# SECTION LAN В LAN SYSTEM c

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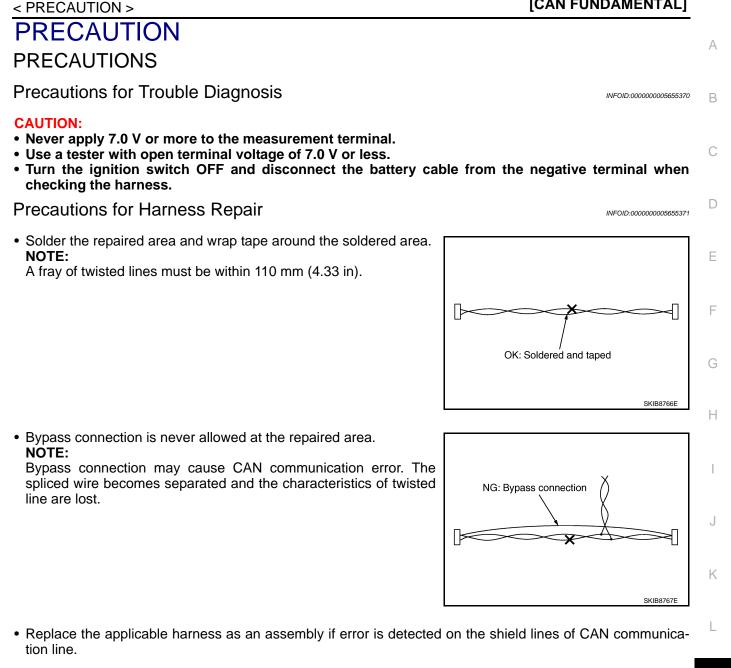
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TCM BRANCH LINE CIRCUIT	L
ADP BRANCH LINE CIRCUIT	LAN
RAS BRANCH LINE CIRCUIT	Ν
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## [CAN FUNDAMENTAL]



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## SYSTEM DESCRIPTION CAN COMMUNICATION SYSTEM

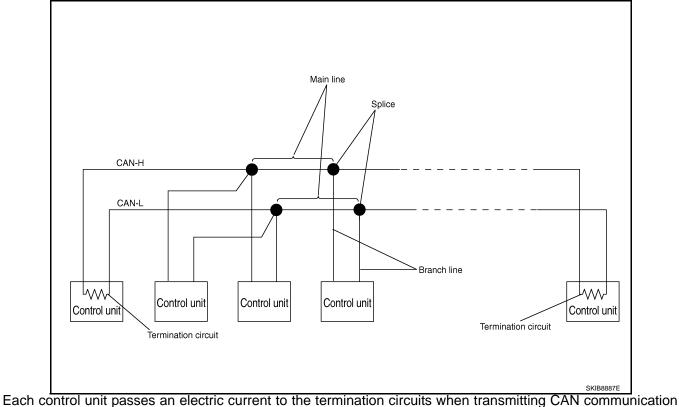
### System Description

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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



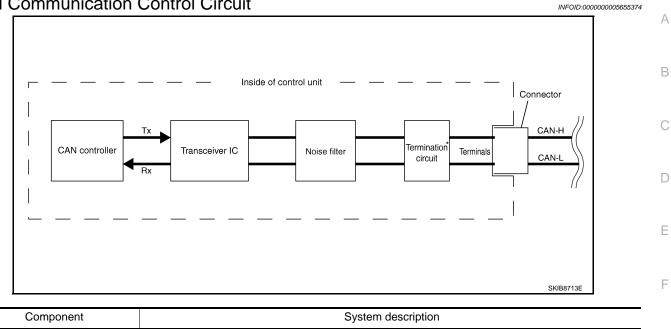
Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential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

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-9, "CAN Communication Control Circuit".

#### < SYSTEM DESCRIPTION >

## [CAN FUNDAMENTAL]

## **CAN Communication Control Circuit**



Component	System description	
CAN controller	It controls CAN communication signal transmission and reception, error detection, etc.	G
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.	Н
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.

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## < SYSTEM DESCRIPTION >

## DIAG ON CAN

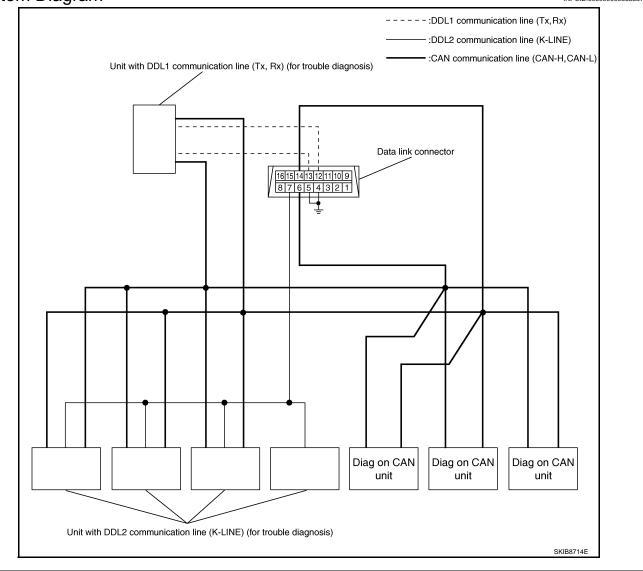
## Description

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

### System Diagram



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

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## < SYSTEM DESCRIPTION >

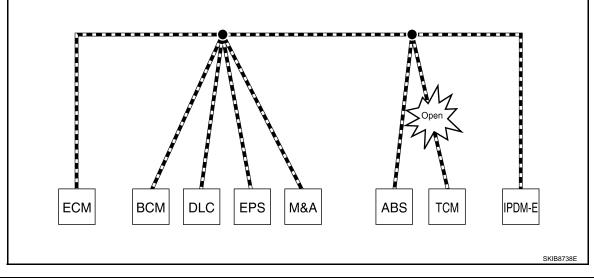
## TROUBLE DIAGNOSIS

## Condition of Error Detection

DTC of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT-III if a CAN communication signal is not transmitted or received between units for 2 seconds or more.	В
DTCs of CAN communication are as follows: • U0101 • U0140 • U0164	С
• U1000 • U1001	D
<ul> <li>CAN COMMUNICATION SYSTEM ERROR</li> <li>CAN communication line open (CAN-H, CAN-L, or both)</li> <li>CAN communication line short (ground, between CAN communication lines, other harnesses)</li> <li>Error of CAN communication control circuit of the unit connected to CAN communication line</li> </ul>	Е
WHEN DTC OF CAN COMMUNICATION IS INDICATED EVEN THOUGH CAN COMMUNICATION SYSTEM IS NORMAL	F
• 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.)	G
<ul> <li>Fuse blown out (removed): CAN communication of the unit may cease.</li> <li>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).</li> <li>Error may be detected if the power supply circuit of the control unit, which carries out CAN communication,</li> </ul>	Η
<ul> <li>Error may be detected if the power supply circuit of the control unit, which carries out CAN communication).</li> <li>Error may be detected if reprogramming is not completed normally.</li> <li>CAUTION:</li> </ul>	
CAN communication system is normal if DTC of CAN communication is indicated on SELF-DIAG RESULTS of CONSULT-III under the above conditions. Erase the memory of the self-diagnosis of each unit.	J
Symptom When Error Occurs in CAN Communication System	K
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	L
Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring	LAI
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	0
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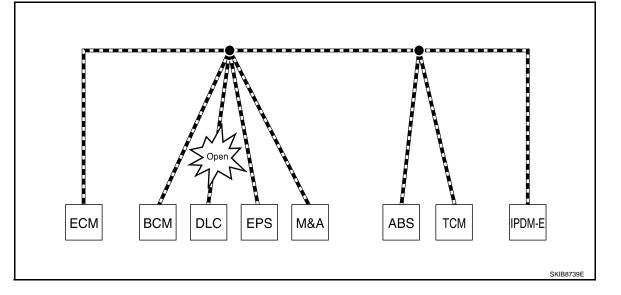
#### < SYSTEM DESCRIPTION >

#### 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.
EPS control unit	Normal operation.
Combination meter	<ul><li>Shift position indicator and OD OFF indicator turn OFF.</li><li>Warning lamps turn ON.</li></ul>
ABS actuator and electric unit (control unit)	Normal operation.
ТСМ	No impact on operation.
IPDM E/R	Normal operation.

Example: Data link connector branch line open circuit



#### < SYSTEM DESCRIPTION >

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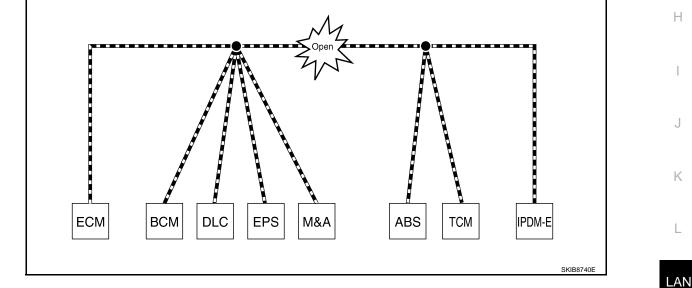
Unit name	Symptom	A
ECM		
BCM		_
EPS control unit		B
Combination meter	Normal operation.	
ABS actuator and electric unit (control unit)		C
ТСМ	_	
IPDM E/R		
		Γ

#### NOTE:

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

Error	Difference of symptom	F
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.	G

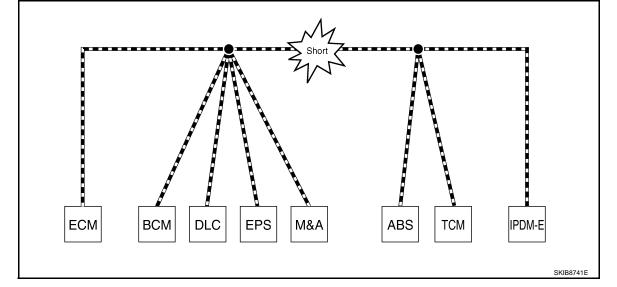
Example: Main Line Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Open Circuit



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>	Ν
EPS control unit	The steering effort increases.	0
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>	Р
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>	

#### < SYSTEM DESCRIPTION >

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



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-III

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

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

## < SYSTEM DESCRIPTION >

## Self-Diagnosis

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[CAN FUNDAMENTAL]

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DTC	Self-diagnosis item (CONSULT-III indication)		DTC detection condition	Inspection/Action	
U0101	LOST COMM (TCM)	When ECM is not transmitting or receiving CAN communi- cation signal of OBD (emission-related diagnosis) from TCM for 2 seconds or more.			
U0140	LOST COMM (BCM)	cation sig	M is not transmitting or receiving CAN communi- nal of OBD (emission-related diagnosis) from 2 seconds or more.		
U0164	LOST COMM (HVAC)	cation sig	M is not transmitting or receiving CAN communi- nal of OBD (emission-related diagnosis) from A/ np. or unified meter and A/C amp. for 2 seconds	Start the inspection. Re-	
U1000		ECM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.	fer to the applicable sec- tion of the indicated control unit.	
01000	CAN COMM CIRCUIT	Except for ECM	When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.		
U1001	CAN COMM CIRCUIT	cation sig	M is not transmitting or receiving CAN communi- nal other than OBD (emission-related diagnosis) onds or more.		
U1002	SYSTEM COMM		control unit is not transmitting or receiving CAN cation signal for 2 seconds or less.	1	
U1010	CONTROL UNIT(CAN)	When an	error is detected during the initial diagnosis for	Replace the control unit	
P0607	ECM	CAN controller of each control unit.		indicating "U1010" or "P0607".	

## CAN Diagnostic Support Monitor

## MONITOR ITEM (CONSULT-III)

#### Example: CAN DIAG SUPPORT MNTR indication

1		PAST	With F			Without
		М	ECI		Μ	EC
	PAST	PRSNT		PAST	PRSNT	
	OK	OK	TRANSMIT DIAG		OK	INITIAL DIAG
	]-	-	VDC/TCS/ABS		OK	TRANSMIT DIAG
	OK	OK	METER/M&A		OK	ТСМ
	ОК	OK	BCM/SEC		UNKWN	VDC/TCS/ABS
	-	-	ICC		OK	METER/M&A
		-	HVAC		UNKWN	ICC
	OK	OK	ТСМ		¦ OK	BCM/SEC
	-	-	EPS		OK	IPDM E/R
	OK	OK	IPDM E/R			
	-	-	e4WD			
1	ОК	OK	AWD/4WD			

#### Without PAST

Item	PRSNT	Description		
Initial diagnosis	OK	Normal at present		
miliai diagnosis	NG	Control unit error (Except for some control units)		

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#### < SYSTEM DESCRIPTION >

Item	PRSNT	Description
	OK	Normal at present
Transmission diagnosis	UNKWN	Unable to transmit signals for 2 seconds or more.
	UNKWIN	Diagnosis not performed
	OK	Normal at present
Control unit name		Unable to receive signals for 2 seconds or more.
(Reception diagnosis)	UNKWN	Diagnosis not performed
		No control unit for receiving signals. (No applicable optional parts)

#### With PAST

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

## MONITOR ITEM (ON-BOARD DIAGNOSIS) **NOTE:**

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

Example: Vehicle Display

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	C 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 b run.)					
	ОК	0	Normal at present					
CAN_CIRC_2 – 9			Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)					
(Reception diagnosis of each unit)	UNKWN	1 – 50	Diagnosis not performed.					
			No control unit for receiving signals. (No applicable optiona parts)					

#### < SYSTEM DESCRIPTION >

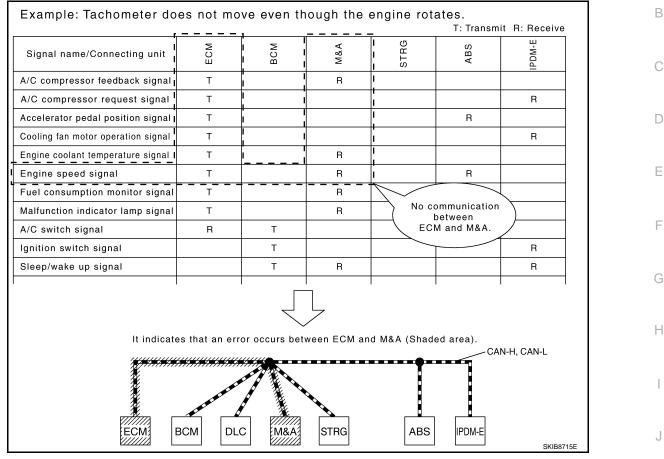
### [CAN FUNDAMENTAL]

## How to Use CAN Communication Signal Chart

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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.



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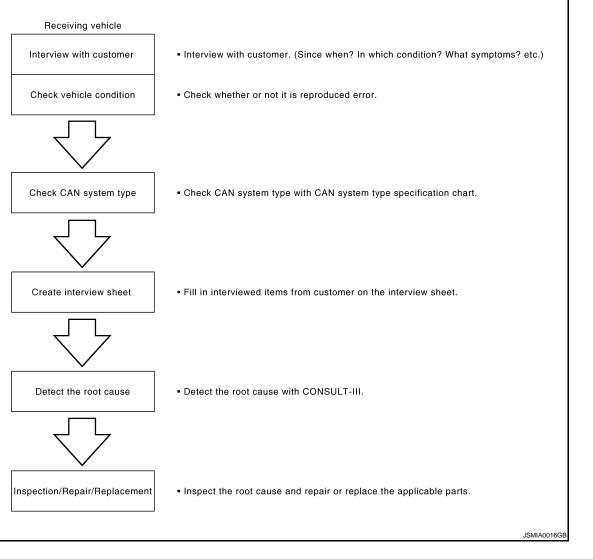
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## BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

## Trouble Diagnosis Flow Chart



## **Trouble Diagnosis Procedure**

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#### INTERVIEW WITH CUSTOMER

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

Points in interview

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

#### NOTE:

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

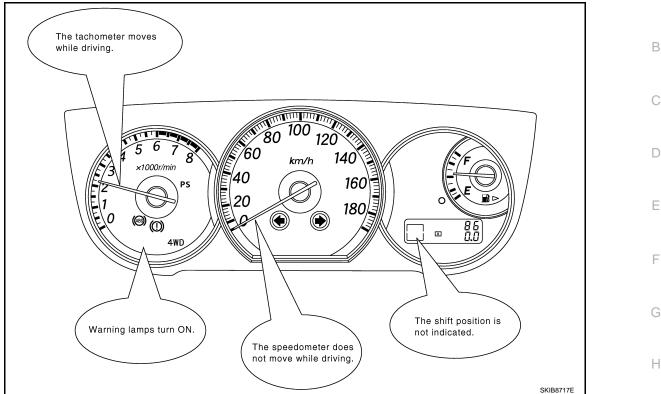
## LAN-18

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

CAN System Type Specification Chart (Style A) **NOTE:** 

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#### < BASIC INSPECTION >

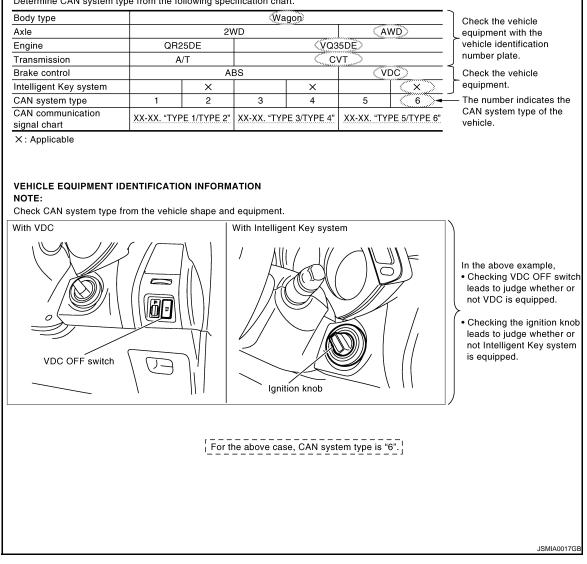
#### CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

### 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**

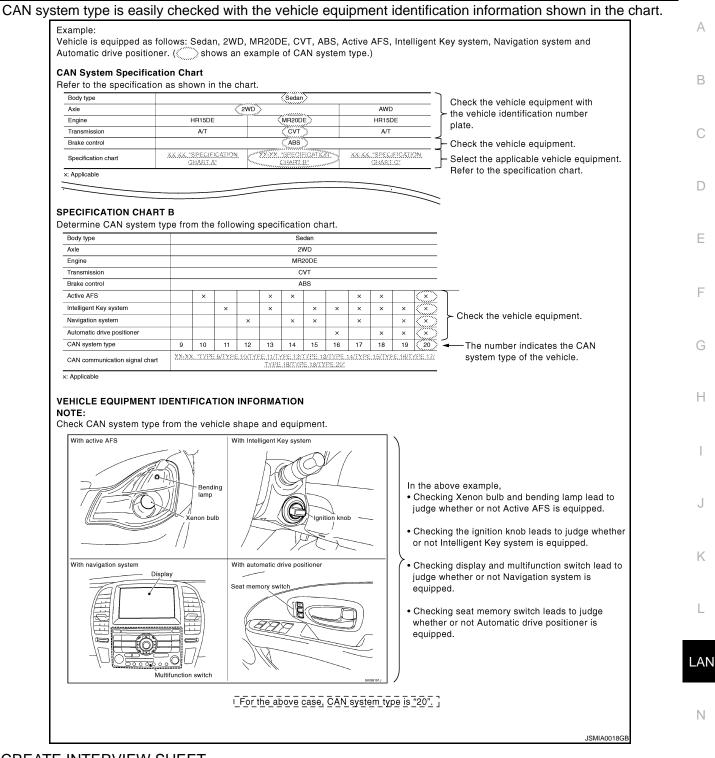
Determine CAN system type from the following specification chart.



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 Com	munication System	n Diagnosis II	nterview Sheet	
		Date received:	3, Feb. 2006	
Туре:	DBA-KG11	VIN No.:	KG11-005040	
Model:	BDRARGZ397EDA-E-J-			
First registration:	10, Jan. 2001	Mileage:	62,140	
CAN syste	m type: Type 19			
Symptom (Re	sults from interview with custon	ner)	]	
	s suddenly turn ON while drivin e does not restart after stopping F.		ng the ignition	
•The coolir	ng fan continues rotating while tu	urning the ignition swit	ch ON.	
Condition at in	nspection			
Error Sympto	om: Present / Past			
While turni • The head	e does not start. ng the ignition switch ON, amps (Lo) turn ON, and the coo or lamp does not turn ON.	bling fan continues rota	ating.	
				JSMIA00

### DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT-III 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-18, "Trouble Diagnosis Procedure".

## Abbreviation List

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

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

**LAN-23** 

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2010 G37 Coupe

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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:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the "SRS AIR BAG".
- Do not 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:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### Precaution for Battery Service

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Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

### Precautions for Trouble Diagnosis

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#### **CAUTION:**

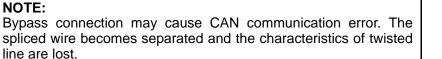
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

## PRECAUTIONS

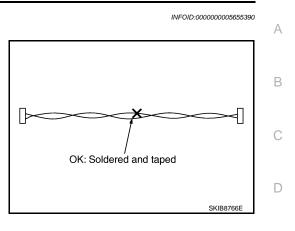
A fray of twisted lines must be within 110 mm (4.33 in).

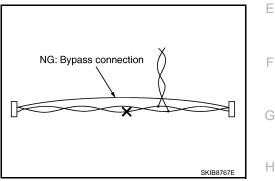
• Bypass connection is never allowed at the repaired area.

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



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





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## < PRECAUTION > Precautions for Harness Repair

NOTE:

< BASIC INSPECTION >

[CAN]

## BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

## **Interview Sheet**

ew Sneet	INFOID:00000000
CAN Communication System Diagnosis In-	terview Sheet
Date receiv	/ed:
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.

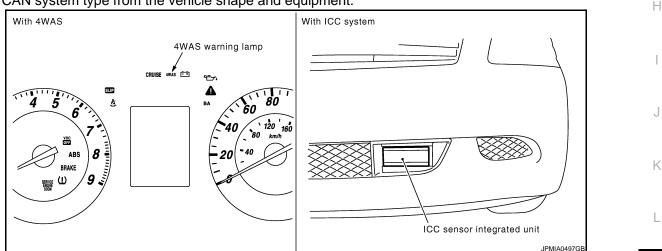
NOTE: Refer to LAN-18, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type		Coupe													
Axle		2WD AWD													
Engine		VQ37VHR													
Transmission		M/T A/T													
Brake control		VDC													
4WAS		×		×		×		Х							
ICC system										×	-				
CAN system type	1	2	3	4	5 6 7 8 9 10										

×: Applicable

#### VEHICLE EQUIPMENT IDENTIFICATION INFORMATION NOTE:

Check CAN system type from the vehicle shape and equipment.



## **CAN Communication Signal Chart**

Revision: 2009 November

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#### Refer to LAN-17, "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart. NOTE:

Refer to LAN-23. "Abbreviation List" for the abbreviations of the connecting units.

										T:	Transm	hit R: F	Receive	6
Signal name/Connecting unit	ECM	BCM	M&A	STRG	4WD	AV	PSB	TCM	ADP	RAS	ABS	ICC	IPDM-E	
A/C compressor request signal	Т												R	ľ
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											
ASCD SET indicator signal	Т		R											

[CAN]

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#### < SYSTEM DESCRIPTION >

< 3131EW DESCRIPTION >													
Signal name/Connecting unit	ECM	BCM	M&A	STRG	4WD	AV	PSB	TCM	ADP	RAS	ABS	ICC	IPDM-E
Closed throttle position signal	Т							R				R	
Cooling fan speed request signal	Т												R
Engine and A/T integrated control signal	T R							R T					
Engine coolant temperature signal	Т		R										
Engine speed signal	Т		R		R			R		R	R	R	
Engine status signal	Т	R				R							
Fuel consumption monitor signal	Т		R			R							
ICC brake switch signal	Т											R	
ICC prohibition signal	Т											R	
ICC steering switch signal	Т											R	
Malfunctioning indicator lamp signal	Т		R										
Park/neutral position switch signal*1	Т											R	
Power generation command value signal	т												R
	T										R	R	
Snow mode switch signal	R		Т										
	Т											R	
Stop lamp switch signal	-				R						Т	R	
Stop lamp switch signal		т			R.			R			1	R.	
Wide open throttle position signal	т	1						R					
	1	Т	R					ĸ					
Buzzer output signal		1	R									Т	
		т							D			1	P
Door switch signal			R						R				R
Door unlock signal		T							R				
Front fog light request signal		T	R										R
Front wiper request signal		Т	_									R	R
High beam request signal		T	R										R
Horn reminder signal		Т											R
Ignition switch ON signal		Т											R
		R											Т
Ignition switch signal		Т							R				
Interlock/PNP switch signal		Т											R
		R											Т
Key ID signal		Т							R				
Key switch signal		Т							R				
Key warning lamp signal		Т	R										
Low beam request signal		Т											R
Low tire pressure warning lamp signal		Т	R										
Meter display signal		Т	R										
			R									Т	
Oil pressure switch signal		T R	R										Т
Position light request signal		Т	R										R
		<u> </u>	<b>`</b>	1	<u> </u>		L	1	<u> </u>	1		L	

Revision: 2009 November

#### < SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	BCM	M&A	STRG	4WD	AV	PSB	TCM	ADP	RAS	ABS	S	IPDM-E	А
Rear window defogger control signal		Т											R	В
	R	R				R							Т	
Sleep wake up signal		Т	R						R				R	
Starter control relay signal		Т											R	С
Starter relay status signal		R T											T R	
Starting mode signal		T							R					D
		R											Т	
Steering lock relay signal		Т											R	F
System setting signal		R T				T R								L
Theft warning horn request signal		Т											R	F
Trunk switch signal		Т	R											
Turn indicator signal		Т	R											
A/C evaporator temperature signal	R		Т											G
A/C switch signal	R		Т											
			R			Т								Н
A/C switch/indicator signal			Т			R								
Blower fan motor switch signal	R		Т											
Distance to empty signal			Т			R								I
Fuel level low warning signal			Т			R								
Fuel level sensor signal	R		Т											J
Manual mode shift down signal			Т					R						
Manual mode shift up signal			Т					R						
Manual mode signal			Т					R						K
Non-manual mode signal			Т					R						
Odometer signal		R	Т											L
Paddle shifter shift down signal <sup>*2</sup>			Т					R						
Paddle shifter shift up signal <sup>*2</sup>			т					R						
Parking brake switch signal		R	Т		R									LAN
Seat belt buckle switch signal		R	Т											
		R	Т											Ν
Sleep-ready signal		R											Т	
Target A/C evaporator temperature signal	R		Т											
Vehicle speed signal	R	R	Т			R	R	R	R				R	0
		R	R		R					R	Т	R		
Wake up signal		R	Т											Р
Steering angle sensor signal				Т		R				R	R			
AWD signal					Т						R			
AWD warning lamp signal			R		Т									
A/C switch operation signal			R			Т								
Rear window defogger switch signal		R				Т								

[CAN]

#### < SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	BCM	M&A	STRG	4WD	AV	PSB	TCM	ADP	RAS	ABS	ICC	IPDM-E
Voice recognition signal <sup>*3</sup>			R			Т							
A/T CHECK indicator lamp signal			R					Т					
A/T self-diagnosis signal	R							Т					
Current gear position signal								Т			R	R	
Input speed signal	R							Т				R	
Manual mode indicator signal			R					Т					
N range signal		R						Т					
Output shaft revolution signal	R							Т				R	
P range signal		R						Т			R		
Shift position signal			R				R*4	Т	R		R	R	
4WAS signal										Т	R		
4WAS warning lamp signal			R							Т			
A/T shift schedule change demand signal								R			Т		
ABS malfunction signal											Т	R	
ABS operation signal								R			Т	R	
ABS warning lamp signal			R								Т		
Brake pressure control signal											Т	R	
Brake warning lamp signal			R								Т		
Side G sensor signal								R			Т		
SLIP indicator lamp signal			R								Т		
TCS gear keep request signal								R			Т		
TCS malfunction signal											Т	R	
TCS operation signal											Т	R	
VDC malfunction signal								R			Т	R	
VDC OFF indicator lamp signal			R								Т		
VDC OFF switch signal											Т	R	
VDC operation signal											Т	R	
Deceleration degree commandment value signal											R	Т	
ICC operation signal	R											Т	<u> </u>
ICC warning lamp signal			R									Т	
A/C compressor feedback signal	R		R										Т
Detention switch signal		R							R				Т
Front wiper stop position signal		R											Т
High beam status signal	R												Т
Hood switch signal		R											Т
Low beam status signal	R												Т
Push-button ignition switch status signal		R											Т
Steering lock unit status signal		R											Т
*4. M/T madela antic	1		L	L		L	1	I		L	1	1	

\*1: M/T models only

\*2: Models with paddle shifter

\*3: Models with navigation system

\*4: Receive reverse position signal only

NOTE:

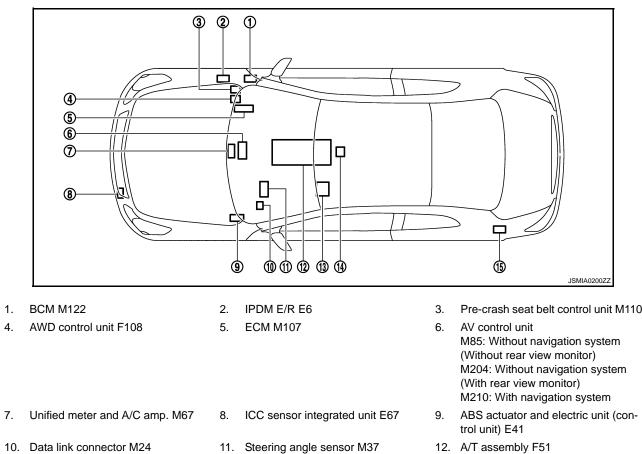
Revision: 2009 November

# [CAN] < SYSTEM DESCRIPTION > CAN data of the air bag diagnosis sensor unit is not used by usual service work, thus it is omitted. А В С D Е F G Н J Κ L LAN Ν Ο Ρ

## **DTC/CIRCUIT DIAGNOSIS** CAN COMMUNICATION SYSTEM

**Component Parts Location** 

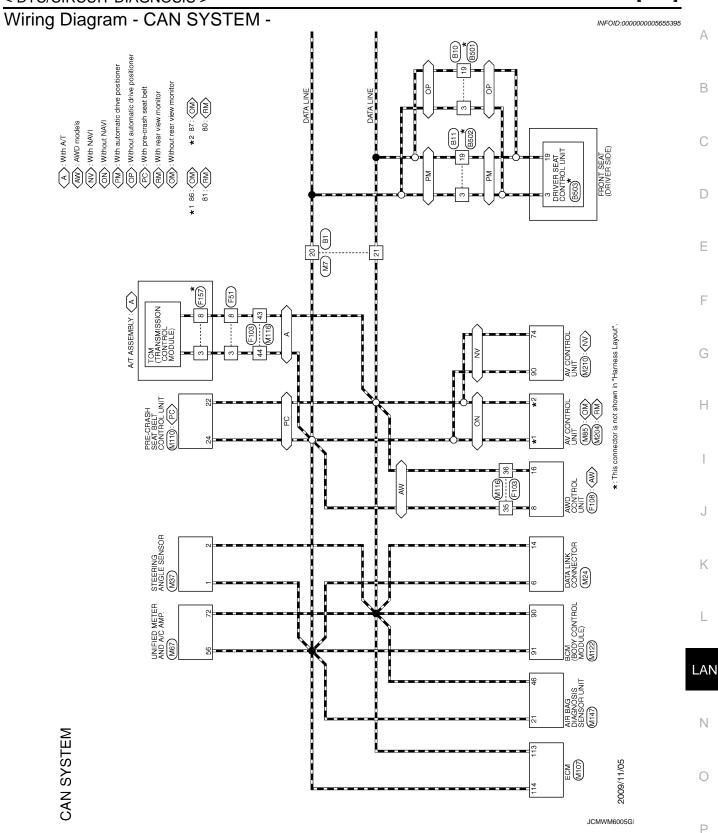
INFOID:000000005655394



- 13. Driver seat control unit B503
- 14. Air bag diagnosis sensor unit M147
- 15. 4WAS main control unit B54

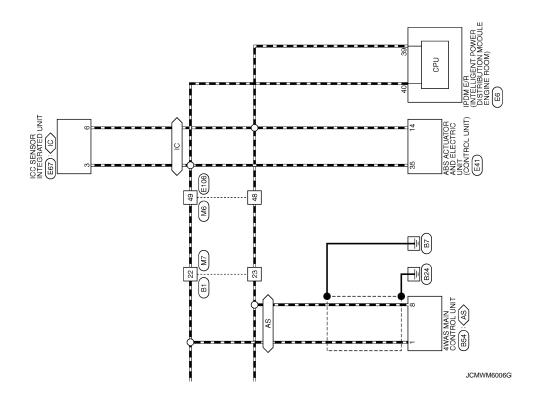
< DTC/CIRCUIT DIAGNOSIS >

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< DTC/CIRCUIT DIAGNOSIS >

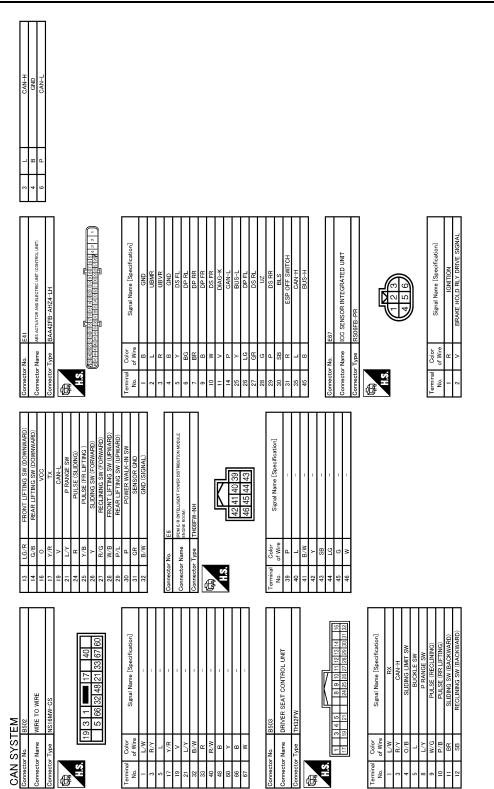




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CAN-H CA	В
	С
31         BR           32         V           33         LG           33         LG           33         V           40         N           60         V           61         N           67         V	D
eeffication) ee	Е
No.         B11           Name         WRE TO WIRE           Anno         WRE TO WIRE           Anno         B11           Anno         B11           Anno         B11           Color         Signal Name (Specification)           of Wire         Signal Name (Specification)           of Wire         Signal Name (Specification)           Color         Signal Name (Specification)           Mine         R-ANG COLOR           Mine         R-ANG COLOR           Mine         R-ANG COLOR           Mine         R-ANG COLOR           Bit         R-ANG COLOR           Mine         R-ANG COLOR <td>F</td>	F
Image: Non-structure	G
Commetto Com	Н
WiRE Signal Name (Specification) Signal Signal Name (Specification)	I
	J
54         ∨           55         EIG           56         6R           57         58           58         6           66         F           63         K           64         F           73         F           74         F           73         F           74         F           75         58           73         F           74         F           74         F           75         F           74         F           75         F           73         F           74         F           75         F           76         F           73         F           73         F           74         F           75         F           75         F           76         F           73         F           74         F           75         F           76         F           77         F           78         F <tr< td=""><td>К</td></tr<>	К
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CAN SYSTEM           Connector Ma.         BI           Connector Ma.         WIRE           Main         Of Ware           Main         Main           Main         Main     <	0
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#### < DTC/CIRCUIT DIAGNOSIS >

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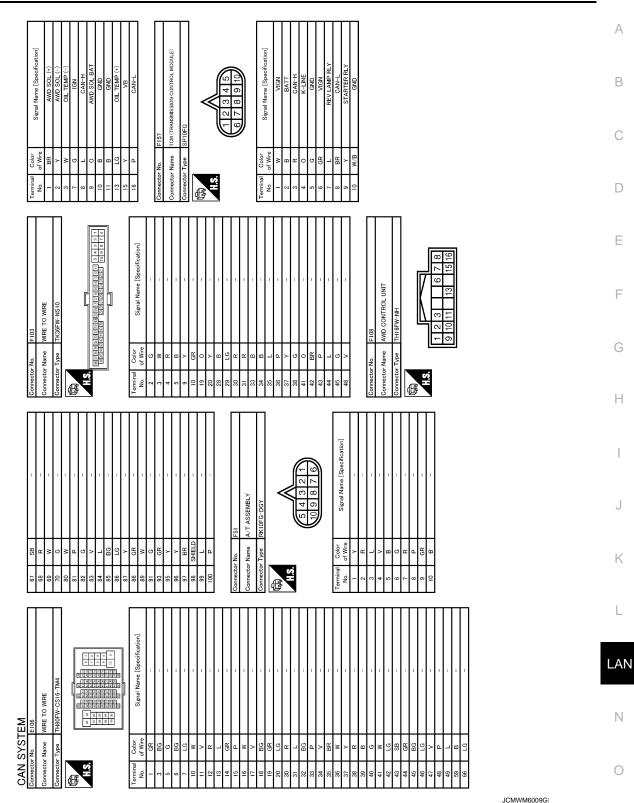


JCMWM6008G

# CAN COMMUNICATION SYSTEM

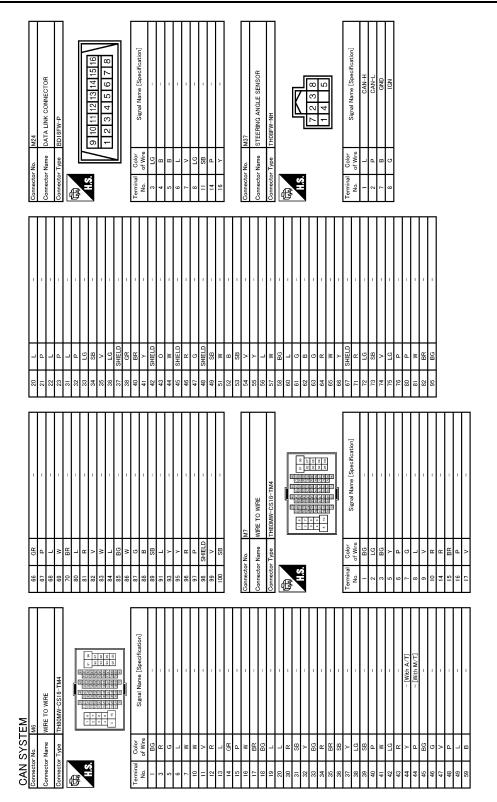
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[CAN]



# CAN COMMUNICATION SYSTEM

#### < DTC/CIRCUIT DIAGNOSIS >

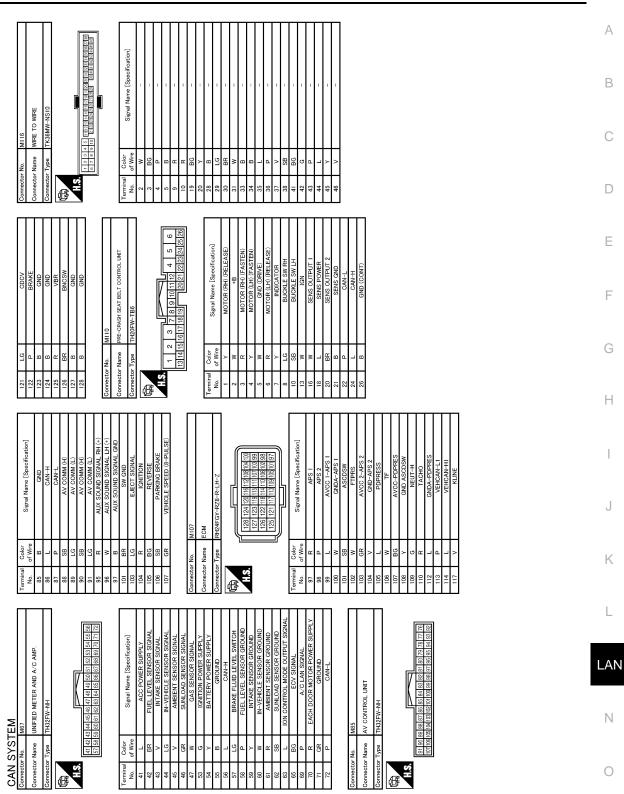


JCMWM6010G

### CAN COMMUNICATION SYSTEM

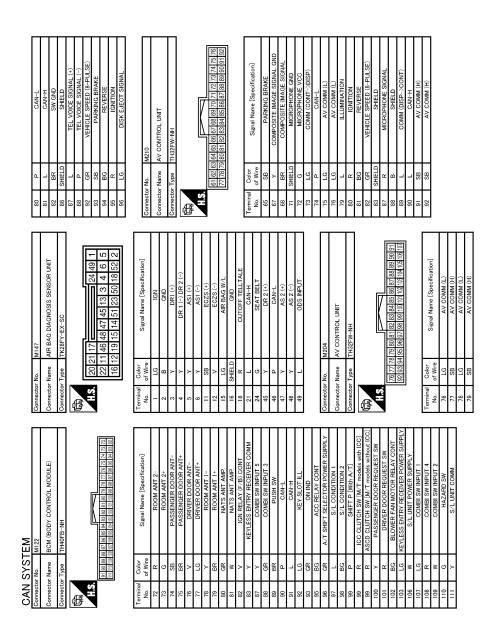
#### < DTC/CIRCUIT DIAGNOSIS >

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JCMWM6012G

# **MALFUNCTION AREA CHART**

#### < DTC/CIRCUIT DIAGNOSIS >

# MALFUNCTION AREA CHART

# Main Line

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Malfunction area	Reference	
Main line between data link connector and AV control unit	LAN-42, "Diagnosis Procedure"	
Main line between AV control unit and driver seat control unit	LAN-43, "Diagnosis Procedure"	
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-44, "Diagnosis Procedure"	
Main line between driver seat control unit and 4WAS main control unit	LAN-46. "Diagnosis Procedure"	
Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)	LAN-47, "Diagnosis Procedure"	

### **Branch Line**

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Malfunction area	Reference	
ECM branch line circuit	LAN-49, "Diagnosis Procedure"	
Air bag diagnosis sensor unit branch line circuit	LAN-50, "Diagnosis Procedure"	
BCM branch line circuit	LAN-51, "Diagnosis Procedure"	
Data link connector branch line circuit	LAN-52, "Diagnosis Procedure"	
Unified meter and A/C amp. branch line circuit	LAN-53, "Diagnosis Procedure"	
Steering angle sensor branch line circuit	LAN-54, "Diagnosis Procedure"	
AWD control unit branch line circuit	LAN-55, "Diagnosis Procedure"	
AV control unit branch line circuit	LAN-56, "Diagnosis Procedure"	
Pre-crash seat belt control unit	LAN-57, "Diagnosis Procedure"	
TCM branch line circuit	LAN-58, "Diagnosis Procedure"	
Driver seat control unit branch line circuit	LAN-59, "Diagnosis Procedure"	
4WAS main control unit branch line circuit	LAN-60, "Diagnosis Procedure"	
ABS actuator and electric unit (control unit) branch line circuit	LAN-61, "Diagnosis Procedure"	
ICC sensor integrated unit branch line circuit	LAN-62, "Diagnosis Procedure"	
IPDM E/R branch line circuit	LAN-63, "Diagnosis Procedure"	

# Short Circuit

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Malfunction area	Reference	
CAN communication circuit	LAN-64, "Diagnosis Procedure"	- N

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### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND AV CIRCUIT

**Diagnosis** Procedure

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[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
- AV control unit
- 4. Check the continuity between the data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
MQ4	6	M85	86	Existed
M24	14		87	Existed

- Without navigation system (With rear view monitor)

Data link	Data link connector		AV control unit harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M204	81	Existed	
10124	14		80	Existed	

#### With navigation system

Data link connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M210	90	Existed	
1/124	14		74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

DTC/CIRCUIT DIA				[CAN
AIN LINE BE	WEEN AV AN	D ADP CIRCUI	Т	
iagnosis Proced	ure			INFOID:0000000056554
.CHECK CONNECT	OR			
. Check the followin and harness side) Harness connecto Harness connecto s the inspection result	ttery cable from the n ng terminals and con or M7 or B1 <u>t normal?</u>	egative terminal. nectors for damage, b	pend and loose conr	nection (connector sid
YES >> GO TO 2. NO >> Repair the	e terminal and connec	tor.		
AV control unit Harness connecto . Check the continu		ontrol unit harness con	nector and harness o	connector.
AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M7	20	Existed
	87		21	Existed
Without navigation	n system (With rear vi	ew monitor)		
AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M204	81	M7	20	Existed
	80		21	Existed
With navigation sy	rstem			
AV control unit h	arness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
	90	N47	20	Existed
	74	M7	21	Existed
M210	<u>: normal?</u>			
the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS	e main line between th CONTINUITY (OPE) etween the harness c		the harness connecto	or M7.
the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b		N CIRCUIT)	the harness connecto	
the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS	CONTINUITY (OPE)	N CIRCUIT)		Continuity
the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b		N CIRCUIT)	the harness connecto	

Revision: 2009 November

NO

unit.

>> Repair the main line between the harness connectors B1 and the driver seat control unit.

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### **Diagnosis Procedure**

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[CAN]

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
B1	20	22	Existed
B1	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

#### ${ m 3.check}$ harness continuity (open circuit)

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M7	22	M6 -	49	Existed	
1017	23		48	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	49	E 41	35	Existed
EIUO	48	E41	14	Existed

Is the inspection result normal?

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

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

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

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

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# MAIN LINE BETWEEN ADP AND RAS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND RAS CIRCUIT

**Diagnosis Procedure** 

INFOID:000000005655402

[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 harness connectors M7 and B1.
- 4. Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	20	22	Existed
DI	21	23	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the 4WAS main control unit.

NO >> Repair the main line between the driver seat control unit and the 4WAS main control unit.

1. Turn the ignition switch OFF.         2. DECK 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 s and harness side).         Harness connector B1         Harness connector M7         Harness connector B10         Itames connector B10         Itames connector B10         Itames connector B10         Itames connector B10         Itamess connector B1         Oxer CH ARNESS CONTINUITY (OPEN CIRCUIT)         1. Disconnect the harness connectors B1 and M7.         2. Check the continuity between the harness connector terminals.         Itamess connector No.       Terminal No.         Connector No.       Terminal No.         Continuity       B1       20         21       23       Existed         Scheck HARNESS CONTINUITY (OPEN CIRCUIT)       1       Disconnector No.       Terminal No.         Continuity       Continuity       Continuity	DTC/CIRCUIT DIA		WEEN RAS A	ND ABS CIRCU	T [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 s and harness side).         Harness connector B1         Harness connector B1         Harness connector B1         Harness connector B1         Harness connector B10         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.         Connector No.       Terminal No.         Connector No.       Terminal No.         Connector No.       Terminal No.         Continuity       Existed         Is the inspection result normal?         YES       >> GO TO 3.         NO       >> Repair the main line between the 4WAS main 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 connector No.       Terminal No. <td>AIN LINE BE</td> <td>TWEEN RAS A</td> <td>ND ABS CIR</td> <td>CUIT</td> <td></td>	AIN LINE BE	TWEEN RAS A	ND ABS CIR	CUIT	
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 s         Admenss side).     - Harness connector MT     - Harness connector B1 and MT.     - Check the continuity between the harness connector terminals.	Diagnosis Procec	lure			INFOID:00000000565540
2. Disconnect the battery cable from the negative terminal.         3. Check the following terminals and connectors for damage, bend and loose connection (connector s and harness side).         Harness connector M7         Harness connector M6         Harness connector M7         Harness connector M6         Ste 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. <ul> <li>Connector No.</li> <li>Terminal No.</li> <li>Continuity</li> <li>B1</li> <li>20</li> <li>21</li> <li>23</li> <li>Existed</li> </ul> Sthe inspection result normal?       YES       > GO TO 3.         NO       >> Repair the main line between the 4WAS main 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.         Image: Connector No.       Terminal No.       Continuity         VES       > GO TO 4.         20       23       M6         48       Ex		OR			
B1         20         22         Existed           is the inspection result normal?         YES         >> GO TO 3.         NO         >> Repair the main line between the 4WAS main 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         Continuity           M7         22         M6         49         Existed           Is the inspection result normal?         YES         >> GO TO 4.         Continuity           M7         22         M6         49         Existed           Is the inspection result normal?         YES         >> GO TO 4.         NO         >> Repair the main line between the harness connectors M7 and M6.           VES         >> 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.         Continuity           M7         23         ABS actuator and electric unit (control unit) harness connector	<ul> <li>2. Disconnect the basis</li> <li>3. Check the following and harness side</li> <li>4. Harness connectore</li> <li>4. Source</li> <li>4. CHECK HARNESS</li> <li>5. Disconnect the harnes</li> </ul>	ttery cable from the n ng terminals and con or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connec 5 CONTINUITY (OPEI rness connectors B1	nectors for damag tor. N CIRCUIT) and M7.		nnection (connector side
B1       20       22       Existed         s the inspection result normal?       YES       >> GO TO 3.       NO       >> Repair the main line between the 4WAS main control unit and the harness connector B1.         3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)       I.       Disconnect the harness connectors M6 and E106.         2.       Check the continuity between the harness connectors.       Continuity         M7       22       M6       49       Existed         s the inspection result normal?       YES       >> GO TO 4.       NO       Terminal No.       Connector No.       Terminal No.         M7       22       M6       49       Existed       Existed         s 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)       I.       Disconnect the connector of ABS actuator and electric unit (control unit).       C.         1.       Disconnect the connector of ABS actuator and electric unit (control unit).       Continuity harness connector       Continuity         1.       Disconnector No.       Terminal No.       Connector No.       Terminal No.       Continuity         1.       Disconnector       ABS actuator and electric unit (control unit).       Continuity       Contin					Continuity
21       23       Existed         s the inspection result normal?         YES       >> GO TO 3.         NO       >> Repair the main line between the 4WAS main 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         Connector No.       Terminal No.         Connector No.       Terminal No.         M7       22         M6       49         Existed       48         Existed       5         S 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).         2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.         Marness connector.       ABS actuator and electric unit (control unit) harness connector         Connector No.       Terminal No.       Continuity		20		22	
YES       >> GO TO 3.         NO       >> Repair the main line between the 4WAS main 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.         Image: Harness connector       Harness connector         Connector No.       Terminal No.         Connector No.       Terminal No.         M7       22         M6       49         Existed       48         Existed       5         s 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.         Image: Connector No.       Terminal No.         Connector No.       Terminal No.         Connector No.       Terminal No.         Continuity       Continuity         M7       23         M8       Control unit).         2.       Check the c	B1	21		23	Existed
Connector No.         Terminal No.         Connector No.         Terminal No.         Continuity           M7         22         M6         49         Existed           23         M6         48         Existed           s the inspection result normal?         YES         >> GO TO 4.         NO         >> Repair the main line between the harness connectors M7 and M6.         48         Existed           4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         I.         Disconnect the connector of ABS actuator and electric unit (control unit).         E.         Check the continuity between the harness connector and the ABS actuator and electric unit (control unit).         E.           2.         Harness connector         ABS actuator and electric unit (control unit) harness connector         Continuity           Marness connector         ABS actuator and electric unit (control unit) harness connector         Continuity           Marness connector         ABS actuator and electric unit (control unit) harness connector         Continuity	NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEI rness connectors M6 ity between the harne	N CIRCUIT) and E106. ess connectors.		ss connector B1.
M7       22 23       M6       49       Existed         s the inspection result normal? YES       >> GO TO 4.            Existed          YES       >> GO TO 4.       NO       >> Repair the main line between the harness connectors M7 and M6.   <					Continuity
M7       23       M6       48       Existed         s 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.         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.         Marness connector       ABS actuator and electric unit (control unit) harness connector       Continuity         Connector No.       Terminal No.       Continuity         49       35       Existed	Connector No.		Connector No.		· ·
s 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)         .       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         Harness connector       Continuity connector No.         Terminal No.       Connector No.         49       35	M7		- M6		
harness connector     Continuity       Connector No.     Terminal No.     Connector No.     Terminal No.       49     35     Existed	YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the co Check the continu harness connecto	e main line between the CONTINUITY (OPEI nnector of ABS actua ity between the harne	N CIRCUIT) tor and electric uni ess connector and ABS actuator and	t (control unit). the ABS actuator and d electric unit (control unit)	electric unit (control unit)
49 35 Fxisted					Continuity
E106 E41 E41		49		35	Existed

Is the inspection result normal?

48

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

E41

14

E106

Existed

#### < DTC/CIRCUIT DIAGNOSIS >

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

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	ilS >		[CAN]
ECM BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000005655404
1. CHECK CONNECTOR			
3. Check the terminals and connector side).	cable from the negative terr d connectors of the ECM f		se connection (unit side and
Is the inspection result normYES>> GO TO 2.NO>> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of ECM. etween the ECM harness c	onnector terminals.	
	ECM harness connector		Desistance (O)
Connector No.	Termir	nal No.	Resistance (Ω)
M107	114	113	Approx. 108 – 132
Is the measurement value wYES>> GO TO 3.NO>> Repair the ECM <b>3.</b> CHECK POWER SUPPL	branch line.	τ	
Check the power supply and	•	CM. Refer to EC-152, "Di	agnosis Procedure".
Is the inspection result norm			
CONTROL UNI YES (Past error)>>Error wa	<u> T (ECM) : Special Repair R</u>	<u>equirement"</u> . Inch line.	RVICE WHEN REPLACING

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# A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

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 terminal and connector.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

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

INFOID:000000005884780

### **BCM BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS	;>		[CAN]
BCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000005655408
1. CHECK CONNECTOR			
<ol> <li>Turn the ignition switch Of</li> <li>Disconnect the battery cal</li> <li>Check the terminals and connector side).</li> </ol>	ole from the negative term		e connection (unit side and
Is the inspection result normal	<u>?</u>		
YES >> GO TO 2. NO >> Repair the termina	and connector		
2.CHECK HARNESS FOR O			
<ol> <li>Disconnect the connector</li> <li>Check the resistance betw</li> </ol>		onnector terminals.	
Connector No.	Termin	nal No.	Resistance (Ω)
M122	91	90	Approx. 54 – 66
Is the measurement value with	in the specification?		
YES >> GO TO 3.			
NO >> Repair the BCM b			
3.CHECK POWER SUPPLY	AND GROUND CIRCUIT	-	
Check the power supply and the	ne ground circuit of the B	CM. Refer to <u>BCS-37, "Dia</u>	gnosis Procedure".
Is the inspection result normal	<u>?</u>		
YES (Present error)>>Replace YES (Past error)>>Error was	detected in the BCM bra	nch line.	
NO >> Repair the power	supply and the ground ci	rcuit.	

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# **DLC BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# DLC 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 data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
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.

INFOID:000000005655412

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

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
M&A BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000005655413
1.CHECK CONNECTOR			
<ol> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> </ol>	OFF. cable from the negative terr	ainal	
			mage, bend and loose con-
nection (unit side and co	onnector side).	·	
Is the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector		
2.CHECK HARNESS FOR			
	or of unified meter and A/C etween the unified meter an		ctor terminals
2. Oneck the resistance be		d A/O amp. namess conne	
Unified	meter and A/C amp. harness cor	nnector	Resistance ( $\Omega$ )
Connector No.	Termir	al No.	
M67	56	72	Approx. 54 – 66
Is the measurement value w	ithin the specification?		
YES >> GO TO 3. NO >> Repair the unifie	ed meter and A/C amp. bra	ach lina	
3.CHECK POWER SUPPL			
Check the power supply and METER AND A/C AMP. : Dia		nified meter and A/C amp.	Refer to <u>MWI-50, "UNIFIED</u>
Is the inspection result norm			
YES (Present error)>>Rep		VC amp. Refer to MWI-130	), "Exploded View".
YES (Past error)>>Error wa			line.
NO >> Repair the powe	er supply and the ground ci	Cult.	

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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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-108</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.

[CAN]

INFOID:000000005655414

### **4WD BRANCH LINE CIRCUIT**

	<b>.</b>
	CAN]
VD BRANCH LINE CIRCUIT	
agnosis Procedure	0005655405
CHECK CONNECTOR	
Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side an nector side). AWD control unit connector Harness connector F103 Harness connector M116 he inspection result normal? ES >> GO TO 2. O >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of AWD control unit. Check the resistance between the AWD control unit harness connector terminals.	d con-
AWD control unit harness connector	
Connector No.     Terminal No.     Resistance (Ω)	
F108 8 16 Approx. 54 – 66	
he measurement value within the specification? ES >> GO TO 3. O >> Repair the AWD control unit branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT	
eck the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-27, "Diagnosis I</u> <u>re"</u> . <u>he inspection result normal?</u> ES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-55, "Exploded View"</u> . ES (Past error)>>Error was detected in the AWD control unit branch line.	<u>Proce-</u>

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# AV BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# AV BRANCH LINE CIRCUIT

#### Diagnosis Procedure

**1.**CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

- Without navigation system (Without rear view monitor)

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M85	86	87	Approx. 54 – 66

Without navigation system (With rear view monitor)

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

With navigation system

AV control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view camera: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view camera: <u>AV-172, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-451, "AV CONTROL UNIT : Diagnosis Procedure"</u>

#### Is the inspection result normal?

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

- Base audio without rear view camera: AV-89, "Exploded View"
- Base audio with rear view camera: AV-201, "Exploded View"
- BOSE audio without navigation: <u>AV-328, "Exploded View"</u>
- BOSE audio with navigation: AV-477, "Exploded View"

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

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

# **PSB BRANCH LINE CIRCUIT**

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< DTC/CIRCUIT DIAGNOS	IS >		[CAN]
PSB BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000005655409
1.CHECK CONNECTOR			
<ol> <li>Check the terminals and (unit side and connector)</li> <li><u>Is the inspection result norman</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminant</li> <li><b>2.</b>CHECK HARNESS FOR</li> <li>Disconnect the connector</li> </ol>	able from the negative termi d connectors of the pre-cras side). al? nal and connector. OPEN CIRCUIT or of pre-crash seat belt cont	h seat belt for damag	e, bend and loose connection
	tween the pre-crash seat be		
Connector No.	n seat belt control unit harness con Terminal		Resistance (Ω)
M110	24	22	Approx. 54 – 66
Is the measurement value wi YES >> GO TO 3. NO >> Repair the pre-c <b>3.</b> CHECK POWER SUPPLY	rash seat belt control unit bra	anch line.	
Check the power supply and nosis Procedure". Is the inspection result norma	-	-crash seat belt contro	l unit. Refer to <u>SBC-24, "Diag-</u>
YES (Past error)>>Error wa	ace the pre-crash seat belt on the pre-crash seat belt on the pre-crash seat belt on the pre-crash seat belt of the ground circ	seat belt control unit bi	

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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 (Ω)
Connector No.	Terminal No.		Resistance (32)
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 POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-212, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-99</u>, "Component Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

INFOID:000000005655410

# **ADP BRANCH LINE CIRCUIT**

# < DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADP BRANCH LINE	E CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000005655415	A
1. CHECK CONNECTOR				В
<ul> <li>3. Check the following term nector side).</li> <li>Models with automatic of</li> </ul>	cable from the negative ter ninals and connectors for o	minal. damage, bend and loose con	nection (unit side and con-	С
<ul> <li>Driver seat control unit</li> <li>Harness connector B50</li> <li>Harness connector B11</li> <li>Models without automat</li> <li>Driver seat control unit</li> </ul>	ic drive positioner			D
<ul> <li>Harness connector B50</li> <li>Harness connector B10</li> <li>Is the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal</li> </ul>	al?			F
2.CHECK HARNESS FOR				G
2. Check the resistance be	or of driver seat control un etween the driver seat cont er seat control unit harness conr	trol unit harness connector te	erminals.	Н
Connector No.		inal No.	Resistance ( $\Omega$ )	
B503	3	19	Approx. 54 – 66	
Is the measurement value w YES >> GO TO 3. NO >> Repair the drive <b>3.</b> CHECK POWER SUPPL	r seat control unit branch l			J
Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm	s Procedure".	river seat control unit. Refer t	o <u>ADP-64, "DRIVER SEAT</u>	K
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the driver seat control as detected in the driver se		ploded View".	L
NO >> Repair the powe	er supply and the ground c	ircuit.		LAN
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# **RAS BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# RAS 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 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WA	4WAS main control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace the body harness.

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

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-136, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-181, "Exploded View".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

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

INFOID:000000005655416

# **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	Resistance (Ω)	_		
(	Connector No.	Termi	Terminal No.		
	E41	35	14	Approx. 54 – 66	- G

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-69, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-105</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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INFOID:000000005655417

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# ICC BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# ICC BRANCH LINE CIRCUIT

### **Diagnosis Procedure**

1.CHECK CONNECTOR

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

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

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

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

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-102, "Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-133, "Exploded View".

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

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

INFOID:000000005655418

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

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
IPDM-E BRANCH LIN	IE CIRCUIT		
Diagnosis Procedure			INFOID:000000005655419
1. CHECK CONNECTOR			
<ol> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cat</li> <li>Check the terminals and c and connector side).</li> </ol>	le from the negative tern		l loose connection (unit side
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the termina	-		
2.CHECK HARNESS FOR O	PEN CIRCUIT		
<ol> <li>Disconnect the connector</li> <li>Check the resistance betw</li> </ol>	-	ess connector terminals.	
IF	PDM E/R harness connector		Desistance (O)
Connector No.	Termin	al No.	Resistance (Ω)
E6	40	39	Approx. 108 – 132
Is the measurement value with YES >> GO TO 3. NO >> Repair the IPDM B <b>3.</b> CHECK POWER SUPPLY A	E/R branch line.		
Check the power supply and the suppl	e the IPDM E/R. Refer to	o <u>PCS-32, "Exploded Viev</u> R branch line.	

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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	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)	
Termi	nal No.	- Resistance ( $\Omega$ )	
114	113	Approx. 108 – 132	

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

IPDM E/R Terminal No.		Resistance (Ω)	

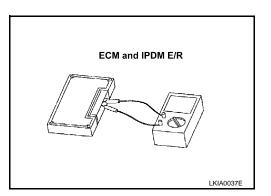
Is the measurement value within the specification?

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-64



INFOID:000000005655420

### **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.	
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Disconnect and of the unit connectors of CAN communication system</li> </ol>	С
<ol> <li>Disconnect one of the unit connectors of CAN communication system.</li> <li>NOTE:</li> </ol>	
FOM and IDDM F/D have a termination singuit. Check other units first	D
NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms.	Е
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	F
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#### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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

#### **Diagnosis Procedure**

INFOID:000000005779370

# 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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link connector AV control unit harness connector		Continuity			
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M85	86	Existed	
M24	14	CON	87	Existed	

- Without navigation system (With rear view monitor)

Data link	Data link connector AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M204	81	Existed
	14	IVIZ04	80	Existed

With navigation system

Data link connector AV control unit harness connector		arness connector	- Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M210	90	Existed	
	14		74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

#### MAIN LINE BETWEEN AV AND ADP CIRCUIT AGNOSIS > [CAN SYSTEM (TYPE 1)]

< DTC/CIRCUIT DIAGNOSIS >
MAIN LINE BETWEEN AV AND ADP CIRCUIT

iagnosis Procedu				
	re			INFOID:00000000577937
.CHECK CONNECTO	R			
and harness side). Harness connector I Harness connector I the inspection result n YES >> GO TO 2. NO >> Repair the te CHECK HARNESS C Disconnect the follow AV control unit Harness connectors	ery cable from the net terminals and cont 31 ormal? erminal and connect CONTINUITY (OPEN wing harness connect M7 and B1 between the AV co	nectors for damage, b tor. N CIRCUIT) ectors.		
AV control unit har	· · ·	Harness o	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	86		00	<b>—</b> 5.0.1
1405	00	N 4-7	20	Existed
M85 —	87	M7	20 21	Existed
M85 Without navigation s	87			
	87 system (With rear vie		21	Existed
Without navigation s	87 system (With rear vie	ew monitor)	21	
Without navigation s AV control unit hard Connector No.	87 system (With rear vie ness connector	ew monitor) Harness o Connector No.	21 connector	Existed
Without navigation s	87 system (With rear vie ness connector Terminal No.	ew monitor) Harness o	21 connector Terminal No.	Existed
Without navigation s AV control unit hard Connector No.	87 system (With rear vie ness connector Terminal No. 81 80	ew monitor) Harness o Connector No.	21 connector Terminal No. 20	Existed Continuity Existed
Without navigation s         AV control unit harm         Connector No.         M204	87 system (With rear vie ness connector Terminal No. 81 80 em	ew monitor) Harness o Connector No.	21 connector Terminal No. 20 21	Existed Continuity Existed Existed
Without navigation s AV control unit har Connector No. M204 With navigation syst	87 system (With rear vie ness connector Terminal No. 81 80 em	ew monitor) Harness o Connector No. M7	21 connector Terminal No. 20 21	Existed Continuity Existed
Without navigation s         AV control unit hard         Connector No.         M204         With navigation syst         AV control unit hard	87 system (With rear vie ness connector Terminal No. 81 80 em	ew monitor) Harness of Connector No. M7 Harness of	21 connector Terminal No. 20 21 21	Existed Continuity Existed Existed

Connector No.	Terminal No.		Continuity	
D4	20	22	Existed	Ρ
ы	21	23	Existed	

Is the inspection result normal?

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

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

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

### MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779372

[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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
B1 -	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

#### ${ m 3.check}$ harness continuity (open circuit)

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M7	22	M6	49	Existed	
1117	23		48	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

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

Is the inspection result normal?

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

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

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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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:000000005779374

[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 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	Resistance (22)	
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-152, "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 1)]

#### A-BAG BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000005884784 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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< DTC/CIRCUIT DIAGNOSIS >

# BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779376

[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.	Termi		
M122	91 90		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

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

# **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 1)]

	INFOID:00000000577937
	INFOID:00000000577937
ve terminal.	
	nage, bend and loose connection
ector terminals.	
r	Resistance (Ω)
Terminal No.	
	Approx. 54 – 66
	data link connector for dam ector terminals.

#### < DTC/CIRCUIT DIAGNOSIS >

# M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified	Unified meter and A/C amp. harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "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:000000005779378

# STRG BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:00000005779379
1.CHECK CONNECTOR			
<ol> <li>Check the terminals and (unit side and connector)</li> </ol>	cable from the negative term I connectors of the steering · side).		bend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of steering angle sensor. Stween the steering angle se	ensor harness connector to	erminals.
	ering angle sensor harness connec		Resistance (Ω)
Connector No. M37	Termina 1	al No. 2	Approx. 54 – 66
CHECK POWER SUPPL	SYSTEM -".		fer to <u>BRC-83, "Wiring Dia-</u>
YES (Present error)>>Rep YES (Past error)>>Error w	lace the steering angle sens		<u>ploded View"</u> .
	er supply and the ground cire		

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# AV BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000005779380

[CAN SYSTEM (TYPE 1)]

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

- Without navigation system (Without rear view monitor)

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

Without navigation system (With rear view monitor)

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

With navigation system

AV control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		Resistance (22)
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view camera: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view camera: <u>AV-172, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-451, "AV CONTROL UNIT : Diagnosis Procedure"</u>

#### Is the inspection result normal?

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

- Base audio without rear view camera: AV-89, "Exploded View"
- Base audio with rear view camera: <u>AV-201, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-328, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-477, "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.

# **ADP BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 1)]

ADP BRANCH LINE C	RCUIT			Λ
Diagnosis Procedure			INFOID:000000005779381	A
1.CHECK CONNECTOR				В
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable</li> <li>Check the following terminals nector side).</li> <li>Models with automatic drive</li> <li>Driver seat control unit</li> </ol>	s and connector	ve terminal. s for damage, bend and loose c	onnection (unit side and con-	С
<ul> <li>Harness connector B502</li> <li>Harness connector B11</li> <li>Models without automatic dri</li> <li>Driver seat control unit</li> <li>Harness connector B501</li> <li>Harness connector B10</li> </ul>	ve positioner			D
Is the inspection result normal? YES >> GO TO 2.				F
NO >> Repair the terminal a 2.CHECK HARNESS FOR OPE 1. Disconnect the connector of 2. Check the resistance betwee	N CIRCUIT	rol unit. at control unit harness connector	terminals.	G
Driver sea	t control unit harnes	ss connector	1	Н
Connector No.		Terminal No.	Resistance (Ω)	
B503	3	19	Approx. 54 – 66	
Is the measurement value withinYES>> GO TO 3.NO>> Repair the driver sea <b>3.</b> CHECK POWER SUPPLY AN	t control unit bra	anch line.		J
Check the power supply and the CONTROL UNIT : Diagnosis Pro		the driver seat control unit. Refe	r to <u>ADP-64, "DRIVER SEAT</u>	K
	tected in the dri	control unit. Refer to <u>ADP-234, "E</u> iver seat control unit branch line.		L
	pply and the gro			LA
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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.

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-69, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-105</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.

INFOID:000000005779382

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

# [CAN SYSTEM (TYPE 1)]

INFOID:00000000577938
INFOID:00000000577938
and loose connection (unit side
Resistance (Ω)
Approx. 108 – 132
<u>-17, "Diagnosis Procedure"</u> . iew".

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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.	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	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 ( $\Omega$ )
Termi	nal No.	
114	113	Approx. 108 – 132

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

IPDN	Resistance (Ω)	
Termi	nal 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-80

LKIA0037E

ECM and IPDM E/R

INFOID:000000005779384

### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D 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: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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#### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

#### **Diagnosis Procedure**

INFOID:000000005779386

# **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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link	connector	AV control unit harness connector				- Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity		
M24	6 M85		86	Existed		
10124	14		87	Existed		

- Without navigation system (With rear view monitor)

Data link	connector	AV control unit harness connector		- Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M204	81	Existed
IVI∠4	M24 M204		80	Existed

With navigation system

Data link	connector	AV control unit harness connector		- Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M210	90	Existed
10124	14	IVIZ TO	74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

# MAIN LINE BETWEEN AV AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	

[CAN SYSTEM (TYPE 2)]

gnosis Proced	ure			INFOID:000000005779.
HECK CONNECT	OR			
	tery cable from the n g terminals and con <sup>.</sup> M7	egative terminal. nectors for damage, b	end and loose conr	nection (connector sic
e inspection result				
S >> GO TO 2.				
•	terminal and connec			
	CONTINUITY (OPE			
AV control unit Harness connecto Check the continui		ontrol unit harness con	nector and harness o	connector.
AV control unit ha	arness connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M7	20	Existed
Without navigation	87 system (With rear vi	ew monitor)	21	Existed
AV control unit ha		, Harness o	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	81		20	Existed
M204	80	M7	21	Existed
Nith navigation sys	stem			
AV control unit ha	arness connector	Harness of	connector	Oractionity
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M210	90	M7	20	Existed
10210	74		21	Existed
HECK HARNESS		connector terminals.	he harness connecte	
Connector No.	20	Terminal No.	22	Continuity
	20		22	Existed
B1	21		23	Existed

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

### LAN-83

### MAIN LINE BETWEEN ADP AND RAS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND RAS CIRCUIT

#### **Diagnosis Procedure**

INFOID:000000005779388

[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 harness connectors M7 and B1.
- 4. Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	20	22	Existed
וט	21	23	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the 4WAS main control unit.

NO >> Repair the main line between the driver seat control unit and the 4WAS main control unit.

DTC/CIRCUIT DIA	GNOSIS >			[CAN SYSTEM (TYPE 2)]
1AIN LINE BE	TWEEN RAS A	ND ABS CIRC	UIT	
iagnosis Proced	dure			INFOID:0000000577938
.CHECK CONNEC	TOR			
	attery cable from the n ng terminals and con ). or B1 or M7 or M6		bend and loose	connection (connector side
s the inspection resul				
YES >> GO TO 2. NO >> Repair the	e terminal and connec	tor.		
	S CONTINUITY (OPEI			
. Disconnect the ha	arness connectors B1 uity between the harne	and M7.	als	
Connector No.		Terminal No.		Continuity
Connector No.	20	Terminar No.	22	Existed
B1	21		23	Existed
. Disconnect the ha	S CONTINUITY (OPEI arness connectors M6 uity between the harne	and E106.		
Harness	connector	Harnes	s connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	22	Mo	49	Existed
M7	23	- M6	48	Existed
CHECK HARNESS	e main line between th S CONTINUITY (OPEI onnector of ABS actua uity between the harne	N CIRCUIT) tor and electric unit ( ess connector and th	control unit). e ABS actuator a	nd electric unit (control unit)
		harnes	lectric unit (control un s connector	Continuity
Connector No.	Terminal No. 49	Connector No.	Terminal No. 35	Existed
E106	49	E41	30	Existed

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

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

48

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

14

Existed

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

## ECM BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INFOID:00000000577939
1.CHECK CONNECTOR			
1. Turn the ignition switch (	)FF		
2. Disconnect the battery c	able from the negative term		se connection (unit side and
Is the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termine	al and connector		
2.CHECK HARNESS FOR			
<ol><li>Check the resistance be</li></ol>	tween the ECM harness co		
	ECM harness connector		
Connector No.	ECM harness connector Termin	al No.	– Resistance (Ω)
M107	Termin 114	al No. 113	- Resistance (Ω) Approx. 108 – 132
	Termin 114 thin the specification? branch line.	113	
M107 Is the measurement value with YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPLY Check the power supply and	Termin 114 thin the specification? branch line. ( AND GROUND CIRCUIT the ground circuit of the E0	113	Approx. 108 – 132
M107 Is the measurement value with YES >> GO TO 3. NO >> Repair the ECM <b>3.</b> CHECK POWER SUPPLY Check the power supply and Is the inspection result norm	Termin 114 thin the specification? branch line. ( AND GROUND CIRCUIT the ground circuit of the EC al?	113 CM. Refer to <u>EC-152, "Di</u>	Approx. 108 – 132 agnosis Procedure".
M107 Is the measurement value with YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPLY Check the power supply and Is the inspection result normaly YES (Present error)>>Reply CONTROL UNITY YES (Past error)>>Error was	Termin 114 thin the specification? branch line. ( AND GROUND CIRCUIT the ground circuit of the EC al? ace the ECM. Refer to E	113 CM. Refer to <u>EC-152, "Di</u> <u>C-17. "ADDITIONAL SE</u> equirement". nch line.	Approx. 108 – 132
M107 Is the measurement value with YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPLY Check the power supply and Is the inspection result normaly YES (Present error)>>Reply CONTROL UNITY YES (Past error)>>Error was	Termin 114 thin the specification? branch line. ( AND GROUND CIRCUIT the ground circuit of the EC ace the ECM. Refer to E (ECM) : Special Repair Refersed to be addressed in the ECM branchesed ( ECM) to be addressed in the ECM branchesed ( AND GROUND CIRCUIT) ( AND	113 CM. Refer to <u>EC-152, "Di</u> <u>C-17. "ADDITIONAL SE</u> equirement". nch line.	Approx. 108 – 132 agnosis Procedure".

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# **A-BAG BRANCH LINE CIRCUIT**

[CAN SYSTEM (TYPE 2)]

### Diagnosis Procedure

INFOID:000000005884785

#### 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 terminal and connector.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

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

## **BCM BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INF0ID:0000000577939
.CHECK CONNECTOR			
	-		
<ul> <li>Turn the ignition switch OFI</li> <li>Disconnect the battery cable</li> <li>Check the terminals and concornector side).</li> </ul>	e from the negati	ve terminal. BCM for damage, bend and lo	ose connection (unit side and
s the inspection result normal?			
YES >> GO TO 2. NO >> Repair the terminal	and connector		
CHECK HARNESS FOR OP			
. Disconnect the connector o			
<ol> <li>Check the resistance between the set of th</li></ol>			
	een the BCM harr	ctor	Resistance (Ω)
Connector No.	BCM harness connec	ctor Terminal No.	
Connector No. M122	BCM harness connect	ctor Terminal No. 90	<ul> <li>Resistance (Ω)</li> <li>Approx. 54 – 66</li> </ul>
Connector No.	BCM harness connect 91 In the specification anch line.	ctor Terminal No. 90 <u>1?</u>	
Connector No. M122 s the measurement value within YES >> GO TO 3. NO >> Repair the BCM bra CHECK POWER SUPPLY A	BCM harness connect 91 In the specification anch line. ND GROUND CI	ctor Terminal No. 90 <u>1?</u>	Approx. 54 – 66
Connector No. M122 s the measurement value within YES >> GO TO 3. NO >> Repair the BCM bra CHECK POWER SUPPLY A	BCM harness connect 91 In the specification anch line. ND GROUND CI	ctor Terminal No. 90 <u>90</u> <u>90</u> RCUIT	Approx. 54 – 66
Connector No. M122 s the measurement value within YES >> GO TO 3. NO >> Repair the BCM bra CHECK POWER SUPPLY A Check the power supply and the s the inspection result normal? YES (Present error)>>Replace	BCM harness connect 91 In the specification anch line. ND GROUND CI ground circuit of the BCM. Refer	ctor Terminal No. 90 <u>90</u> <u>1?</u> RCUIT f the BCM. Refer to <u>BCS-37, "E</u> to <u>BCS-78, "Exploded View"</u> .	Approx. 54 – 66
Connector No. M122 S the measurement value within YES >> GO TO 3. NO >> Repair the BCM brack CHECK POWER SUPPLY A Check the power supply and the S the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was content YES (Past error)	BCM harness connect 91 In the specification anch line. ND GROUND CI of ground circuit of the BCM. Refer letected in the BC	ctor Terminal No. 90 <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u></u>	Approx. 54 – 66
Connector No. M122 s the measurement value within YES >> GO TO 3. NO >> Repair the BCM bra CHECK POWER SUPPLY A Check the power supply and the s the inspection result normal? YES (Present error)>>Replace	BCM harness connect 91 In the specification anch line. ND GROUND CI of ground circuit of the BCM. Refer letected in the BC	ctor Terminal No. 90 <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u>	Approx. 54 – 66
Connector No. M122 S the measurement value within YES >> GO TO 3. NO >> Repair the BCM brack CHECK POWER SUPPLY A Check the power supply and the S the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was content YES (Past error)	BCM harness connect 91 In the specification anch line. ND GROUND CI of ground circuit of the BCM. Refer letected in the BC	ctor Terminal No. 90 <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u> <u>90</u>	Approx. 54 – 66

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# DLC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000005779396

[CAN SYSTEM (TYPE 2)]

# 1.CHECK CONNECTOR

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector			
Connector No.	Termi	nal No.	Resistance (Ω)	
M24	6	14	Approx. 54 – 66	

Is the measurement value within the specification?

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

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> Repair the data link connector branch line.

# **M&A BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000005779397
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the unified	ninal. meter and A/C amp. for dar	mage, bend and loose con-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	nal and connector.		
	or of unified meter and A/C etween the unified meter an	amp. d A/C amp. harness connec	ctor terminals.
	meter and A/C amp. harness cor		Resistance (Ω)
Connector No. M67	Termir 56	72	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	I the ground circuit of the un agnosis Procedure". al? lace the unified meter and <i>i</i>	- nified meter and A/C amp. F A/C amp. Refer to <u>MWI-130</u> neter and A/C amp. branch I	, "Exploded View".

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# STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000005779398

[CAN SYSTEM (TYPE 2)]

### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

#### 1. Disconnect the connector of steering angle sensor.

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

Ste	ering angle sensor harness conne	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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-108</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.

# **AV BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 2)]

DIC/CIRCUIT DIAGNO	515 >		
V BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000005779400
CHECK CONNECTOR			
. Turn the ignition switch 2. Disconnect the battery	cable from the negative term of connectors of the AV cont		end and loose connection (unit
<u>the inspection result norn</u> YES >> GO TO 2.	nal?		
	inal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	tor of AV control unit. etween the AV control unit ha em (Without rear view monito		nals.
	AV control unit harness connector		Resistance (Ω)
Connector No. M85	Termina 86	87	 Approx. 54 – 66
	em (With rear view monitor)	07	Арргох. 54 – 66
	AV control unit harness connector		Resistance (Ω)
Connector No. M204	Termina		Arren 54 00
With navigation system	81	80	Approx. 54 – 66
	AV control unit harness connector		Resistance (Ω)
Connector No.	Termina	-	
M210	90	74	Approx. 54 – 66
	vithin the specification? control unit branch line. _Y AND GROUND CIRCUIT		
Check the power supply an Base audio without rear v Base audio with rear view BOSE audio without navig	d the ground circuit of the AV iew camera: <u>AV-40, "AV CON</u> camera: <u>AV-172, "AV CONT</u> gation: <u>AV-297, "AV CONTRO</u> on: <u>AV-451, "AV CONTROL</u>	ITROL UNIT : Diagnos ROL UNIT : Diagnosis DL UNIT : Diagnosis Pr	<u>is Procedure"</u> <u>Procedure"</u> <u>ocedure"</u>
s the inspection result norn	nal?		
	blace the AV control unit. Refe		
	ithout rear view camera: <u>AV-</u> ith rear view camera: <u>AV-201</u>		
<ul> <li>BOSE audio</li> </ul>	without navigation: AV-328, "I	Exploded View"	
	with navigation: <u>AV-477, "Exp</u> /as detected in the AV control		
	er supply and the ground circ		

# ADP BRANCH LINE CIRCUIT

## **Diagnosis Procedure**

INFOID:000000005779401

[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).
- Models with automatic drive positioner
- Driver seat control unit
- Harness connector B502
- Harness connector B11
- Models without automatic drive positioner
- Driver seat control unit
- Harness connector B501
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Termi	nal No.	
B503	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-64, "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-234, "Exploded View"</u>.

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

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

# **RAS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			INFOID:000000005779402
1.CHECK CONNECTOR			
	able from the negative terr connectors of the 4WAS		ge, bend and loose connec-
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of 4WAS main control un tween the 4WAS main con		r terminals.
4WA	S main control unit harness conn	ector	Resistance (Ω)
Connector No.	Termir 1	nal No. 8	Approx. 54 – 66
YES >> GO TO 3. NO >> Replace the boo CHECK POWER SUPPL	Y AND GROUND CIRCUIT		efer to <u>STC-136, "Diagnosis</u>
rocedure (4WAS Main Cor the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	<u>itrol Unit)"</u> . <u>al?</u> ace the 4WAS main contro	l unit. Refer to <u>STC-181, "</u> ain control unit branch line	Exploded View".

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# ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator a	and electric unit (control unit) har	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.

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-69, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-105</u>, "Exploded <u>View"</u>.

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

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

[CAN SYSTEM (TYPE 2)]

INFOID:000000005779403

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

# [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 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.         Impose the resistance between the IPDM E/R harness connector terminals.         Impose the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>> Replace the IPDM E/R. Refer to PCS-32. "Exploded View".	agnosis Procedure			INFOID:00000000577940
<ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).</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>2. CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of IPDM E/R.</li> <li>2. Check the resistance between the IPDM E/R harness connector terminals.</li> </ul> IPDM E/R harness connector Resistance (Ω) <ul> <li>Connector No.</li> <li>E6</li> <li>40</li> <li>39</li> <li>Approx. 108 – 132</li> </ul> Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>> Replace the IPDM E/R. Refer to PCS-32, "Exploded View".	CHECK CONNECTOR			
YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of IPDM E/R.         2. Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         Resistance (Ω)         Connector No.         E6       40         39       Approx. 108 – 132         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".	Disconnect the battery Check the terminals ar and connector side).	cable from the negative termir id connectors of the IPDM E/F		l loose connection (unit side
. Disconnect the connector of IPDM E/R.         2. Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector       Resistance (Ω)         Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".	ES >> GO TO 2. O >> Repair the term	inal and connector.		
Connector No.       Terminal No.       Resistance (Ω)         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.         YES       >> GO TO 3.       NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".			s connector terminals.	
Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         Is the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".		IPDM E/R harness connector		Resistance (O)
s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".	Connector No.	Terminal	No.	
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-17, "Diagnosis Procedure"</u> . s the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-32, "Exploded View"</u> .	E6	40	39	Approx. 108 – 132
YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit.	IO >> Repair the IPD CHECK POWER SUPPI	Y AND GROUND CIRCUIT	M E/R. Refer to PCS-17	7, "Diagnosis Procedure".

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# CAN COMMUNICATION CIRCUIT

# Diagnosis Procedure

**1**.CONNECTOR INSPECTION

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector	Continuity	
Connector No.	Termi	nal 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	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)	
Termi	nal No.		
114	113	Approx. 108 – 132	

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

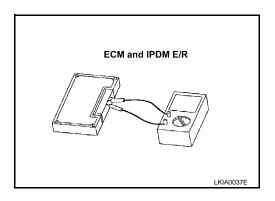
IPDM E/R Terminal No.		Resistance (Ω)	
40	39	Approx. 108 – 132	

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.



INFOID:000000005779406

### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D 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: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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#### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

#### **Diagnosis Procedure**

INFOID:000000005779407

# 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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link	connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	M24 6	M85	86	Existed
11/24	14		87	Existed

- Without navigation system (With rear view monitor)

Data link	Data link connector		AV control unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M24	6	M204	81	Existed
	14		80	Existed

With navigation system

Data link connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M210	90	Existed	
	14		74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

# MAIN LINE BETWEEN AV AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >
MAIN LINE BETWEEN AV AND ADP CIRCUIT

[CAN SYSTEM (TYPE 3)]

gnosis Proced	ure			INFOID:000000005779408
HECK CONNECT	OR			
Check the followir and harness side). Harness connecto Harness connecto <u>e inspection result</u> S >> GO TO 2. >> Repair the CHECK HARNESS Disconnect the foll AV control unit Harness connecto	tery cable from the n ng terminals and con r M7 r B1 <u>normal?</u> terminal and connec CONTINUITY (OPEN owing harness connections rs M7 and B1	nectors for damage, b tor. N CIRCUIT) ectors.		ection (connector side
	system (Without rea	ontrol unit harness con r view monitor)	nector and harness of	connector.
AV control unit ha	arness connector Terminal No.	Harness Connector No.	connector Terminal No.	Continuity
M85	86 87	M7	20	Existed
Without navigation	system (With rear view	ew monitor)		
AV control unit h	arness connector	Harness	connector	<b>2</b>
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M204	81	M7	20	Existed
With navigation sy	80 stem		21	Existed
that lightlight by				
AV control unit hat Connector No.	arness connector Terminal No.	Harness Connector No.	connector Terminal No.	Continuity
M210	90	M7	20	Existed
HECK HARNESS			21 the harness connecto	Existed
				0
Connector No.	20	Terminal No.	22	Continuity Existed
B1	20		22 23	Existed
	1			

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

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

### LAN-101

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779409

[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 harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1 —	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

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

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M7	22	M6	49	Existed	
1117	M7 23		48	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

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

Is the inspection result normal?

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

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

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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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:000000005779410

[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 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.	Terminal No.		Tresistance (22)
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-152, "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:000000005884788 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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# BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779412

[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 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.

	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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

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

# **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT	[CAN SYSTEM (TYPE 3)]
Diagnosis Procedure	INFOID:0000000577941.
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 data link connector f (connector side and harness side).</li> </ul>	for damage, bend and loose connectior
the inspection result normal?	
YES >> GO TO 2. NO >> Repair the terminal and connector.	
CHECK HARNESS FOR OPEN CIRCUIT	
heck the resistance between the data link connector terminals.	
Data link connector Connector No. Terminal No.	Resistance (Ω)
M24 6 14	4 Approx. 54 – 66

#### < DTC/CIRCUIT DIAGNOSIS >

# M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified	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.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "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:000000005779414

#### STRG BRANCH LINE CIRCUIT

## [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:00000005779415
.CHECK CONNECTOR			
	cable from the negative term d connectors of the steering r side).		, bend and loose connection
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
	or of steering angle sensor. etween the steering angle se	ensor harness connector t	erminals.
	ering angle sensor harness connec		- Resistance (Ω)
Connector No. M37	Termina 1	al No. 2	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply an ram - BRAKE CONTROL S	<u>SYSTEM -"</u> .		efer to <u>BRC-83, "Wiring Dia-</u>
	lace the steering angle sens as detected in the steering a	ingle sensor branch line.	xploded View".
• •	and the ground city		
	er supply and the ground en		
	er supply and the ground ch		

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## AV BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000005779417

[CAN SYSTEM (TYPE 3)]

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

- Without navigation system (Without rear view monitor)

	AV control unit harness connector		Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Without navigation system (With rear view monitor)

	AV control unit harness connector		Resistance (Ω)
Connector No.	Termi	nal No.	
M204	81	80	Approx. 54 – 66

With navigation system

	AV control unit harness connector		Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view camera: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view camera: AV-172, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-451, "AV CONTROL UNIT : Diagnosis Procedure"</u>

#### Is the inspection result normal?

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

- Base audio without rear view camera: AV-89, "Exploded View"
- Base audio with rear view camera: <u>AV-201, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-328</u>, "Exploded View"
- BOSE audio with navigation: <u>AV-477, "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.

#### **PSB BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:00000005779418
.CHECK CONNECTOR			
	able from the negative termined connectors of the pre-cras		, bend and loose connection
the inspection result norm YES >> GO TO 2. NO >> Repair the termi			
CHECK HARNESS FOR			
	or of pre-crash seat belt contr tween the pre-crash seat bel		onnector terminals.
	h seat belt control unit harness con	nector	Resistance (Ω)
Connector No. M110	Terminal 24		
the measurement value w		22	Approx. 54 – 66
CHECK POWER SUPPL	rash seat belt control unit bra Y AND GROUND CIRCUIT I the ground circuit of the pre		unit. Refer to <u>SBC-24, "Diag-</u>
YES (Present error)>>Rep YES (Past error)>>Error wa	al? ace the pre-crash seat belt c as detected in the pre-crash s er supply and the ground circu	seat belt control unit bra	
YES (Present error)>>Rep YES (Past error)>>Error wa	ace the pre-crash seat belt c as detected in the pre-crash s	seat belt control unit bra	
YES (Present error)>>Rep YES (Past error)>>Error wa	ace the pre-crash seat belt c as detected in the pre-crash s	seat belt control unit bra	
YES (Past error)>>Error wa	ace the pre-crash seat belt c as detected in the pre-crash s	seat belt control unit bra	

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## ADP BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779419

[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).
- Models with automatic drive positioner
- Driver seat control unit
- Harness connector B502
- Harness connector B11
- Models without automatic drive positioner
- Driver seat control unit
- Harness connector B501
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driv	er seat control unit harness connector		Resistance (Ω)
Connector No.	Termi	nal No.	
B503	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-64, "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-234, "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.

## **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:000000005779420
CHECK CONNECTOR			
<ol><li>Check the terminals and</li></ol>	able from the negative term connectors of the ABS action nit side and connector side) al? nal and connector.	uator and electric unit (co	ntrol unit) for damage, bend
	or of ABS actuator and elect stween the ABS actuator an		it) harness connector termi-
ABS actuator a	nd electric unit (control unit) harne		Resistance (Ω)
ABS actuator a Connector No.	Termina	l No.	Resistance (Ω)
ABS actuator a Connector No. E41 s the measurement value w	Termina 35		Resistance (Ω) Approx. 54 – 66
ABS actuator a Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPLY Check the power supply and Check the power supp	Termina 35 actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A are".	14 Dontrol unit) branch line. ABS actuator and electric	

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#### < 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	ensor integrated unit harness connector		Resistance ( $\Omega$ )
Connector No.	Termi	nal No.	
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

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

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-102, "Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-133, "Exploded View".

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

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

INFOID:000000005779421

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

## [CAN SYSTEM (TYPE 3)]

<ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit signal connector side).</li> <li><u>s the inspection result normal?</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li><b>2.</b>CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of IPDM E/R.</li> <li>2. Check the resistance between the IPDM E/R harness connector terminals.</li> </ul> IPDM E/R harness connector <ul> <li>Resistance (Ω)</li> <li>Connector No.</li> <li>IPDM E/R harness connector</li> <li>Resistance (Ω)</li> <li>E6</li> <li>40</li> <li>39</li> <li>Approx. 108 – 132</li> </ul> s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure", s the inspection result normal?	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 sid and connector side).         s the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of IPDM E/R.         2. Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector       Resistance (Ω)         Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.       NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".	1. Turn the ignition switch OFF.
<ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit sid and connector side).</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>2. CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of IPDM E/R.</li> <li>2. Check the resistance between the IPDM E/R harness connector terminals.</li> </ul> IPDM E/R harness connector <ul> <li>Resistance (Ω)</li> <li>Connector No.</li> <li>E6</li> <li>40</li> <li>39</li> <li>Approx. 108 – 132</li> </ul> Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure". Is the inspection result normal?	<ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit sid and connector side).</li> <li>3. the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>2. CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of IPDM E/R.</li> <li>2. Check the resistance between the IPDM E/R harness connector terminals.</li> </ul> IPDM E/R harness connector Resistance (Ω) Connector No. IPDM E/R harness connector Resistance (Ω) Connector No. Terminal No. Resistance (Ω) Set the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View". YES (Past error)>>Error was detected in the IPDM E/R branch line.	
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.         E6       40         39       Approx. 108 – 132         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?	YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of IPDM E/R.         2. Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         Resistance (Ω)         Connector No.         E6       40         39       Approx. 108 – 132         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit and connector side).
. Disconnect the connector of IPDM E/R.         . Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector       Resistance (Ω)         Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.       CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".       s the inspection result normal?	. Disconnect the connector of IPDM E/R.         . Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector       Resistance (Ω)         Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.       .         J.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	YES >> GO TO 2. NO >> Repair the terminal and connector.
Connector No.       Terminal No.       Resistance (Ω)         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.         YES       >> GO TO 3.       NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?	Connector No.       Terminal No.       Resistance (Ω)         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.         YES       >> GO TO 3.       NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	
Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?	Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	IPDM E/R harness connector
s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-17, "Diagnosis Procedure"</u> . s the inspection result normal?	s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	Connector No. Terminal No.
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-17, "Diagnosis Procedure"</u> . s the inspection result normal?	YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	E6 40 39 Approx. 108 – 132
YES (Past error)>>Error was detected in the IPDM E/R branch line.	NO >> Repair the power supply and the ground circuit.	NO >> Repair the IPDM E/R branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-17, "Diagnosis Procedure</u> <u>s the inspection result normal?</u> YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-32, "Exploded View"</u> . YES (Past error)>>Error was detected in the IPDM E/R branch line.

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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		Continuity
Connector No.	Termi	nal 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	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
 M24	6	Ground	Not existed
10124	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

E	СМ	Resistance ( $\Omega$ )
Termi	nal 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.

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

#### LAN-116

# ECM and IPDM E/R

INFOID:000000005779423

#### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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#### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

#### **Diagnosis Procedure**

INFOID:000000005779430

## 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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M24	124 6 M85		86	Existed	
11/24	14	CON	87	Existed	

- Without navigation system (With rear view monitor)

Data link connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M24	6	M204	81	Existed	
IVI∠4	14	IVIZ04	80	Existed	

With navigation system

Data link connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M24	6	M210	90	Existed	
10124	14	IVIZ TO	74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

## MAIN LINE BETWEEN AV AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	
MAIN LINE BETWEEN AV AND ADP CIRC	1

[CAN SYSTEM (TYPE 4)]

agnosis Proced	ure			INFOID:00000000577943
-				NA 012.0000000001104C
CHECK CONNECT				
Check the followir and harness side). Harness connecto Harness connecto the inspection result ES >> GO TO 2. O >> Repair the CHECK HARNESS	ttery cable from the ne ng terminals and conn r M7 r B1 <u>normal?</u> terminal and connect CONTINUITY (OPEN owing harness conne	nectors for damage, tor. N CIRCUIT)	bend and loose con	nection (connector side
Check the continui	ity between the AV co system (Without real		nnector and harness	connector.
AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86 87	M7	20 21	Existed Existed
Without navigation AV control unit h	87 system (With rear vie arness connector	ew monitor) Harness	21 connector	
Without navigation	87 a system (With rear vie arness connector Terminal No.	ew monitor)	21 connector Terminal No.	Existed Continuity
Without navigation AV control unit h	87 a system (With rear vie arness connector Terminal No. 81	ew monitor) Harness	21 connector Terminal No. 20	Existed Continuity Existed
Without navigation AV control unit h Connector No.	87 a system (With rear vie arness connector Terminal No. 81 80	ew monitor) Harness Connector No.	21 connector Terminal No.	Existed Continuity
Without navigation AV control unit h Connector No. M204 With navigation sy	87 a system (With rear vie arness connector Terminal No. 81 80 stem	ew monitor) Harness Connector No. M7	21 connector Terminal No. 20 21	Existed Continuity Existed
Without navigation AV control unit h Connector No. M204 With navigation sy	87 a system (With rear vie arness connector Terminal No. 81 80	ew monitor) Harness Connector No. M7	21 connector Terminal No. 20	Existed Continuity Existed
Without navigation AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No.	87 a system (With rear vie arness connector Terminal No. 81 80 stem arness connector	ew monitor) Harness Connector No. M7 Harness Connector No.	21 s connector 20 21 connector	Existed Continuity Existed Existed
Without navigation AV control unit h Connector No. M204 With navigation sy AV control unit h	87 a system (With rear vie arness connector Terminal No. 81 80 stem arness connector Terminal No.	ew monitor) Harness Connector No. M7 Harness	21 s connector Terminal No. 20 21 s connector Terminal No.	Existed Continuity Existed Existed Continuity
Without navigation AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No. M210 the inspection result ES >> GO TO 3. O >> Repair the CHECK HARNESS	87 a system (With rear vie arness connector Terminal No. 81 80 stem arness connector Terminal No. 90 74	ew monitor) Harness Connector No. M7 Harness Connector No. M7 e AV control unit and N CIRCUIT)	21       Connector       20       21       Connector       Connector       Terminal No.       20       21	Existed Continuity Existed Existed Continuity Existed Existed Existed
Without navigation AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No. M210 the inspection result ES >> GO TO 3. O >> Repair the CHECK HARNESS the continuity be	87 a system (With rear vie arness connector Terminal No. 81 80 stem arness connector Terminal No. 90 74 normal? main line between th CONTINUITY (OPEN	ew monitor) Harness Connector No. M7 Harness Connector No. M7 e AV control unit and N CIRCUIT) onnector terminals.	21       Connector       20       21       Connector       Connector       Terminal No.       20       21	Existed Continuity Existed Existed Continuity Existed Existed Existed Continuity Or M7.
Without navigation AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No. M210 the inspection result ES >> GO TO 3. O >> Repair the CHECK HARNESS	87 a system (With rear vie arness connector Terminal No. 81 80 stem arness connector Terminal No. 90 74 normal? main line between th CONTINUITY (OPEN	ew monitor) Harness Connector No. M7 Harness Connector No. M7 e AV control unit and N CIRCUIT)	21       Connector       20       21       Connector       Connector       Terminal No.       20       21	Existed Continuity Existed Existed Continuity Existed Existed Existed

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

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

#### MAIN LINE BETWEEN ADP AND RAS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND RAS CIRCUIT

#### **Diagnosis Procedure**

INFOID:000000005779432

[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 harness connectors M7 and B1.
- 4. Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	20	22	Existed
ום	21	23	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the 4WAS main control unit.

NO >> Repair the main line between the driver seat control unit and the 4WAS main control unit.

DTC/CIRCUIT DIA	GNOSIS >			[CAN SYSTEM (TYPE 4)]
1AIN LINE BE	TWEEN RAS A	ND ABS CIRC	UIT	
iagnosis Proced	lure			INFOID:00000005779433
CHECK CONNEC	TOR			
	attery cable from the n ng terminals and con ). or B1 or M7 or M6		, bend and loose	connection (connector side
s the inspection resul				
YES >> GO TO 2. NO >> Repair the	e terminal and connec	tor		
	S CONTINUITY (OPEI			
	arness connectors B1			
	lity between the harne		als.	
Connector No.		Terminal No.		Continuity
B1	20		22	Existed
Ы	21		23	Existed
<b>B.</b> CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPEI arness connectors M6 uity between the harne	N CIRCUIT) and E106.		
			s connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No. 49	Existed
M7	22	- M6	49	Existed
<ol> <li>CHECK HARNESS</li> <li>Disconnect the co</li> <li>Check the continum harness connector</li> </ol>	e main line between the CONTINUITY (OPEI onnector of ABS actua uity between the harne	N CIRCUIT) tor and electric unit ( ess connector and th	control unit).	nd electric unit (control unit)
Harness Connector No.	Connector Terminal No.		s connector Terminal No.	Continuity
	49		35	Existed
E106		E41		

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

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

48

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

14

Existed

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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 4)]

ECM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000005779440
1.CHECK CONNECTOR			
	cable from the negative termin		ose 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 ECM. etween the ECM harness con	nector terminals.	
Connector No.	Terminal	No.	Resistance (Ω)
M107	114	113	Approx. 108 – 132
Is the measurement value w YES >> GO TO 3.			
NO >> Repair the ECN 3.CHECK POWER SUPPL Check the power supply and		M. Refer to <u>EC-152, "D</u>	iagnosis Procedure".
3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep <u>CONTROL UNI</u>	Y AND GROUND CIRCUIT I the ground circuit of the ECI al?	<u>-17, "ADDITIONAL SE quirement"</u> .	iagnosis Procedure". RVICE WHEN REPLACING

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## A-BAG BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005884794

#### 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 terminal and connector.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".

Is the inspection result normal?

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

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

## [CAN SYSTEM (TYPE 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. <ul> <li>M122</li> <li>91</li> <li>90</li> <li>Approx. 54 – 66</li> </ul> Is the measurement value within the specification?         YES       > GO TO 3.         NO       >> Repair the BCM branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the BCM. Refer to BCS-37, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the BCM. Refer to BCS-78. "Exploded View".         YES (Past error)>>Replace the BCM. Refer to BCS-78. "Exploded View".         YES (Past error)>>Replace the BCM branch line.         NO       >> Replare the power supply and the ground circuit.	Diagnosis Procedure			INFOID:000000005779442
<ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).</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>2. CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of BCM.</li> <li>2. Check the resistance between the BCM harness connector terminals.</li> </ul> BCM harness connector terminal No. <ul> <li>BCM harness connector</li> <li>M122</li> <li>91</li> <li>90</li> <li>Approx. 54 - 66</li> </ul> Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-37, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>> Replace the BCM. Refer to BCS-78. "Exploded View". YES (Past error)>> Error was detected in the BCM branch line.	1. CHECK CONNECTOR			
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.	<ol> <li>Disconnect the battery c</li> <li>Check the terminals and connector side).</li> </ol>	able from the negative tern d connectors of the BCM for		ose connection (unit side and
1. Disconnect the connector of BCM.         2. Check the resistance between the BCM harness connector terminals.         BCM harness connector       Resistance (Ω)         Connector No.       Terminal No.         M122       91       90       Approx. 54 – 66         S the measurement value within the specification?       YES       >> GO TO 3.         NO       >> Repair the BCM branch line.       S.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the BCM. Refer to BCS-37, "Diagnosis Procedure".       s the inspection result normal?         YES (Present error)>>Replace the BCM. Refer to BCS-78, "Exploded View".       YES (Past error)>>Error was detected in the BCM branch line.	YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
Connector No.       Terminal No.       Resistance (Ω)         M122       91       90       Approx. 54 – 66         s the measurement value within the specification?       YES       >> GO TO 3.         NO       >> Repair the BCM branch line.       Sthe CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the BCM. Refer to BCS-37, "Diagnosis Procedure".       s the inspection result normal?         YES (Present error)>>Replace the BCM. Refer to BCS-78, "Exploded View".       YES (Past error)>>Error was detected in the BCM branch line.			nnector terminals	
Connector No.       Terminal No.         M122       91       90       Approx. 54 – 66         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the BCM branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the BCM. Refer to BCS-37, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the BCM. Refer to BCS-78, "Exploded View".         YES (Past error)>>Error was detected in the BCM branch line.				
s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the BCM branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the BCM. Refer to BCS-37, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the BCM. Refer to BCS-78, "Exploded View".         YES (Past error)>>Error was detected in the BCM branch line.		BCM harness connector		Resistance (Ω)
YES       >> GO TO 3.         NO       >> Repair the BCM branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the BCM. Refer to BCS-37, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the BCM. Refer to BCS-78, "Exploded View".         YES (Past error)>>Error was detected in the BCM branch line.		BCM harness connector Termin	al No.	
<u>s the inspection result normal?</u> YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u> . YES (Past error)>>Error was detected in the BCM branch line.	M122	BCM harness connector Termin 91	al No.	
YES (Past error)>>Error was detected in the BCM branch line.	M122 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM <b>3.</b> CHECK POWER SUPPLY	BCM harness connector Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT	al No. 90	Approx. 54 – 66
	M122 <u>S the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM <b>3.</b> CHECK POWER SUPPL Check the power supply and Is the inspection result norm	BCM harness connector Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Br al?	al No. 90 CM. Refer to <u>BCS-37, "D</u>	Approx. 54 – 66
	M122 Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	BCM harness connector Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the B al? ace the BCM. Refer to BCS as detected in the BCM bra	al No. 90 CM. Refer to <u>BCS-37, "D</u> S-78. "Exploded View". nch line.	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

## DLC BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779443

[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 data link connector for damage, bend and loose connection (connector side and harness side).
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> Repair the data link connector branch line.

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

## [CAN SYSTEM (TYPE 4)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000005779444
1.CHECK CONNECTOR			
	able from the negative terr connectors of the unified		amage, bend and loose con-
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of unified meter and A/C etween the unified meter an		ector terminals.
	meter and A/C amp. harness con-		Resistance (Ω)
Connector No. M67	Termir 56	nal No. 72	Approx. 54 – 66
<b>3.</b> CHECK POWER SUPPL	I the ground circuit of the u agnosis Procedure".	-	Refer to <u>MWI-50, "UNIFIED</u>
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the unified meter and	eter and A/C amp. branch	

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## STRG BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779445

[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 ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-83, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-108</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.

## **AV BRANCH LINE CIRCUIT**

AV BRANCH LINE CI	RCUIT		
Diagnosis Procedure			INFOID:000000005779446
1. CHECK CONNECTOR			I
<ol> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cat</li> <li>Check the terminals and c side and connector side).</li> <li>Is the inspection result normal? YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the termina</li> <li>CHECK HARNESS FOR OF</li> </ol>	ble from the negative term connectors of the AV cont 2 1 and connector.		d and loose connection (unit
1. Disconnect the connector			I
<ol> <li>Check the resistance betw</li> <li>Without navigation system</li> </ol>	een the AV control unit ha		als.
AV Connector No.	control unit harness connector Termina	al No.	Resistance (Ω)
	86	87	Approx. 54 – 66
- Without navigation system	(With rear view monitor)		
AV	control unit harness connector		
Connector No.	Termina	al No.	– Resistance (Ω)
M204	81	80	Approx. 54 – 66
- With navigation system			
AV	control unit harness connector		
Connector No.	Termina	al No.	– Resistance (Ω)
M210	90	74	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the AV controlNO >> Repair the AV control <b>3.</b> CHECK POWER SUPPLY A Check the power supply and the power supply of the power supply o	trol unit branch line. AND GROUND CIRCUIT	/ control unit Refer to the	
<ul> <li>Base audio without rear view</li> <li>Base audio with rear view ca</li> <li>BOSE audio without navigati</li> <li>BOSE audio with navigation:</li> </ul>	camera: <u>AV-40, "AV COM</u> mera: <u>AV-172, "AV CONT</u> on: <u>AV-297, "AV CONTRO</u>	NTROL UNIT : Diagnosis [ROL UNIT : Diagnosis P OL UNIT : Diagnosis Proc	Procedure"
Is the inspection result normal?	<u>&gt;</u>		I
<ul><li>Base audio with</li><li>BOSE audio with</li></ul>	e the AV control unit. Ref out rear view camera: <u>AV-</u> rear view camera: <u>AV-20</u> nout navigation: <u>AV-328</u> , " n navigation: <u>AV-477</u> , "Exp	<u>89, "Exploded View"</u> 1, "Exploded View" Exploded View"	
YES (Past error)>>Error was		ol unit branch line.	I

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

#### **PSB BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## **PSB BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000005779447

[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 pre-crash seat belt for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the pre-crash seat belt control unit branch line.

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

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to <u>SBC-24, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to <u>SBC-39</u>, "Exploded View".

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

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

## ADP BRANCH LINE CIRCUIT

## [CAN SYSTEM (TYPE 4)]

agnosis Procedure			INFOID:000000005779448
CHECK CONNECTOR			
Check the following term nector side). Models with automatic di Driver seat control unit Harness connector B502 Harness connector B11 Models without automati Driver seat control unit Harness connector B501 Harness connector B10 the inspection result norma ES >> GO TO 2.	able from the negative term inals and connectors for o ive positioner c drive positioner		nnection (unit side and con-
	DPEN CIRCUIT r of driver seat control uni	it.	
Disconnect the connector Check the resistance bet	r of driver seat control uni ween the driver seat cont	rol unit harness connector t	erminals.
Disconnect the connector Check the resistance bet Drive	r of driver seat control uni ween the driver seat cont r seat control unit harness conn	rol unit harness connector t	erminals. Resistance (Ω)
Check the resistance bet Drive Connector No. B503	r of driver seat control uni ween the driver seat cont r seat control unit harness conn Termi 3	rol unit harness connector t	
Disconnect the connector Check the resistance bet Drive Connector No. B503 he measurement value wi ES >> GO TO 3. O >> Repair the driver CHECK POWER SUPPLY eck the power supply and NTROL UNIT : Diagnosis he inspection result normal	r of driver seat control univeen the driver seat cont r seat control unit harness conn Termi 3 thin the specification? seat control unit branch li AND GROUND CIRCUI the ground circuit of the di <u>Procedure</u> ".	rol unit harness connector t nector nal No. 19 ine.	Resistance (Ω) Approx. 54 – 66 to <u>ADP-64, "DRIVER SEAT</u>

< DTC/CIRCUIT DIAGNOSIS >

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## **RAS BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## RAS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779449

[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 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WA	4WAS main control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace the body harness.

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

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-136, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-181, "Exploded View".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

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

## **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000005779450
CHECK CONNECTOR			
<ol><li>Check the terminals and</li></ol>	able from the negative termina I connectors of the ABS actuat nit side and connector side).		ntrol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
nals.	etween the ABS actuator and e		, 
Connector No.	Terminal N		Resistance ( $\Omega$ )
E41 s the measurement value w	35	14	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply and BRC-69. "Diagnosis Procedu s the inspection result norm	ithin the specification? actuator and electric unit (cont Y AND GROUND CIRCUIT d the ground circuit of the AB	rol unit) branch line. S actuator and electric	unit (control unit). Refer to

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#### < 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.

#### **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-102, "Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-133, "Exploded View".

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

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

INFOID:000000005779451

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

## [CAN SYSTEM (TYPE 4)]

IPDM-E BRANCH LINE CIRCUIT         Diagnosis Procedure         1.cHECK CONNECTOR         1. Turn the ignition switch OFF.         2. Disconnect the battery cable from the negative terminal.         3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).         Is the inspection result normal?         YES       > GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1       Disconnect the connector of IPDM E/R.         2. CHECK the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector       Resistance (Ω) <u>Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         Is the measurement value within the specification?       YES       &gt;&gt; GO TO 3.         NO       &gt;&gt; Repair the IPDM E/R branch line.       39       Approx. 108 – 132         Sthe measurement value within the specification?         YES       &gt;&gt; GO TO 3.       NO       &gt;&gt; Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-</u>	< DTC/CIRCUIT DIAGNOS	3IS >	[0	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.         Image: the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".	IPDM-E BRANCH L	INE CIRCUIT		
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).         1s the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2. CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of IPDM E/R.         2. Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         Resistance (Ω)         Connector No.         IPDM E/R harness connector         Resistance (Ω)         Connector No.         Terminal No.         Resistance (Ω)         St the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3. CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17. "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32. "Exploded View".         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32. "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	Diagnosis Procedure			INFOID:0000000577945
<ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).</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>2. CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of IPDM E/R.</li> <li>2. Check the resistance between the IPDM E/R harness connector terminals.</li> </ul> IPDM E/R harness connector Resistance (Ω) Connector No. IPDM E/R harness connector Resistance (Ω) Connector No. Terminal No. Resistance (Ω) Connector No. Terminal No. Resistance (Ω) Connector No. Terminal No. Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View". YES (Past error)>>Error was detected in the IPDM E/R branch line.	1. CHECK CONNECTOR			
YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of IPDM E/R.         2. Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector         Resistance (Ω)         Connector No.         E6       40         39       Approx. 108 – 132         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	<ol> <li>Disconnect the battery of</li> <li>Check the terminals an</li> </ol>	cable from the negative term		oose connection (unit side
1. Disconnect the connector of IPDM E/R.         2. Check the resistance between the IPDM E/R harness connector terminals.         IPDM E/R harness connector       Resistance (Ω)         Connector No.       Terminal No.         E6       40       39       Approx. 108 – 132         s the measurement value within the specification?       YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	YES >> GO TO 2. NO >> Repair the term	inal and 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.         S.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".       Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".       YES (Past error)>>Error was detected in the IPDM E/R branch line.	1. Disconnect the connect	or of IPDM E/R.	ess connector terminals.	
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.         NO       >> Repair the IPDM E/R branch line.       S.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".       Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".       YES (Past error)>>Error was detected in the IPDM E/R branch line.				Resistance (O)
Is the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	Connector No.	Termin	al No.	
YES       >> GO TO 3.         NO       >> Repair the IPDM E/R branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".         YES (Past error)>>Error was detected in the IPDM E/R branch line.	E6	40	39	Approx. 108 – 132
	NO >> Repair the IPDM <b>3.</b> CHECK POWER SUPPL Check the power supply and <u>is the inspection result norm</u> YES (Present error)>>Rep	Y AND GROUND CIRCUIT d the ground circuit of the IP <u>nal?</u> lace the IPDM E/R. Refer to	DM E/R. Refer to <u>PCS-17,</u> p <u>PCS-32, "Exploded View"</u>	-
	YES (Past error)>>Error w	as detected in the IPDM E/	R branch line.	

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## CAN COMMUNICATION CIRCUIT

#### Diagnosis Procedure

**1**.CONNECTOR INSPECTION

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

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

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

Data link	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
 M24	6	Ground	Not existed
10124	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

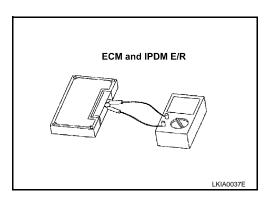
IPDM E/R		Resistance (Ω)	
Terminal No.			
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



#### LAN-136

INFOID:000000005779453

#### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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#### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

#### **Diagnosis Procedure**

INFOID:000000005779454

## **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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M24	6	M85	86	Existed	
11/24	14	CON	87	Existed	

- Without navigation system (With rear view monitor)

Data link	connector	AV control unit harness connector		- Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M204	81	Existed
	14		80	Existed

With navigation system

Data link	connector	AV control unit harness connector		- Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M210	90	Existed
10124	14 M210	IVIZ TO	74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

#### MAIN LINE BETWEEN AV AND ADP CIRCUIT IAGNOSIS > [CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >
MAIN LINE BETWEEN AV AND ADP CIRCUIT

Diagnosis Procec	lure			INFOID:00000005779455
.CHECK CONNEC	OR			
<ul> <li>Check the followi 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 for AV control unit Harness connector</li> <li>Check the continut</li> </ul>	attery cable from the non- ng terminals and con- or M7 or B1 <u>t normal?</u> e terminal and connect 5 CONTINUITY (OPEN lowing harness connect	nectors for damag tor. N CIRCUIT) ectors.		connection (connector side
	harness connector		ness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M7	20	Existed
	87		21	Existed
Without navigation	n system (With rear vie	ew monitor)		
AV control unit l	arness connector	Harı	ness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M204	81	M7	20	Existed
	80		21	Existed
With navigation sy	/stem			,
	rstem	Hari	ness connector	Continuity
		Harı Connector No.	ness connector Terminal No.	Continuity
AV control unit I Connector No.	narness connector	Connector No.		Continuity Existed
AV control unit h Connector No. M210	narness connector Terminal No. 90 74		Terminal No.	· · · · · · · · · · · · · · · · · · ·
AV control unit I Connector No. M210 the inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS	narness connector Terminal No. 90 74 t normal?	Connector No. M7 e AV control unit a N CIRCUIT)	Terminal No. 20 21 and the harness con	Existed Existed
AV control unit H Connector No. M210 the inspection resul (ES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity b	Terminal No. 90 74 t normal? e main line between th cONTINUITY (OPEN	Connector No. M7 e AV control unit a N CIRCUIT) onnector terminal	Terminal No. 20 21 and the harness con	Existed Existed
AV control unit I Connector No. M210 the inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS	Terminal No. 90 74 t normal? e main line between th cONTINUITY (OPEN	Connector No. M7 e AV control unit a N CIRCUIT)	Terminal No. 20 21 and the harness con	Existed 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 driver seat control unit.

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

#### MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779456

[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.	Termir	Continuity	
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

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

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	Harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M7	22	M6	49	Existed
1117	23		48	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

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

Is the inspection result normal?

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

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

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

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## ECM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779457

[CAN SYSTEM (TYPE 5)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			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-152, "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 5)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005884796 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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## BCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779459

[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 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.

	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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

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

## **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 5)]

CIC/CIRCUIT DIAGNOS	515 >		
DLC BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:0000000577946
CHECK CONNECTOR			
<ul> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> </ul>	cable from the negative ter	minal.	
. Check the terminals an	d connectors of the data I		, bend and loose connection
(connector side and har the inspection result norm	,		
YES >> GO TO 2.			
NO >> Repair the term	inal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
heck the resistance betwe	en the data link connector	terminals.	
	Data link connector		
Connector No.	Termi	nal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66

#### < DTC/CIRCUIT DIAGNOSIS >

## M&A BRANCH LINE CIRCUIT

#### Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified	Unified meter and A/C amp. harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "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:000000005779461

#### **STRG BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 5)]

STRG BRANCH LINE CIRCUIT Diagnosis Procedure	INFOID-000000000000000000000000000000000000
	INFOID:00000005779462
1.CHECK CONNECTOR	
<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 steering angle sensor for dama (unit side and connector side).</li> <li><u>Is the inspection result normal?</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> </ol>	age, bend and loose connection
2. CHECK HARNESS FOR OPEN CIRCUIT	
<ol> <li>Disconnect the connector of steering angle sensor.</li> <li>Check the resistance between the steering angle sensor harness connect</li> </ol>	or terminals.
Steering angle sensor harness connector           Connector No.         Terminal No.	Resistance (Ω)
M37 1 2	Approx. 54 – 66
NO >> Repair the steering angle sensor branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. gram - BRAKE CONTROL SYSTEM -".	Refer to <u>BRC-83</u> , "Wiring Dia-
Is the inspection result normal?	
Is the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-108</u> , YES (Past error)>>Error was detected in the steering angle sensor branch lir NO >> Repair the power supply and the ground circuit.	
YES (Past error)>>Error was detected in the steering angle sensor branch lir	

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## **AV BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000005779463

[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 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.

- Without navigation system (Without rear view monitor)

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M85	86	87	Approx. 54 – 66

Without navigation system (With rear view monitor)

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

With navigation system

AV control unit harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view camera: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view camera: AV-172, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-451, "AV CONTROL UNIT : Diagnosis Procedure"</u>

#### Is the inspection result normal?

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

- Base audio without rear view camera: AV-89, "Exploded View"
- Base audio with rear view camera: <u>AV-201, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-328</u>, "Exploded View"
- BOSE audio with navigation: <u>AV-477, "Exploded View"</u>

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

### **TCM BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 5)]

TCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INF0ID:000000005779464
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d 3 6 <u>nal?</u> inal and connector.		onnection (unit side and con-
1. Disconnect the connect	or of A/T assembly. etween the A/T assembly h	arness connector terminals	
Connector No.	A/T assembly harness connector Termin	r nal No.	Resistance ( $\Omega$ )
F51	3	8	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCM <b>3.</b> CHECK POWER SUPPL Check the power supply and Is the inspection result norm	I branch line. Y AND GROUND CIRCUIT d the ground circuit of the T		ignosis Procedure".
(Replace A/T as YES (Past error)>>Error w	ssembly if control valve with	h TCM is not listed in the la anch line.	Component Parts Location". test parts list.)

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## ADP BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779465

[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).
- Models with automatic drive positioner
- Driver seat control unit
- Harness connector B502
- Harness connector B11
- Models without automatic drive positioner
- Driver seat control unit
- Harness connector B501
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (32)
B503	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-64, "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-234, "Exploded View"</u>.

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

## **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:000000005779466
<ol> <li>Check the terminals and loose connection (</li> </ol>	cable from the negative termin nd connectors of the ABS actua unit side and connector side).		ontrol unit) for damage, bend
s the inspection result norr YES >> GO TO 2. NO >> Repair the tern CHECK HARNESS FOF	ninal and connector.		
	tor of ABS actuator and electric between the ABS actuator and		nit) harness connector termi-
ABS actuator	and electric unit (control unit) harness	connector	Resistance (Ω)
Connector No.	Terminal N	No.	
E41	35	14	Approx. 54 – 66
CHECK POWER SUPP Check the power supply a BRC-69. "Diagnosis Proceed the inspection result norr YES (Present error)>>Rep		3S actuator and electr	
NO >> Repair the ABS CHECK POWER SUPP Check the power supply and BRC-69. "Diagnosis Proceed is the inspection result norr YES (Present error)>>Rep <u>View"</u> . YES (Past error)>>Error w	LY AND GROUND CIRCUIT nd the ground circuit of the AE <u>dure"</u> . <u>nal?</u>	3S actuator and electric ctric unit (control unit). or and electric unit (con	Refer to <u>BRC-105, "Exploded</u>

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

#### Diagnosis Procedure

INFOID:000000005779467

[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.

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

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

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".

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

#### CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 5)]

#### CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000005779468 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Terminal No. Connector No. M24 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. ${f 4}$ . CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance $(\Omega)$ Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance $(\Omega)$ Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< DTC/CIRCUIT DIAGNOSIS >

#### LAN-153

< 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 DLC AND AV CIRCUIT [CAN SYSTEM (TYPE 6)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN DLC AND AV CIRCUIT **Diagnosis** Procedure INFOID:000000005779469 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 3. Disconnect the following harness connectors. ECM \_ D AV control unit 4. Check the continuity between the data link connector and the AV control unit harness connector. Without navigation system (Without rear view monitor) Е Data link connector AV control unit harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 6 86 Existed M24 M85 14 87 Existed Without navigation system (With rear view monitor) Data link connector AV control unit harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 6 81 Existed M24 M204 14 80 Existed With navigation system Data link connector AV control unit harness connector Continuity Terminal No. Connector No. Terminal No. Connector No. 90 6 Existed M24 M210 14 74 Existed Κ 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 AV control unit. NO >> Repair the main line between the data link connector and the AV control unit. LAN Ν

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#### MAIN LINE BETWEEN AV AND ADP CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN AV AND ADP CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779470

[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 (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.

- AV control unit
- Harness connectors M7 and B1

2. Check the continuity between the AV control unit harness connector and harness connector.

- Without navigation system (Without rear view monitor)

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M7	20	Existed
COIVI	87	1/17	21	Existed

Without navigation system (With rear view monitor)

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M204 81 80	M7	20	Existed	
	80	1017	21	Existed

With navigation system

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M7	20	Existed
WZ TO	74	IVI7	21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	20	22	Existed
Ы	21	23	Existed

Is the inspection result normal?

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

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

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

#### LAN-156

#### MAIN LINE BETWEEN ADP AND RAS CIRCUIT

# MAIN LINE BETWEEN ADP AND RAS CIRCUIT

#### **Diagnosis** Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the harness connectors M7 and B1.
- 4. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity	D
D4	20	22	Existed	_
B1	21	23	Existed	_
o inspection result perma	10		I	E

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 4WAS main control unit.

NO >> Repair the main line between the driver seat control unit and the 4WAS main control unit.

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[CAN SYSTEM (TYPE 6)]

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### MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779472

[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 (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the 4WAS main control unit and the harness connector B1.

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

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M7	22	M6	49	Existed
1017	23		48	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E106	49	E41	35	Existed
ETUO	48	<b>C</b> 41	14	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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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:000000005779473

[CAN SYSTEM (TYPE 6)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

2. Check the resistance between the ECM harness connector terminals.

	ECM harness connector		
Connector No.	Termi	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-152, "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 6)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005884798 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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## BCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779475

[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 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.	Termi	Resistance (Ω)	
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

## **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 6)]

DLC BRANCH LIN	IE CIRCUIT		
iagnosis Procedure	9		INFOID:00000000577947
-			
CHECK CONNECTOR			
<ul> <li>Turn the ignition switcl</li> <li>Disconnect the battery</li> </ul>	h OFF. / cable from the negative terr	minal.	
. Check the terminals a	and connectors of the data li		e, bend and loose connection
connector side and hat the inspection result nor			
YES >> GO TO 2.	<u></u>		
NO >> Repair the terr	minal and connector.		
CHECK HARNESS FO	R OPEN CIRCUIT		
heck the resistance betw	een the data link connector t	terminals.	
	Data link connector		
Connector No.	Termir	nal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66
YES (Present error)>>Ch YES (Past error)>>Error v	within the specification? neck CAN system type decisi was detected in the data link ta link connector branch line.	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.
YES (Present error)>>Ch YES (Past error)>>Error v	neck CAN system type decisi was detected in the data link	connector branch line c	ircuit.

#### < DTC/CIRCUIT DIAGNOSIS >

## M&A BRANCH LINE CIRCUIT

#### Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified	Unified meter and A/C amp. harness connector			
Connector No.	Termi	nal No.	Resistance ( $\Omega$ )	
M67	56	72	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "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:000000005779477

#### **STRG BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:00000005779478
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the steering r side).		, bend and loose connection
YES >> GO TO 2.			
NO >> Repair the term CHECK HARNESS FOR			
	or of steering angle sensor.		
	etween the steering angle se	ensor harness connector t	erminals.
Ste	ering angle sensor harness connec	tor	Resistance ( $\Omega$ )
Connector No.	Termina		
M37 the measurement value w	1	2	Approx. 54 – 66
CHECK POWER SUPPL			fer to <u>BRC-83, "Wiring Dia-</u>
am - BRAKE CONTROL S the inspection result norm			
YES (Present error)>>Rep YES (Past error)>>Error w	lace the steering angle sens as detected in the steering a er supply and the ground cire	ngle sensor branch line.	<u>ploded View"</u> .

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## AV BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000005779479

[CAN SYSTEM (TYPE 6)]

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

- Without navigation system (Without rear view monitor)

	AV control unit harness connector			
Connector No.	Termi	Resistance ( $\Omega$ )		
M85	86	87	Approx. 54 – 66	

• Without navigation system (With rear view monitor)

AV control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		Resistance (22)
M204	81	80	Approx. 54 – 66

With navigation system

AV control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		(100) (100)
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view camera: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view camera: AV-172, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-451, "AV CONTROL UNIT : Diagnosis Procedure"</u>

#### Is the inspection result normal?

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

- Base audio without rear view camera: AV-89, "Exploded View"
- Base audio with rear view camera: <u>AV-201, "Exploded View"</u>
- BOSE audio without navigation: AV-328, "Exploded View"
- BOSE audio with navigation: <u>AV-477, "Exploded View"</u>

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

## **TCM BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 6)]

TCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000005779480
1. CHECK CONNECTOR			
<ol> <li>Check the following term nector side).</li> <li>A/T assembly</li> <li>Harness connector F103</li> <li>Harness connector M116</li> <li>Is the inspection result normative YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the termining</li> <li>CHECK HARNESS FOR</li> </ol>	able from the negative term ninals and connectors for da b al? nal and connector. OPEN CIRCUIT		onnection (unit side and con-
	or of A/T assembly. tween the A/T assembly ha	rness connector termina	
Connector No.	Termina	al No.	Resistance (Ω)
F51	3	8	Approx. 54 – 66
(Replace A/T as YES (Past error)>>Error wa	branch line. Y AND GROUND CIRCUIT the ground circuit of the TC al? ace the control valve with sembly if control valve with	TCM. Refer to <u>TM-99, '</u> TCM is not listed in the l nch line.	Component Parts Location".

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## ADP BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779481

[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).
- Models with automatic drive positioner
- Driver seat control unit
- Harness connector B502
- Harness connector B11
- Models without automatic drive positioner
- Driver seat control unit
- Harness connector B501
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
B503	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-64, "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-234, "Exploded View"</u>.

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

## **RAS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:00000005779482
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the 4WAS r ector side). al?		age, bend and loose connec-
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	or of 4WAS main control un atween the 4WAS main cont		or terminals.
	S main control unit harness conne		Resistance (Ω)
Connector No.	Termina		
B54 s the measurement value w	1	8	Approx. 54 – 66
Procedure (4WAS Main Con Is the inspection result norm YES (Present error)>>Repl	Y AND GROUND CIRCUIT d the ground circuit of the 4 <u>htrol Unit)"</u> . al? lace the 4WAS main control	WAS main control unit. I	
	er supply and the ground cir	cuit.	
		cuit.	
		cuit.	

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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		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.

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-69, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-105</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: 2009 November

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

## [CAN SYSTEM (TYPE 6)]

IPDM-E BRANCH LINE CIRCUIT         Diagnosis Procedure         1. CHECK CONNECTOR         1. Turn the ignition switch OFF.         2. Disconnect the battery cable from the negative terminal.         3. Check the terminals and connectors of the IPDM E/R for d 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         IPDM E/R harness connector		
<ol> <li>CHECK CONNECTOR</li> <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 IPDM E/R for d and connector side).</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 IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector</li> </ol>		INFOID:00000005779484
<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 IPDM E/R for d and connector side).</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 IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector</li> </ol>		loose connection (unit side
<ol> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the terminals and connectors of the IPDM E/R for d and connector side).</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 IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector</li> </ol>		loose connection (unit side
<ol> <li>Disconnect the connector of IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector</li> </ol>	ector terminals.	
2. Check the resistance between the IPDM E/R harness connector	nector terminals.	
	1	
		Resistance ( $\Omega$ )
E6 40	39	Approx. 108 – 132
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 is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-3</u> YES (Past error)>>Error was detected in the IPDM E/R branch	32, "Exploded View	

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# CAN COMMUNICATION CIRCUIT

#### Diagnosis Procedure

**1**.CONNECTOR INSPECTION

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

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

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

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

Data link	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
 M24	6	Ground	Not existed
10124	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

E	СМ	Resistance ( $\Omega$ )
Termi	nal No.	
114	113	Approx. 108 – 132

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

IPDM E/R		Resistance (Ω)
Termi	nal No.	
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.



# LKIA0037E

ECM and IPDM E/R

INFOID:000000005779485

#### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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#### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

#### **Diagnosis Procedure**

INFOID:000000005779486

## 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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link	onnector AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	M24 6	M85	86	Existed
10124	14	- WOO	87	Existed

- Without navigation system (With rear view monitor)

Data link connector AV control unit harness connector		arness connector	Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M204	81	Existed	
	14		80	Existed	

With navigation system

Data link connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M210	90	Existed	
	14		74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

# MAIN LINE BETWEEN AV AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >
MAIN LINE BETWEEN AV AND ADP CIRCL

[CAN SYSTEM (TYPE 7)]

		D ADP CIRCU		
iagnosis Proced	ure			INFOID:000000005779487
.CHECK CONNECT	OR			
<ul> <li>Check the followir and harness side). Harness connecto Harness connecto</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 AV control unit</li> </ul>	ttery cable from the ne ng terminals and con r M7 r B1 normal? terminal and connec CONTINUITY (OPEN lowing harness connec	nectors for damage, tor. N CIRCUIT)	bend and loose conr	nection (connector side
	ity between the AV co system (Without rea		nnector and harness	connector.
AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M7	20	Existed
	87	1017	21	Existed
Without navigation	87 n system (With rear vie		21	Existed
-	_	ew monitor)	21 connector	
-	system (With rear vie	ew monitor)		Existed Continuity
AV control unit h	arness connector Terminal No. 81	ew monitor) Harness	connector Terminal No. 20	- Continuity Existed
AV control unit h Connector No. M204	arness connector Terminal No. 81 80	ew monitor) Harness Connector No.	connector Terminal No.	Continuity
AV control unit h Connector No.	arness connector Terminal No. 81 80	ew monitor) Harness Connector No.	connector Terminal No. 20	- Continuity Existed
AV control unit h Connector No. M204 With navigation sy AV control unit h	arness connector Terminal No. 81 80 stem arness connector	ew monitor) Harness Connector No. M7 Harness	connector Terminal No. 20 21 connector	- Continuity Existed
AV control unit h Connector No. M204 With navigation sy	arness connector Terminal No. 81 80 rstem arness connector Terminal No.	ew monitor) Harness Connector No. M7	connector Terminal No. 20 21 connector Terminal No.	Continuity Existed Existed Continuity
AV control unit h Connector No. M204 With navigation sy AV control unit h	arness connector Terminal No. 81 80 estem arness connector Terminal No. 90	ew monitor) Harness Connector No. M7 Harness	connector Terminal No. 20 21 connector Terminal No. 20	Continuity Existed Existed Continuity Existed
AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No. M210 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS	arness connector Terminal No. 81 80 rstem arness connector Terminal No. 90 74 74 normal? main line between th CONTINUITY (OPEN	ew monitor) Harness Connector No. M7 Harness Connector No. M7 ee AV control unit and N CIRCUIT)	connector Terminal No. 20 21 21 connector Terminal No. 20 21 21	Continuity Existed Existed Continuity Existed Existed
AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No. M210 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS	arness connector Terminal No. 81 80 rstem arness connector Terminal No. 90 74 74 normal?	ew monitor) Harness Connector No. M7 Harness Connector No. M7 ee AV control unit and N CIRCUIT)	connector Terminal No. 20 21 21 connector Terminal No. 20 21 21	Continuity Existed Existed Continuity Existed Existed
AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No. M210 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS	arness connector Terminal No. 81 80 rstem arness connector Terminal No. 90 74 74 normal? main line between th CONTINUITY (OPEN	ew monitor) Harness Connector No. M7 Harness Connector No. M7 ee AV control unit and N CIRCUIT)	connector Terminal No. 20 21 21 connector Terminal No. 20 21 21	Continuity Existed Existed Continuity Existed Existed
AV control unit h Connector No. M204 With navigation sy AV control unit h Connector No. M210 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be	arness connector Terminal No. 81 80 rstem arness connector Terminal No. 90 74 74 normal? main line between th CONTINUITY (OPEN	ew monitor) Harness Connector No. M7 Harness Connector No. M7 e AV control unit and N CIRCUIT) onnector terminals.	connector Terminal No. 20 21 21 connector Terminal No. 20 21 21	Continuity Existed Existed Continuity Existed Existed Or M7.

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

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

#### LAN-175

#### MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779488

[CAN SYSTEM (TYPE 7)]

#### **1.**CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
B1 –	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

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

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M7	22	M6	49	Existed	
1017	23		48	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

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

Is the inspection result normal?

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

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

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

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## ECM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779489

[CAN SYSTEM (TYPE 7)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

2. Check the resistance between the ECM harness connector terminals.

	Resistance ( $\Omega$ )		
Connector No.	Termi	Tresistance (22)	
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-152, "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 7)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005885027 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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## BCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779491

[CAN SYSTEM (TYPE 7)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.

	Resistance (Ω)		
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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

# **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 7)]

CONCIRCUIT DIAGNOS	15 >		
DLC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INF0ID:000000005779492
<b>1</b> .CHECK CONNECTOR			
<ol> <li>Turn the ignition switch (2. Disconnect the battery of 3. Check the terminals and (connector side and hard)</li> </ol>	cable from the negative ter d connectors of the data I ness side).		e, bend and loose connection
s the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR			
Check the resistance betwee	en the data link connector	terminals.	
	Data link connector		
Connector No.	Termi	nal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66

#### < DTC/CIRCUIT DIAGNOSIS >

# M&A BRANCH LINE CIRCUIT

#### Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified meter and A/C amp. harness connector			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.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "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:000000005779493

## STRG BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:00000005779494
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the steering r side).		, bend and loose connection
YES >> GO TO 2.			
NO >> Repair the term CHECK HARNESS FOR	inal and connector.		
	or of steering angle sensor.		
	etween the steering angle se	nsor harness connector t	erminals.
Ste	ering angle sensor harness connec	tor	Resistance (Ω)
Connector No.	Termina		
M37 s the measurement value v	1	2	Approx. 54 – 66
CHECK POWER SUPPL			efer to <u>BRC-83, "Wiring Dia-</u>
the inspection result norm YES (Present error)>>Rep	<u>nal?</u> lace the steering angle sens		xploded View".
	as detected in the steering a er supply and the ground circ		
YES (Past error)>>Error w NO >> Repair the pow			

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# **AV BRANCH LINE CIRCUIT**

# Diagnosis Procedure

INFOID:000000005779495

[CAN SYSTEM (TYPE 7)]

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

- Without navigation system (Without rear view monitor)

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M85	86	87	Approx. 54 – 66

Without navigation system (With rear view monitor)

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

With navigation system

AV control unit harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view camera: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view camera: AV-172, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-451, "AV CONTROL UNIT : Diagnosis Procedure"</u>

#### Is the inspection result normal?

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

- Base audio without rear view camera: AV-89, "Exploded View"
- Base audio with rear view camera: <u>AV-201, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-328, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-477, "Exploded View"</u>

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

## **PSB BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:000000005779496
.CHECK CONNECTOR			
	able from the negative term d connectors of the pre-cra		e, bend and loose connection
the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of pre-crash seat belt cor stween the pre-crash seat b		onnector terminals.
Pre-cras	h seat belt control unit harness co	onnector	Resistance (Ω)
Connector No.	Termin		
M110 the measurement value w	24	22	Approx. 54 – 66
CHECK POWER SUPPL	al?	e-crash seat belt control	unit. Refer to <u>SBC-24, "Diag-</u>
•	and the must supply a set built		L-39 "Exploded View"
YES (Present error)>>Rep YES (Past error)>>Error wa		n seat belt control unit bra	
YES (Present error)>>Rep YES (Past error)>>Error wa	as detected in the pre-crash	n seat belt control unit bra	
YES (Present error)>>Rep YES (Past error)>>Error wa	as detected in the pre-crash	n seat belt control unit bra	
YES (Present error)>>Rep YES (Past error)>>Error wa	as detected in the pre-crash	n seat belt control unit bra	

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# TCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779497

[CAN SYSTEM (TYPE 7)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

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

	A/T assembly harness connector	r	Resistance (Ω)
Connector No.	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.

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

Check the power supply and the ground circuit of the TCM. Refer to TM-212, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-99</u>, "Component Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

## **ADP BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 7)]

ADP BRANCH LINE	CIRCUIT			Δ
Diagnosis Procedure			INFOID:00000005779498	A
1.CHECK CONNECTOR				В
<ol> <li>Check the following term nector side).</li> <li>Models with automatic d</li> </ol>	able from the negative ter ninals and connectors for o	minal. Jamage, bend and loose con	nection (unit side and con-	С
<ul> <li>Driver seat control unit</li> <li>Harness connector B502</li> <li>Harness connector B11</li> <li>Models without automati</li> <li>Driver seat control unit</li> <li>Harness connector B502</li> </ul>	ic drive positioner			D
Harness connector B10     Is the inspection result norm     YES >> GO TO 2.     NO >> Repair the termi     2.CHECK HARNESS FOR	al? nal and connector.			F
2. Check the resistance be	or of driver seat control un tween the driver seat conf er seat control unit harness conr	rol unit harness connector te	rminals. Resistance (Ω)	Н
Connector No.		nal No.		I
B503	3	19	Approx. 54 – 66	
Is the measurement value wYES>> GO TO 3.NO>> Repair the drive <b>3.</b> CHECK POWER SUPPLY	r seat control unit branch l			J
Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm	<u>Procedure</u> ".	river seat control unit. Refer to	o <u>ADP-64. "DRIVER SEAT</u>	K
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the driver seat control		bloded View".	L
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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.		(125)Starice (22)
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-69, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-105</u>, "Exploded <u>View"</u>.

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

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

[CAN SYSTEM (TYPE 7)]

INFOID:000000005779499

## **ICC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 7)]

DIC/CIRCUIT DIAGNO	515 >		
CC BRANCH LINE	CIRCUIT		
agnosis Procedure			INFOID:000000005779500
CHECK CONNECTOR			
<ol> <li>Check the terminals an nection (unit side and c s the inspection result norn YES &gt;&gt; GO TO 2.</li> </ol>	cable from the negative tern of connectors of the ICC se onnector side).		mage, bend and loose con-
2.CHECK HARNESS FOR			
1. Disconnect the connect	tor of ICC sensor integrated	l unit. grated unit harness connec	tor terminals.
	ensor integrated unit harness cor		Resistance (Ω)
E67	lermi 3	nal No. 6	Approx. 54 – 66
<u>sis Procedure"</u> . <u>s the inspection result norn</u> YES (Present error)>>Rep YES (Past error)>>Error w	nal? blace the ICC sensor integra	ated unit. Refer to <u>CCS-133</u> sor integrated unit branch li	Refer to <u>CCS-102, "Diagno-</u> <u>, "Exploded View"</u> . ne.
		reuit.	

< DTC/CIRCUIT DIAGNOSIS >

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# **IPDM-E BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

INFOID:000000005779501

[CAN SYSTEM (TYPE 7)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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 ( $\Omega$ )
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

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

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View".

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

## **CAN COMMUNICATION CIRCUIT**

[CAN SYSTEM (TYPE 7)]

· ^ K I / Y X K / K / I K I / Y A -			
CAN COMMUNICA	HON CIRCUIT		
Diagnosis Procedure			INFOID:000000005779502
1.CONNECTOR INSPECT	ION		
<ol><li>Disconnect all the unit c</li></ol>	cable from the negative terr connectors on CAN commu	nication system.	
	nnectors for damage, bend	and loose connection.	
Is the inspection result norm YES >> GO TO 2.	<u>al :</u>		
NO >> Repair the termi	inal and connector.		
2. CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)	
Check the continuity betwee	n the data link connector te	erminals.	
	Data link connector		
Connector No.	Termir	nal No.	Continuity
M24	6	14	Not existed
•	ess and repair the root caus		
<b>3.</b> CHECK HARNESS CON			
Check the continuity betwee	in the data link connector a	nd the ground.	
Data link	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M24	6	Cround	Not existed
	14		Not existed
Is the inspection result norm	<u>ial?</u>		
YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND IPDM			
YES >> GO TO 4. NO >> Check the harne <b>4.</b> CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be	E/R TERMINATION CIRC		ECM and IPDM F/R
YES >> GO TO 4. NO >> Check the harne <b>4.</b> CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be	I E/R TERMINATION CIRC he IPDM E/R.	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be ECM Terminal No.	I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals.	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be ECM Terminal No.	I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be ECM Terminal No.	I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1 etween the IPDM E/R termin	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harner 4.CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be ECM Terminal No. 114 1' 3. Check the resistance be	I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1 etween the IPDM E/R termin Resistance (Ω	UIT 2) 32 nals.	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be ECM Terminal No. 114 1' 3. Check the resistance be IPDM E/R Terminal No.	I E/R TERMINATION CIRC         he IPDM E/R.         etween the ECM terminals.         Resistance (Ω         13       Approx. 108 – 1         etween the IPDM E/R terminals         Resistance (Ω         39       Approx. 108 – 1	UIT 2) 32 nals.	

< DTC/CIRCUIT DIAGNOSIS >

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< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result

Reproduced>>GO TO 6.

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

**6.**CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

#### MAIN LINE BETWEEN DLC AND AV CIRCUIT [CAN SYSTEM (TYPE 8)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN DLC AND AV CIRCUIT **Diagnosis** Procedure INFOID:000000005779503 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 3. Disconnect the following harness connectors. ECM \_ D AV control unit 4. Check the continuity between the data link connector and the AV control unit harness connector. Without navigation system (Without rear view monitor) Е Data link connector AV control unit harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 6 86 Existed M24 M85 14 87 Existed Without navigation system (With rear view monitor) Data link connector AV control unit harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 6 81 Existed M24 M204 14 80 Existed With navigation system Data link connector AV control unit harness connector Continuity Terminal No. Connector No. Terminal No. Connector No. 90 6 Existed M24 M210 14 74 Existed Κ 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 AV control unit. NO >> Repair the main line between the data link connector and the AV control unit. LAN Ν

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#### MAIN LINE BETWEEN AV AND ADP CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN AV AND ADP CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779504

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

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

1. Disconnect the following harness connectors.

- AV control unit
- Harness connectors M7 and B1

2. Check the continuity between the AV control unit harness connector and harness connector.

- Without navigation system (Without rear view monitor)

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	MZ	20	Existed
COIVI	87	M7	21	Existed

Without navigation system (With rear view monitor)

AV control unit h	arness connector	Harness c	onnector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M204	81	N/7	20	Existed
M204	80	— M7	21	Existed

With navigation system

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M7	20	Existed
MZ TO	74	IVI7	21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

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

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

#### LAN-194

#### MAIN LINE BETWEEN ADP AND RAS CIRCUIT

# MAIN LINE BETWEEN ADP AND RAS CIRCUIT

#### **Diagnosis** Procedure

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the harness connectors M7 and B1.
- 4. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity	D
D4	20	22	Existed	_
B1	21	23	Existed	_
o inspection result perma	10		I	E

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 4WAS main control unit.

NO >> Repair the main line between the driver seat control unit and the 4WAS main control unit.

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[CAN SYSTEM (TYPE 8)]

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## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779506

[CAN SYSTEM (TYPE 8)]

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the 4WAS main control unit and the harness connector B1.

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

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	22	M6	49	Existed
1017	23		48	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness 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		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	49	E41	35	Existed
E100	48		14	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

# MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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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:000000005779507

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

2. Check the resistance between the ECM harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-152, "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 8)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005885028 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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# BCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779509

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

## **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS >			[CAN SYSTEM (TYPE 8)]
DLC BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:0000000577951
1.CHECK CONNECTOR			
(connector side and harness s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal a	e from the negative te nnectors of the data side). and connector.		e, bend and loose connectior
2.CHECK HARNESS FOR OPE Check the resistance between th		r terminals	
Connector No.	Data link connector	ninal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66

#### < DTC/CIRCUIT DIAGNOSIS >

# M&A BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779511

[CAN SYSTEM (TYPE 8)]

#### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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	Unified meter and A/C amp. harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M67	56 72		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "Exploded View".

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

## STRG BRANCH LINE CIRCUIT

# [CAN SYSTEM (TYPE 8)]

Diagnosis Procedure			INFOID:00000005779512
<b>1.</b> CHECK CONNECTOR			
<ol> <li>Check the terminals and (unit side and connector)</li> </ol>	cable from the negative term d connectors of the steering r side).		bend and loose connection
the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
	or of steering angle sensor. Stween the steering angle se	ensor harness connector to	erminals.
	ering angle sensor harness connec		Resistance (Ω)
Connector No. M37	Termina 1	al No. 2	Approx. 54 – 66
CHECK POWER SUPPL			fer to <u>BRC-83, "Wiring Dia-</u>
<u>the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w		angle sensor branch line.	ploded View".

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# **AV BRANCH LINE CIRCUIT**

# Diagnosis Procedure

INFOID:000000005779513

[CAN SYSTEM (TYPE 8)]

#### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.

- Without navigation system (Without rear view monitor)

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance ( $\Omega$ )
M85	86 87		Approx. 54 – 66

Without navigation system (With rear view monitor)

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

With navigation system

AV control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M210	90 74		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view camera: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view camera: AV-172, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-451, "AV CONTROL UNIT : Diagnosis Procedure"</u>

#### Is the inspection result normal?

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

- Base audio without rear view camera: AV-89, "Exploded View"
- Base audio with rear view camera: <u>AV-201, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-328, "Exploded View"</u>
- BOSE audio with navigation: <u>AV-477, "Exploded View"</u>

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

## **PSB BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 8)]

PSB BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000005779514
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the pre-cra		bend and loose connection
<u>s the inspection result norm</u> YES >> GO TO 2.	al?		
NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of pre-crash seat belt con etween the pre-crash seat be		onnector terminals.
	h seat belt control unit harness co		Resistance (Ω)
Connector No. M110	Termina 24	ai no. 22	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply and osis Procedure". the inspection result norm		e-crash seat belt control	unit. Refer to <u>SBC-24, "Diag-</u>
YES (Past error)>>Error wa	as detected in the pre-crash er supply and the ground cir	seat belt control unit bra	

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# TCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779515

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

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

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

Check the power supply and the ground circuit of the TCM. Refer to TM-212, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-99</u>, "Component Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

## **ADP BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 8)]

ADP BRANCH LINE	CIRCUIT			A
Diagnosis Procedure			INFOID:000000005779516	
1. CHECK CONNECTOR				В
<ul> <li>3. Check the following term nector side).</li> <li>Models with automatic de Driver seat control unit</li> </ul>	able from the negative term inals and connectors for c rive positioner	minal. lamage, bend and loose con	nection (unit side and con-	C
<ul> <li>Harness connector B502</li> <li>Harness connector B11</li> <li>Models without automati</li> <li>Driver seat control unit</li> <li>Harness connector B501</li> <li>Harness connector B10</li> </ul>	c drive positioner			E
<u>Is the inspection result norma</u> YES >> GO TO 2.				F
NO >> Repair the termin				G
2. Check the resistance be	or of driver seat control uni tween the driver seat cont	rol unit harness connector te	erminals.	Н
Connector No.		nal No.	Resistance ( $\Omega$ )	
B503	3	19	Approx. 54 – 66	
3.CHECK POWER SUPPLY	seat control unit branch li AND GROUND CIRCUI	Г		J
Check the power supply and CONTROL UNIT : Diagnosis	Procedure".	iver seat control unit. Refer	O ADP-64, DRIVER SEAL	
YES (Past error)>>Error wa	ace the driver seat control		ploded View".	
	supply and the ground c	irouit.		LA
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## **RAS BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# RAS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779517

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WA	4WAS main control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
B54	1 8		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace the body harness.

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

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-136, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-181, "Exploded View".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

## **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 8)]

Diagnosis Procedure			INFOID:00000000577951
.CHECK CONNECTOR			
. Check the terminals and	able from the negative termina connectors of the ABS actuat nit side and connector side).		ntrol unit) for damage, benc
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
nals.	etween the ABS actuator and on the ABS actuator and on the ABS actuator and on the actuator actuator and on the actuator actu		· 
Connector No.	Terminal N		Resistance (Ω)
		-	
E41 the measurement value w	35	14	Approx. 54 – 66
the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL check the power supply and RC-69. "Diagnosis Procedu the inspection result norm YES (Present error)>>Repl <u>View"</u> .	thin the specification? actuator and electric unit (cont Y AND GROUND CIRCUIT d the ground circuit of the AB <u>are</u> ".	rol unit) branch line. S actuator and electric tric unit (control unit). F	c unit (control unit). Refer to Refer to <u>BRC-105, "Exploded</u>

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#### < DTC/CIRCUIT DIAGNOSIS >

# ICC BRANCH LINE CIRCUIT

#### Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

## **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-102, "Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-133, "Exploded View".

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

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

INFOID:000000005779519

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

## [CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOS	SIS >	[1	CAN SYSTEM (TYPE 8)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:00000005779520
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the IPDM	ninal. E/R for damage, bend and l	loose connection (unit side
NO >> Repair the termi			
2.CHECK HARNESS FOR			
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	tween the IPDM E/R harn	ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.		nal No.	
E6 Is the measurement value w	40	39	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IF al? ace the IPDM E/R. Refer to as detected in the IPDM E/	PDM E/R. Refer to <u>PCS-17,</u> to <u>PCS-32, "Exploded View"</u> /R branch line.	-
NO >> Repair the powe	er supply and the ground ci	rcuit.	

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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.	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	
 M24	6	Ground	Not existed
10124	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

E	Resistance ( $\Omega$ )	
Terminal No.		
114	113	Approx. 108 – 132

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

IPDN	Posistanco (O)		
Terminal No.		Resistance (Ω)	
40	39	Approx. 108 – 132	

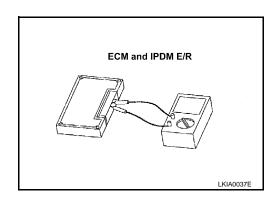
Is the measurement value within the specification?

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-212



INFOID:000000005779521

#### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D 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: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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#### MAIN LINE BETWEEN DLC AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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

#### **Diagnosis Procedure**

INFOID:000000005779522

# 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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link	connector	AV control unit h	AV control unit harness connector		
Connector No.	Terminal No.	Connector No. Terminal No.		- Continuity	
M24	6	M85	86	Existed	
11/24	14		87	Existed	

- Without navigation system (With rear view monitor)

Data link	connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	81	Existed	
11/24	14	M204	80	Existed

With navigation system

Data link	Data link connector		arness connector	- Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	6	M210	90	Existed
10124	14		74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

# MAIN LINE BETWEEN AV AND ADP CIRCUIT

< DTC/CIRCUIT DIAG				SYSTEM (TYPE 9)]
MAIN LINE BET	WEEN AV AN	D ADP CIRCUI	Т	
Diagnosis Proced	ure			INFOID:000000005779523
1.снеск соллест	OR			
<ol> <li>Check the followir and harness side).</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Is the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> </ol>	tery cable from the n ng terminals and con r M7 r B1 <u>normal?</u> terminal and connec	nectors for damage, b	bend and loose conn	ection (connector side
AV control unit Harness connecto 2. Check the continuit		ontrol unit harness con	nector and harness c	onnector.
AV control unit ha	arness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	86		20	Existed
M85	87	- M7	21	Existed
Without navigation	system (With rear vi	ew monitor)		
AV control unit h	arness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	81		20	Existed
M204	80	- M7	21	Existed
With navigation sy	stem			
AV control unit h	arness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

AV control unit h	arness connector	Harness connector				Continuity	L
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
M210	90	M7	20	Existed			
IM2 10	74	IVI7	21	Existed	LAN		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M7.

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

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity		
P1	20	22	Existed	P
B1	21	23	Existed	

Is the inspection result normal?

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

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

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

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#### MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### Diagnosis Procedure

INFOID:000000005779524

[CAN SYSTEM (TYPE 9)]

#### **1.**CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

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

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	N7 22	M6	49	Existed
1017	23	MO	48	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

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

Is the inspection result normal?

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

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

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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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:000000005779525

[CAN SYSTEM (TYPE 9)]

### 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.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-152, "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 9)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005885114 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779527

[CAN SYSTEM (TYPE 9)]

### 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.	Termi	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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

## **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 9)]

CITC/CIRCUIT DIAGNOS	15 >		
DLC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000005779528
.CHECK CONNECTOR			
. Turn the ignition switch ( . Disconnect the battery c	able from the negative terr	ninal.	
. Check the terminals and	d connectors of the data li		bend and loose connection
connector side and harr the inspection result norm			
YES >> GO TO 2.			
NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
Check the resistance betwee	en the data link connector t	erminals.	
-	Data link connector		Resistance (Ω)
Connector No. M24		nal No.	Arres 54 . 00
s the measurement value wi	6	14	Approx. 54 – 66

### < DTC/CIRCUIT DIAGNOSIS >

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified	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.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "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:000000005779529

### **STRG BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 9)]

Diagnosis Procedure			INFOID:000000005779530
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the steering a r side).		, bend and loose connection
YES >> GO TO 2.			
NO >> Repair the term CHECK HARNESS FOR			
	or of steering angle sensor.		
	etween the steering angle se	nsor harness connector t	erminals.
Ste	ering angle sensor harness connec	tor	Resistance (Ω)
Connector No.	Termina		
M37 the measurement value w	1	2	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply an ram - BRAKE CONTROL S	<u>SYSTEM -"</u> .		efer to <u>BRC-83, "Wiring Dia-</u>
the inspection result norm			xploded View".
YES (Past error)>>Error w	as detected in the steering a er supply and the ground circ		
YES (Past error)>>Error w	as detected in the steering a		
YES (Past error)>>Error w	as detected in the steering a		
	as detected in the steering a		

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## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779531

[CAN SYSTEM (TYPE 9)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### **2.**CHECK HARNESS FOR OPEN CIRCUIT

### 1. Disconnect the connector of AWD control unit.

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

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.

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

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-27, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-55, "Exploded View"</u>.

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

## **AV BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 9)]

DIC/CIRCUIT DIAGNUS			
V BRANCH LINE (	CIRCUIT		
Diagnosis Procedure			INFOID:000000005779532
CHECK CONNECTOR			
	able from the negative termin I connectors of the AV contro		end and loose connection (unit
the inspection result norm YES >> GO TO 2.			
NO >> Repair the termin			
CHECK HARNESS FOR			
	or of AV control unit. tween the AV control unit har m (Without rear view moniton		nals.
	V control unit harness connector		Resistance (Ω)
Connector No. M85	Terminal 86	No. 87	Approx. 54 – 66
	m (With rear view monitor)	87	Арргох. 54 – 66
Without havigation syste	in (with real view monitor)		
4	W control unit harness connector		Resistance (Ω)
Connector No.	Terminal	No.	
M204	81	80	Approx. 54 – 66
With navigation system			
ļ	AV control unit harness connector		Desistance (O)
Connector No.	Terminal	No.	Resistance (Ω)
M210	90	74	Approx. 54 – 66
CHECK POWER SUPPLY	ontrol unit branch line. Y AND GROUND CIRCUIT		
<ul> <li>Base audio without rear vie</li> <li>Base audio with rear view</li> <li>BOSE audio without naviga</li> </ul>	the ground circuit of the AV of ew camera: <u>AV-40, "AV CONT</u> camera: <u>AV-172, "AV CONTRO</u> ation: <u>AV-297, "AV CONTRO</u> n: <u>AV-451, "AV CONTROL U</u>	TROL UNIT : Diagnosi COL UNIT : Diagnosis UNIT : Diagnosis Pro	<u>is Procedure"</u> Procedure" ocedure"
s the inspection result norm		_	
	ace the AV control unit. Refe hout rear view camera: <u>AV-8</u>		
<ul> <li>Base audio wit</li> </ul>	th rear view camera: <u>AV-201.</u> h rear view camera: <u>AV-201.</u> ithout navigation: <u>AV-328.</u> "E	"Exploded View"	
BOSE audio w YES (Past error)>>Error wa	ith navigation: <u>AV-477, "Expl</u> as detected in the AV control r supply and the ground circu	oded View" unit branch line.	

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779533

[CAN SYSTEM (TYPE 9)]

## 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.	Termi	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.

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

Check the power supply and the ground circuit of the TCM. Refer to TM-212, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-99</u>, "Component Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

### **ADP BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 9)]

ADP BRANCH LINE C	IRCUIT			А
Diagnosis Procedure			INFOID:000000005779534	$\square$
1.CHECK CONNECTOR				В
<ol> <li>Turn the ignition switch OFF</li> <li>Disconnect the battery cable</li> <li>Check the following termina nector side).</li> <li>Models with automatic drive</li> </ol>	e from the negative Is and connectors f	terminal. or damage, bend and loose co	nnection (unit side and con-	С
<ul> <li>Driver seat control unit</li> <li>Harness connector B502</li> <li>Harness connector B11</li> <li>Models without automatic d</li> </ul>				D
<ul> <li>Driver seat control unit</li> <li>Harness connector B501</li> <li>Harness connector B10</li> </ul>				E
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal	and connector.			F
2.CHECK HARNESS FOR OP				G
		control unit harness connector t	erminals.	Н
Connector No.		erminal No.	Resistance ( $\Omega$ )	
B503	3	19	Approx. 54 – 66	
Is the measurement value within YES >> GO TO 3. NO >> Repair the driver se <b>3.</b> CHECK POWER SUPPLY A	at control unit brand			J
Check the power supply and the CONTROL UNIT : Diagnosis Pl		e driver seat control unit. Refer	to <u>ADP-64. "DRIVER SEAT</u>	K
Is the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was d	etected in the drive	r seat control unit branch line.	xploded View".	L
NO >> Repair the power su	ipply and the groun			LAI
				Ν

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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.

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-69, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-105</u>, "Exploded <u>View"</u>.

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

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

[CAN SYSTEM (TYPE 9)]

INFOID:000000005779535

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

## [CAN SYSTEM (TYPE 9)]

< DTC/CIRCUIT DIAGNOS	ilS >	Ι	CAN SYSTEM (TYPE 9)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:0000000577953
1.CHECK CONNECTOR			
	able from the negative terr d connectors of the IPDM al?	ninal. E/R for damage, bend and	loose connection (unit side
2. CHECK HARNESS FOR	OPEN CIRCUIT		
<ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>	or of IPDM E/R. tween the IPDM E/R harn	ess connector terminals.	
Connector No.		nal No.	Resistance ( $\Omega$ )
E6	40	39	Approx. 108 – 132
YES (Past error)>>Error wa	I E/R branch line. Y AND GROUND CIRCUIT the ground circuit of the IF al? ace the IPDM E/R. Refer to as detected in the IPDM E	PDM E/R. Refer to <u>PCS-17</u> to <u>PCS-32, "Exploded View</u> /R branch line.	-
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the IPDM E/R. Refer	/R branch line.	<u>"</u> -

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# CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

**1**.CONNECTOR INSPECTION

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Continuity	
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

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

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

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

Data link	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 ( $\Omega$ )	
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	

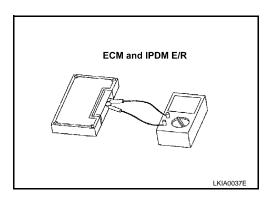
Is the measurement value within the specification?

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.



### LAN-230

INFOID:000000005779537

### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D 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: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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### MAIN LINE BETWEEN DLC AND AV CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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

### **Diagnosis Procedure**

INFOID:000000005779538

## **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 data link connector and the AV control unit harness connector.
- Without navigation system (Without rear view monitor)

Data link connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6 M95	M85	86	Existed
11/24	14	CON	87	Existed

- Without navigation system (With rear view monitor)

Data link	connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	6 M204	81	Existed
M24 14	14	WI204	80	Existed

With navigation system

Data link	connector	AV control unit ha	arness connector	- Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	N040	90	Existed
M24 14	M210	74	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 AV control unit.

NO >> Repair the main line between the data link connector and the AV control unit.

	MAIN LINE BE	TWEEN AV AND		
< DTC/CIRCUIT DIAG	SNOSIS >		[CAN	SYSTEM (TYPE 10)]
MAIN LINE BET	WEEN AV AN	D ADP CIRCUI	Т	
Diagnosis Proced	ure			INFOID:000000005779538
1.снеск соллест	OR			
<ul> <li>Check the followir and harness side). Harness connecto Harness connecto s the inspection result</li> <li>YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the foll AV control unit Harness connecto</li> <li>Check the continuit</li> </ul>	tery cable from the r og terminals and con r M7 r B1 <u>normal?</u> terminal and connect CONTINUITY (OPE owing harness connect rs M7 and B1 ty between the AV co	tor. N CIRCUIT) ectors.		ection (connector side
-	system (Without rea		connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	86		20	Existed
M85	87	– M7	21	Existed
Without navigation	system (With rear vi	ew monitor)		
AV control unit h	arness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M204	81	- M7	20	Existed
IVIZU4	80	1/17	21	Existed
With navigation sy	stem			
AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	- M7	20	Existed
IVIZ IU	74	1717	21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M7.

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

Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity		
D4	20	22	Existed	ŀ
B1	21	23	Existed	

Is the inspection result normal?

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

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

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

### MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000005779540

[CAN SYSTEM (TYPE 10)]

### **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	
B1	20	22	Existed
Ы	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

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

### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	22 MG	M6	49	Existed
1117	23	IVIO	48	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

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

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

Harness	connector		unit (control unit) harness nector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E106	49	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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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:000000005779541

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M107	114 113		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-152, "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 10)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005885115 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779543

[CAN SYSTEM (TYPE 10)]

### 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 (Ω)
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-37, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-78, "Exploded View"</u>.

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

### **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 10)]

DTC/CIRCUIT DIAGNOSIS			[CAN SYSTEM (TYPE 10)
OLC BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:0000000057795
.CHECK CONNECTOR			
(connector side and harnes	e from the negative te onnectors of the data		ge, bend and loose connectio
the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal	and connector		
.CHECK HARNESS FOR OP			
heck the resistance between the		terminals	
neek the resistance between t			
	Data link connector		Resistance (Ω)
Connector No.		ninal No.	<b>54_00</b>
M24	6	14	Approx. 54 – 66
YES (Present error)>>Check C YES (Past error)>>Error was d	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.
YES (Present error)>>Check C YES (Past error)>>Error was d	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.
YES (Present error)>>Check C YES (Past error)>>Error was d	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.
YES (Present error)>>Check C YES (Past error)>>Error was d	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.
YES (Present error)>>Check C YES (Past error)>>Error was d	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.
the measurement value within YES (Present error)>>Check C YES (Past error)>>Error was d NO >> Repair the data link	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.
YES (Present error)>>Check C YES (Past error)>>Error was d	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.
/ES (Present error)>>Check C /ES (Past error)>>Error was d	CAN system type decis letected in the data lin	k connector branch line ci	ircuit.

Revision: 2009 November

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### < DTC/CIRCUIT DIAGNOSIS >

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779545

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Termi		
M67	56	56 72	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-50, "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-130, "Exploded View".

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

### STRG BRANCH LINE CIRCUIT

## [CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:000000005779546
1.CHECK CONNECTOR			
3. Check the terminals and (unit side and connector	cable from the negative term d connectors of the steering r side).		e, bend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
I. Disconnect the connect	or of steering angle sensor.		to unain a la
	etween the steering angle se		
Connector No.	Termin		Resistance (Ω)
M37	1	2	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply an ram - BRAKE CONTROL S the inspection result norm YES (Present error)>>Rep	<u>SYSTEM -"</u> .	steering angle sensor. R or. Refer to <u>BRC-108, "E</u>	
	er supply and the ground cir		

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## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779547

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### **2.**CHECK HARNESS FOR OPEN CIRCUIT

### 1. Disconnect the connector of AWD control unit.

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

A	AWD control unit harness connector		
Connector No.	Termi	Resistance ( $\Omega$ )	
F108	8	8 16	

### Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

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

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-27, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-55</u>, "Exploded View".

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

## **AV BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 10)]

DIC/CIRCUIT DIAGNUS	00 >		
AV BRANCH LINE (	CIRCUIT		
Diagnosis Procedure			INF0ID:00000005779548
.CHECK CONNECTOR			
	able from the negative tern d connectors of the AV cor		nd and loose connection (unit
the inspection result norm YES >> GO TO 2. NO >> Repair the termi			
CHECK HARNESS FOR			
	or of AV control unit. tween the AV control unit h em (Without rear view moni		ials.
T	AV control unit harness connector		Resistance (Ω)
Connector No. M85	Termir 86		
	oo em (With rear view monitor)	87	Approx. 54 – 66
initiout natigation by the			
	AV control unit harness connector Resistance (Ω)		Resistance (Ω)
Connector No. M204	Termir 81	80	Approx. 54 – 66
With navigation system	01	00	Αρριοχ. 54 – 66
	AV control unit harness connector		
Connector No.	Termin		Resistance (Ω)
M210	90	74	Approx. 54 – 66
the measurement value w YES >> GO TO 3. NO >> Repair the AV co CHECK POWER SUPPL	ontrol unit branch line.		
Check the power supply and Base audio without rear vie Base audio with rear view BOSE audio without navigatio BOSE audio with navigatio	ew camera: <u>AV-40, "AV CO</u> camera: <u>AV-172, "AV CON</u> ation: <u>AV-297, "AV CONTR</u>	<u>NTROL UNIT : Diagnosi TROL UNIT : Diagnosis OL UNIT : Diagnosis Pro</u>	is Procedure" Procedure" ocedure"
s the inspection result norm			_
<ul> <li>Base audio with</li> </ul>	ace the AV control unit. Re thout rear view camera: <u>AV</u> th rear view camera: <u>AV-20</u> <i>i</i> thout navigation: <u>AV-328.</u>	<u>-89, "Exploded View"</u> 1, "Exploded View"	
BOSE audio w YES (Past error)>>Error wa	ith navigation: <u>AV-477, "Ex</u>	ploded View" ol unit branch line.	

### **PSB BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

## **PSB BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000005779549

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the pre-crash seat belt control unit branch line.

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

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to <u>SBC-24, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to <u>SBC-39</u>, "Exploded View".

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

### **TCM BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 10)]

TCM BRANCH LINE			
Diagnosis Procedure			INF01D:000000005779550
1.CHECK CONNECTOR			
	cable from the negative tern ninals and connectors for c 3		nnection (unit side and con-
Is the inspection result norm			
YES >> GO TO 2. NO >> Repair the termi <b>2.</b> CHECK HARNESS FOR			
	tween the A/T assembly h	arness connector terminals	
Connector No.	· · · · · · · · · · · · · · · · · · ·	nal No.	Resistance ( $\Omega$ )
F51	3	8	Approx. 54 – 66
(Replace A/T as YES (Past error)>>Error wa	branch line. Y AND GROUND CIRCUIT I the ground circuit of the T al? ace the control valve with sembly if control valve with	TCM. Refer to <u>TM-212, "Diameters</u> TCM. Refer to <u>TM-99, "C</u> TCM is not listed in the lat unch line.	<u>Component Parts Location"</u> .

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## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779551

[CAN SYSTEM (TYPE 10)]

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-64, "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-234, "Exploded View"</u>.

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

### **ABS BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

	CIRCUIT			
Diagnosis Procedure			INFOID:000000005779552	
1.CHECK CONNECTOR				
3. Check the terminals and and loose connection (u	cable from the negative tern d connectors of the ABS ac nit side and connector side	tuator and electric unit (co	ntrol unit) for damage, bend	
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.			
1. Disconnect the connect	or of ABS actuator and elec		it) harness connector termi-	
ABS actuator a	ABS actuator and electric unit (control unit) harness connector		Resistance ( $\Omega$ )	
Connector No.	Tormin			
Connector No.	Terrini	al No.		
E41 s the measurement value w	35	nal No. 14	Approx. 54 – 66	
E41 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS <b>3.</b> CHECK POWER SUPPL Check the power supply an <u>BRC-69. "Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep	35 ithin the specification? actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . <u>al?</u>	14 control unit) branch line. ABS actuator and electric	Approx. 54 – 66	
E41 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS <b>3.</b> CHECK POWER SUPPL Check the power supply an <u>BRC-69</u> , "Diagnosis Procedu Is the inspection result norm YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error was	35 ithin the specification? actuator and electric unit (or Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . al? lace the ABS actuator and e	14 control unit) branch line. ABS actuator and electric electric unit (control unit). R	Approx. 54 – 66 e unit (control unit). Refer to Refer to <u>BRC-105, "Exploded</u>	

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### < DTC/CIRCUIT DIAGNOSIS >

## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000005779553

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

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

### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

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

ICC sensor integrated unit harness connector			Resistance ( $\Omega$ )	
Connector No.	Termi	Resistance (22)		
E67	3	3 6		

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

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

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-102, "Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-133, "Exploded View".

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

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

## [CAN SYSTEM (TYPE 10)]

#### < DTC/CIRCUIT DIAGNOSIS > IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005779554 **1.**CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side 3. С and connector side). Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT Е 1. Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance $(\Omega)$ Connector No. Terminal No. F6 40 39 Approx. 108 - 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. Н ${ m 3.}$ Check power supply and ground circuit Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-32, "Exploded View". YES (Past error)>>Error was detected in the IPDM E/R branch line. >> Repair the power supply and the ground circuit. NO Κ

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# CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000005779555

[CAN SYSTEM (TYPE 10)]

### **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 connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

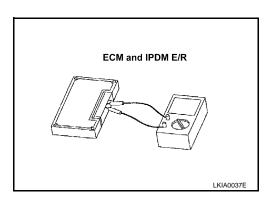
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



### LAN-250

### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 3. Disconnect one of the unit connectors of CAN communication system. NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. D Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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