT)		
s the inspection resu YES >> GO TO 3 NO >> Repair th 3.CHECK HARNES 1. Disconnect the for ICC sensor integr	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conne rated unit	N CIRCUIT)		
s the inspection resurve         YES       >> GO TO 3         NO       >> Repair th         CHECK HARNES         Disconnect the for         ICC sensor integration         Brake booster co         Check the continue	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conne rated unit introl unit buity between the ICC	N CIRCUIT)	harness connector	and the brake booster
s the inspection resurve         YES       >> GO TO 3         NO       >> Repair th         J.CHECK HARNES         Disconnect the for ICC sensor integration of the sensor integr	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conne rated unit introl unit buity between the ICC	N CIRCUIT)	harness connector	and the brake booster
s the inspection result YES >> GO TO 3 NO >> Repair th CHECK HARNESS Disconnect the for ICC sensor integrish Brake booster co Check the contin control unit harne	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conne rated unit introl unit buity between the ICC	N CIRCUIT)		
s the inspection result YES >> GO TO 3 NO >> Repair th CHECK HARNESS Disconnect the for ICC sensor integration Brake booster co Check the contine control unit harne	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conne rated unit ntrol unit nuity between the ICC ess connector.	N CIRCUIT) ectors. sensor integrated unit		and the brake booster Continuity
s the inspection resurves         YES       >> GO TO 3         NO       >> Repair th         CHECK HARNES         Disconnect the for         ICC sensor integrate         Brake booster co         Check the contin         control unit harne         ICC sensor integrate         Connector No.	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conne rated unit introl unit buity between the ICC ess connector.	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No.	nit harness connector	
s the inspection resurves YES >> GO TO 3 NO >> Repair th CHECK HARNESS Disconnect the for ICC sensor integrate Check the continn control unit harnes ICC sensor integrate Connector No.	It normal?         e terminal and connect         S CONTINUITY (OPEN         ollowing harness conne         rated unit         introl unit         nuity between the ICC         ess connector.         d unit harness connector         Terminal No.         2         5	N CIRCUIT) ectors. sensor integrated unit Brake booster control u	nit harness connector Terminal No.	Continuity
s the inspection resu YES >> GO TO 3 NO >> Repair th CHECK HARNESS Disconnect the for ICC sensor integrate Brake booster co Check the contin control unit harne ICC sensor integrate Connector No. E67	It normal?         e terminal and connect         S CONTINUITY (OPEN         ollowing harness conne         rated unit         ntrol unit         uuity between the ICC         ess connector.         d unit harness connector         Terminal No.         2         5         It normal?	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No.	nit harness connector Terminal No. 14	Continuity Existed
s the inspection resurves YES >> GO TO 3 NO >> Repair th CHECK HARNES Disconnect the for ICC sensor integra Brake booster co Check the contin control unit harne ICC sensor integrate Connector No. E67 s the inspection resurves YES >> GO TO 4	It normal?         e terminal and connect         S CONTINUITY (OPEN         ollowing harness conne         rated unit         ntrol unit         nuity between the ICC         ess connector.         d unit harness connector         It normal?         .	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No. B250	nit harness connector Terminal No. 14 5	Continuity Existed Existed
s the inspection resule         YES       >> GO TO 3         NO       >> Repair th         J.CHECK HARNES         . Disconnect the for         ICC sensor integrate         Brake booster co         2. Check the contine         control unit harned         ICC sensor integrate         Connector No.         E67         s the inspection resule         YES       >> GO TO 4         NO       >> Repair th	It normal?         e terminal and connect         S CONTINUITY (OPEN         ollowing harness conne         rated unit         ntrol unit         nuity between the ICC         ess connector.         d unit harness connector         It normal?         .         e ICC sensor integrate	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No. B250	nit harness connector Terminal No. 14 5	Continuity Existed
s the inspection result         YES       >> GO TO 3         NO       >> Repair th         J.CHECK HARNESS         I. Disconnect the for         ICC sensor integrate         Brake booster co         2. Check the contin         control unit harne         ICC sensor integrate         Connector No.         E67         s the inspection result         YES       >> GO TO 4         NO       >> Repair th         41. "Systematical systematical system	It normal?         e terminal and connect         S CONTINUITY (OPEN         ollowing harness conne         rated unit         ntrol unit         nuity between the ICC         ess connector.         d unit harness connector         1         2         5         It normal?            e ICC sensor integrate         em Diagram".	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No. B250 ed unit branch line (ITS	nit harness connector Terminal No. 14 5	Continuity Existed Existed
s the inspection resurves YES >> GO TO 3 NO >> Repair th CHECK HARNES Disconnect the for ICC sensor integrate Brake booster co Check the continne control unit harned ICC sensor integrate Connector No. E67 s the inspection resurves YES >> GO TO 4 NO >> Repair the 41. "System CHECK HARNESS	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conner rated unit ntrol unit nuity between the ICC ess connector. d unit harness connector Terminal No. 2 5 It normal? e ICC sensor integrate em Diagram". S CONTINUITY (SHOP	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No. B250 ed unit branch line (ITS RT CIRCUIT)	nit harness connector Terminal No. 14 5	Continuity Existed Existed
s the inspection resultYES>> GO TO 3NO>> Repair thCHECK HARNESDisconnect the for ICC sensor integra Brake booster coICC sensor integrate Control unit harnedICC sensor integrate Connector No.ICC sensor integrate Connector No.ICC sensor integrate Connector No.S the inspection result YESYESYESS CHECK HARNESI. CHECK HARNESDisconnect the contegrate	It normal?         e terminal and connect         S CONTINUITY (OPEN         ollowing harness conne         rated unit         ntrol unit         nuity between the ICC         ess connector.         d unit harness connector         1         2         5         It normal?            e ICC sensor integrate         em Diagram".	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No. B250 ed unit branch line (ITS RT CIRCUIT) r pedal actuator.	Init harness connector Terminal No. 14 5 communication circe	Continuity Existed Existed uit side). Refer to LAN-
s the inspection resultYES>> GO TO 3NO>> Repair th $\mathbf{J}$ .CHECK HARNES $\mathbf{J}$ .CHECK HARNES1. Disconnect the followingBrake booster coBrake booster co2. Check the contincontrol unit harneICC sensor integrateConnector No.E67s the inspection resultYESYESYESYESS CHECK HARNES1. Disconnect the co	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conner rated unit introl unit uity between the ICC ess connector. d unit harness connector d unit harness connector Terminal No. 2 5 It normal? e ICC sensor integrate em Diagram". S CONTINUITY (SHOP onnector of accelerator	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No. B250 ed unit branch line (ITS RT CIRCUIT) r pedal actuator. sensor integrated unit h	Init harness connector Terminal No. 14 5 communication circe	Continuity Existed Existed uit side). Refer to LAN-
s the inspection resultYES>> GO TO 3NO>> Repair th $3.CHECK$ HARNES1. Disconnect the formationI. Disconnect the contineI. CC sensor integrateI. Connector No.E67I. Sthe inspection resultYESYESYESYESS CHECK HARNES1. Disconnect the content	It normal? e terminal and connect S CONTINUITY (OPEN ollowing harness conner rated unit ntrol unit nuity between the ICC ess connector. d unit harness connector d unit harness connector Terminal No. 2 5 It normal? e ICC sensor integrate em Diagram". S CONTINUITY (SHOP onnector of accelerator uity between the ICC s	N CIRCUIT) ectors. sensor integrated unit Brake booster control u Connector No. B250 ed unit branch line (ITS RT CIRCUIT) r pedal actuator. sensor integrated unit h	Init harness connector Terminal No. 14 5 communication circe	Continuity Existed Existed uit side). Refer to LAN-

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line is short) the root cause.

< DTC/CIRCUIT DIAGNOSIS >

### ITS COMMUNICATION CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

#### [CAN SYSTEM (TYPE 3)]

## 5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

ICC sensor integrated	ICC sensor integrated unit harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
E67	2	Giouna	Not existed
207	5		Not existed

Is the inspection result normal?

YES >> GO TO 6.

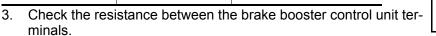
NO >> Check the harness and repair or replace (if shield line is short) the root cause.

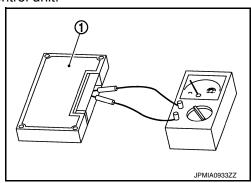
#### 6. CHECK TERMINATION CIRCUIT

1. Remove the ICC sensor integrated unit and the brake booster control unit.

- Check the resistance between the ICC sensor integrated unit 2. terminals.
  - 1 : ICC sensor integrated unit and brake booster control unit

ICC sensor integrated unit		Resistance ( $\Omega$ )	
Terminal No.			
2	5	Approx. 108 – 132	





Brake booster control unit		Resistance (Ω)	
Terminal No.			
14	5	Approx. 108 – 132	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC sensor integrated unit and/or the brake booster control unit.

#### 7.CHECK SYMPTOM

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

#### Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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

#### **BSW COMMUNICATION CIRCUIT**

### [CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGN	0515 >		[CA	N SYSTEM (TYPE 3)]
BSW COMMUNIC	CATION CIRC	TIUT		
Diagnosis Procedure	е			INFOID:000000011038921
CHECK CAN DIAGNO	SIS			
Check the CAN diagnosis ion. <b>NOTE:</b>	results from CON	SULT to see that the	CAN communicatior	n circuit has no malfunc-
For identification of CAN refer to LAN-41, "System		cuit, ITS communicat	ion circuit, and BSW	V communication circuit,
s the CAN communicatio YES >> GO TO 2.				
NO >> Check and re 2.CONNECTOR INSPECT	pair CAN commun	ication circuit.		
1. Turn the ignition swite				
<ol> <li>Disconnect the batter</li> <li>Check the following tender</li> <li>nector side).</li> <li>BSW control module</li> </ol>	ry cable from the ne		end and loose conne	ction (unit side and con-
Side radar LH Side radar RH Harness connector B				
<ul> <li>Harness connector B</li> <li>Harness connector B</li> <li>Harness connector B</li> </ul>	103			
s the inspection result no YES >> GO TO 3. NO >> Repair the ter	ormal? rminal and connect	or.		
• ·				
CHECK HARNESS CC Disconnect the follow BSW control module Side radar RH	ing harness conne	ctors.	ss connector and the	e side radar RH harness
<ol> <li>CHECK HARNESS CO</li> <li>Disconnect the follow BSW control module Side radar RH</li> <li>Check the continuity I</li> </ol>	ring harness conne	ctors. control module harne:	ss connector and the	
<ul> <li>CHECK HARNESS CO</li> <li>Disconnect the follow BSW control module Side radar RH</li> <li>Check the continuity I connector.</li> </ul>	ring harness conne between the BSW arness connector Terminal No.	ctors. control module harne:		e side radar RH harness Continuity
<ul> <li>CHECK HARNESS CO</li> <li>Disconnect the follow BSW control module Side radar RH</li> <li>Check the continuity I connector.</li> </ul>	ving harness conne	ctors. control module harne: Side radar RH h	arness connector	
<ul> <li>CHECK HARNESS CO</li> <li>Disconnect the follow BSW control module Side radar RH</li> <li>Check the continuity I connector.</li> <li>BSW control module has Connector No.</li> <li>BSW control module has Connector No.</li> <li>BSU control module has Connector No.</li> <li>Connector No.</li> <li>BSU control module has Connector No.</li> <li>Connector No.</li> <li>Connector No.</li> <li>Connector No.</li> <li>Connector No.</li> <li>BSU control module has Connector No.</li> </ul>	ring harness conner between the BSW of arness connector Terminal No. 7 8 ormal? SW control module gram".	ctors. control module harnes Side radar RH ha Connector No. B107 e branch line (BSW co	arness connector Terminal No. 4 3	Continuity Existed
CHECK HARNESS CO     Disconnect the follow     BSW control module     Side radar RH     Check the continuity I     connector.     BSW control module ha     Connector No.     B50     Sthe inspection result no     YES >> GO TO 4.     NO >> Repair the BS         "System Diag     CHECK HARNESS CO     Disconnect the connect	ring harness conner between the BSW of arness connector Terminal No. 7 8 ormal? SW control module gram". ONTINUITY (SHOF ector of side radar I	ctors. control module harnes Side radar RH ha Connector No. B107 e branch line (BSW co RT CIRCUIT) LH.	arness connector Terminal No. 4 3 ommunication circuit	Continuity Existed Existed side). Refer to LAN-41,
CHECK HARNESS CO     Disconnect the follow     BSW control module     Side radar RH     Check the continuity I     connector.     BSW control module ha     Connector No.     BSW control module ha     Connector No.     BS0     s the inspection result no     YES >> GO TO 4.     NO >> Repair the BS     "System Diag     CHECK HARNESS CO     Disconnect the connector     Check the continuity I	ring harness conner between the BSW of arness connector Terminal No. 7 8 ormal? SW control module gram". ONTINUITY (SHOF ector of side radar I	ctors. control module harnes Side radar RH ha Connector No. B107 e branch line (BSW co RT CIRCUIT) LH. control module harnes	arness connector Terminal No. 4 3 ommunication circuit	Continuity Existed Existed side). Refer to LAN-41,
CHECK HARNESS CO     Disconnect the follow     BSW control module     Side radar RH     Check the continuity I     connector.     BSW control module ha     Connector No.     BSW control module ha     Connector No.     BS0     s the inspection result no     YES >> GO TO 4.     NO >> Repair the BS     "System Diag     CHECK HARNESS CO     Disconnect the connector     Check the continuity I	ving harness conner between the BSW of arness connector Terminal No. 7 8 ormal? SW control module gram". ONTINUITY (SHOP ector of side radar L between the BSW of	ctors. control module harnes Side radar RH ha Connector No. B107 e branch line (BSW co RT CIRCUIT) LH. control module harnes	arness connector Terminal No. 4 3 ommunication circuit	Continuity Existed Existed side). Refer to LAN-41,

**Revision: February 2015** 

>> Check the harness and repair the root cause.

NO

#### < DTC/CIRCUIT DIAGNOSIS >

#### [CAN SYSTEM (TYPE 3)]

#### **5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the BSW control module harness connector and the ground.

BSW control module harness connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
B50	7	Giouna	Not existed
	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair the root cause.

**6.**CHECK TERMINATION CIRCUIT

1. Remove the BSW control module and the side radar RH.

2. Check the resistance between the BSW control module terminals.

1 : BSW control module and side radar RH

BSW control module		Resistance (Ω)	
Terminal No.			
7 8		Approx. 108 – 132	

3. Check the resistance between the side radar RH terminals.

Side radar RH Terminal No.		Resistance (Ω)	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the BSW control module and/or the side radar RH.

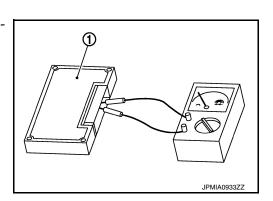
#### **1**.CHECK SYMPTOM

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

#### Inspection result

Reproduced>>Replace the side radar LH.

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



#### MAIN LINE BETWEEN AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 4)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:000000011038922 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect the following harness connectors. 3. ECM \_ D AV control unit 4. Check the continuity between the AV control unit harness connector and the data link connector. Models with navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M151 M24 Existed 74 14 Models without navigation system AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M217 M24 80 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 connec-J tor. NO >> Repair the main line between the AV control unit and the data link connector. Κ L LAN

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#### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### **Diagnosis** Procedure

INFOID:000000011038923

[CAN SYSTEM (TYPE 4)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Unified meter and A/C amp.
- 4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M67	56	Existed	
	14		72	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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

	ЛТ	ND ABS CIRCU	WEEN M&A AI	1AIN LINE BET
INFOID:0000000110389			ure	agnosis Proced
				-
				.CHECK CONNECT
ection (connector sid	end and loose conne	ectors for damage, be or. CIRCUIT)	ttery cable from the nei ig terminals and conr r M6 r E106 <u>normal?</u> terminal and connect CONTINUITY (OPEN owing harness connect	<ul> <li>Check the followin and harness side). Harness connector Harness connector</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the foll</li> </ul>
				Unified meter and
			rs who and Fillip	Harness connector
and the harness cor	harness connector	d meter and A/C amp		
and the harness cor	. harness connector	d meter and A/C amp		
		d meter and A/C amp	ity between the unifie	. Check the continu
and the harness cor Continuity			ity between the unifie	. Check the continu nector.
	onnector	Harness co	ity between the unifie amp. harness connector Terminal No. 56	Check the continu nector. Unified meter and A/C a
Continuity	onnector Terminal No.	Harness co	ity between the unifie amp. harness connector Terminal No. 56 72	Check the continu nector. Unified meter and A/C a Connector No. M67
Continuity Existed Existed ess connector M6.	onnector Terminal No. 85 86 C amp. and the harne	Harness co Connector No. M6	ity between the unifie amp. harness connector Terminal No. 56 72 normal? main line between the CONTINUITY (OPEN nnector of ABS actuated ty between the harnest	<ul> <li>Check the continunector.</li> <li>Unified meter and A/C a</li> <li>Connector No.</li> <li>M67</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the cor</li> </ul>
Continuity Existed Existed ess connector M6.	onnector Terminal No. 85 86 C amp. and the harne ntrol unit). ABS actuator and ele	Harness co Connector No. M6 e unified meter and A/C CIRCUIT) or and electric unit (co	ity between the unifie amp. harness connector Terminal No. 56 72 normal? main line between the CONTINUITY (OPEN nector of ABS actuated ty between the harnes	<ul> <li>Check the continuinector.</li> <li>Unified meter and A/C a</li> <li>Connector No.</li> <li>M67</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the cor</li> <li>Check the continuit</li> </ul>
Continuity Existed Existed ess connector M6. ectric unit (control unit	onnector Terminal No. 85 86 C amp. and the harne ntrol unit). ABS actuator and ele	Harness co Connector No. M6 e unified meter and A/C CIRCUIT) or and electric unit (con ss connector and the A ABS actuator and elect	ity between the unifie amp. harness connector Terminal No. 56 72 normal? main line between the CONTINUITY (OPEN nector of ABS actuated ty between the harnes	<ul> <li>Check the continuinector.</li> <li>Unified meter and A/C a</li> <li>Connector No.</li> <li>M67</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the cor</li> <li>Check the continuinector</li> </ul>
Continuity Existed Existed ess connector M6. ectric unit (control unit	onnector Terminal No. 85 86 C amp. and the harne ntrol unit). ABS actuator and ele	Harness or Connector No. M6 e unified meter and A/C CIRCUIT) or and electric unit (consistent of the A ABS actuator and elect harness consistent of the A	ity between the unifie amp. harness connector Terminal No. 56 72 normal? main line between the CONTINUITY (OPEN nnector of ABS actuated ty between the harnes connector	<ul> <li>Check the continuinector.</li> <li>Unified meter and A/C a</li> <li>Connector No.</li> <li>M67</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the cortinuinector</li> <li>Check the continuinector</li> <li>Harness connector</li> </ul>

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

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# ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038925

[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		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-17, "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT (ECM) : Special Repair Requirement"</u>.

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

# [CAN SYSTEM (TYPE 4)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000011038926 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. 2. Disconnect the battery cable from the negative terminal. 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? Ε 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-3, "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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# **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		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M151	90 74		Approx. 54 – 66

Models without navigation system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M217	81	80	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 navigation: <u>AV-93, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-268, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-477, "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 navigation: <u>AV-128, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-316, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-520, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

4WD BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011038936
1.CHECK CONNECTOR			
<ol> <li>Check the following term nector side).</li> <li>AWD control unit</li> <li>Harness connector F103</li> <li>Harness connector M116</li> <li>Is the inspection result normatical structures and the second structures and structures and the second structures and the second structur</li></ol>	able from the negative terr inals and connectors for d		connection (unit side and con-
YES >> GO TO 2. NO >> Repair the termin	al and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connecto</li> <li>Check the resistance bet</li> </ol>	r of AWD control unit. ween the AWD control un	t harness connector terr	minals.
	VD control unit harness connected		Resistance (Ω)
Connector No.	Termir		
F108	8	16	Approx. 54 – 66
s the measurement value wi YES >> GO TO 3. NO >> Repair the AWD CHECK POWER SUPPLY	control unit branch line.		
Check the power supply and ure".	the ground circuit of the	AWD control unit. Refer	to DLN-47, "Diagnosis Proce-
s the inspection result norma	11?		
YES (Present error)>>Repla YES (Past error)>>Error wa	ace the AWD control unit. I	trol unit branch line.	val and Installation".

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# BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038928

[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		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-46, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-97, "Exploded View"</u>.

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

# **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOS			[CAN SYSTEM (TYPE 4)]
DLC BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011038929
<b>1</b> .CHECK CONNECTOR			
	cable from the negative term d connectors of the data lir ness side).		e, bend and loose connection
YES >> GO TO 2. NO >> Repair the termi			
2. CHECK HARNESS FOR			
Check the resistance betwee		erminals.	
	Data link connector		
Connector No.	Termina	al No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66
	link connector branch line.		

# TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011038930

[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		
Connector No.	Terminal No.		Resistance (Ω)
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-185, "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-125</u>, "<u>Diagnosis Procedure</u>". Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-185, "Removal and Installation".

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

## **M&A BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000011038931
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the unified r		damage, bend and loose con-
the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
Disconnect the connect	or of unified meter and A/C etween the unified meter and		nector terminals.
Unified	meter and A/C amp. harness con	nector	Resistance ( $\Omega$ )
Connector No. M67	Termin 56	al No. 72	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply and ETER AND A/C AMP. : Dia	agnosis Procedure".		p. Refer to <u>MWI-55, "UNIFIED</u>
YES (Past error)>>Error w	al? lace the unified meter and A as detected in the unified m er supply and the ground cir	eter and A/C amp. brand	

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### < DTC/CIRCUIT DIAGNOSIS >

# STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011038932

[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 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-134, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-159</u>, "Exploded View".

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

# **ABS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

ABS BRANCH LINE			
Diagnosis Procedure			INFOID:000000011038933
1.CHECK CONNECTOR			
<ol> <li>Check the terminals and and loose connection (u</li> </ol>	able from the negative tern connectors of the ABS ac nit side and connector side	tuator and electric unit (co	ntrol unit) for damage, bend
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
nals.	tween the ABS actuator a		it) harness connector termi-
Connector No.	Termin		Resistance ( $\Omega$ )
E41	35	14	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL	actuator and electric unit (c	,	
Check the power supply an 3RC-48, "Diagnosis Procedu		ABS actuator and electric	unit (control unit). Refer to
s the inspection result norm	al?		
YES (Present error)>>Repl		electric unit (control unit). F	efer to <u>BRC-156, "Exploded</u>
YES (Present error)>>Repl <u>View"</u> YES (Past error)>>Error wa	ace the ABS actuator and e	ator and electric unit (con	
YES (Present error)>>Repl <u>View"</u> YES (Past error)>>Error wa	ace the ABS actuator and e	ator and electric unit (con	
YES (Present error)>>Repl <u>View"</u> YES (Past error)>>Error wa	ace the ABS actuator and e	ator and electric unit (con	

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# **IPDM-E BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000011038934

[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		
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-19, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Exploded View".

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

## CAN COMMUNICATION CIRCUIT

# [CAN SYSTEM (TYPE 4)]

DIC/CIRCUIT DIAGNOS			
CAN COMMUNICAT	FION CIRCUIT		
Diagnosis Procedure			INFOID:00000001103893
1.CONNECTOR INSPECTI	ON		
1. Turn the ignition switch (	OFF.		
	able from the negative terr		
	onnectors on CAN commune nnectors for damage, bend		
s the inspection result norma	-		
YES >> GO TO 2.			
NO >> Repair the termin			
2. CHECK HARNESS CON			
Check the continuity betweer	n the data link connector te	erminals.	
	Data link connector		<b>2</b> <i>H H</i>
Connector No.	Termir	nal No.	Continuity
M24	6	14	Not existed
YES >> GO TO 3. NO >> Check the harne CHECK HARNESS CON	ess and repair the root caus TINUITY (SHORT CIRCUI		
Check the continuity between	n the data link connector a	nd the ground.	
Data link c	connector		Continuity
Connector No.	Terminal No.	Ground	
M24	6	0.00.00	Not existed
	14		Not existed
s the inspection result norma YES >> GO TO 4. NO >> Check the harne CHECK ECM AND IPDM	ess and repair the root caus		
<ol> <li>Remove the ECM and the ECM and the constance be</li> <li>Check the resistance be</li> </ol>	ne IPDM E/R. tween the ECM terminals.		
ECM	Resistance (Ω	2)	ECM and IPDM E/R
Terminal No.			
114 11		//	
3. Check the resistance be	tween the IPDM E/R termin	nals.	
IPDM E/R	Resistance (C		
IPDM E/R Terminal No.	Resistance (Ω	2)	LKIA0037E
	9 Approx. 108 – 1		LKIA0037E

### **Revision: February 2015**

< DTC/CIRCUIT DIAGNOSIS >

# LAN-157

< 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.

#### MAIN LINE BETWEEN AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 5)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:0000000011038937 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect the following harness connectors. 3. ECM \_ D AV control unit 4. Check the continuity between the AV control unit harness connector and the data link connector. Models with navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M151 M24 Existed 74 14 Models without navigation system AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M217 M24 80 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 connec-J tor. NO >> Repair the main line between the AV control unit and the data link connector. Κ L LAN

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## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000011038938

[CAN SYSTEM (TYPE 5)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Unified meter and A/C amp.
- 4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link	connector	Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M67	56	Existed
WI24	14		72	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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

1AIN LINE BET	GNOSIS > WEEN M&A AI	ND ADP CIRCL	JIT	
Diagnosis Proced	ure			INFOID:000000011038939
	OR			
<ul> <li>Check the followin and harness side) Harness connecto Harness connecto</li> <li><u>s the inspection result</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> </ul>	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 conne	ection (connector side
	CONTINUITY (OPEN			
nector.		d meter and A/C amp Harness c		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	56		34	Existed
M67	72	M7	35	Existed
the mapeolion result		e unified meter and A/	C amp. and the harne	ess connector M7.
<b>3.</b> CHECK HARNESS	main line between the CONTINUITY (OPEN rness connectors B11 ity between the harnes	and B460.		
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEN rness connectors B11 ity between the harnes	and B460. ss connectors. Harness c		Continuity
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEN rness connectors B11 ity between the harnes connector Terminal No.	and B460. ss connectors.	Terminal No.	Continuity
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEN rness connectors B11 ity between the harnes connector Terminal No. 34	and B460. ss connectors. Harness c	Terminal No.	Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No.	CONTINUITY (OPEN rness connectors B11 ity between the harnes connector Terminal No.	and B460. ss connectors. Harness c Connector No.	Terminal No.	

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## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000011038940

[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
<b>P1</b>	36	34	Existed
Ы	37	35	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	36	M6	85	Existed	
1017	37		86	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
EIUO	86	<b>C4</b> 1	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:000000011038941

# 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 ( $\Omega$ )
Connector No.	Termi		
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-17, "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT (ECM) : Special Repair Requirement"</u>.

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

## [CAN SYSTEM (TYPE 5)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000011038942 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. 2. Disconnect the battery cable from the negative terminal. 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? Ε 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-3, "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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< DTC/CIRCUIT DIAGNOSIS >

# AFS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038943

[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 AFS 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 AFS control unit.
- 2. Check the resistance between the AFS control unit harness connector terminals.

ŀ	Resistance ( $\Omega$ )		
Connector No.	Termi		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-65</u>, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".

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

# **AV BRANCH LINE CIRCUIT**

JIC/CIRCUIT DIAGNOSIS	2		
V BRANCH LINE CIF	RCUIT		
agnosis Procedure			INFOID:000000011038944
CHECK CONNECTOR			
	e from the negative termina		d and loose connection (unit
side and connector side).			
ES >> GO TO 2. O >> Repair the terminal	and connector		
CHECK HARNESS FOR OP			
Disconnect the connector of Check the resistance betwee Models with navigation syst	en the AV control unit harr	ness connector termina	IIS.
AV c	ontrol unit harness connector		Resistance (Ω)
Connector No.	Terminal N	No.	
M151	90	74	Approx. 54 – 66
Models without navigation s	ystem		
AV c	ontrol unit harness connector	Resistance ( $\Omega$ )	
Connector No.	Terminal N	No.	
M217	81	80	Approx. 54 – 66
the measurement value within (ES >> GO TO 3. IO >> Repair the AV contr .CHECK POWER SUPPLY A neck the power supply and the Base audio without navigation BOSE audio without navigation BOSE audio with navigation:	ol unit branch line. ND GROUND CIRCUIT ground circuit of the AV c AV-93, "AV CONTROL U n: AV-268, "AV CONTROL	<u>NIT : Diagnosis Procec</u> UNIT : Diagnosis Proc	dure" cedure"
the inspection result normal?		TT . Diagnobio r rocca	
ES (Present error)>>Replace			
<ul> <li>BOSE audio without</li> </ul>	ut navigation: <u>AV-128, "Exp</u> out navigation: <u>AV-316, "Ex</u> navigation: <u>AV-520, "Explo</u> etected in the <u>AV</u> control u	<u> (ploded View"</u> oded View"	
	apply and the ground circuit		

< DTC/CIRCUIT DIAGNOSIS >

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# **4WD BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000011038954

[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 (unit side and connector side).
- AWD control unit
- 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.

AWD control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Termi		
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.

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

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-47</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-59</u>, "Removal and Installation".

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

## **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSI	S >		[CAN SYSTEM (TYPE 5)]
BCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011038945
1. CHECK CONNECTOR			
<ol> <li>Turn the ignition switch C</li> <li>Disconnect the battery ca</li> <li>Check the terminals and connector side).</li> </ol>	ble from the negative terr		se connection (unit side and
Is the inspection result normalYES>> GO TO 2.NO>> Repair the termin2.CHECK HARNESS FOR COL	al and connector.		
<ol> <li>Disconnect the connector</li> <li>Check the resistance bet</li> </ol>	r of BCM.	onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termin	nal No.	
M122	91	90	Approx. 54 – 66
Is the measurement value wit	hin the specification?		
YES >> GO TO 3. NO >> Repair the BCM I	aranch line		
3.CHECK POWER SUPPLY		r	
			agnosia Drocoduro"
Check the power supply and Is the inspection result norma	•	CIVI. REIEI (0 <u>BC3-40, DI</u>	agnosis Frocedure.
YES (Present error)>>Repla		S-97 "Exploded View"	
YES (Past error)>>Error was		anch line.	

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# **DLC BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000011038946

[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.	Termi	Resistance ( $\Omega$ )		
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.

## **TCM BRANCH LINE CIRCUIT**

iagnosis Procedure				INFOID:00000001103894
.CHECK CONNECTOR				
<ul> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> <li>Check the following terr nector side).</li> <li>A/T assembly</li> <li>Harness connector F10</li> <li>Harness connector M11</li> <li>the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ul>	cable from minals and 03 16 <u>nal?</u> ninal and co COPEN CI tor of A/T a	d connectors for da onnector. IRCUIT assembly.	amage, bend and l	nection (unit side and con
		bly harness connector		
Connector No.		Termin	al No.	Resistance ( $\Omega$ )
F51		3	8	Approx E4 66
the measurement value w YES >> GO TO 3. NO >> Repair the TCM	1 branch lii	ne.		Approx. 54 – 66
s the measurement value w         YES       >> GO TO 3.         NO       >> Repair the TCM         CHECK HARNESS FOR         Remove the joint conner	I branch lin OPEN CI ector. Refe etween the	ne. IRCUIT rr to <u>TM-185, "Ren</u>		he TCM harness connecto
s the measurement value w         YES       >> GO TO 3.         NO       >> Repair the TCW         CHECK HARNESS FOR         Remove the joint connect         Check the continuity be side of the joint connect	I branch lin COPEN CI ector. Refe etween the tor.	ne. IRCUIT rr to <u>TM-185, "Ren</u>	rness connector si	
the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be	I branch lin COPEN CI ector. Refe etween the tor.	ne. IRCUIT r to <u>TM-185, "Ren</u> A/T assembly ha	rness connector si	
a the measurement value were were were were were were were we	I branch lin COPEN CI ector. Refe etween the tor.	ne. IRCUIT r to <u>TM-185, "Ren</u> A/T assembly ha TCM harness o	rness connector si connector side al No.	e TCM harness connecto
<ul> <li>s the measurement value way of the measurement value way of the second se</li></ul>	I branch lin COPEN CI ector. Refe etween the tor.	ne. IRCUIT or to <u>TM-185, "Ren</u> A/T assembly ha TCM harness of Termin	rness connector si connector side al No.	e TCM harness connecto Continuity

# 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	Resistance (Ω)		
Connector No.	Termi		
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-55, "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-137, "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:000000011038948

## STRG BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:000000011038949
.CHECK CONNECTOR			
<ul> <li>Check the terminals and (unit side and connector s the inspection result norm YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the termi</li> <li>CHECK HARNESS FOR</li> <li>Disconnect the connector</li> </ul>	able from the negative terr I connectors of the steering side). al? nal and connector. OPEN CIRCUIT or of steering angle sensor.	g angle sensor for damage,	bend and loose connection
		ensor harness connector te	erminals.
Connector No.	ering angle sensor harness conne Termir	nal No.	Resistance ( $\Omega$ )
M37	1	2	Approx. 54 – 66
CHECK POWER SUPPL	d the ground circuit of the	-	er to <u>BRC-134, "Wiring Dia-</u>
ram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	al? ace the steering angle sen	angle sensor branch line.	ploded View".

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# ADP BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038950

[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 (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

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	Resistance ( $\Omega$ )		
Connector No.	Termi		
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.

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-56, "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-219</u>, "Exploded View".

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

# **ABS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 5)]

ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011038951
<b>1</b> .CHECK CONNECTOR			
3. Check the terminals and	cable from the negative terr d connectors of the ABS ac init side and connector side	tuator and electric unit (conf	rol unit) for damage, bend
YES >> GO TO 2.			
NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
nals.	etween the ABS actuator a	nd electric unit (control unit)	
Connector No.	Termir		Resistance (Ω)
E41	35	14	Approx. 54 – 66
Is the measurement value w	ithin the specification?		
YES >> GO TO 3.	actuator and electric unit (	,	
Check the power supply an BRC-48, "Diagnosis Proced		ABS actuator and electric u	unit (control unit). Refer to
Is the inspection result norm			
YES (Present error)>>Rep <u>View"</u> .	ace the ABS actuator and e	electric unit (control unit). Re	fer to <u>BRC-156, "Exploded</u>
	as detected in the ABS actuer supply and the ground cites and the ground cites are as a second cites and the ground cites are as a second cites and the ground cites are as a second cites and the ground cites are as a second cites are as a sec	uator and electric unit (contro rcuit.	ol unit) branch line.

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# **IPDM-E BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000011038952

[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-19, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Exploded View".

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

## CAN COMMUNICATION CIRCUIT

# [CAN SYSTEM (TYPE 5)]

AN COMMUNICA			
viagnosis Procedure			INFOID:000000011038953
-			NN 012.000000011030333
.CONNECTOR INSPECT			
. Disconnect all the unit c	able from the negative terr onnectors on CAN commu	nication system.	
<ul> <li>Check terminals and cor the inspection result norm</li> </ul>	nnectors for damage, bend	and loose connection.	
YES >> GO TO 2. NO >> Repair the termi			
CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)	
heck the continuity betwee	n the data link connector te	erminals.	
	Data link connector		
Connector No.		nal No.	Continuity
M24	6	14	Not existed
YES >> GO TO 3. NO >> Check the harne CHECK HARNESS CON heck the continuity betwee		T)	
Data link o	connector		
Connector No.	Terminal No.		Continuity
M24	6	Ground	Not existed
WZ4	14		Not existed
CHECK ECM AND IPDM Remove the ECM and th	ess and repair the root cause E/R TERMINATION CIRC	UIT	
ECM Terminal No.	Resistance (	2)	ECM and IPDM E/R
114 11	3 Approx. 108 – 7	132	Ren CT
. Check the resistance be	tween the IPDM E/R termi	nals.	
IPDM E/R	Resistance (	2)	
Terminal No.			LKIA0037E
40 3	11	132	
the measurement value w YES >> GO TO 5. NO >> Replace the EC	M and/or the IPDM E/R.		

< DTC/CIRCUIT DIAGNOSIS >

# LAN-177

< 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.

#### MAIN LINE BETWEEN AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 6)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:000000011038956 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. 3. ECM \_ D AV control unit 4. Check the continuity between the AV control unit harness connector and the data link connector. Models with navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M151 M24 Existed 74 14 Models without navigation system AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M217 M24 80 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 connec-J tor. NO >> Repair the main line between the AV control unit and the data link connector. Κ L LAN Ν

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## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038957

[CAN SYSTEM (TYPE 6)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Unified meter and A/C amp.
- 4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C	Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M67	56	Existed
10124	14		72	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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

1AIN LINE BE7	GNOSIS > WEEN M&A AI	ND ADP CIRCU	-	SYSTEM (TYPE 6)]
Diagnosis Proced	ure			INFOID:000000011038958
	OR			
<ul> <li>Check the followin and harness side) Harness connecto Harness connecto</li> <li><u>s the inspection result</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> </ul>	ttery cable from the ne ng terminals and conr r M7 r B1	or.	end and loose conn	ection (connector side
Unified meter and Harness connecto . Check the continu nector.	rs M7 and B1 ity between the unifie	d meter and A/C amp		and the harness con-
	amp. harness connector	Harness of		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56 72	M7	34	Existed
<u>s the inspection result</u> YES >> GO TO 3.	main line between the CONTINUITY (OPEN	I CIRCUIT)	/C amp. and the harn	ess connector M7.
<b>3.</b> CHECK HARNESS 1. Disconnect the ha	rness connectors B11 ity between the harnes			
CHECK HARNESS Disconnect the ha	ity between the harnes	ss connectors.	connector	
CHECK HARNESS Disconnect the ha			connector Terminal No.	Continuity
CHECK HARNESS Disconnect the ha Check the continu Harness Connector No.	ity between the harnes	ss connectors. Harness o Connector No.		Continuity
CHECK HARNESS Disconnect the ha Check the continu	ity between the harnes connector Terminal No.	ss connectors. Harness o	Terminal No.	·

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### MAIN LINE BETWEEN ADP AND BSW CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND BSW CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011038959

[CAN SYSTEM (TYPE 6)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors B460 and B11
- BSW control module
- 4. Check the continuity between the harness connector and the BSW control module harness connector.

Harness	connector	BSW control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B11	3	B50	14	Existed
ЫП	19	- D00	15	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 BSW control module.

NO >> Repair the main line between the harness connector B11 and the BSW control module.

	TWEEN BSW A	ND ABS CIRCU	JII	
iagnosis Proced	lure			INFOID:000000011038960
.CHECK CONNEC	TOR			
Turn the ignition s	witch OFF.			
Disconnect the ba	attery cable from the ne ng terminals and coni		pend and loose conn	ection (connector side
and harness side)	).			
Harness connector Harness connector				
Harness connecto	or M6			
Harness connector the inspection resul				
'ES >> GO TO 2.				
NO >> Repair the	e terminal and connect			
CHECK HARNESS	S CONTINUITY (OPEN	N CIRCUIT)		
Disconnect the fo	llowing harness conne			
BSW control mod Harness connecto				
	uity between the BSW	control module harnes	ss connector and the	harness connector.
BSW control modu	le harness connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	14	B1	36	Existed
	15		37	Existed
the inequation regul	t normal?			
<u>s the inspection resul</u> YES >> GO TO 3. NO >> Repair the		e BSW control module	e and the harness cor	nnector B1.
YES >> GO TO 3. NO >> Repair the	e main line between th		e and the harness cor	nector B1.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPEN arness connectors M6	N CIRCUIT) and E106.	e and the harness cor	inector B1.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPEN	N CIRCUIT) and E106.	e and the harness cor	nector B1.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	e main line between th S CONTINUITY (OPEN arness connectors M6	N CIRCUIT) and E106.		
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne	N CIRCUIT) and E106. ss connectors.		nnector B1.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No.	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne	N CIRCUIT) and E106. ss connectors. Harness of Connector No.	connector	
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu-	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Terminal No.	N CIRCUIT) and E106. ss connectors. Harness o	connector Terminal No.	Continuity
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No.	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Terminal No. 36 37	N CIRCUIT) and E106. ss connectors. Harness of Connector No.	connector Terminal No. 85	Continuity Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7 the inspection resul YES >> GO TO 4.	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Terminal No. 36 37 t normal?	N CIRCUIT) and E106. ss connectors. Harness of Connector No. M6	connector Terminal No. 85 86	Continuity Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Terminal No. 36 37 t normal? e main line between th	N CIRCUIT) and E106. ss connectors. Harness of Connector No. M6 e harness connectors	connector Terminal No. 85 86	Continuity Existed
YES >> GO TO 3. NO >> Repair the .CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the .CHECK HARNESS	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Terminal No. 36 37 t normal? e main line between th S CONTINUITY (OPEN	N CIRCUIT) and E106. ss connectors. Harness of Connector No. M6 e harness connectors N CIRCUIT)	connector Terminal No. 85 86 M7 and M6.	Continuity Existed
YES >> GO TO 3. NO >> Repair the .CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the .CHECK HARNESS Disconnect the co	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Terminal No. 36 37 t normal? e main line between th S CONTINUITY (OPEN connector of ABS actual	N CIRCUIT) and E106. ss connectors. Harness of Connector No. M6 e harness connectors N CIRCUIT) tor and electric unit (co	connector Terminal No. 85 86 M7 and M6. ontrol unit).	Continuity Existed Existed
YES >> GO TO 3. NO >> Repair the .CHECK HARNESS Disconnect the ha Check the continu- Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the .CHECK HARNESS Disconnect the co	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector connector Terminal No. 36 37 t normal? e main line between th S CONTINUITY (OPEN ponnector of ABS actual uity between the harne	N CIRCUIT) and E106. ss connectors. Harness of Connector No. M6 e harness connectors N CIRCUIT) tor and electric unit (co	connector Terminal No. 85 86 M7 and M6. ontrol unit).	Continuity Existed Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu- Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the co Check the continu	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Connector Terminal No. 36 37 t normal? e main line between th S CONTINUITY (OPEN ponnector of ABS actual uity between the harne	N CIRCUIT) and E106. ss connectors. Harness of Connector No. M6 e harness connectors N CIRCUIT) tor and electric unit (co	connector Terminal No. 85 86 M7 and M6. M7 and M6. ontrol unit). ABS actuator and ele	Continuity Existed Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu- Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Connector Terminal No. 36 37 t normal? e main line between th S CONTINUITY (OPEN ponnector of ABS actual uity between the harne	N CIRCUIT) and E106. ss connectors. Harness of Connector No. M6 e harness connectors N CIRCUIT) tor and electric unit (co	connector Terminal No. 85 86 M7 and M6. Ontrol unit). ABS actuator and ele	Continuity Existed Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu- Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector	e main line between th S CONTINUITY (OPEN arness connectors M6 uity between the harne connector Terminal No. 36 37 t normal? e main line between th S CONTINUITY (OPEN ponnector of ABS actual uity between the harne or.	A CIRCUIT) and E106. ss connectors. Harness of Connector No. M6 e harness connectors N CIRCUIT) tor and electric unit (co ess connector and the ABS actuator and electors	connector Terminal No. 85 86 M7 and M6. Ontrol unit). ABS actuator and ele	Continuity Existed Existed

MAIN LINE BETWEEN BSW AND ABS CIRCUIT

Is the inspection result normal?

86

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Existed

< DTC/CIRCUIT DIAGNOSIS >

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

- YES (Past error)>>Error was detected in the main line between the BSW control module 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 6)]

Diagnosis Procedure			INFOID:000000011038961
1. CHECK CONNECTOR			
	cable from the negative term		se connection (unit side and
s the inspection result nor YES >> GO TO 2.	<u>mal?</u>		
NO >> Repair the term 2.CHECK HARNESS FOR	ninal and connector. R OPEN CIRCUIT		
<ol> <li>Disconnect the connect</li> <li>Check the resistance b</li> </ol>	ctor of ECM. between the ECM harness co	onnector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No.	Termin	nal No.	
M107	114	nal No. 113	Approx. 108 – 132
M107 Is the measurement value YES >> GO TO 3. NO >> Repair the ECI	114 within the specification?	113	
M107 Is the measurement value YES >> GO TO 3. NO >> Repair the ECI 3.CHECK POWER SUPP Check the power supply and Is the inspection result norm	114 within the specification? M branch line. LY AND GROUND CIRCUIT nd the ground circuit of the E mal?	113 - CM. Refer to <u>EC-164, "Dia</u>	Approx. 108 – 132
M107 Is the measurement value YES >> GO TO 3. NO >> Repair the ECH 3.CHECK POWER SUPP Check the power supply ar Is the inspection result norm YES (Present error)>>Re <u>CONTROL UN</u> YES (Past error)>>Error v	114 within the specification? M branch line. LY AND GROUND CIRCUIT nd the ground circuit of the E	113 CM. Refer to <u>EC-164, "Dia</u> <u>C-17, "ADDITIONAL SEF</u> equirement". nch line.	Approx. 108 – 132

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< DTC/CIRCUIT DIAGNOSIS >

# A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011038962

[CAN SYSTEM (TYPE 6)]

#### 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-3, "Work Flow".

Is the inspection result normal?

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

## **AFS 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 AFS control unit for damage, bend and loose connection (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 AFS control unit.         2. CHECK the resistance between the AFS control unit harness connector terminals. <ul> <li>AFS control unit harness connector terminals.</li> </ul> Connector No. <ul> <li>Terminal No.</li> <li>Resistance (Ω)</li> <li>M16</li> <li>30</li> <li>Terminal No.</li> </ul> YES       >> GO TO 3.       NO       >> Repair the AFS control unit branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-65, "AFS CONTE UNIT: Diagnosis Procedure".         Is the inspection result normal?       YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".         YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".         YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".	unit
<ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the AFS control unit for damage, bend and loose connection (side and connector side).</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the terminal and connector.</li> <li>2. CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of AFS control unit.</li> <li>2. Check the resistance between the AFS control unit harness connector terminals.</li> </ul> AFS control unit harness connector Resistance (Ω) Connector No. M16 <ul> <li>30</li> <li>7</li> <li>Approx. 54 - 66</li> </ul> Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the AFS control unit branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-65, "AFS CONTFFUNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".	unit
YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of AFS control unit.         2. Check the resistance between the AFS control unit harness connector terminals.	
. Disconnect the connector of AFS control unit.         2. Check the resistance between the AFS control unit harness connector terminals.         AFS control unit harness connector         Connector No.       Terminal No.         M16       30       7       Approx. 54 – 66         s the measurement value within the specification?       YES       >> GO TO 3.       NO       >> Repair the AFS control unit branch line.         J.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-65, "AFS CONTF UNIT : Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".	_
Connector No.       Terminal No.       Resistance (Ω)         M16       30       7       Approx. 54 – 66         s the measurement value within the specification?       YES       >> GO TO 3.         YES       >> GO TO 3.       NO       >> Repair the AFS control unit branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-65, "AFS CONTF JNIT : Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".	
Connector No.       Terminal No.         M16       30       7       Approx. 54 – 66         Is the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the AFS control unit branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-65, "AFS CONTFUNIT : Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the AFS control unit. Refer to EXL-219, "Exploded View".	
<ul> <li><u>s the measurement value within the specification?</u></li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the AFS control unit branch line.</li> <li>CHECK POWER SUPPLY AND GROUND CIRCUIT</li> <li>Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-65, "AFS CONTF</u></li> <li>JNIT : Diagnosis Procedure".</li> <li><u>s the inspection result normal?</u></li> <li>YES (Present error)&gt;&gt;Replace the AFS control unit. Refer to <u>EXL-219, "Exploded View"</u>.</li> </ul>	
NO >> Repair the power supply and the ground circuit.	<u> 20L</u>
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# **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 connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
M151	90	74	Approx. 54 – 66

Models without navigation system

	AV control unit harness connecto	r	Resistance ( $\Omega$ )
Connector No.	Termi	nal No.	
M217	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: <u>AV-93, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-268</u>, "<u>AV CONTROL UNIT</u>: <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-477, "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 navigation: <u>AV-128, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-316</u>, "Exploded View"
- BOSE audio with navigation: <u>AV-520, "Exploded View"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

LANE BRANCH LIN	IE CIRCUIT			٨
Diagnosis Procedure			INFOID:000000011038965	А
1.CHECK CONNECTOR				В
<ol> <li>Check the following term nector side).</li> <li>Lane camera unit</li> <li>Harness connector R7</li> <li>Harness connector M11</li> </ol>	cable from the negative terr ninals and connectors for d 0		nnection (unit side and con-	C
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termination 2.CHECK HARNESS FOR	nal and connector.			E
1. Disconnect the connect	or of lane camera unit.	it harness connector termir	nals.	F
	ane camera unit harness connect		Resistance (Ω)	G
Connector No.		nal No.	A	
R10 Is the measurement value w	4	8	Approx. 54 – 66	Н
YES >> GO TO 3.	camera unit branch line.	г		I
Check the power supply and UNIT : Diagnosis Procedure Is the inspection result norm	<u>.</u>	lane camera unit. Refer to	DAS-298, "LANE CAMERA	J
YES (Present error)>>Rep YES (Past error)>>Error wa	ace the lane camera unit.	nera unit branch line.	<u>ed View"</u> .	K
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# **4WD BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:0000000011038983

[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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AWD control unit
- 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.

ŀ	WD control unit harness connect	or	Resistance ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-47</u>, "<u>Diagnosis Proce-</u> <u>dure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-59, "Removal and Installation".

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

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

### **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 6)]
BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000011038966
1.CHECK CONNECTOR			
	cable from the negative terr		se connection (unit side and
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of BCM. Stween the BCM harness c	onnector terminals.	
	BCM harness connector		– Resistance (Ω)
Connector No.	Termi	nal No.	
M122	91	90	Approx. 54 – 66
Is the measurement value wYES>> GO TO 3.NO>> Repair the BCM3.CHECK POWER SUPPL	branch line.	г	
Check the power supply and	I the ground circuit of the E	CM. Refer to BCS-46, "Dia	agnosis Procedure".
Is the inspection result norm	<u>al?</u>		
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe		anch line.	
YES (Past error)>>Error w	as detected in the BCM bra	anch line.	

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# DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038967

[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		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.

### **TCM BRANCH LINE CIRCUIT**

Diagnosis Procedure				INFOID:000000011038968
.CHECK CONNECTOR				
<ul> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> <li>Check the following terr nector side).</li> <li>A/T assembly</li> <li>Harness connector F10</li> <li>Harness connector M11</li> <li>the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ul>	cable from minals and 6 <u>hal?</u> inal and c OPEN Cl or of A/T a	d connectors for da onnector. IRCUIT assembly.	amage, bend and	nection (unit side and con-
		bly harness connector		Posistance (O)
Connector No.		Termina	al No.	Resistance (Ω)
F51		3	8	Approx. 54 – 66
NO >> Repair the TCM				
NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne	OPEN Clector. Refe	IRCUIT er to <u>TM-185, "Ren</u>		ne TCM harness connector
NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be side of the joint connect	OPEN Clector. Refe tween the tor.	IRCUIT er to <u>TM-185, "Ren</u> e A/T assembly ha	mess connector s	ne TCM harness connector
NO >> Repair the TCM CHECK HARNESS FOR . Remove the joint conne . Check the continuity be	OPEN Clector. Refe tween the tor.	IRCUIT er to <u>TM-185, "Ren</u>	ness connector s	ne TCM harness connector
<ul> <li>NO &gt;&gt; Repair the TCM</li> <li>CHECK HARNESS FOR</li> <li>Remove the joint conne</li> <li>Check the continuity be side of the joint connect</li> <li>A/T assembly harness connect</li> </ul>	OPEN Clector. Refe tween the tor.	IRCUIT er to <u>TM-185, "Ren</u> e A/T assembly ha TCM harness c	ness connector s onnector side al No.	
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.	COPEN Clector. Refe tween the tor.	IRCUIT er to <u>TM-185, "Rem</u> e A/T assembly har TCM harness o Termina	ness connector s onnector side al No.	Continuity

# 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	I meter and A/C amp. harness co	nnector	Resistance ( $\Omega$ )
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-55, "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-137, "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:000000011038969

### STRG BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000011038970
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the steering r side).		bend and loose connection
YES >> GO TO 2.			
NO >> Repair the term			
2.CHECK HARNESS FOR			
	or of steering angle sensor. etween the steering angle s	ensor harness connector te	erminals.
	ering angle sensor harness conne		Resistance ( $\Omega$ )
Connector No.		nal No.	
M37	1	2	Approx. 54 – 66
	ring angle sensor branch lir		
CHECK POWER SUPPL	Y AND GROUND CIRCUIT	r	
Check the power supply and ram - BRAKE CONTROL S	d the ground circuit of the s		er to <u>BRC-134, "Wiring Dia-</u>
Check the power supply an gram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the s <u>SYSTEM -"</u> . al? lace the steering angle sen	steering angle sensor. Refe sor. Refer to <u>BRC-159, "Ex</u> angle sensor branch line.	
Check the power supply an gram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the s <u>SYSTEM -"</u> . a <u>al?</u> lace the steering angle sen as detected in the steering	steering angle sensor. Refe sor. Refer to <u>BRC-159, "Ex</u> angle sensor branch line.	
Check the power supply an gram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the s <u>SYSTEM -"</u> . a <u>al?</u> lace the steering angle sen as detected in the steering	steering angle sensor. Refe sor. Refer to <u>BRC-159, "Ex</u> angle sensor branch line.	
Check the power supply an gram - BRAKE CONTROL S is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the s <u>SYSTEM -"</u> . a <u>al?</u> lace the steering angle sen as detected in the steering	steering angle sensor. Refe sor. Refer to <u>BRC-159, "Ex</u> angle sensor branch line.	
Check the power supply an gram - BRAKE CONTROL S is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the s <u>SYSTEM -"</u> . a <u>al?</u> lace the steering angle sen as detected in the steering	steering angle sensor. Refe sor. Refer to <u>BRC-159, "Ex</u> angle sensor branch line.	
YES (Past error)>>Error wa	d the ground circuit of the s <u>SYSTEM -"</u> . a <u>al?</u> lace the steering angle sen as detected in the steering	steering angle sensor. Refe sor. Refer to <u>BRC-159, "Ex</u> angle sensor branch line.	

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# ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038971

[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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

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.

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-56, "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-219</u>, "Exploded View".

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

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

### **BSW BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:00000001103897
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the BSW c side). <u>al?</u> nal and connector.		bend and loose connectior
2. Check the resistance be	or of BSW control module. etween the BSW control module W control module harness conne	odule harness connector ter	rminals.
Connector No.	Termiı	nal No.	Resistance ( $\Omega$ )
	14 ithin the specification?	15	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the BSW <u>"System Diagran</u> 3.CHECK POWER SUPPL" Check the power supply and TROL MODULE : Diagnosis	ithin the specification? / control module branch lin m". Y AND GROUND CIRCUIT d the ground circuit of the <u>Procedure"</u> .	15 e (CAN communication cir	cuit side). Refer to <u>LAN-41</u>
Is the measurement value w YES >> GO TO 3. NO >> Repair the BSW "System Diagran 3.CHECK POWER SUPPL" Check the power supply and TROL MODULE : Diagnosis Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? / control module branch lin m". Y AND GROUND CIRCUIT d the ground circuit of the <u>Procedure"</u> . <u>al?</u> ace the BSW control modu	15 e (CAN communication cir - BSW control module. Refe ile. Refer to <u>DAS-418, "Rer</u> ntrol module branch line.	cuit side). Refer to <u>LAN-41</u> er to <u>DAS-409, "BSW CON-</u>

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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-48</u>, "<u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-156</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: February 2015

## ICC BRANCH LINE CIRCUIT

ICC BRANCH LINE (	CIRCUIT		
Diagnosis Procedure			INFOID:000000011038974
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch O</li> <li>Disconnect the battery ca</li> <li>Check the terminals and nection (unit side and context)</li> </ol>	ble from the negative ter connectors of the ICC s	minal. ensor integrated unit for da	mage, bend and loose con-
Is the inspection result norma	<u> ?</u>		
YES >> GO TO 2. NO >> Repair the termina	al and connector.		
2. CHECK HARNESS FOR C			
	ween the ICC sensor inte	grated unit harness connec	tor terminals.
	sor integrated unit harness co		Resistance (Ω)
E67	3	inal No. 6	Approx. 54 – 66
s the measurement value with	-	0	
LAN-41. "System 3.CHECK POWER SUPPLY Check the power supply and	Diagram". AND GROUND CIRCUI the ground circuit of th	e ICC sensor integrated un	
SENSOR INTEGRATED UNIT			
YES (Present error)>>Repla YES (Past error)>>Error was	 ce the ICC sensor integr	sor integrated unit branch li	

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# **IPDM-E BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011038975

[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		Resistance ( $\Omega$ )
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-19, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Exploded View".

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

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

## **APA BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000011038976
<b>1</b> .CHECK CONNECTOR			
<ol> <li>Turn the ignition switch (2. Disconnect the battery of 2. Check the terminals and nection (unit side and constitution (unit side and constitution) (</li></ol>	able from the negative te d connectors of the acce onnector side). <u>al?</u> nal and connector.	erminal. lerator pedal actuator for dar	nage, bend and loose con-
	or of accelerator pedal ac tween the accelerator pe	ctuator. edal actuator harness connect	or terminals.
Accele Connector No.	erator pedal actuator harness c	connector minal No.	Resistance ( $\Omega$ )
E113	5	3	Approx. 54 – 66
YES >> GO TO 3.			
NO >> Repair the accel CHECK POWER SUPPL Check the power supply and <u>ERATOR PEDAL ACTUATO</u> <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	the ground circuit of the <u>R : Diagnosis Procedure</u> al? ace the accelerator peda	JIT e accelerator pedal actuator. F <u>"</u> . al actuator. Refer to <u>DAS-197,</u> rator pedal actuator branch lir	"Exploded View".

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# **BCU BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011038977

[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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Brake booster control unit
- Harness connector B201
- Harness connector M117
- Harness connector M6
- Harness connector E106

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 brake booster control unit.
- 2. Check the resistance between the brake booster control unit harness connector terminals.

booster control unit harness con	nector	Resistance (Ω)
Terminal No.		
14	5	Approx. 108 – 132
	Termi	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair or replace (if shield line is open) the brake booster control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the brake booster control unit. Refer to <u>CCS-134</u>, "<u>BRAKE</u> <u>BOOSTER CONTROL UNIT</u> : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the brake booster control unit. Refer to CCS-175, "Exploded View".

- YES (Past error)>>Error was detected in the brake booster control unit branch line.
- NO >> Repair the power supply and the ground circuit.

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 cornector side).         - Side radar LH         - Harness connector B104         - Harness connector B102         - Harness connector B101         - Harness connector B69         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 side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector         Resistance (Ω)         0       Terminal No.         8105       4       3         105       4       3         115       4       3         126       Side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT	Diagnosis Procedure       Processed Procedure         1. CHECK CONNECTOR       I. 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).         3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).       Side radar LH         4. Harness connector B104       Harness connector B102         4. Harness connector B101       Harness connector B69         5. sthe inspection result normal?       YES >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT       1. Disconnect the connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector       Resistance (Ω)         6       Side radar LH harness connector         1. Disconnect the connector of side radar LH harness connector terminals.       Resistance (Ω)         Side radar LH harness connector       Resistance (Ω)         8       Side radar LH harness connector         8       YES >> GO TO 3.       Approx. 54 – 66         9       >> Repair the side radar LH branch line.       Approx. 54 – 66         3       Approx. 54 – 66       Ste measurement value with	Diagnosis Procedure		202 >		
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 cornector side).         Side radar LH         Harness connector B104         Harness connector B102         Harness connector B101         Harness connector B102         Harness connector B103         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 side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector       Resistance (Ω)         Connector No.       Terminal No.         B105       4       3       Approx. 54 – 66         s the measurement value within the specification?       YES       > GO TO 3.       NO       >> Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".	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).         Side radar LH         Harness connector B104         Harness connector B102         Harness connector B101         Harness connector B69         Is the inspection result normal?         YES         YES         > GO TO 2.         NO         > Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector       Resistance (Ω)         Connector No.       Terminal No.         B105       4       3         Approx. 54 - 66       s the measurement value within the specification?         YES       > GO TO 3.         NO       > Repair the side radar LH branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".         s the inspection result normal?         YES	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).         Side radar LH         Harness connector B104         Harness connector B102         Harness connector B69         is the inspection result normal?         YES         YES         Scheck the resistance between the side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector         Resistance (Ω)         B105       4         3       Approx. 54 - 66         s the measurement value within the specification?         YES       > GO TO 3.         NO       > Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH ? Diagnosis Procedure"."         s the inspection result normal?         YES (Present error)>>Replace the side radar LH. Refer to DAS-419. "Removal and Installation"."      <	RDR-L BRANCH LI	INE CIRCUIT		
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 cornector side).         3. Side radar LH         Harness connector B104         Harness connector B101         Harness connector B101         Harness connector B101         Harness connector B101         Harness connector B69         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 side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector         Resistance (Ω)         Connector No.         Image: Side radar LH harness connector         Resistance (Ω)         B105       4         s the measurement value within the specification?         YES       > GO TO 3.         NO       >> Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".	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).         Side radar LH         Harness connector B104         Harness connector B102         Harness connector B101         Harness connector B69         s the inspection result normal?         YES         YES         Side radar LH         1. Disconnect the connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector No.         Resistance (Ω)         B105       4         S the measurement value within the specification?         YES       > GO TO 3.         NO       >> Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".         S the inspection result normal?         YES (Present error)>>Replace the side radar LH. Refer to DAS-419. "Removal and Installation".         YES (Present error)>>Error was detected in the side radar LH branch line.	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).         Side radar LH         Harness connector B104         Harness connector B102         Harness connector B101         Harness connector B69         s the inspection result normal?         YES         YES         Side radar LH         1. Disconnect the connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector No.         Resistance (Ω)         B105       4         S the measurement value within the specification?         YES       > GO TO 3.         NO       >> Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".         S the inspection result normal?         YES (Present error)>>Replace the side radar LH. Refer to DAS-419. "Removal and Installation".         YES (Present error)>>Error was detected in the side radar LH branch line.	Diagnosis Procedure			INFOID:00000001103897
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 cornector side).         3. Side radar LH         - Harness connector B104         - Harness connector B102         - Harness connector B101         - Harness connector B101         - Harness connector B101         - Harness connector B102         - Harness connector B103         - Bib the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the terminal and connector. <b>2</b> . CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector       Resistance (Ω)         B105       4       3       Approx. 54 – 66         Is the measurement value within the specification?       YES       >> GO TO 3.       NO       >> Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".	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).         Side radar LH         Harness connector B104         Harness connector B102         Harness connector B101         Harness connector B69         s the inspection result normal?         YES         YES         Scheck the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector         Resistance (Ω)         Connector No.       Terminal No.         B105       4       3         Approx. 54 – 66       is the measurement value within the specification?         YES       > GO TO 3.         NO       >> Repair the side radar LH branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".         St the inspection result normal?         YES (Present error)>>Replace the side radar LH. Refer to DAS-419. "Removal and Installation".         YES (Present	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).         Side radar LH         Harness connector B104         Harness connector B101         Harness connector B101         Harness connector B69         Is the inspection result normal?         YES         YES         Scheck the resistance between the side radar LH.         2. Check the connector of side radar LH.         2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector         Resistance (Ω)         Side radar LH harness connector terminals.         Side radar LH harness connector terminals.         Side radar LH harness connector terminals.         Side radar LH harness connector         Resistance (Ω)         B105       4         B105       4         Sole radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the side radar LH. Refer to DAS-419. "Removal and				
2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector         Resistance (Ω)         Connector No.         Terminal No.         B105       4       3       Approx. 54 – 66         S the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the side radar LH branch line.         CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".	2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector       Resistance (Ω)         Connector No.       Terminal No.         B105       4       3         Approx. 54 – 66       Sthe measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409, "SIDE RADAR LH Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the side radar LH. Refer to DAS-419, "Removal and Installation".         YES (Past error)>>Error was detected in the side radar LH branch line.	2. Check the resistance between the side radar LH harness connector terminals.         Side radar LH harness connector       Resistance (Ω)         Connector No.       Terminal No.         B105       4       3         Approx. 54 – 66       Sthe measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the side radar LH branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409, "SIDE RADAR LH Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the side radar LH. Refer to DAS-419, "Removal and Installation".         YES (Past error)>>Error was detected in the side radar LH branch line.	<ol> <li>Disconnect the battery of Check the following terr nector side).</li> <li>Side radar LH Harness connector B10 Harness connector B10 Harness connector B10 Harness connector B69</li> <li><u>s the inspection result norm</u> YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> </ol>	cable from the negative tern minals and connectors for d 04 02 01 <u>nal?</u> ninal and connector. R OPEN CIRCUIT		nnection (unit side and con
Connector No.       Terminal No.       Resistance (Ω)         B105       4       3       Approx. 54 – 66         s the measurement value within the specification?       YES >> GO TO 3.       NO >> Repair the side radar LH branch line.         S.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409. "SIDE RADAR LH Diagnosis Procedure".	Connector No.       Terminal No.       Resistance (Ω)         B105       4       3       Approx. 54 – 66         s the measurement value within the specification?       YES       >> GO TO 3.         YES       >> GO TO 3.       NO       >> Repair the side radar LH branch line.         B.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409, "SIDE RADAR LH Diagnosis Procedure".         S the inspection result normal?       YES (Present error)>>Replace the side radar LH. Refer to DAS-419, "Removal and Installation".         YES (Past error)>>Error was detected in the side radar LH branch line.       Past and the side radar LH branch line.	Connector No.       Terminal No.       Resistance (Ω)         B105       4       3       Approx. 54 – 66         s the measurement value within the specification?       YES       >> GO TO 3.         YES       >> GO TO 3.       NO       >> Repair the side radar LH branch line.         B.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409, "SIDE RADAR LH : Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the side radar LH. Refer to DAS-419, "Removal and Installation".         YES (Past error)>>Error was detected in the side radar LH branch line.       Past and the side radar LH branch line.		etween the side radar LH ha		
B105       4       3       Approx. 54 – 66         s the measurement value within the specification?       YES       >> GO TO 3.         YES       >> GO TO 3.       >> Repair the side radar LH branch line.         B.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the side radar LH. Refer to DAS-409, "SIDE RADAR LH Diagnosis Procedure".	B105       4       3       Approx. 54 – 66         s the measurement value within the specification?	B105       4       3       Approx. 54 – 66         s the measurement value within the specification?	Connector No	1		Resistance ( $\Omega$ )
s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the side radar LH branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-409</u> , "SIDE RADAR LH Diagnosis Procedure".	s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the side radar LH branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-409</u> , "SIDE RADAR LH Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the side radar LH. Refer to <u>DAS-419</u> , "Removal and Installation". YES (Past error)>>Error was detected in the side radar LH branch line.	s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the side radar LH branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-409</u> , "SIDE RADAR LH Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the side radar LH. Refer to <u>DAS-419</u> , "Removal and Installation". YES (Past error)>>Error was detected in the side radar LH branch line.				Approx 54 - 66
YES (Past error)>>Error was detected in the side radar LH branch line.			NO >> Repair the side 3.CHECK POWER SUPPL Check the power supply an Diagnosis Procedure". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	LY AND GROUND CIRCUIT nd the ground circuit of the s nal? blace the side radar LH. Refe vas detected in the side rada	side radar LH. Refer to <u>DA</u> er to <u>DAS-419, "Removal a</u> ar LH branch line.	

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# **RDR-R BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000011038979

[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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Side radar RH
- Harness connector B106
- Harness connector B103
- Harness connector B101
- Harness connector B69

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 side radar RH.

#### 2. Check the resistance between the side radar RH harness connector terminals.

	Side radar RH harness connecto	r	Resistance (Ω)
Connector No.	Terminal No.		
B107	4	3	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar RH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-410. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to <u>DAS-419</u>, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar RH branch line.

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

### CAN COMMUNICATION CIRCUIT

# [CAN SYSTEM (TYPE 6)]

DTC/CIRCOTT DIAGNOS			
CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:00000001103898
CONNECTOR INSPECT	ION		
. Turn the ignition switch	OFF.		
<ol><li>Disconnect the battery of</li></ol>	able from the negative ter		
	onnectors on CAN commu nnectors for damage, benc		
s the inspection result norm	•		
YES >> GO TO 2.			
NO >> Repair the termi			
CHECK HARNESS CON			
Check the continuity betwee	n the data link connector to	erminals.	
	Data link connector		
Connector No.	Termi	nal No.	Continuity
M24	6	14	Not existed
s the inspection result norm	al?		·
YES >> GO TO 3.			
•	ess and repair the root cau		
$\mathbf{B}$ . CHECK HARNESS CON			
Check the continuity betwee	n the data link connector a	and the ground.	
Data link	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M24	6		Not existed
	14		Not existed
s the inspection result norm	al?		
YES >> GO TO 4. NO >> Check the harne	ess and repair the root cau	ISP	
<b>1.</b> CHECK ECM AND IPDM			
. Remove the ECM and the			
	etween the ECM terminals.		
ECM	Resistance (	2)	ECM and IPDM E/R
Terminal No.			
	13 Approx. 108 –		
3. Check the resistance be	tween the IPDM E/R termi	inals.	
IPDM E/R		——	LV
Terminal No.	Resistance (	ב)	LKIA0037E
40 3	9 Approx. 108 –	132	
s the measurement value w			
YES >> GO TO 5.			
YES >> GO TO 5.	M and/or the IPDM E/R.		

< DTC/CIRCUIT DIAGNOSIS >

## LAN-205

< 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.

## **ITS COMMUNICATION CIRCUIT**

S COMMUNIC				
agnosis Proced	ure			INFOID:000000011038981
CHECK CAN DIAG	NOSIS			
eck the CAN diagno	osis results from CON	SULT to see that the	CAN communication of	circuit has no malfunc-
n. <b>)TE:</b>				
r identification of CA		rcuit, ITS communicat	tion circuit and BSW of	communication circuit,
er to <u>LAN-41, "Syste</u>				
ES >> GO TO 2.	ation circuit normal?			
O >> Check and	d repair CAN commun	ication circuit.		
CONNECTOR INSP	PECTION			
Turn the ignition s	witch OFF. ttery cable from the ne	egative terminal		
Check the followin			nd and loose connect	ion (unit side and con-
nector side). ICC sensor integra	ated unit			
Accelerator pedal	actuator			
Brake booster con Harness connecto				
Harness connector Harness connector				
Harness connecto	r E106			
Harness connecto he inspection result				
Harness connectone to he inspection result ES >> GO TO 3.	normal?	tor.		
Harness connecto he inspection result ES >> GO TO 3. O >> Repair the	normal? terminal and connect			
Harness connectone he inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll	terminal and connect CONTINUITY (OPEN lowing harness conne	N CIRCUIT)		
Harness connectone inspection result S >> GO TO 3. C >> Repair the CHECK HARNESS	normal? terminal and connect CONTINUITY (OPEN lowing harness conne ated unit	N CIRCUIT)		
Harness connectone inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integra Brake booster con Check the continu	normal? terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC	N CIRCUIT)	t harness connector a	and the brake booster
Harness connector ne inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integra Brake booster con Check the continu control unit harnes	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC as connector.	N CIRCUIT)	t harness connector a	and the brake booster
Harness connector he inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integrated Brake booster con Check the continu control unit harnes	normal? terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC as connector.	N CIRCUIT) ectors. sensor integrated uni Brake booster control	unit harness connector	and the brake booster
Harness connector ne inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integra Brake booster con Check the continu control unit harnes	terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit tity between the ICC ss connector. unit harness connector Terminal No.	N CIRCUIT) ectors. sensor integrated uni	unit harness connector Terminal No.	Continuity
Harness connector the inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integrated Brake booster con Check the continu control unit harnes	normal? terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC as connector.	N CIRCUIT) ectors. sensor integrated uni Brake booster control	unit harness connector Terminal No. 14	Continuity Existed
Harness connector the inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integrated Brake booster con Check the continue control unit harness ICC sensor integrated Connector No. E67	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit hity between the ICC as connector. unit harness connector Terminal No. 2 5	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No.	unit harness connector Terminal No.	Continuity
Harness connector the inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integrated Brake booster con Check the continue control unit harness ICC sensor integrated Connector No. E67 The inspection result	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit hity between the ICC as connector. unit harness connector Terminal No. 2 5	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No.	unit harness connector Terminal No. 14	Continuity Existed
Harness connector the inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integrated Connector No. E67 The inspection result S >> GO TO 4. D >> Repair the	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit hity between the ICC ss connector. unit harness connector Terminal No. 2 5 normal?	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No. B250	unit harness connector Terminal No. 14 5	Continuity Existed
Harness connector he inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integra Brake booster con Check the continu control unit harnes ICC sensor integrated Connector No. E67 he inspection result ES >> GO TO 4. D >> Repair the 41, "System	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC ss connector. unit harness connector Terminal No. 2 5 inormal? e ICC sensor integrate <u>m Diagram</u> .	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No. B250 ed unit branch line (ITS	unit harness connector Terminal No. 14 5	Continuity Existed Existed
Harness connector ne inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integra Brake booster con Check the continu control unit harnes ICC sensor integrated Connector No. E67 ne inspection result ES >> GO TO 4. D >> Repair the <u>41. "Syster</u> CHECK HARNESS	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC ss connector. unit harness connector Terminal No. 2 5 .normal? E ICC sensor integrate m Diagram". CONTINUITY (SHOP	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No. B250 ed unit branch line (ITS RT CIRCUIT)	unit harness connector Terminal No. 14 5	Continuity Existed Existed
Harness connectone inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integrated Brake booster con Check the continue control unit harnes ICC sensor integrated Connector No. E67 he inspection result S >> GO TO 4. D >> Repair the 41. "System CHECK HARNESS Disconnect the con	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC ss connector. unit harness connector Terminal No. 2 5 .normal? E ICC sensor integrate m Diagram". CONTINUITY (SHOP nnector of accelerator	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No. B250 ed unit branch line (ITS RT CIRCUIT)	unit harness connector Terminal No. 14 5	Continuity Existed Existed
Harness connecton he inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integra Brake booster con Check the continue control unit harnes ICC sensor integrated Connector No. E67 he inspection result ES >> GO TO 4. D >> Repair the 41. "System CHECK HARNESS Disconnect the con	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC ss connector. unit harness connector Terminal No. 2 5 .normal? E ICC sensor integrate m Diagram". CONTINUITY (SHOP nnector of accelerator	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No. B250 ed unit branch line (ITS RT CIRCUIT) pedal actuator. ensor integrated unit l	unit harness connector Terminal No. 14 5 S communication circu	Continuity Existed Existed nit side). Refer to LAN-
Harness connecto he inspection result ES >> GO TO 3. O >> Repair the CHECK HARNESS Disconnect the foll ICC sensor integra Brake booster con Check the continu control unit harnes ICC sensor integrated Connector No. E67 he inspection result ES >> GO TO 4. O >> Repair the <u>41. "Syster</u> CHECK HARNESS Disconnect the con	e terminal and connect CONTINUITY (OPEN lowing harness conne ated unit trol unit ity between the ICC ss connector. unit harness connector Terminal No. 2 5 	N CIRCUIT) ectors. sensor integrated uni Brake booster control Connector No. B250 ed unit branch line (ITS RT CIRCUIT) pedal actuator. ensor integrated unit l	unit harness connector Terminal No. 14 5 S communication circu	Continuity Existed Existed

Revision: February 2015

NO

< DTC/CIRCUIT DIAGNOSIS >

LAN-207

>> Check the harness and repair or replace (if shield line is short) the root cause.

## ITS COMMUNICATION CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

#### [CAN SYSTEM (TYPE 6)]

# 5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

ICC sensor integrated	ICC sensor integrated unit harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
E67	2	Giouna	Not existed
207	5		Not existed

Is the inspection result normal?

YES >> GO TO 6.

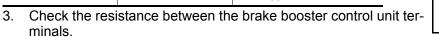
NO >> Check the harness and repair or replace (if shield line is short) the root cause.

6. CHECK TERMINATION CIRCUIT

1. Remove the ICC sensor integrated unit and the brake booster control unit.

- 2. Check the resistance between the ICC sensor integrated unit terminals.
  - 1 : ICC sensor integrated unit and brake booster control unit

ICC sensor i	Resistance (Ω)	
Terminal No.		
2	5	Approx. 108 – 132



JPMIA0933ZZ	

Brake booste	Resistance (Ω)	
Termir		
14	5	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC sensor integrated unit and/or the brake booster control unit.

### 7.CHECK SYMPTOM

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

#### Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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

#### **BSW COMMUNICATION CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

	IICATION CIRC			
iagnosis Proced	ure			INFOID:00000001103898
.CHECK CAN DIAG	NOSIS			
on. I <b>OTE:</b> or identification of CA efer to <u>LAN-41, "Syste</u>	AN communication cire			circuit has no malfunc
<u>s the CAN communica</u> YES >> GO TO 2.	ation circuit normal?			
NO >> Check and	d repair CAN commun	ication circuit.		
CONNECTOR INSP				
<ul> <li>Check the followin nector side).</li> <li>BSW control modu Side radar LH</li> <li>Side radar RH</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Some connecto</li> <li>Harness connecto</li> <li< td=""><td>ttery cable from the ne g terminals and conne lle r B69 r B101 r B103 r B106 <u>normal?</u></td><td>ectors for damage, be</td><td>nd and loose conned</td><td>ction (unit side and con</td></li<></ul>	ttery cable from the ne g terminals and conne lle r B69 r B101 r B103 r B106 <u>normal?</u>	ectors for damage, be	nd and loose conned	ction (unit side and con
BSW control modu Side radar RH	lowing harness conne ule	ctors.	ss connector and the	e side radar RH harness
<ul> <li>Disconnect the foll BSW control modu Side radar RH</li> <li>Check the continu connector.</li> </ul>	lowing harness conne ule	ctors.		
<ul> <li>Disconnect the foll BSW control modu Side radar RH</li> <li>Check the continu connector.</li> </ul>	lowing harness conne ule ity between the BSW (	ctors. control module harnes		e side radar RH harness Continuity
<ul> <li>Disconnect the foll BSW control modu Side radar RH</li> <li>Check the continu connector.</li> </ul>	lowing harness conne ule ity between the BSW e harness connector Terminal No. 7	ctors. control module harnes Side radar RH ha	arness connector Terminal No. 4	Continuity Existed
<ul> <li>Disconnect the foll BSW control modu Side radar RH</li> <li>Check the continu connector.</li> <li>BSW control modul</li> <li>Connector No.</li> <li>B50</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 4.</li> <li>NO &gt;&gt; Repair the <u>"System D</u></li> </ul>	lowing harness conne ule ity between the BSW e harness connector Terminal No. 7 8 normal? e BSW control module biagram".	ctors. control module harnes Side radar RH ha Connector No. B107	Arness connector Terminal No. 4 3	- Continuity
<ul> <li>Disconnect the foll BSW control modu Side radar RH</li> <li>Check the continu connector.</li> <li>BSW control modul Connector No.</li> <li>BSW control modul</li> <li>Connector No.</li> <li>B50</li> <li>Sthe inspection result</li> <li>YES &gt;&gt; GO TO 4.</li> <li>NO &gt;&gt; Repair the "System D</li> <li>CHECK HARNESS</li> <li>Disconnect the continu</li> </ul>	lowing harness conne ule ity between the BSW of e harness connector Terminal No. 7 8 anormal? e BSW control module	ctors. control module harnes Side radar RH ha Connector No. B107 branch line (BSW co RT CIRCUIT) LH. control module harnes arness connector	Terminal No. 4 3 mmunication circuit	Continuity Existed Existed side). Refer to LAN-41
<ul> <li>Disconnect the foll BSW control modu Side radar RH</li> <li>Check the continu connector.</li> <li>BSW control modul Connector No.</li> <li>B50</li> <li>the inspection result YES &gt;&gt; GO TO 4.</li> <li>NO &gt;&gt; Repair the "System D</li> <li>CHECK HARNESS</li> <li>Disconnect the continue</li> </ul>	lowing harness conne ule ity between the BSW of e harness connector Terminal No. 7 8 normal? e BSW control module biagram". CONTINUITY (SHOP nnector of side radar L ity between the BSW of	ctors. control module harnes Side radar RH ha Connector No. B107 branch line (BSW co RT CIRCUIT) _H. control module harnes	Terminal No. 4 3 mmunication circuit	Continuity Existed Existed side). Refer to LAN-41

NO >> Check the harness and repair the root cause.

#### < DTC/CIRCUIT DIAGNOSIS >

#### [CAN SYSTEM (TYPE 6)]

### **5.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the BSW control module harness connector and the ground.

BSW control modul	BSW control module harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
B50	7	Gibuna	Not existed
	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair the root cause.

**6.**CHECK TERMINATION CIRCUIT

1. Remove the BSW control module and the side radar RH.

2. Check the resistance between the BSW control module terminals.

1 : BSW control module and side radar RH

BSW cont	Resistance ( $\Omega$ )	
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the side radar RH terminals.

Side ra	Resistance ( $\Omega$ )	
Terminal No.		Resistance (32)
4 3		Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the BSW control module and/or the side radar RH.

#### **1**.CHECK SYMPTOM

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

#### Inspection result

Reproduced>>Replace the side radar LH.

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

