SECTION LAN SYSTEM

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PRECAUTIONS

Precautions for Trouble Diagnosis

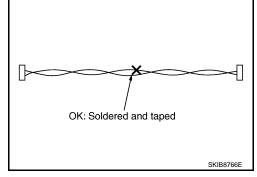
CAUTION:

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

Precautions for Harness Repair

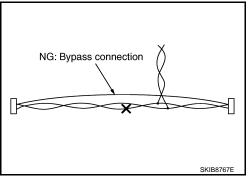
• Solder the repaired area and wrap tape around the soldered area. **NOTE:**

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



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

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



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

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INFOID:000000005622670

SYSTEM DESCRIPTION CAN COMMUNICATION SYSTEM

System Description

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INFOID:000000005622672

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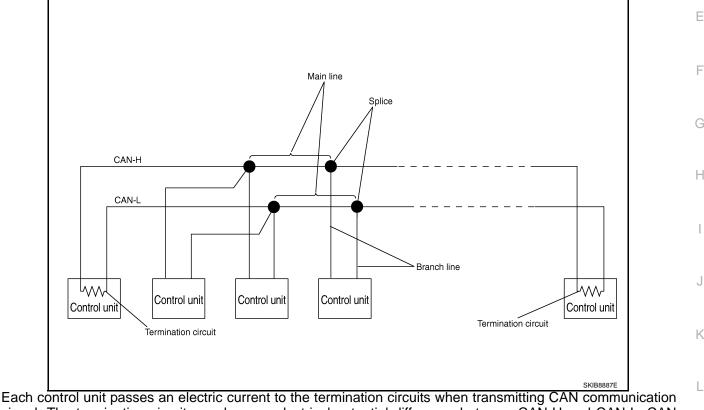
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- CAN communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network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

System Diagram



signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

Component	Description	
Main line	CAN communication line between splices	
Branch line	CAN communication line between splice and a control unit	
Splice	A point connecting a branch line with a main line	
Termination circuit	Refer to LAN-10, "CAN Communication Control Circuit".	(

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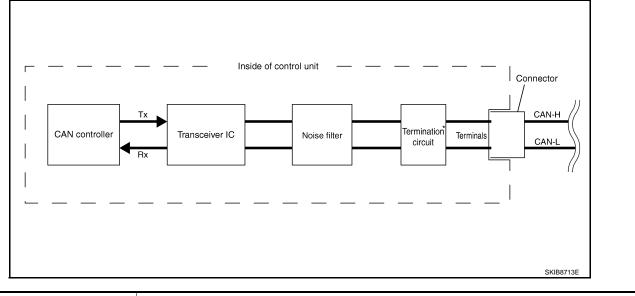
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< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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CAN Communication Control Circuit



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

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

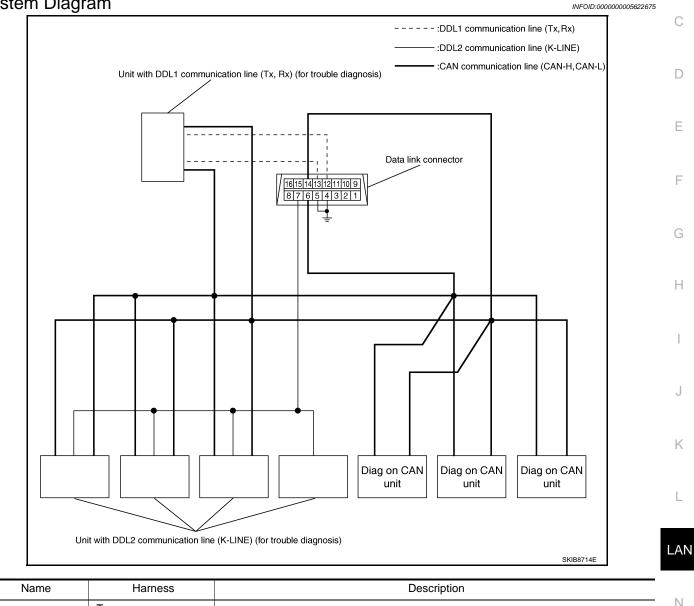
< SYSTEM DESCRIPTION >

DIAG ON CAN

Description

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

System Diagram



Name	Harness	Description	
DDL1	Tx Rx	It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling)	Ν
DDL2	K-LINE	It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling)	
Diag on CAN	CAN-H CAN-L	It is used for trouble diagnosis and control.	0

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Condition of Error Detection

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DTC 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. **NOTE:**

- DTCs of CAN communication are as follows:
- U0101
- U0140
- U0164
- U1000
- U1001

CAN COMMUNICATION SYSTEM ERROR

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

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

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

CAUTION:

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

Symptom When Error Occurs in CAN Communication System

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

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to <u>LAN-24</u>, "Abbreviation List" for the unit abbreviation.

< SYSTEM DESCRIPTION >

Example: TCM branch line open circuit

А В D Ε ECM BCM DLC EPS M&A ABS TCM IPDM-E F SKIB8738E 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. Н • Shift position indicator and OD OFF indicator turn OFF. Combination meter • Warning lamps turn ON. ABS actuator and electric unit (control unit) Normal operation. TCM No impact on operation. IPDM E/R Normal operation. Example: Data link connector branch line open circuit J Κ L LAN Ν EPS TCM IPDM-E ECM BCM DLC M&A ABS

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SKIB8739E

< SYSTEM DESCRIPTION >

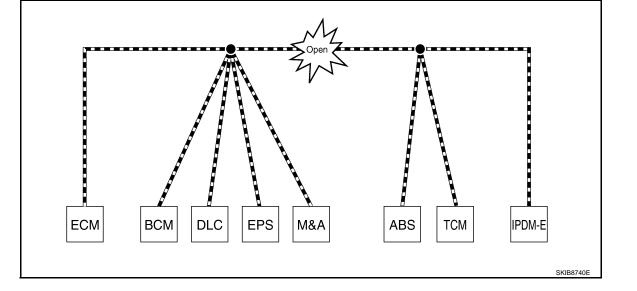
Unit name	Symptom
ECM	
BCM	
EPS control unit	
Combination meter	Normal operation.
ABS actuator and electric unit (control unit)	
ТСМ	
IPDM E/R	

NOTE:

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

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

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

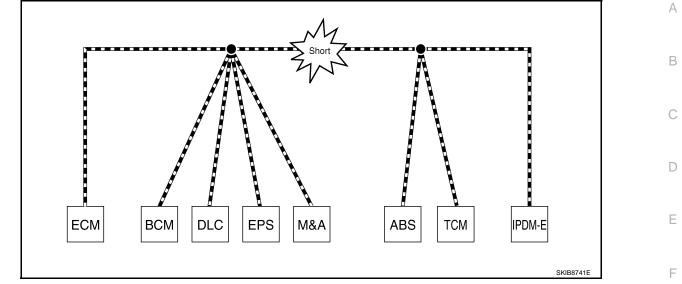


Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	 Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.
EPS control unit	The steering effort increases.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

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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



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

CAN Diagnosis with CONSULT-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

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< SYSTEM DESCRIPTION >

Self-Diagnosis

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[CAN FUNDAMENTAL]

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

CAN Diagnostic Support Monitor

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MONITOR ITEM (CONSULT-III)

Withou	t PAST		With	PAST	
EC	М		EC	M	
	PRSNT	PAST		PRSNT	PAST
INITIAL DIAG	OK		TRANSMIT DIAG	¦OK	OK
TRANSMIT DIAG	OK	 	VDC/TCS/ABS	[-]-
ТСМ	OK		METER/M&A	¦OK	OK
VDC/TCS/ABS	UNKWN	1	BCM/SEC	OK	OK
METER/M&A	¦ OK	1	ICC	-	-
ICC	UNKWN		HVAC		
BCM/SEC	OK	1	ТСМ	l OK	OK
IPDM E/R	OK	1	EPS	[-]
			IPDM E/R	LOK	OK
			e4WD	-]
			AWD/4WD	OK	OK

Without PAST

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

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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Item	PRSNT	Description	
Transmission diagnosis	OK	Normal at present	A
	UNKWN	Unable to transmit signals for 2 seconds or more.	
		Diagnosis not performed	В
	ОК	Normal at present	
Control unit name (Reception diagnosis)		Unable to receive signals for 2 seconds or more.	
	UNKWN	Diagnosis not performed	С
		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.)
	OK OK ansmission diagnosis OK UNKWN 0 UNKWN 0 OK 1 – 39 OK 1 – 39 OK 1 – 39	Unable to transmit signals for 2 seconds or more at present.	
		OK	Normal at present and in the past
ransmission diagnosis OK UNKWN OK Control unit name Reception diagnosis)	ОК	1 – 39	Normal at present, but unable to receive signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	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

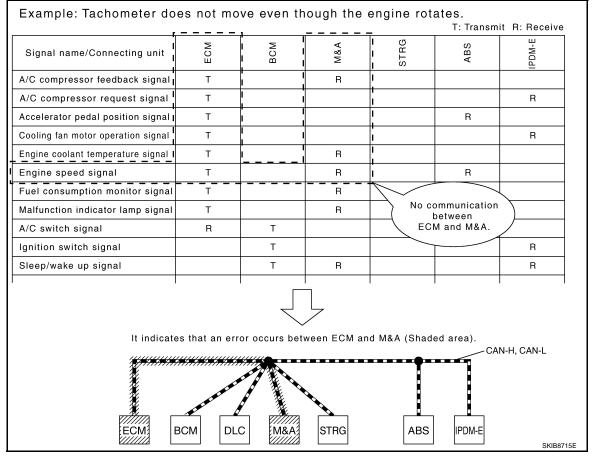
Item	Result indi- cated	Error counter	Description						
	OK	0	Normal at present						
CAN_COMM (Initial diagnosis)	NG	1 – 50	Control unit error (The number indicates how many times diagnosis has been run.)						
	ОК	0	Normal at present						
CAN_CIRC_1 (Transmission diagnosis)	UNKWN	1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has bee run.)						
	ОК	0	Normal at present						
CAN_CIRC_2 – 9		4 50	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 optional parts)						

< SYSTEM DESCRIPTION >

How to Use CAN Communication Signal Chart

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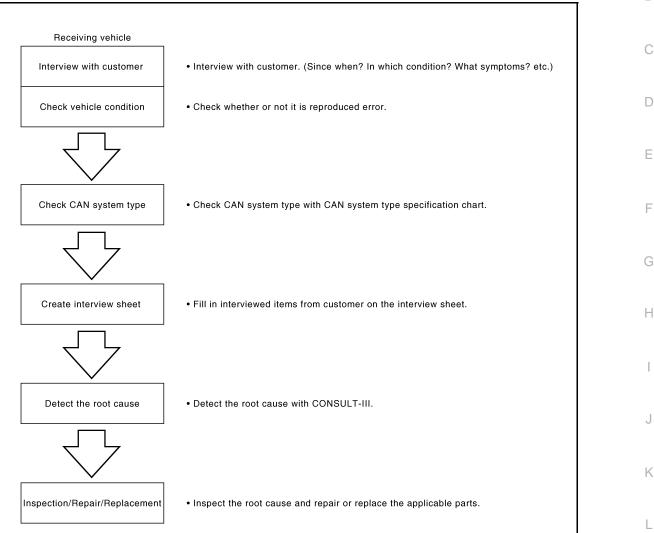
The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



< BASIC INSPECTION >

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart



Trouble Diagnosis Procedure

INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

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

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[CAN FUNDAMENTAL]

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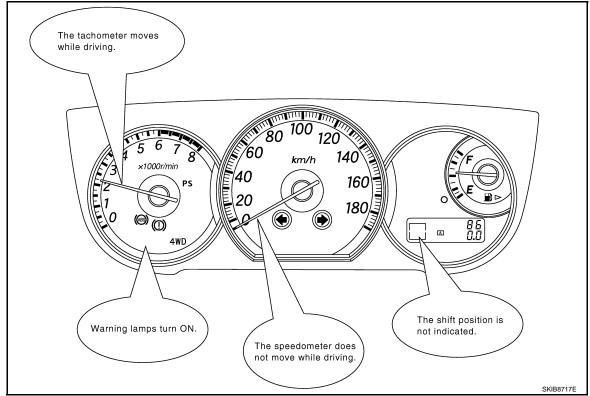
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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

CHECK OF CAN SYSTEM TYPE (HOW TO USE CAN SYSTEM TYPE SPECIFICATION CHART) Determine CAN system type based on vehicle equipment.

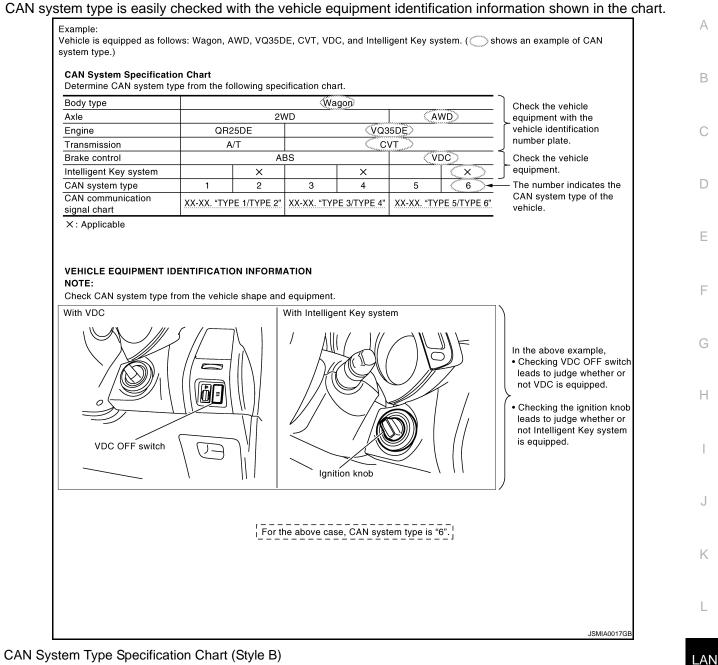
NOTE:

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

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

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



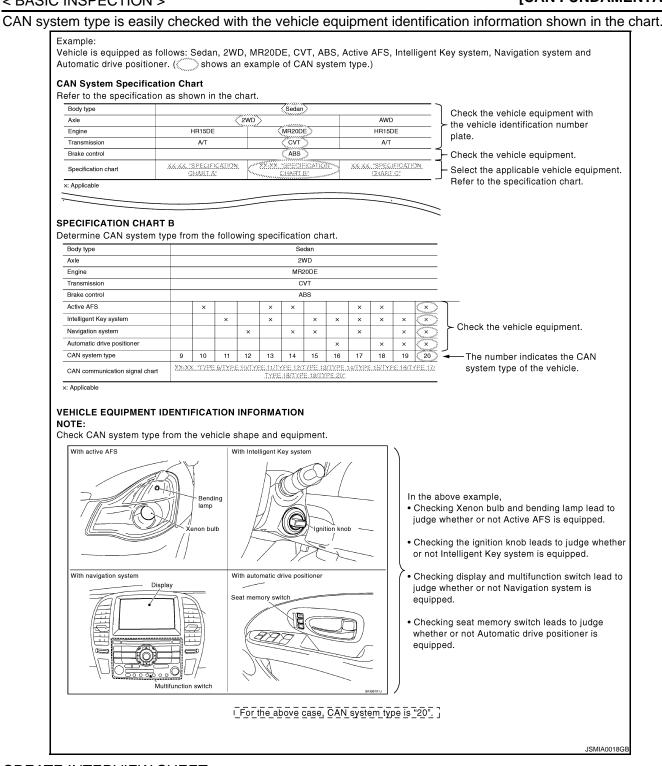
em Type Specification Chart (St

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NOTE:

< BASIC INSPECTION >



CREATE INTERVIEW SHEET

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

[CAN FUNDAMENTAL]

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

DETECT THE ROOT CAUSE

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

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HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

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

• For trouble diagnosis procedure, refer to LAN-19, "Trouble Diagnosis Procedure".

Abbreviation List

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

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.

Precautions for Trouble Diagnosis

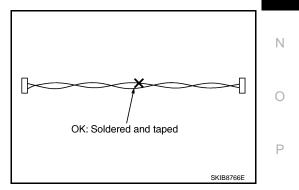
CAUTION:

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

Precautions for Harness Repair

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

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



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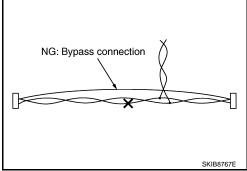
PRECAUTIONS

< PRECAUTION >

[CAN]

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

spliced wire becomes separated and the characteristics of twisted line are lost.



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

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

Type: Type: VIN No.: Model: Model: First registration: Mileage: CAN system type: Symptom (Results from interview with customer) Condition at inspection Error symptom : Present / Past	ew Sheet	INFOID:000000005622689	E
Type: VIN No: Model: First registration: Mileage: CAN system type: Symptom (Results from interview with customer) Condition at inspection Error symptom : Present / Past	CAN Communication System Diagnosis Interview Sheet		
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SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

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Determine CAN system type from the following specification chart.

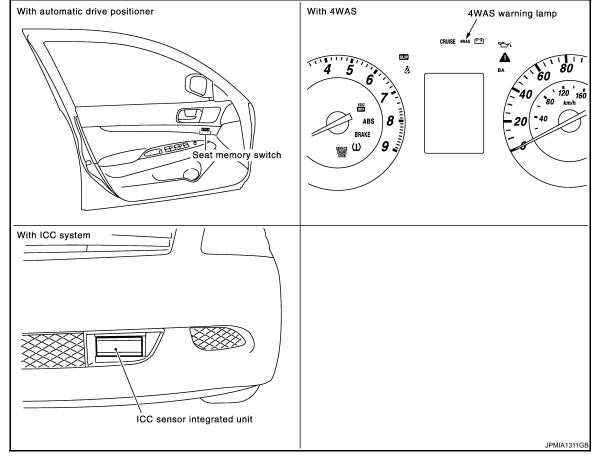
NOTE: Refer to <u>LAN-19</u>, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type		Sedan												
Axle			AWD											
Engine		VQ37VHR												
Transmission		N	1/T		A/T									
Brake control		VDC												
Automatic drive positioner	×	×	×	×		×	×	×	×		×	×		
4WAS		×		×			×		×					
ICC system			×	×				×	×			×		
CAN system type	1	3	4	5	6	7	8	9	10	11	12	13		

 \times : Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION NOTE:

Check CAN system type from the vehicle shape and equipment.



CAN Communication Signal Chart

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Refer to <u>LAN-18</u>, "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart.

< SYSTEM DESCRIPTION >

NOTE:

Refer to <u>LAN-24, "Abbreviation List"</u> for the abbreviations of the connecting units.

T: Transmit R: Receive щ STRG ECM 4WD TCM RAS BCM IPDM-PSB M&A ADP ABS <u>0</u> Signal name/Connecting unit ¥ т R A/C compressor request signal т R Accelerator pedal position signal R R R т R ASCD OD cancel request signal ASCD operation signal Т R Т ASCD status signal R ASCD SET indicator signal Т R Е Closed throttle position signal т R R Cooling fan speed request signal Т R Т R Engine and A/T integrated control signal Т R Engine coolant temperature signal Т R Т R R R R R R Engine speed signal Т R Engine status signal R Fuel consumption monitor signal Т R R Н ICC brake switch signal Т R Т R ICC prohibition signal Т ICC steering switch signal R т R Malfunctioning indicator lamp signal т Park/neutral position switch signal^{*1} R Power generation command value signal Т R Т R R Snow mode switch signal R Т Κ т R R R Stop lamp switch signal Т Т R Wide open throttle position signal Т R Т R AWD signal LAN AWD warning lamp signal Т R т R A/C switch/indicator signal Ν Т R т R A/C switch operation signal т R Rear window defogger switch signal Т R System setting signal R т Voice recognition signal^{*2} Т R Т R Buzzer output signal Т R Т R R R Door switch signal Door unlock signal т R т R R Front fog light request signal

Revision: 2009 November

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BCM

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PSB

TCM

ECM

4WD

STRG

ADP

RAS

ABS

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< SYSTEM DESCRIPTION >

Signal name/Connecting unit

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IPDM-E

< SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	4WD	AV	BCM	PSB	TCM	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E	A
Fuel level low warning signal			R				Т							_
Fuel level sensor signal	R						Т							В
Manual mode shift down signal						R	Т							
Manual mode shift up signal						R	Т							С
Manual mode signal						R	Т							
Non-manual mode signal						R	Т							
Odometer signal				R			Т							D
Paddle shifter shift down signal ^{*4}						R	Т							
Paddle shifter shift up signal ^{*4}						R	Т							Е
Parking brake switch signal		R		R			Т							
Seat belt buckle switch signal				R			Т							_
Sleep-ready signal				R			Т							F
	-		<u> </u>	R	<u> </u>	<u> </u>	_						Т	
Target A/C evaporator temperature signal	R		<u> </u>	<u> </u>	<u> </u>		Т							G
Vehicle speed signal	R	_	R	R	R	R	Т		R	-	-	_	R	
Welcour signal		R		R	<u> </u>		R			R	Т	R		Н
Wake up signal				R			Т			6				
Steering angle sensor signal			R					Т		R	R			
4WAS signal					<u> </u>					T	R			
4WAS warning lamp signal					<u> </u>		R			Т	-			
A/T shift schedule change demand signal						R					T			1
ABS malfunction signal					<u> </u>						T	R		J
ABS operation signal						R					T	R		
ABS warning lamp signal							R				T			K
Brake pressure control signal							_				T	R		
Brake warning lamp signal							R				T			
Side G sensor signal						R					T			L
SLIP indicator lamp signal			-				R				Т			
TCS gear keep request signal						R					Т			LAN
TCS malfunction signal											T	R		
TCS operation signal											Т	R		
VDC malfunction signal						R					T	R		Ν
VDC OFF indicator lamp signal					<u> </u>		R				T			
VDC OFF switch signal				<u> </u>	<u> </u>						Т	R		0
VDC operation signal				<u> </u>	<u> </u>						Т	R		<u> </u>
Deceleration degree commandment value signal											R	Т		D
ICC operation signal	R											Т		Г
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	1	1	1	1	1	1						Т	

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< SYSTEM DESCRIPTION >

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Signal name/Connecting unit	ECM	4WD	AV	BCM	PSB	тсм	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E
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

*1: M/T models only

*2: Models with navigation system

*3: Receive reverse position signal only

*4: Models with paddle shifter

NOTE:

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

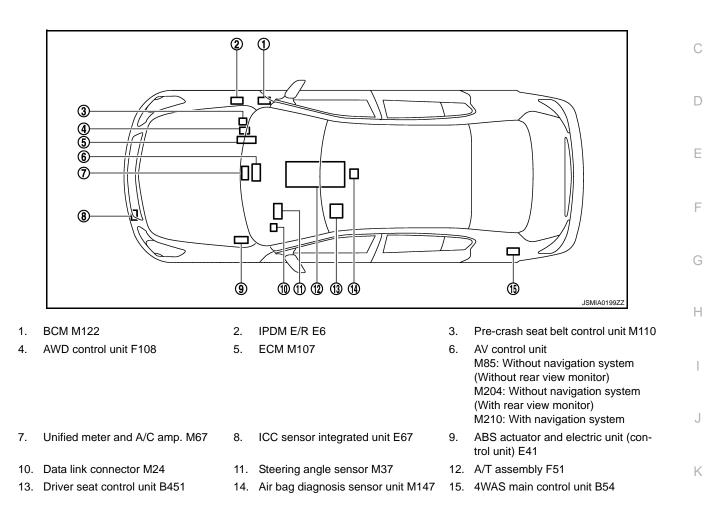
DTC/CIRCUIT DIAGNOSIS CAN COMMUNICATION SYSTEM

Component Parts Location

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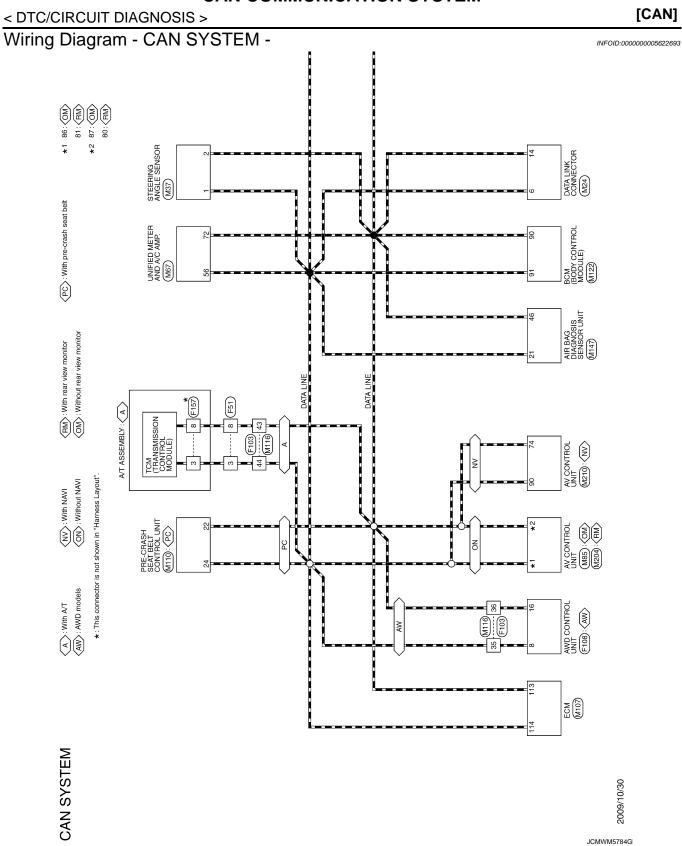


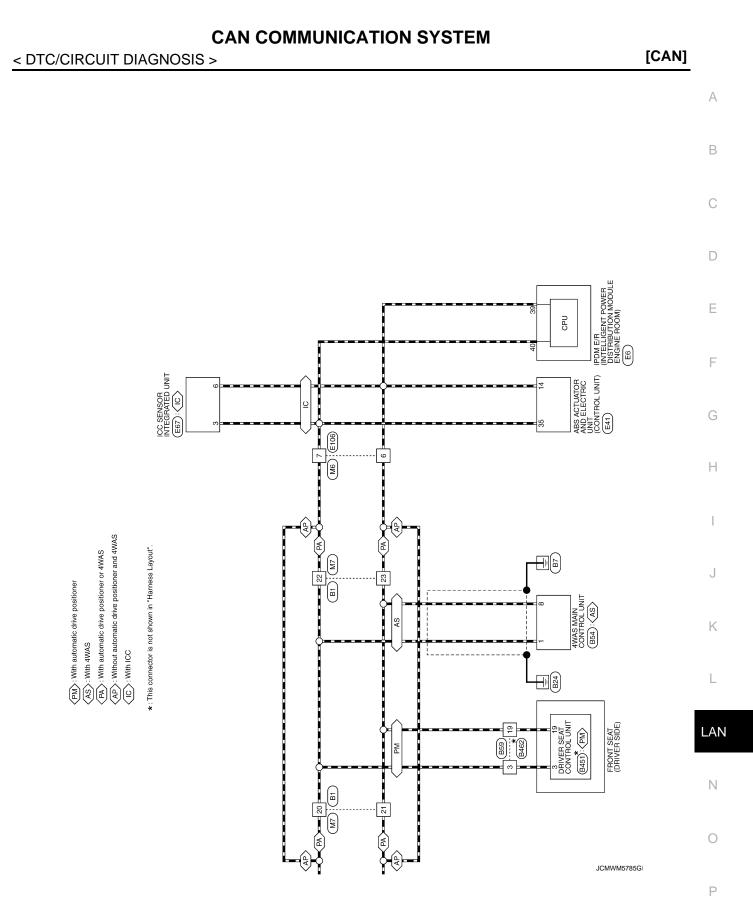
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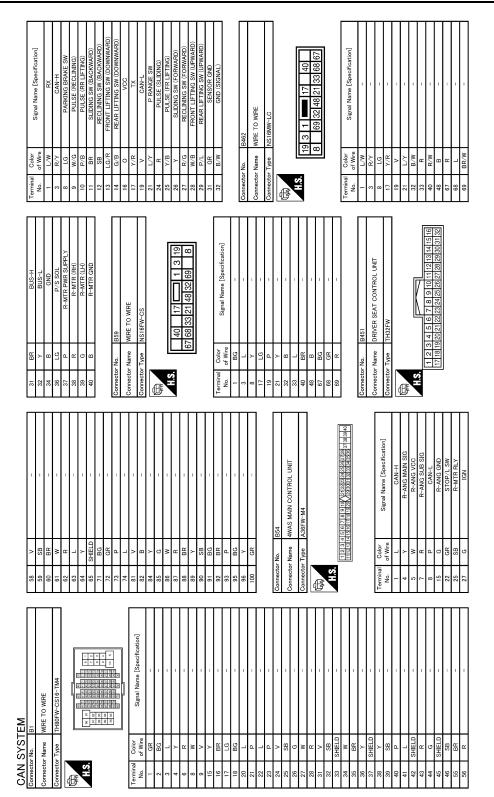
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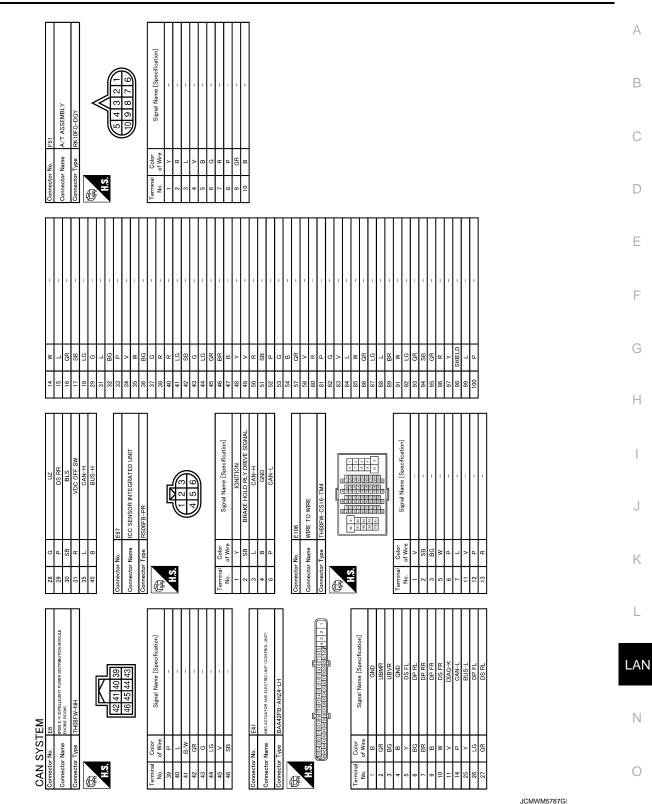
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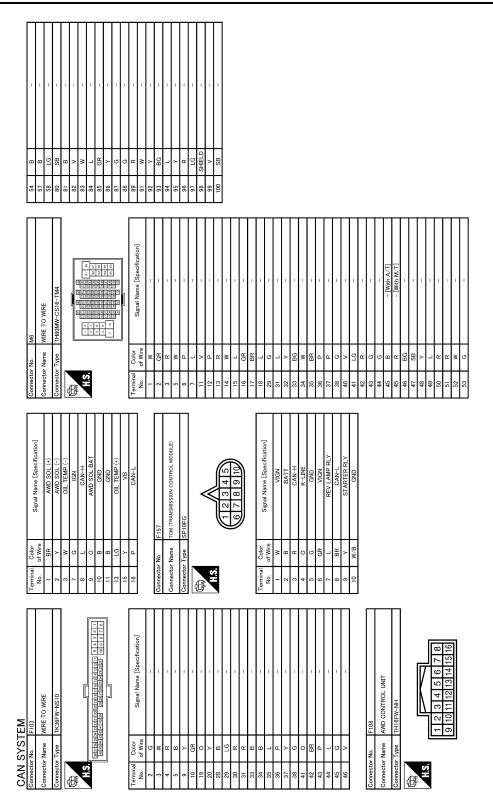
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80 79 78 77 76 Signal Name [Specification] GND CAN-I CAN-I COMN 85 84 83 82 1 SW 0 AV CONTROL UNIT INBIENT 91 90 89 88 87 86 8 107 106 105 104 103 103 M85 Color of Wire a R B C Connector Name жĤ SB SB പപ R : nnector No. be. H.S. erminal No. - 2 86 E ပိ Signal Name [Specification] Signal Name [Specification] UNIFIED METER AND A/C AMP. STEERING ANGLE SENSOR CAN-L GND 5 / ო 48 49 64 65 ν4 BRAKE Ť -41 42 43 44 45 57 58 59 60 61 M67 Color of Wire Color of Wire œ Connector Name Connector No. - HS Connector Name ~ Γ임 꿈 니 ≥ 8 ٢ 16 H.S. Terminal No. Ferminal No. H.S. 8 2 2 43 45 47 Œ Æ Signal Name [Specification] 9 10 11 12 13 14 15 16 1 2 3 4 5 6 7 8 DATA LINK CONNECTOR M24 Color of Wire , 명. nnector No. Connector Name 비망 > ≥ 8 8 G ۳ ß BG ۳ ۳ BG ۳*۳* . HS. Terminal No. 8 8 Signal Name [Specification] LAN
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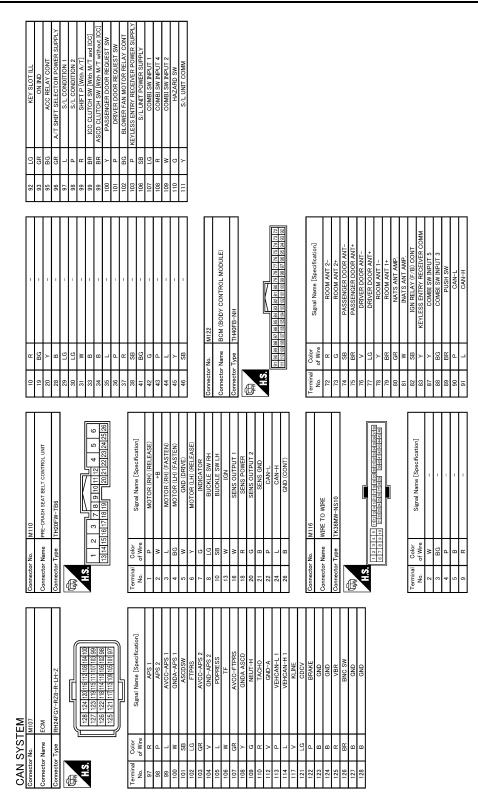
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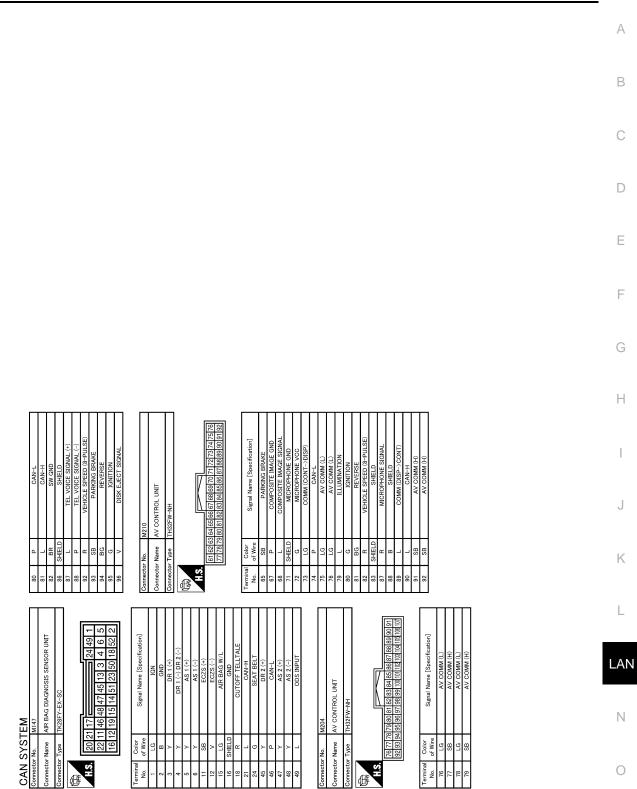
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MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

MALFUNCTION AREA CHART

Main Line

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Malfunction area	Reference
Main line between AV control unit and data link connector	LAN-43, "Diagnosis Procedure"
Main line between data link connector and ABS actuator and electric unit (control unit)	LAN-44, "Diagnosis Procedure"
Main line between data link connector and driver seat control unit	LAN-45. "Diagnosis Procedure"
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-46. "Diagnosis Procedure"
Main line between driver seat control unit and 4WAS main control unit	LAN-48, "Diagnosis Procedure"
Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)	LAN-49, "Diagnosis Procedure"

Branch Line

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Malfunction area	Reference
ECM branch line circuit	LAN-51, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-52, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-53, "Diagnosis Procedure"
Pre-crash seat belt control unit branch line circuit	LAN-54, "Diagnosis Procedure"
TCM branch line circuit	LAN-55, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-56, "Diagnosis Procedure"
BCM branch line circuit	LAN-57, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-58, "Diagnosis Procedure"
Unified meter and A/C amp. branch line circuit	LAN-59. "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-60, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-61, "Diagnosis Procedure"
4WAS main control unit branch line circuit	LAN-62, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-63. "Diagnosis Procedure"
ICC sensor integrated unit branch line circuit	LAN-64, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-65, "Diagnosis Procedure"

Short Circuit

Malfunction area	Reference
CAN communication circuit	LAN-66, "Diagnosis Procedure"

MAIN LINE BETWEEN AV AND DLC CIRCUIT	< DTC/CIRCUIT DIA		TWEEN AV AND	DLC CIRCUIT	[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 AV control unit harness connector and the data link connector. • With navigation system All control unit harness connector Data link connector Connector No. Terminal No. Connector No. Terminal No. Connector No. Terminal No. M210 74 M210 14 Existed 6 M204 81 M204 81 M204 81 M204 86			D DLC CIRCUI	Г	
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1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect the following harness connectors. ECM AV control unit 4. Check the continuity between the AV control unit harness connector and the data link connector. With navigation system AV control unit harness connector Data link connector AV control unit harness connector Data link connector Connector No. Terminal No. M210 90 AV control unit harness connector Data link connector Connector No. Terminal No. Connector No. Terminal No. M204 81 M204 81 M204 81 M204 6 Existed Without navigation system (Without rear view monitor) AV control unit harness connec	1.CHECK HARNESS		N CIRCUIT)		
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	AV control unit h	arness connector	Data link	connector	Continuity
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$\begin{tabular}{ c c c c c } \hline Connector No. & Terminal No. & Connector No. & Terminal No. & Existed & & & & & & & & & & & & & & & & & & &$	AV control unit h	arness connector	Data link	connector	0
M204 M24 14 Existed Without navigation system (Without rear view monitor) AV control unit harness connector Data link connector Continuity AV control unit harness connector Data link connector Continuity M85 86 M24 6 Existed M85 86 M24 14 Existed the inspection result normal? 6 Existed Existed (FS (Present error)>>Check CAN system type decision again. (FS (Past error)>>Error was detected in the main line between the AV control unit and the data link conructor.	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
8014ExistedWithout navigation system (Without rear view monitor)AV control unit harness connectorData link connectorContinuityAV control unit harness connectorData link connectorContinuityConnector No.Terminal No.Connector No.Terminal No.M8586M246ExistedM858714Existedthe inspection result normal?Kes (Present error)>>Check CAN system type decision again.Control unit and the data link conrector tor.	N004	81	N04	6	Existed
AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. M85 86 M24 6 Existed M85 87 14 Existed the inspection result normal? 'ES (Present error)>>Check CAN system type decision again. 'ES (Past error)>>Error was detected in the main line between the AV control unit and the data link conr tor.	M204	80	M24	14	Existed
Connector No.Terminal No.Connector No.Terminal No.M8586M246Existed8714Existedthe inspection result normal? ('ES (Present error)>>Check CAN system type decision again. ('ES (Past error)>>Error was detected in the main line between the AV control unit and the data link conr tor.	Without navigation	n system (Without rea	r view monitor)		
Connector No. Terminal No. Connector No. Terminal No. M85 86 M24 6 Existed 14 Existed 14 Existed (Fes (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the AV control unit and the data link conr tor.	AV control unit h	arness connector	Data link	connector	
M85 M24 the inspection result normal? 'ES (Present error)>>Check CAN system type decision again. 'ES (Past error)>>Error was detected in the main line between the AV control unit and the data link conr tor.	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
87 14 Existed the inspection result normal? 'ES (Present error)>>Check CAN system type decision again. 'ES (Past error)>>Error was detected in the main line between the AV control unit and the data link conructor.		86		6	Existed
 'ES (Present error)>>Check CAN system type decision again. 'ES (Past error)>>Error was detected in the main line between the AV control unit and the data link conr tor. 	M85	87	M24	14	Existed
	/ES (Present error)> /ES (Past error)>>E tor.	>Check CAN system rror was detected in the system	ne main line between t		
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MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005622698

[CAN]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

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

Data link	Data link connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M6	7	Existed
10124	14		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	- E41	35	Existed
E106	6		14	Existed

Is the inspection result normal?

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

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

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

Diagnosis Proced	ure			INFOID:00000000562269
1.CHECK CONNECT	OR			
 Check the followin and harness side). Harness connector Harness connector sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	tery cable from the neig terminals and conr M7 B1 normal? terminal and connect	or. I CIRCUIT)	bend and loose conn	ection (connector side
	ty between the data li		e harness connector.	
Data link			s connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
M24	6	M7	20	Existed
the inspection result	14		21	Existed
CHECK HARNESS	CONTINUITY (OPEN etween the harness co	I CIRCUIT)	r and the harness conr	Continuity Existed
B1	21		23	Existed
B1 s the inspection result	<u>normal?</u> >Check CAN system t			tor and the driver sea

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005779060

[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.	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.

${ m 3.check}$ 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	7	Existed
1717	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector			ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
E106	6		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:000000005622701

[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
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 4WAS main control unit and the driver seat control unit.

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

	GNOSIS >			[CAN]
MAIN LINE BET	TWEEN RAS A	ND ABS CIR	CUIT	
Diagnosis Procec	ure			INFOID:00000000562270
1.CHECK CONNECT	OR			
 Check the following and harness side) Harness connectore <l< td=""><td>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</td><td>nectors for damag tor. N CIRCUIT) and M7.</td><td></td><td>nnection (connector side</td></l<>	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	nectors for damag tor. N CIRCUIT) and M7.		nnection (connector side
Connector No.		Terminal No.	nais.	Continuity
	20		22	Existed
B1	21		23	Existed
3. CHECK HARNESS		N CIRCUIT) and E106.	rol unit and the harnes	s connector B1.
		ess connectors.		
Harness	connector		ess connector	Continuity
Harness Connector No.	connector Terminal No.		Terminal No.	
		Harne		Continuity Existed Existed
Connector No. M7 Sthe inspection result YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the co 2. Check the continu harness connecto	Terminal No. 22 23 t normal? e main line between th cONTINUITY (OPEI nnector of ABS actua ity between the harne r.	Harne Connector No. M6 he harness connect N CIRCUIT) tor and electric unit	Terminal No. 7 6 or M7 and M6.	Existed Existed
Connector No. M7 Sthe inspection result YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the co 2. Check the continu harness connecto	Terminal No. 22 23 t normal? e main line between th cONTINUITY (OPE) nnector of ABS actua ity between the harne	Harne Connector No. M6 he harness connect N CIRCUIT) tor and electric unit ess connector and	Terminal No. 7 6 or M7 and M6. c (control unit). the ABS actuator and	Existed

Is the inspection result normal?

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

6

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	S >		[CAN]
ECM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000005622704
1. CHECK CONNECTOR			
connector side).	able from the negative to connectors of the ECN	erminal. I for damage, bend and loos	se connection (unit side and
Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin			
2.CHECK HARNESS FOR			
 Disconnect the connecto Check the resistance bet 		connector terminals.	
	ECM harness connector		Desistance (O)
Connector No.	Ter	minal No.	Resistance (Ω)
M107	114	113	Approx. 108 – 132
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 normal	branch line. AND GROUND CIRCU the ground circuit of the		ignosis Procedure".
YES (Present error)>>Repla <u>CONTROL UNIT</u> YES (Past error)>>Error wa	ace the ECM. Refer to	branch line.	RVICE WHEN REPLACING

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005622705

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- 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 (Ω)
Connector No.	Terminal No.		Resistance (12)
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</u>, "Exploded View".

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

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

AV BRANCH LINE CIRCUIT

COTC/CIRCUIT DIAGNOSIS	>		[CAN]
AV BRANCH LINE CI	RCUIT		
agnosis Procedure			INFOID:000000005622707
.CHECK CONNECTOR			
side and connector side). the inspection result normal?	e from the negative te		nd and loose connection (unit
YES >> GO TO 2. NO >> Repair the terminal	and connector.		
.CHECK HARNESS FOR OF			
Disconnect the connector of Check the resistance betwee Models with navigation system	en the AV control uni	t harness connector termina	als.
	ontrol unit harness connec		Resistance (Ω)
Connector No.		minal No.	
M210	90	74	Approx. 54 – 66
Models without navigation s	system (With rear view	w monitor)	
AV c	ontrol unit harness connec	ctor	Besistance (O)
Connector No.	Terr	minal No.	Resistance (Ω)
M204	81	80	Approx. 54 – 66
Models without navigation s	system (Without rear v	view monitor)	
AV c	ontrol unit harness connec	ctor	
Connector No.		minal No.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
the measurement value within	n the specification?		
YES >> GO TO 3. NO >> Repair the AV conti	ol unit branch line.		
.CHECK POWER SUPPLY A	ND GROUND CIRCU	ЛТ	
heck the power supply and the			e following.
Base audio without rear view Base audio with rear view mo			
BOSE audio without navigation	n: <u>AV-297, "AV CON</u> T	<u> FROL UNIT : Diagnosis Pro</u>	<u>cedure"</u>
the inspection result normal?		· · · · · ·	
YES (Present error)>>Replace			
		AV-90, "Exploded View" 202, "Exploded View"	
 BOSE audio with 	out navigation: AV-328	8. "Exploded View"	
	navigation: AV-474, "	Exploded View"	

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

$\mathbf{3}$. 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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >			[CAN]
TCM BRANCH LINE CIF	CUIT		
Diagnosis Procedure			INFOID:000000005622710
1.CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable from the following terminals an ector side). A/T assembly Harness connector F103 Harness connector M116 			onnection (unit side and con-
<u>Is the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and	l connector.		
2. Check harness for open	CIRCUIT		
 Disconnect the connector of A/ Check the resistance between A/T asse 		ess connector terminal	s.
Connector No.	Terminal N	0.	Resistance (Ω)
F51	3	8	Approx. 54 – 66
Is the measurement value within the YES >> GO TO 3. NO >> Repair the TCM branch 3. CHECK POWER SUPPLY AND Check the power supply and the gr Is the inspection result normal? YES (Present error)>>Replace the (Replace A/T assembly YES (Past error)>>Error was dete NO >> Repair the power supp	n line. GROUND CIRCUIT ound circuit of the TCM e control valve with TC r if control valve with TC cted in the TCM branch	CM. Refer to <u>TM-99. "</u> CM is not listed in the la line.	Component Parts Location".

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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 main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
BCM BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:000000005622708
1.CHECK CONNECTOR			
	able from the negative tern		se connection (unit side and
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi			
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of BCM. etween the BCM harness co BCM harness connector	onnector terminals.	
Connector No.	Termin	al No	Resistance (Ω)
M122	91	90	Approx. 54 – 66
Is the measurement value w	ithin the specification?		
YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL			
Check the power supply and	I the ground circuit of the B	CM. Refer to <u>BCS-37, "Dia</u>	agnosis Procedure".
Is the inspection result norm	<u>al?</u>		
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe		nch line.	

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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			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

[CAN]

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > [CAI	
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M&A BRANCH LINE CIRCUIT	
Diagnosis Procedure	713
	//0
1.CHECK CONNECTOR	
1. Turn the ignition switch OFF.	
 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. for damage, bend and loose content of the unified meter and A/C amp. 	n-
nection (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	
 Disconnect the connector of unified meter and A/C amp. Check the resistance between the unified meter and A/C amp. harness connector terminals. 	
2. Oneck the resistance between the unined meter and Aro amp. namess connector terminals.	
Unified meter and A/C amp. harness connector Resistance (Ω)	-
Connector No. Terminal No.	_
M67 56 72 Approx. 54 – 66	
Is the measurement value within the specification?	
YES >> GO TO 3. NO >> Repair the unified meter and A/C amp. branch line.	
3. CHECK POWER SUPPLY AND GROUND CIRCUIT	
	_
Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-51, "UNIFIE</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u> .	D
<u>Is the inspection result normal?</u>	
YES (Present error)>>Replace the unified meter and A/C amp. Refer to <u>MWI-136</u> , "Exploded View".	
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.	
NO >> Repair the power supply and the ground circuit.	

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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.

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-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-110, "Exploded View"</u>.

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

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

[CAN]

ADP BRANCH LINE CIRCUIT

ADP BRANCH LINE CIRCUIT				
Diagnosis Procedure ************************************	< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). - Driver seat control unit - Harness connector B462 - Harness connector B59 Is the inspection result normal? YES 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 (Ω) YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>>Replace the driver seat control unit. Refer to <u>ADP-65, "Exploded View".</u> YES (Preat error)>>>Replace the driver seat control</u>	ADP BRANCH LINE (CIRCUIT		
1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). - Driver seat control unit - Harness connector B462 - Harness connector B59 Is the inspection result normal? YES YES > GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of driver seat control unit. 2. Check the resistance between the driver seat control unit harness connector terminals. Driver seat control unit harness connector terminals. Connector No. Terminal No. Resistance (Ω) Generative resistance between the driver seat control unit harness connector terminals. YES > GO TO 3. NO >> Repair the driver seat control unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".</u> Is the inspection result normal? YES (Present error)>>>Replace the driver seat control unit. Ref	Diagnosis Procedure			INFOID:00000005622716
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). - Driver seat control unit - Harness connector B462 - Harness connector B59 Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of driver seat control unit. 2. Check the resistance between the driver seat control unit harness connector terminals. Driver seat control unit hamess connector Resistance (Ω) Connector No. Terminal No. B451 3 19 Approx. 54 - 66 Is the measurement value within the specification? YES 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 ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to ADP-228, "Exploded Vi				
 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). Driver seat control unit Harness connector B462 Harness connector B59 Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of driver seat control unit harness connector terminals. 2. Check the resistance between the driver seat control unit harness connector terminals. 2. Driver seat control unit harness connector Connector No. Driver seat control unit harness connector Resistance (Ω) B451 3 19 Approx.54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to ADP-228, "Exploded View". YES (Present error)>>Error was detected in the driver seat control unit branch line. 				
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) 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 ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to ADP-228, "Exploded View". YES (Past error)>>Error was detected in the driver seat control unit branch line.	 Disconnect the battery cab Check the following termina nector side). Driver seat control unit 	le from the negative term		nnection (unit side and con-
$\begin{array}{llllllllllllllllllllllllllllllllllll$				
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) B451 3 B451 3 B451 3 YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".</u> Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228, "Exploded View".</u> YES (Past error)>>Error was detected in the driver seat control unit branch line.	· · · · · · · · · · · · · · · · · · ·	,		
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.		and connector.		
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) B451 3 B451 3 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 ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to ADP-228, "Exploded View". YES (Past error)>>Error was detected in the driver seat control unit branch line.	•			
Connector No. Terminal No. B451 3 19 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to ADP-228, "Exploded View". YES (Past error)>>Error was detected in the driver seat control unit branch line.	2. Check the resistance betwee	een the driver seat contro	ol unit harness connector te	erminals.
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65</u> , " <u>DRIVER SEAT</u> <u>CONTROL UNIT</u> : <u>Diagnosis Procedure</u> ". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228</u> , " <u>Exploded View</u> ". YES (Past error)>>Error was detected in the driver seat control unit branch line.	Connector No.			Resistance (Ω)
YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"</u> . Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228, "Exploded View"</u> . YES (Past error)>>Error was detected in the driver seat control unit branch line.	B451	3	19	Approx. 54 – 66
NO >> Repair the driver seat control unit branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"</u> . Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228, "Exploded View"</u> . YES (Past error)>>Error was detected in the driver seat control unit branch line.	Is the measurement value within	n the specification?		
Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65</u> , "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u> . Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228</u> , "Exploded View". YES (Past error)>>Error was detected in the driver seat control unit branch line.		eat control unit branch lin	ie.	
<u>CONTROL UNIT : Diagnosis Procedure"</u> . <u>Is the inspection result normal?</u> YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228</u> , " <u>Exploded View</u> ". YES (Past error)>>Error was detected in the driver seat control unit branch line.	3. CHECK POWER SUPPLY A	ND GROUND CIRCUIT		
YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228, "Exploded View"</u> . YES (Past error)>>Error was detected in the driver seat control unit branch line.			ver seat control unit. Refer	to ADP-65, "DRIVER SEAT
YES (Past error)>>Error was detected in the driver seat control unit branch line.	Is the inspection result normal?			
	YES (Past error)>>Error was	detected in the driver sea	at control unit branch line.	<u>kploded View"</u> .

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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 (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-185, "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

< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	ABS actuator	and electric unit (control unit) har	ness connector	Resistance (Ω)	_
(Connector No.	Termi	nal 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-107</u>, "Exploded <u>View"</u>.

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

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

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ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-134, "Exploded View".

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

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

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	\$>		[CAN]
IPDM-E BRANCH LI	VE CIRCUIT		
Diagnosis Procedure			INFOID:00000005622719
1. CHECK CONNECTOR			
	ble from the negative termi		nd loose connection (unit side
Is the inspection result normal	<u>?</u>		
YES >> GO TO 2. NO >> Repair the termina	al and connector.		
2.CHECK HARNESS FOR O			
 Disconnect the connector Check the resistance betw 	of IPDM E/R. veen the IPDM E/R harnes	s connector terminals.	
I	PDM E/R harness connector		Resistance (Ω)
Connector No.	Terminal	No.	
E6	40	39	Approx. 108 – 132
Is the measurement value withYES>> GO TO 3.NO>> Repair the IPDM 3. CHECK POWER SUPPLY	E/R branch line.		
Check the power supply and the supplementation of the	? ce the IPDM E/R. Refer to	PCS-33, "Exploded Vie 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		Continuity
Connector No.	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)	
Terminal No.			
114	113	Approx. 108 – 132	

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

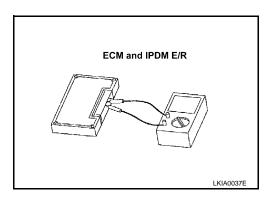
IPDN	Resistance (O)		
Terminal No.		Resistance (Ω)	
40	39	Approx. 108 – 132	

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-66

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.	
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect and of the unit connectors of CAN communication system 	С
 Disconnect one of the unit connectors of CAN communication system. NOTE: 	
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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779061

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Without navigation system (With rear view monitor)

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

Without navigation system (Without rear view monitor)

AV control unit harness connector		Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M95	86	M24	6	Existed	
M85	87	₩124	14	Existed	

Is the inspection result normal?

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

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

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

AIN LINE BET	WEEN DLC AN	ND ADP CIRCL	JIT	
iagnosis Proced	ure			INFOID:000000005779062
	OR			
. Check the followir and harness side). Harness connecto Harness connecto s the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	ttery cable from the ne ng terminals and conr r M7 r B1	nectors for damage, k or. N CIRCUIT)	pend and loose conr	nection (connector side
. Check the continui	ity between the data li		harness connector.	
	connector	or Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	5 100 1
M24	6	M7	20	Existed
	main line between the		and the harness con	nector M7.
NO >> Repair the CHECK HARNESS	CONTINUITY (OPEN etween the harness co			
NO >> Repair the CHECK HARNESS				Continuity
NO >> Repair the CHECK HARNESS heck the continuity be Connector No.		onnector terminals.	22	Continuity Existed
NO >> Repair the CHECK HARNESS Check the continuity be	etween the harness co	onnector terminals.	22	

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005779063

[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.	Termiı	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	7	Existed
1117	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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:000000005779064

[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 (Ω)
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-144, "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.

AV BRANCH LINE CIRCUIT

AV BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:000000005779065
1.CHECK CONNECTOR			
 Turn the ignition switch C Disconnect the battery ca Check the terminals and side and connector side) Is the inspection result normative YES >> GO TO 2. NO >> Repair the terminals and side and connector side) 	able from the negative ter connectors of the AV co al? nal and connector.		and loose connection (unit
 Disconnect the connecto Check the resistance bet Models with navigation s 	ween the AV control unit	harness connector terminal	S
	V control unit harness connecto		Resistance (Ω)
Connector No. M210	90	inal No. 74	Approx. 54 – 66
-	n system (With rear view		
A	V control unit harness connecto	or	Resistance (Ω)
Connector No.	Term	inal No.	
M204	81	80	Approx. 54 – 66
 Models without navigatio 	n system (Without rear vi	ew monitor)	
A	V control unit harness connecto	or	Resistance (Ω)
Connector No.	Term	inal No.	
M85	86	87	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the AV coNO >> Repair the AV co3.CHECK POWER SUPPLY	ntrol unit branch line.	Т	
 Check the power supply and Base audio without rear vie Base audio with rear view r BOSE audio without navigation BOSE audio with navigation 	w monitor: <u>AV-40, "AV CC</u> nonitor: <u>AV-173, "AV CON</u> ition: <u>AV-297, "AV CONT</u> F	<u>ONTROL UNIT : Diagnosis</u> NTROL UNIT : Diagnosis Pr ROL UNIT : Diagnosis Proc	Procedure" ocedure" edure"
Is the inspection result norma	<u>ll?</u>		
Base audio witBOSE audio wit	ace the AV control unit. Rehout rear view monitor: <u>A</u> hout rear view monitor: <u>AV-2</u> th rear view monitor: <u>AV-28</u> thout navigation: <u>AV-474, "E</u>	<u>V-90, "Exploded View"</u> 02, "Exploded View" , "Exploded View"	
YES (Past error)>>Error wa	s detected in the AV cont	rol unit branch line.	

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

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure

INFOID:000000005869038

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:00000000577906
.CHECK CONNECTOR			
connector side).	able from the negative t I connectors of the BCI	terminal. M for damage, bend and loo	se connection (unit side and
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
Disconnect the connect Check the resistance be		s connector terminals.	
	PCM barnage connector		
Connector No	BCM harness connector	rminal No	- Resistance (Ω)
Connector No. M122	Te 91	rminal No. 90	- Resistance (Ω) Approx. 54 – 66
M122 s the measurement value w YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPL	Te 91 thin the specification? branch line. Y AND GROUND CIRC	90	Approx. 54 – 66

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779068

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

	ECIRCUIT		
iagnosis Procedure			INFOID:000000005779069
.CHECK CONNECTOR			
	cable from the negative termined to the unified method of the unified method.		mage, bend and loose con-
the inspection result norm YES >> GO TO 2.			
NO >> Repair the termi			
CHECK HARNESS FOR			
	or of unified meter and A/C a etween the unified meter and		ector terminals.
	meter and A/C amp. harness conr		Resistance (Ω)
Connector No.	Termina		
M67	56	72	Approx. 54 – 66
	ithin the specification?		
YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL	ed meter and A/C amp. brand Y AND GROUND CIRCUIT		Pofor to MW/L 51 "LINIEIED
YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL	ed meter and A/C amp. brand Y AND GROUND CIRCUIT I the ground circuit of the unitagnosis Procedure".		Refer to <u>MWI-51, "UNIFIED</u>
YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ed meter and A/C amp. brand Y AND GROUND CIRCUIT I the ground circuit of the unitagnosis Procedure".	ified meter and A/C amp. /C amp. Refer to <u>MWI-130</u> eter and A/C amp. branch	6, "Exploded View".
YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL Check the power supply and <u>METER AND A/C AMP. : Dia</u> s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	ed meter and A/C amp. brand Y AND GROUND CIRCUIT I the ground circuit of the uni agnosis Procedure". al? lace the unified meter and A as detected in the unified meter	ified meter and A/C amp. /C amp. Refer to <u>MWI-130</u> eter and A/C amp. branch	6, "Exploded View".
YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL theck the power supply and <u>IETER AND A/C AMP. : Dia</u> the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ed meter and A/C amp. brand Y AND GROUND CIRCUIT I the ground circuit of the uni agnosis Procedure". al? lace the unified meter and A as detected in the unified meter	ified meter and A/C amp. /C amp. Refer to <u>MWI-130</u> eter and A/C amp. branch	6, "Exploded View".
YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ed meter and A/C amp. brand Y AND GROUND CIRCUIT I the ground circuit of the uni agnosis Procedure". al? lace the unified meter and A as detected in the unified meter	ified meter and A/C amp. /C amp. Refer to <u>MWI-130</u> eter and A/C amp. branch	6, "Exploded View".

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779070

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-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-110, "Exploded View"</u>.

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

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

ECIRCUIT		
		INFOID:000000005779071
cable from the negative term ninals and connectors for da 2 <u>al?</u> inal and connector.		nection (unit side and con-
	l unit harness connector te	erminals.
		Resistance (Ω)
-	19	Approx. 54 – 66
Y AND GROUND CIRCUIT I the ground circuit of the driv		to <u>ADP-65, "DRIVER SEAT</u>
<u>al?</u> lace the driver seat control u as detected in the driver sea er supply and the ground circ	t control unit branch line.	ploded View".
	ninals and connectors for da 2 <u>nal?</u> inal and connector. OPEN CIRCUIT or of driver seat control unit. etween the driver seat control rer seat control unit harness connect rer seat control unit harness connect a <u>vithin the specification?</u> er seat control unit branch line <u>Y</u> AND GROUND CIRCUIT	cable from the negative terminal. minals and connectors for damage, bend and loose cor 22 mal? inal and connector. OPEN CIRCUIT or of driver seat control unit. etween the driver seat control unit harness connector terminal No. 3 19 within the specification? er seat control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the driver seat control unit. Refer to 19

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-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-107</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 1)]

INFOID:000000005779072

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

SIS >		[CAN SYSTEM (TYPE 1)]
INE CIRCUIT		
		INFOID:00000000577907
cable from the negative term d connectors of the IPDM E		nd loose connection (unit side
nal and connector.		
etween the IPDM E/R harne	ss connector terminals.	
	al No	Resistance (Ω)
		Approx. 108 – 132
Y AND GROUND CIRCUIT I the ground circuit of the IP al?		
as detected in the IPDM E/F	R branch line.	
	INE CIRCUIT	OFF. cable from the negative terminal. d connectors of the IPDM E/R for damage, bend a mal? inal and connector. OPEN CIRCUIT or of IPDM E/R. etween the IPDM E/R harness connector terminals. IPDM E/R harness connector Terminal No. 40 39 vithin the specification? A E/R branch line. Y AND GROUND CIRCUIT d the ground circuit of the IPDM E/R. Refer to PCS-

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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	Continuity
 M24	6	Ground	Not existed
10124	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

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

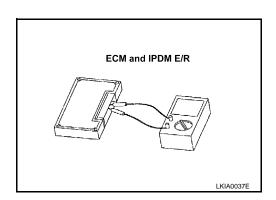
Is the measurement value within the specification?

YES >> GO TO 5.

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

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

LAN-82



INFOID:000000005779074

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779087

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Without navigation system (With rear view monitor)

AV control unit h	narness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M204	81	M24	6	Existed
101204	80	₩24	14	Existed

Without navigation system (Without rear view monitor)

AV control unit h	arness connector	Data link o	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
COIVI	87	₩124	14	Existed

Is the inspection result normal?

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

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

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

			~	
Diagnosis Proced	ure			INFOID:000000005779088
CHECK CONNECT	OR			
Check the followir and harness side) Harness connecto Harness connecto s the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha	ttery cable from the ne ng terminals and conr r M7 r B1 <u>normal?</u> terminal and connect CONTINUITY (OPEN rness connectors M7 a	or. I CIRCUIT) and B1.		nection (connector side
	ity between the data li			,
Connector No.	connector Terminal No.	Harness c Connector No.	connector Terminal No.	- Continuity
Connector No.	6	Connector No.	20	Existed
M24	14	M7	21	Existed
	main line between the CONTINUITY (OPEN etween the harness co	I CIRCUIT)	and the harness con	nector M7.
				Continuity
		Terminal No.		
Check the continuity b	20	Terminal No.	22	Existed
Check the continuity b Connector No.	21	Terminal No.	22 23	Existed Existed

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MAIN LINE BETWEEN ADP AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000005779089

[CAN SYSTEM (TYPE 3)]

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	nal No.	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 4WAS main control unit and the driver seat control unit.

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

DTC/CIRCUIT DIA	TWEEN RAS A	ND ABS (CIRCI	JIT	
iagnosis Proced	Jule				INFOID:00000000577909
CHECK CONNEC	TOR				
	attery cable from the n ing terminals and con). or B1 or M7 or M6			pend and loose c	onnection (connector side
s the inspection resul					
YES >> GO TO 2. NO >> Repair the	e terminal and connec	tor.			
•	S CONTINUITY (OPEI				
I. Disconnect the ha	arness connectors B1 uity between the harne	and M7.	terminal	S.	
Connector No.		Terminal I	No.		Continuity
B1	20			22	Existed
	21			23	Existed
CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPEI arness connectors M6 uity between the harne	N CIRCUIT) and E106. ess connectors	S. Harness	connector	Continuity
Connector No.	Terminal No.	Connector	No.	Terminal No.	
M7	22	- M6		7	Existed
s the inspection resul	23			6	Existed
A '	e main line between th S CONTINUITY (OPEI				
 Disconnect the continue Check the continue harness connector 	onnector of ABS actua uity between the harne	ess connector	and the		· · · · · · · · · · · · · · · · · · ·
 Disconnect the continue Check the continue harness connector 	onnector of ABS actua uity between the harne	ess connector	and the or and ele harness of	ABS actuator and	d electric unit (control unit)
Disconnect the co Check the continu- harness connecto Harness	onnector of ABS actua uity between the harne or.	ABS actuate	and the or and ele harness of	ABS actuator and ctric unit (control unit) connector	

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

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

6

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 3)]

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

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

	E CIRCUIT		
Diagnosis Procedure			INFOID:00000005779091
1.CHECK CONNECTOR			
	cable from the negative term		ose connection (unit side and
Is the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	etween the ECM harness co	nnector terminals.	
	ECM barness connector		
Connector No.	ECM harness connector Termina	al No.	Resistance (Ω)
M107	Termina 114	al No. 113	- Resistance (Ω) Approx. 108 – 132
M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM	Termina 114 vithin the specification?		
M107 S the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and	Termina 114 vithin the specification? I branch line. LY AND GROUND CIRCUIT d the ground circuit of the EC	113	Approx. 108 – 132
M107 S the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep <u>CONTROL UNI</u> YES (Past error)>>Error w	Termina 114 vithin the specification? I branch line. Y AND GROUND CIRCUIT d the ground circuit of the EC hal?	113 CM. Refer to <u>EC-144, "D</u> C-17, "ADDITIONAL SE equirement". nch line.	Approx. 108 – 132

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AV BRANCH LINE CIRCUIT

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

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

Models with navigation system

	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
M210	90	74	Approx. 54 – 66

Models without navigation system (With rear view monitor)

	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	(125)Starice (22)
M204	81	80	Approx. 54 – 66

Models without navigation system (Without rear view monitor)

	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view monitor: <u>AV-40, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- Base audio with rear view monitor: <u>AV-173, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: AV-448, "AV CONTROL UNIT : Diagnosis Procedure"

Is the inspection result normal?

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

- Base audio without rear view monitor: <u>AV-90, "Exploded View"</u>
- Base audio with rear view monitor: <u>AV-202, "Exploded View"</u>
- BOSE audio without navigation: AV-328, "Exploded View"
- BOSE audio with navigation: <u>AV-474</u>, "Exploded View"

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

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

[CAN SYSTEM (TYPE 3)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005869039 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779097

[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.

	BCM harness connector		Resistance (Ω)
Connector No.	Termi	nal No.	
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-80, "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)]

DTC/CIRCUIT DIAGNOS	ilS >		[CAN SYSTEM (TYPE 3)]
DLC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000000577909
.CHECK CONNECTOR			
	able from the negative tend d connectors of the data ness side). al?		e, bend and loose connectior
CHECK HARNESS FOR			
Check the resistance betwee		terminals.	
	Data link connector		
Connector No.		inal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66
YES (Past error)>>Error wa	ck CAN system type decis as detected in the data linl link connector branch line	k connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data linl	k connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data linl	k connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data linl	k connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data linl	k connector branch line ci	rcuit.
YES (Present error)>>Chec YES (Past error)>>Error wa NO >> Repair the data I	as detected in the data linl	k connector branch line ci	rcuit.

< 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 (Ω)
Connector No.	Termi		
M67	56 72		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-136, "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:000000005779099

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000005779100
1. CHECK CONNECTOR			
 Check the terminals and (unit side and connector s the inspection result norm YES >> GO TO 2. NO >> Repair the term 	cable from the negative terr d connectors of the steering r side). hal? inal and connector.		bend and loose connection
2. CHECK HARNESS FOR			
	or of steering angle sensor. etween the steering angle s	ensor harness connector te	erminals.
	ering angle sensor harness conne		Resistance (Ω)
Connector No. M37	Termir 1	nal No. 2	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL	ring angle sensor branch lir Y AND GROUND CIRCUIT		
Check the power supply an gram - BRAKE CONTROL S is the inspection result norm	SYSTEM -".	steering angle sensor. Re	fer to <u>BRC-83, "Wiring Dia-</u>
YES (Present error)>>Rep YES (Past error)>>Error w	lace the steering angle sen	angle sensor branch line.	ploded View".

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779101

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B462
- Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (32)
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228, "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 3)]

Diagnosis Procedure			INFOID:00000005779102
1.CHECK CONNECTOR			
	cable from the negative terr		age, bend and loose connec-
s the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect	or of 4WAS main control un etween the 4WAS main con		or terminals.
	S main control unit harness conn		Resistance (Ω)
Connector No. B54	Termir 1	nal No. 8	Approx. 54 – 66
Procedure (4WAS Main Cor	Y AND GROUND CIRCUIT d the ground circuit of the 4 htrol Unit)".		Refer to <u>STC-136, "Diagnosis</u>
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the 4WAS main contro	ain control unit branch lir	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-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-107</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 3)]

INFOID:000000005779103

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:0000000577910
1.CHECK CONNECTOR			
	able from the negative termin I connectors of the IPDM E/R <u>al?</u> nal and connector.		nd loose connection (unit side
. Disconnect the connect	or of IPDM E/R. tween the IPDM E/R harness	connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
E6	40	lo. 39	Approx. 108 – 132
s the measurement value w	thin the specification?		
YES >> GO TO 3.			
NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and	Y AND GROUND CIRCUIT the ground circuit of the IPD	/ E/R. Refer to <u>PCS-</u>	18, "Diagnosis Procedure".
NO >> Repair the IPDM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the IPD	CS-33, "Exploded Vie branch line.	
NO >> Repair the IPDM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the IPDM al? ace the IPDM E/R. Refer to E as detected in the IPDM E/R b	CS-33, "Exploded Vie 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		
Connector No.	Termi	Continuity	
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

E	ECM Resistance (
Termi		
114	113	Approx. 108 – 132

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

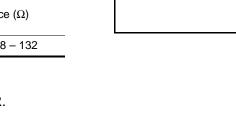
IPDM E/R Terminal No.		- Resistance (Ω)	

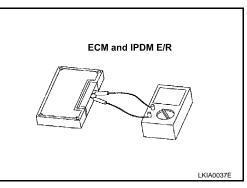
Is the measurement value within the specification?

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-100

INFOID:000000005779106

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779107

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit h	arness connector	Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M24	6	Existed
WZ TO	74		14	Existed

Without navigation system (With rear view monitor)

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

Without navigation system (Without rear view monitor)

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

Is the inspection result normal?

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

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

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

		ND ADP CIRCL	וור	
iagnosis Proced	ure			INFOID:000000005779108
.CHECK CONNECT	OR			
Check the followir and harness side) Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the	ttery cable from the ne ng terminals and conr r M7 r B1	nectors for damage, b	pend and loose conr	nection (connector side
Check the continu	-	nk connector and the		
Connector No.	connector Terminal No.	Harness of Connector No.	connector Terminal No.	- Continuity
	6		20	Existed
M24	14	M7	21	Existed
•	main line between th CONTINUITY (OPEN etween the harness co		and the harness con	
				Continuity
		Terminal No.		
heck the continuity b	20	Terminal No.	22	Existed
Check the continuity b Connector No.	21	Terminal No.	22 23	Existed

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005779109

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termiı	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	7	Existed	
1017	23		6	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	7	E 44	35	Existed	
	6	E41	14	Existed	

Is the inspection result normal?

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

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779112

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

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

	Resistance (Ω)	
Connector No.	Termi	176515tance (22)
M107	114	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-144, "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.

AV BRANCH LINE CIRCUIT

AV BRANCH LINE C	RCUIT		
Diagnosis Procedure			INFOID:000000005779113
1.CHECK CONNECTOR			
 Turn the ignition switch OF Disconnect the battery call Check the terminals and one side and connector side). Is the inspection result normality YES >> GO TO 2. NO >> Repair the termination CHECK HARNESS FOR O 	ble from the negative ter connectors of the AV co <u>?</u> al and connector.	rminal. ontrol unit for damage, bend	and loose connection (unit
 Disconnect the connector Check the resistance betw Models with navigation system 	veen the AV control unit	harness connector terminals	5.
	control unit harness connecte	-	Resistance (Ω)
Connector No. M210	90	inal No. 74	Approx 54 66
- Models without navigation			Approx. 54 – 66
		,	
	control unit harness connecto		Resistance (Ω)
Connector No. M204	81	inal No. 80	Approx. 54 – 66
- Models without navigation	-		Αρριοχ. 34 – 66
	- ``	,	
	control unit harness connected		Resistance (Ω)
Connector No.		inal No.	
M85	86	87	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the AV con 3. CHECK POWER SUPPLY	trol unit branch line. AND GROUND CIRCUI		
 Check the power supply and the Base audio without rear view Base audio with rear view me BOSE audio without navigation: BOSE audio with navigation: 	/ monitor: <u>AV-40, "AV C(</u> onitor: <u>AV-173, "AV COM</u> ion: <u>AV-297, "AV CONT</u>	<u>ONTROL UNIT : Diagnosis F</u> NTROL UNIT : Diagnosis Pro ROL UNIT : Diagnosis Proce	Procedure" ocedure" adure"
Is the inspection result normal			
Base audio withBOSE audio with	out rear view monitor: <u>A</u> rear view monitor: <u>AV-2</u> nout navigation: <u>AV-328</u>	<u>V-90, "Exploded View"</u> 202, "Exploded View" , "Exploded View"	
BOSE audio with YES (Past error)>>Error was NO >> Repair the power of the po		trol unit branch line.	

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

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779114

[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 control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Pre-cras	Resistance (Ω)		
Connector No.	Termi	ivesistance (22)	
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.

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005869040 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779116

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

	BCM harness connector		
Connector No.	Terminal No.		Resistance (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-80, "Exploded View"</u>.

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

DLC BRANCH LINE ([CAN SYSTEM (TYPE 4)]
	CIRCUIT		
Diagnosis Procedure			INFOID:00000000577911
.CHECK CONNECTOR			
. Turn the ignition switch OF	F.		
. Disconnect the battery cab	ole from the negative te		age, bend and loose connectior
(connector side and harne			age, benu anu loose connectior
the inspection result normal?	2		
YES >> GO TO 2. NO >> Repair the termina	l and connector		
CHECK HARNESS FOR O			
heck the resistance between		r terminals.	
Connector No	Data link connector	minal No.	Resistance (Ω)
Connector No. M24	6	14	Approx. 54 – 66
the measurement value with	-		, (pp. 6x. 6 + 66

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779118

[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 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 (Ω)
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-136, "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 4)]

STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000005779119
CHECK CONNECTOR			
	cable from the negative term d connectors of the steering	minal. g angle sensor for damage,	bend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of steering angle sensor etween the steering angle s	ensor harness connector te	rminals.
	ering angle sensor harness conne		Resistance (Ω)
Connector No. M37	Termi 1	nal No. 2	Approx. 54 – 66
CHECK POWER SUPPL	d the ground circuit of the		er to <u>BRC-83, "Wiring Dia-</u>
gram - BRAKE CONTROL S s the inspection result norm			
YES (Present error)>>Rep YES (Past error)>>Error w	lace the steering angle ser		bloded View".

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779120

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B462
- Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Driv	Driver seat control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228, "Exploded View"</u>.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000005779122
.CHECK CONNECTOR			
Check the terminals and	able from the negative termir I connectors of the ABS actu nit side and connector side). al?		ntrol unit) for damage, bend
CHECK HARNESS FOR	OPEN CIRCUIT		
	or of ABS actuator and electri etween the ABS actuator and		t) harness connector termi-
ABS actuator a	nd electric unit (control unit) barnes	s connector	
	nd electric unit (control unit) harnes Terminal		Resistance (Ω)
Connector No. E41	Terminal 35		Resistance (Ω) Approx. 54 – 66
Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply and RC-69. "Diagnosis Procedu s the inspection result norm YES (Present error)>>Repl <u>View"</u> .	Terminal 35 actuator and electric unit (con Y AND GROUND CIRCUIT d the ground circuit of the A <u>ire"</u> .	No. 14 ntrol unit) branch line. BS actuator and electric ectric unit (control unit). R	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-107, "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 s	ICC sensor integrated unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
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-134, "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:000000005779123

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

 CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the new connector side, and connector side). the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector connectors. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. 	the IPDM E/R for	damage, bend an	d loose connection (unit side
 Disconnect the battery cable from the net of the connector side). Check the terminals and connectors of and connector side). the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connect CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. 	the IPDM E/R for	damage, bend an	d loose connection (unit side
. Check the resistance between the IPDN IPDM E/R harnes	1 E/R harness cor	nnector terminals.	
Connector No.	Terminal No.		Resistance (Ω)
E6 40		39	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the IPDM E/R branch lin CHECK POWER SUPPLY AND GROUN Check the power supply and the ground circ the inspection result normal? YES (Present error)>>Replace the IPDM E YES (Past error)>>Error was detected in th NO >> Repair the power supply and the	D CIRCUIT uit of the IPDM E E/R. Refer to <u>PCS</u> le IPDM E/R bran	-33, "Exploded Vie	

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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.

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

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

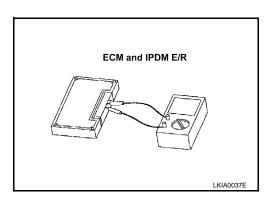
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

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-118

INFOID:000000005779125

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779133

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Without navigation system (With rear view monitor)

AV control unit harness connector		Data link connector		rness connector Data link		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M204	81	M24	6	Existed		
101204	80	₩24	14	Existed		

Without navigation system (Without rear view monitor)

AV control unit h	arness connector	Data link connector		_ Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
COIVI	87	₩124	14	Existed

Is the inspection result normal?

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

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

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

		ND ADP CIRCU		
iagnosis Proced	ure			INFOID:000000005779134
.CHECK CONNECT				
. Check the followir and harness side). Harness connecto Harness connecto s the inspection result YES >> GO TO 2. NO >> Repair the	ttery cable from the ne ng terminals and coni r M7 r B1	nectors for damage, b	pend and loose con	nection (connector side
Check the continu	rness connectors M7 ity between the data li	nk connector and the		
Connector No.	Terminal No.	Connector No.	connector Terminal No.	- Continuity
	6		20	Existed
M24	14	M7	21	Existed
the inspection result	normal?			
the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS	main line between th CONTINUITY (OPEN		and the harness con	nector M7.
the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be Connector No.	main line between th CONTINUITY (OPEN	I CIRCUIT)	and the harness con	
s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be	main line between th CONTINUITY (OPEN etween the harness co 20 21	I CIRCUIT)		Continuity

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MAIN LINE BETWEEN ADP AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000005779135

[CAN SYSTEM (TYPE 5)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		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 4WAS main control unit and the driver seat control unit.

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

.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 (connector and harness side). Harness connector B1 Harness connector M6 Harness connector M6 Harness connector M6 Harness connector M6 Harness connector B1 Disconnect the harness connectors B1 and M7. Check the continuity between the harness connector terminals. Connector No. Terminal No. Continuity B1 20 21 23 Existed the inspection result normal? (FS) >> GO TO 3. VO >> Repair the main line between the 4WAS main control unit and the harness connector B1. .CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connector No. Harness connector No. Harness connector No. Terminal No. Continuity Check the continuity between the harness connector Check than Continuity COPEN CIRCUIT) Disconnect the harness connectors M6 and	iagnosis Proced	ΓWEEN RAS A lure			INF01D:000000005779136
Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (connector and harness side). Harness connector M7 Harness connector S106 Wo >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors B1 and M7. Check the continuity between the harness connector terminals. Connector No. Terminal No. Connector No. Terminal No. Continuity B1 20 22 Existed the inspection result normal? YES >> GO TO 3. NO >> Repair the main line between the 4WAS main control unit and the harness connector B1. .CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Harness connector Harness connector M7 22 23 M6	-				
Check the continuity between the harness connector terminals. Connector No. Terminal No. Continuity B1 20 22 Existed 21 23 Existed Existed The inspection result normal? YES >> GO TO 3. NO >> Repair the main line between the 4WAS main control unit and the harness connector B1. OCHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Mareness connector Mareness connector Continuity Continuity Continuity Continuity Continuity Continuity Mareness connector Continuity Continuity Mareness connector Continuity Continuity Mareness connector Continuity Continuity Context t	Disconnect the ba Check the followin and harness side) Harness connector Harness connector Harness connector Harness connector Harness connector Tes >> GO TO 2. NO >> Repair the CHECK HARNESS	Ittery cable from the n ng terminals and con or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connect 5 CONTINUITY (OPE	nectors for dama tor. N CIRCUIT)	ige, bend and loose	connection (connector side
B12022Existed2123Existed25> GO TO 3.30>> Repair the main line between the 4WAS main control unit and the harness connector B1CHECK HARNESS CONTINUITY (OPEN CIRCUIT)Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors.Harness connectorHarness connectorMaress connector No.Terminal No.Connector No.Terminal No.M722M67Existedthe inspection result normal?(ES >> GO TO 4.NO >> Repair the main line between the harness connector M7 and M6CHECK HARNESS CONTINUITY (OPEN CIRCUIT)Disconnect the connector of ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Continuity barness connector.	Check the continu		ess connector terr	ninals.	
B1 21 23 Existed YES >> GO TO 3. NO >> Repair the main line between the 4WAS main control unit and the harness connector B1. NO >> Repair the main line between the 4WAS main control unit and the harness connector B1. OCHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Harness connector Harness connector Connector No. Terminal No. Connector No. Terminal No. M7 22 M6 7 Existed 6 Ethe inspection result normal? YES >> GO TO 4. NO >> Repair the main line between the harness connector M7 and M6. •.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Obsconnect the connector of ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Check the connector. ABS actuator and electric unit (control unit) Harness connector. ABS actuator and electric unit (control unit)	Connector No.		Terminal No.		
the inspection result normal? YES >> GO TO 3. NO >> Repair the main line between the 4WAS main control unit and the harness connector B1. ••••CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Harness connector Harness connector Connector No. Terminal No. Continuity M7 22 M6 7 Existed the inspection result normal? YES >> GO TO 4. So TO 4. So TO 4. NO >> Repair the main line between the harness connector M7 and M6. So CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Continuity	B1		20 22		
Connector No. Terminal No. Connector No. Terminal No. Continuity M7 22 M6 7 Existed 123 M6 6 Existed the inspection result normal? 7 Existed rES >> GO TO 4. 6 Existed NO >> Repair the main line between the harness connector M7 and M6. . . .CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). Check the continuity between the harness connector and electric unit (control unit). Harness connector ABS actuator and electric unit (control unit) harness connector Continuity	Disconnect the ha	rness connectors M6	and E106.		
Connector No. Terminal No. Connector No. Terminal No. M7 22 M6 7 Existed 23 6 Existed 6 Existed Sthe inspection result normal? YES >> GO TO 4. Sthe inspection result normal? State YES >> GO TO 4. NO >> Repair the main line between the harness connector M7 and M6. State CHECK HARNESS CONTINUITY (OPEN CIRCUIT) . Disconnect the connector of ABS actuator and electric unit (control unit). . Check the continuity between the harness connector and the ABS actuator and electric unit (control unit). . Marness connector. ABS actuator and electric unit (control unit) Continuity	Harness	connector	Ha	rness connector	
M7 23 M6 Existed a the inspection result normal? Figure 1	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
23 6 Existed Sthe inspection result normal? YES >> GO TO 4. YES >> Repair the main line between the harness connector M7 and M6. NO >> Repair the connector of ABS actuator and electric unit (control unit). . . . Disconnect the connector of ABS actuator and electric unit (control unit). . . Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector. . Harness connector ABS actuator and electric unit (control unit) harness connector .	M7	22	M6	7	Existed
YES >> GO TO 4. NO >> Repair the main line between the harness connector M7 and M6. • CHECK HARNESS CONTINUITY (OPEN CIRCUIT) • Disconnect the connector of ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector. Harness connector ABS actuator and electric unit (control unit) harness connector		23		6	Existed
Harness connector harness connector Continuity				ctor M7 and M6.	
	LCHECK HARNESS Disconnect the co Check the continu	nnector of ABS actua	tor and electric un ess connector and	d the ABS actuator a	
7 35 Existed	 CHECK HARNESS Disconnect the co Check the continut harness connecto Harness 	nnector of ABS actua ity between the harnor r. connector	tor and electric usess connector and ABS actuator a har	d the ABS actuator a nd electric unit (control un ness connector	it) Continuity

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

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

6

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

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E106

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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 5)]

ECM BRANCH LINI	ECIRCUIT		
Diagnosis Procedure			INFOID:000000005779137
1.CHECK CONNECTOR			
3. Check the terminals and connector side).	able from the negative term d connectors of the ECM fo		e connection (unit side and
Is the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR			
1. Disconnect the connect			
 Check the resistance be 		nnector terminals.	
2. Check the resistance be	ECM harness connector		Resistance (Ω)
Connector No. M107	ECM harness connector Termin 114		Resistance (Ω) Approx. 108 – 132
Connector No.	ECM harness connector Termin 114 ithin the specification? branch line.	al No. 113	. ,
Connector No. M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and	ECM harness connector Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the E0	al No. 113	Approx. 108 – 132
Connector No. M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm	ECM harness connector Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the EC al?	al No. 113 CM. Refer to <u>EC-144, "Diac</u>	Approx. 108 – 132
Connector No. M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl <u>CONTROL UNI</u> YES (Past error)>>Error wa	ECM harness connector Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the EC al? ace the ECM. Refer to E ((ECM) : Special Repair Ref	al No. 113 CM. Refer to <u>EC-144, "Diac</u> <u>C-17, "ADDITIONAL_SER</u> equirement". nch line.	Approx. 108 – 132
Connector No. M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl <u>CONTROL UNI</u> YES (Past error)>>Error wa	ECM harness connector Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the EC al? ace the ECM. Refer to <u>E</u> <u>(ECM) : Special Repair Re</u> as detected in the ECM bran	al No. 113 CM. Refer to <u>EC-144, "Diac</u> <u>C-17, "ADDITIONAL_SER</u> equirement". nch line.	Approx. 108 – 132

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AV BRANCH LINE CIRCUIT

INFOID:000000005779138

[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.

Models with navigation system

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

Models without navigation system (With rear view monitor)

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

Models without navigation system (Without rear view monitor)

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view monitor: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view monitor: AV-173, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-448, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without rear view monitor: AV-90, "Exploded View"
- Base audio with rear view monitor: <u>AV-202, "Exploded View"</u>
- BOSE audio without navigation: AV-328, "Exploded View"
- BOSE audio with navigation: <u>AV-474, "Exploded View"</u>

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

PSB BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:000000005779139
CHECK CONNECTOR			
	cable from the negative termind connectors of the pre-cras		for damage, bend and loose
the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
CHECK HARNESS FOR Disconnect the connect	OPEN CIRCUIT or of pre-crash seat belt conti	rol unit	
	etween the pre-crash seat bel		onnector terminals.
Pre-cras	sh seat belt control unit harness con	nector	Resistance (Ω)
Connector No.	Terminal		
M110 s the measurement value w	24	22	Approx. 54 – 66
CHECK POWER SUPPL	crash seat belt control unit brace Y AND GROUND CIRCUIT I the ground circuit of the pre		unit. Refer to <u>SBC-24, "Diag-</u>
	<u>al?</u> lace the pre-crash seat belt c		
NO >> Repair the powe	as detected in the pre-crash s er supply and the ground circ		
NO >> Repair the powe			
NO >> Repair the powe			
NO >> Repair the powe			

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005869081

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from Check the terminals and connect			
 Disconnect the battery cable from Check the terminals and connect 			
connector side). <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and	ectors of the BCM for damag connector.	ge, bend and loose	connection (unit side and
CHECK HARNESS FOR OPEN Disconnect the connector of BC			
. Check the resistance between t		terminals.	
BCM	harness connector		Pagistange (0)
Connector No.	Terminal No.		Resistance (Ω)
M122	91	90	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the BCM branch CHECK POWER SUPPLY AND Check the power supply and the gro	GROUND CIRCUIT	er to <u>BCS-37, "Diag</u>	nosis Procedure".
s the inspection result normal? YES (Present error)>>Replace the YES (Past error)>>Error was detect NO >> Repair the power suppli	cted in the BCM branch line.	<u>ploded View"</u> .	
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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779142

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000005779143
1. CHECK CONNECTOR			
	able from the negative tern d connectors of the unified		mage, bend and loose con-
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 unified meter and A/C	amp. d A/C amp. harness connec	ctor terminals.
Unified	meter and A/C amp. harness cor	nector	Resistance (Ω)
Connector No. M67	Termin 56	al No. 72	Approx. 54 – 66
3. CHECK POWER SUPPL Check the power supply and	I the ground circuit of the u		Refer to <u>MWI-51, "UNIFIED</u>
METER AND A/C AMP. : Dia s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error way NO >> Repair the power	al? ace the unified meter and A	eter and A/C amp. branch I	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779144

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-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-110, "Exploded View"</u>.

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

	CIRCUIT		
Diagnosis Procedure			INFOID:000000005779145
1.CHECK CONNECTOR			
 Check the following tern nector side). Driver seat control unit Harness connector B462 	able from the negative termin ninals and connectors for dar		connection (unit side and con-
Harness connector B59 s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
	or of driver seat control unit.		
	tween the driver seat control	unit harness connecto	or terminals.
Drive	er seat control unit harness connect	or	Resistance (Ω)
Connector No.	Terminal	No.	
B451	3	19	Approx. 54 – 66
s the measurement value w			
NO >> Repair the drive CHECK POWER SUPPL			
NO >> Repair the drive 3. CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis	Y AND GROUND CIRCUIT the ground circuit of the drive <u>Procedure</u> ".		fer to <u>ADP-65, "DRIVER SEAT</u>
NO >> Repair the drive 3. CHECK POWER SUPPL Check the power supply and <u>CONTROL UNIT : Diagnosis</u> <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the drive <u>Procedure</u> ".	er seat control unit. Re nit. Refer to <u>ADP-228,</u> control unit branch lin	"Exploded View".
NO >> Repair the drive 3. CHECK POWER SUPPL Check the power supply and <u>CONTROL UNIT : Diagnosis</u> <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the drives <u>Procedure</u> ". <u>al?</u> ace the driver seat control ur as detected in the driver seat	er seat control unit. Re nit. Refer to <u>ADP-228,</u> control unit branch lin	"Exploded View".
NO >> Repair the drive 3.CHECK POWER SUPPL Check the power supply and <u>CONTROL UNIT : Diagnosis</u> Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the drives <u>Procedure</u> ". <u>al?</u> ace the driver seat control ur as detected in the driver seat	er seat control unit. Re nit. Refer to <u>ADP-228,</u> control unit branch lin	"Exploded View".
NO >> Repair the drive 3.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the drives <u>Procedure</u> ". <u>al?</u> ace the driver seat control ur as detected in the driver seat	er seat control unit. Re nit. Refer to <u>ADP-228,</u> control unit branch lin	"Exploded View".

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RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779146

[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 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-185, "Exploded View".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:000000005779147
.CHECK CONNECTOR			
. Check the terminals and	able from the negative tern I connectors of the ABS ac nit side and connector side	tuator and electric unit (co	ontrol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR			
	or of ABS actuator and electer etween the ABS actuator a		nit) harness connector termi-
ABS actuator	nd electric unit (control unit) harn	ess connector	
	nd electric unit (control unit) harn Termin		Resistance (Ω)
Connector No. E41	Termin 35		Resistance (Ω) Approx. 54 – 66
Connector No. E41 the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL heck the power supply an RC-69. "Diagnosis Procedu the inspection result norm YES (Present error)>>Repl <u>View</u> ". YES (Past error)>>Error wa	Termin 35 ithin the specification? actuator and electric unit (c Y AND GROUND CIRCUIT d the ground circuit of the <u>ire"</u> . al?	al No. 14 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). F ator and electric unit (con	Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-107, "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-134, "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:000000005779148

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOS	SIS >	[CAN SYSTEM (TYPE 5)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:0000000577914
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the IPDM	minal. E/R for damage, bend and	loose connection (unit side
NO >> Repair the term			
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of IPDM_E/R. etween the IPDM_E/R harn	ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	Termi	nal No.	Resistance (12)
E6	40	39	Approx. 108 – 132
	Y AND GROUND CIRCUI	Г PDM E/R. Refer to <u>PCS-18,</u>	"Diagnosis Procedure".
YES (Past error)>>Error wa	ace the IPDM E/R. Refer		

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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

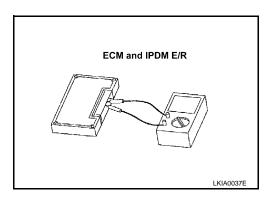
Is the measurement value within the specification?

YES >> GO TO 5.

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

5. CHECK SYMPTOM

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



LAN-138

INFOID:000000005779150

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779160

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Without navigation system (With rear view monitor)

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M204	81	M24	6	Existed
	80	IVIZ4	14	Existed

Without navigation system (Without rear view monitor)

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

Is the inspection result normal?

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

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

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

COTC/CIRCUIT DIAC		WEEN DLC ANI		SYSTEM (TYPE 6)]	
MAIN LINE BET		ND ABS CIRCU	<u></u> ЛТ		
Diagnosis Proced	ure			INFOID:000000005779161	
	OR				
 Check the followir and harness side). Harness connecto Harness connectos the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha 	ttery cable from the ne ng terminals and conn r M6 r E106 <u>normal?</u> terminal and connect CONTINUITY (OPEN rness connectors M6	nectors for damage, b tor. N CIRCUIT) and E106.		ection (connector side	
	connector	ink connector and the	narness connector.		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	6		7	Existed	
M24	14	M6	6	Existed	
B. CHECK HARNESS	CONTINUITY (OPEN nnector of ABS actuation ity between the harne	tor and electric unit (consistent of the second s	ontrol unit). ABS actuator and ele	ector M6. ectric unit (control unit)	
Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	7	E41	35	Existed	
	6		14	Existed	
	Check CAN system ror was detected in th c unit (control unit).	e main line between t	he data link connector E106 and the ABS ac	and the ABS actuator	

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779162

[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			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.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-144, "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.

AV BRANCH LINE CIRCUIT

AV BRANCH LINE C	IRCUIT		
Diagnosis Procedure			A INFOID:000000005779163
1.CHECK CONNECTOR			В
 Turn the ignition switch O Disconnect the battery ca Check the terminals and side and connector side). Is the inspection result normative YES >> GO TO 2. NO >> Repair the terminant CHECK HARNESS FOR O 	ble from the negative te connectors of the AV connectors of the AV connectors all and connector.	erminal. ontrol unit for damage, benc	I and loose connection (unit C
1. Disconnect the connector	of AV control unit.	t harness connector terminal	s .
	/ control unit harness connect		Resistance (Ω)
Connector No.		ninal No.	G
M210 - Models without navigation	90	/ monitor)	Approx. 54 – 66
		(mormor)	Н
A۱	/ control unit harness connect	tor	Resistance (Ω)
Connector No.	Term	ninal No.	
M204	81	80	Approx. 54 – 66
 Models without navigation 	າ system (Without rear v	view monitor)	
A	/ control unit harness connect	tor	J
Connector No.	Tern	ninal No.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
Is the measurement value wit	hin the specification?		K
YES >> GO TO 3. NO >> Repair the AV con 3. CHECK POWER SUPPLY		IT	L
Check the power supply and t Base audio without rear view Base audio with rear view m BOSE audio without navigation BOSE audio with navigation	w monitor: <u>AV-40, "AV C</u> nonitor: <u>AV-173, "AV CO</u> tion: <u>AV-297, "AV CONT</u>	ONTROL UNIT : Diagnosis I NTROL UNIT : Diagnosis Pr ROL UNIT : Diagnosis Proce	Procedure" LAN ocedure" edure"
Is the inspection result norma	<u>l?</u>		I N
Base audio withBOSE audio with	nout rear view monitor: <u>A</u> n rear view monitor: <u>AV-2</u> thout navigation: <u>AV-328</u>	<u>AV-90, "Exploded View"</u> 202, "Exploded View" 3, "Exploded View"	0
YES (Past error)>>Error was		trol unit branch line.	P

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

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779164

[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).
- 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.

[CAN SYSTEM (TYPE 6)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005869085 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779166

[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			Posistanaa (O)
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-80, "Exploded View"</u>.

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

DLC BRANCH LINE	S>		[CAN SYSTEM (TYPE 6)]
	CIRCUIT		
Diagnosis Procedure			INFOID:00000000577916
.CHECK CONNECTOR			
. Turn the ignition switch OI	=F.		
. Disconnect the battery cal	ole from the negative te		ge, bend and loose connectior
(connector side and harne			
the inspection result normal	<u>?</u>		
YES >> GO TO 2. NO >> Repair the termina	al and connector		
CHECK HARNESS FOR O			
heck the resistance between		r terminals	
	Data link connector		Resistance (Ω)
Connector No. M24	-	ninal No.	
the measurement value with	6	14	Approx. 54 – 66
		е.	
		-	
		-	
		-	
		-	

< 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 (Ω)
Connector No.	Terminal No.		Resistance (32)
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to <u>MWI-136, "Exploded View"</u>.

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:000000005779168

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

I. 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 harness connector terminals. Steering angle sensor branch line. S. > GO TO 3. NO >> Repair the steering angle sensor branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-83. "Wiring Dia- Gram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-110. "Exploded View". YES (Present error)>>Replace the steering angle sensor branch line. NO >> Repair the power supply and the ground circuit.		NE CIRCUIT		
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side). s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of steering angle sensor harness connector terminals. Steering angle sensor harness connector Connector No. Terminal No. M37 1 2 Approx. 54 - 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. 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 Diagram - BRAKE CONTROL SYSTEM -".</u> s the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-110, "Exploded View".</u> YES (Past error)>>Error was detected in the steering angle sensor branch line. 	Diagnosis Procedure			INFOID:000000005779169
 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of steering angle sensor. 2. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector terminals. Steering angle sensor barnes connector Resistance (Ω) M37 1 2 Approx.54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-110, "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line.	1.CHECK CONNECTOR			
Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. M37 1 2 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-83. "Wiring Diagram - BRAKE CONTROL SYSTEM". Is the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-110. "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line.	 Disconnect the battery Check the terminals an (unit side and connecto ls the inspection result norn YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connect 	cable from the negative terr d connectors of the steering r side). <u>nal?</u> inal and connector. COPEN CIRCUIT	g angle sensor for damage,	
Connector No. Terminal No. M37 1 2 Approx. 54 – 66 Sthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Sche inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-110, "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line.				
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-110, "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line.	Connector No.	Termir	nal No.	Resistance (Ω)
 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</u>, "Wiring Diagram - <u>BRAKE CONTROL SYSTEM -</u>". <u>s the inspection result normal?</u> YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-110</u>, "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line. 	M37	1	2	Approx. 54 – 66
	NO >> Repair the stee 3. CHECK POWER SUPPL Check the power supply ar <u>gram - BRAKE CONTROL</u> <u>s the inspection result norm</u> YES (Present error)>>Rep	AND GROUND CIRCUIT and the ground circuit of the <u>SYSTEM -"</u> . <u>nal?</u> place the steering angle sen	steering angle sensor. Rei sor. Refer to <u>BRC-110, "Ex</u>	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-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-107</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 6)]

INFOID:000000005779170

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

IPDM-E BRANCH LINE CIRCUIT Diagnosis Procedure	INIEQ1D-00000000577013
	INFOID:00000000577917
	INFOID.0000000377917
1.CHECK CONNECTOR	
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damage, and connector side). 	bend and loose connection (unit 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.	
 Check the resistance between the IPDM E/R harness connector tell 	rminals.
IPDM E/R harness connector	
Connector No. Terminal No.	Resistance (Ω)
E6 40 39	Approx. 108 – 132
Is the measurement value within the specification?	
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line.	
3. CHECK POWER SUPPLY AND GROUND CIRCUIT	
Check the power supply and the ground circuit of the IPDM E/R. Refer	to PCS 18 "Diagnosis Procedure"
Is the inspection result normal?	to <u>PCS-18</u> , <u>Diagnosis Plocedure</u> .
YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Expl	oded View".
YES (Past error)>>Error was detected in the IPDM E/R branch line.	
NO >> Repair the power supply and the ground circuit.	

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link	Data link connector		Continuity	
Connector No.	Terminal No.	- Ground	Continuity	
 M24	6		Not existed	
IVIZ4	14		Not existed	

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

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

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

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

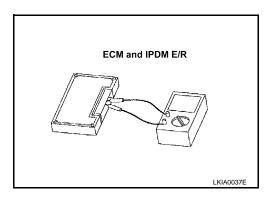
Is the measurement value within the specification?

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-152

INFOID:000000005779172

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779174

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector Data		Data link	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M210	90	M24	6	Existed	
WZ 10	74	10124	14	Existed	

- Without navigation system (With rear view monitor)

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

Without navigation system (Without rear view monitor)

AV control unit h	arness connector	Data link connector		_ Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
COIVI	87	₩124	14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BET	WEEN DLC A	ND ADP CIRCL	JIT	
Diagnosis Proced	ure			INFOID:000000005779175
.CHECK CONNECT	OR			
 Check the followir and harness side) Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	ttery cable from the ne ng terminals and conr r M7 r B1 <u>normal?</u> terminal and connect	nectors for damage, k or. N CIRCUIT)	pend and loose conr	nection (connector side
. Check the continu	ity between the data li	ink connector and the	harness connector.	
	connector		connector	- Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M7	20	Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS	main line between th CONTINUITY (OPEN		and the harness con	nector M7.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS	main line between th CONTINUITY (OPEN	I CIRCUIT)	and the harness con	nector M7.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS theck the continuity be Connector No.	main line between th CONTINUITY (OPEN	I CIRCUIT)	and the harness con	
NO >> Repair the CHECK HARNESS Check the continuity be	main line between th CONTINUITY (OPEN etween the harness co 20 21	I CIRCUIT)		Continuity

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005779176

[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.	Termiı	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	7	Existed	
1117	23	IVIO	6	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	arness connector ABS actuator and electric unit (control unit) harness connector Continu			
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
E100	6		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:000000005779177

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

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

ECM harness connector			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-144, "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.

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

AV BRANCH LINE CI	RCUIT		
Diagnosis Procedure			μ ΝΕΟΙD:000000005779178
1.CHECK CONNECTOR			E
 Turn the ignition switch OF Disconnect the battery cat Check the terminals and o side and connector side). Is the inspection result normal YES >> GO TO 2. NO >> Repair the terminat CHECK HARNESS FOR O 	ble from the negative terr connectors of the AV cor ? al and connector.		and loose connection (unit
 Disconnect the connector Check the resistance betw Models with navigation system 	veen the AV control unit h	narness connector terminals	S. F
AV Connector No.	control unit harness connecto	r nal No.	Resistance (Ω)
M210	90	74	Approx. 54 – 66
- Models without navigation	system (With rear view	monitor)	H
	control unit harness connecto		Resistance (Ω)
Connector No.		nal No.	A
M204 - Models without navigation	81	80	Approx. 54 – 66
	system (without rear vie		
AV	control unit harness connecto	r	Resistance (Ω)
Connector No.		nal No.	
M85	86	87	Approx. 54 – 66
Is the measurement value withYES>> GO TO 3.NO>> Repair the AV con 3. CHECK POWER SUPPLY	trol unit branch line. AND GROUND CIRCUIT		L
 Check the power supply and the Base audio without rear view Base audio with rear view me BOSE audio without navigation: BOSE audio with navigation: 	/ monitor: <u>AV-40, "AV CC</u> onitor: <u>AV-173, "AV CON</u> on: <u>AV-297, "AV CONTR</u>	NTROL UNIT : Diagnosis F TROL UNIT : Diagnosis Pro OL UNIT : Diagnosis Proce	Procedure" LA bocedure"
Is the inspection result normal			1
YES (Present error)>>Replac • Base audio with	the AV control unit. Recout rear view monitor: AV		
Base audio withBOSE audio with	rear view monitor: <u>AV-20</u> nout navigation: <u>AV-328</u> , n navigation: <u>AV-474</u> , "Ex	02, "Exploded View" "Exploded View"	C
YES (Past error)>>Error was		ol unit branch line.	F

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779179

[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		
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.

[CAN SYSTEM (TYPE 7)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005869087 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779181

[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.

	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-80, "Exploded View"</u>.

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

DIC/CIRCUIT DIAGNOS	10 >		
DLC BRANCH LINE	CIRCUIT		
iagnosis Procedure			INFOID:0000000577918
CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of 	orr. able from the negative terr	minal.	
Check the terminals an	d connectors of the data li		e, bend and loose connection
connector side and har the inspection result norm	,		
YES >> GO TO 2.			
NO >> Repair the term	nal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
heck the resistance betwee	en the data link connector t	terminals.	
	Data link connector		
Connector No.	Termir	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	Resistance (Ω)		
Connector No.	Termi	(100) (100)	
M67	56 72		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-136, "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:000000005779183

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INF0ID:000000005779184
I .CHECK CONNECTOR			
 Check the terminals and (unit side and connecto) 	cable from the negative tern d connectors of the steering r side).	ninal. g angle sensor for damage,	bend and loose connection
the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
CHECK HARNESS FOR			
	or of steering angle sensor etween the steering angle s	ensor harness connector te	rminals.
	ering angle sensor harness conne		Resistance (Ω)
Connector No. M37	Termi	nal No. 2	Approx. 54 – 66
CHECK POWER SUPPL	ring angle sensor branch lin Y AND GROUND CIRCUI Id the ground circuit of the		er to <u>BRC-83, "Wiring Dia-</u>
ram - BRAKE CONTROL S the inspection result norm			
YES (Present error)>>Rep YES (Past error)>>Error w			bloded View".

< DTC/CIRCUIT DIAGNOSIS >

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779185

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Driv	Resistance (Ω)		
Connector No.	Termi		
B451	3 19		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-228, "Exploded View".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:000000005779186
Check the terminals and	cable from the negative term d connectors of the ABS act nit side and connector side)	uator and electric unit (co	ntrol unit) for damage, bend
YES >> GO TO 2.			
NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
nals.			it) harness connector termi-
ADS actuator a	ABS actuator and electric unit (control unit) harness connector		Resistance (Ω)
Connector No	Termina		Resistance (Ω)
Connector No. E41	Termina 35		
	35	al No.	Resistance (Ω) Approx. 54 – 66
E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS	35	al No. 14	
E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply an <u>3RC-69. "Diagnosis Proced</u>	35 actuator and electric unit (c Y AND GROUND CIRCUIT d the ground circuit of the a	al No. 14 ontrol unit) branch line.	
E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply an <u>3RC-69.</u> "Diagnosis Procedures the inspection result norm	35 ithin the specification? actuator and electric unit (c Y AND GROUND CIRCUIT d the ground circuit of the <u>ure</u> ". <u>al?</u>	al No. 14 ontrol unit) branch line. ABS actuator and electric	Approx. 54 – 66
E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3 .CHECK POWER SUPPL Check the power supply an <u>3RC-69. "Diagnosis Procedu</u> <u>s the inspection result norm</u> YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error wa	35 ithin the specification? actuator and electric unit (c Y AND GROUND CIRCUIT d the ground circuit of the <u>ure</u> ". <u>al?</u>	al No. 14 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). R ator and electric unit (cont	Approx. 54 – 66 e unit (control unit). Refer to Refer to <u>BRC-107, "Exploded</u>
E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3 .CHECK POWER SUPPL Check the power supply an <u>3RC-69. "Diagnosis Procedu</u> <u>s the inspection result norm</u> YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error wa	35 actuator and electric unit (c Y AND GROUND CIRCUIT d the ground circuit of the ure". al? lace the ABS actuator and e	al No. 14 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). R ator and electric unit (cont	Approx. 54 – 66 e unit (control unit). Refer to Refer to <u>BRC-107, "Exploded</u>
E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3 .CHECK POWER SUPPL Check the power supply an <u>3RC-69. "Diagnosis Procedu</u> <u>s the inspection result norm</u> YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error wa	35 actuator and electric unit (c Y AND GROUND CIRCUIT d the ground circuit of the ure". al? lace the ABS actuator and e	al No. 14 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). R ator and electric unit (cont	Approx. 54 – 66 e unit (control unit). Refer to Refer to <u>BRC-107, "Exploded</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779187

[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.	Termi	Resistance (Ω)		
E6	40 39		Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Exploded View".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 7)]

CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:000000005779188
1.CONNECTOR INSPECT	ION		
1. Turn the ignition switch	OFF.		
	cable from the negative terr connectors on CAN commu		
	innectors for damage, bend		
Is the inspection result norm	-		
YES >> GO TO 2.			
• ·	inal and connector.	T \	
2.CHECK HARNESS CON			
Check the continuity betwee	en the data link connector te	erminals.	
	Data link connector		Continuity
Connector No.	Termiı	nal No.	Continuity
M24	6	14	Not existed
s the inspection result norm	nal?		
YES >> GO TO 3. NO >> Check the harn	ess and repair the root cau	20	
3. CHECK HARNESS CON	•		
Check the continuity betwee	en the data link connector a	na the ground.	
Data liak			
Data IIIK	connector		Continuity
Connector No.	connector Terminal No.	Ground	Continuity
Connector No.	1	Ground	Continuity Not existed
Connector No. M24	Terminal No. 6 14	Ground	
Connector No. M24 s the inspection result norm	Terminal No. 6 14	Ground	Not existed
Connector No. M24 s the inspection result norm YES >> GO TO 4.	Terminal No. 6 14 nal?		Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn	Terminal No. 6 14 nal? ess and repair the root caus	se.	Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM	Terminal No. 6 14 nal? ess and repair the root caus I E/R TERMINATION CIRC	se.	Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t	Terminal No. 6 14 nal? ess and repair the root caus I E/R TERMINATION CIRC	se.	Not existed
Connector No. M24 Sthe inspection result norm YES >> GO TO 4. NO >> Check the harn CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be	Terminal No. 6 14 nal? ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R.	se.	Not existed Not existed
Connector No. M24 S the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM	Terminal No. 6 14 nal? ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R.	se. :UIT	Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No.	Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC the IPDM E/R. etween the ECM terminals.	se. :UIT 2)	Not existed Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1	Terminal No. 6 14 nal? ess and repair the root cause 1 E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (0.13) 13 Approx. 108 – 1	se. :UIT 2) 132	Not existed Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1	Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC the IPDM E/R. etween the ECM terminals.	se. :UIT 2) 132	Not existed Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and to 2. Check the resistance be ECM Terminal No. 114 1 3. Check the resistance be	Terminal No. 6 14 nal? ess and repair the root cause 1 E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (0.13) 13 Approx. 108 – 1	se. :UIT 2) 132	Not existed Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1	Terminal No. 6 14 nal? ess and repair the root cause 1 E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (0.13) 13 Approx. 108 – 1	se. :UIT 2) 132 nals.	Not existed Not existed
Connector No. M24 s the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1 3. Check the resistance be IPDM E/R Terminal No.	Terminal No. 6 14 hal? ess and repair the root cause I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (£ 13 Approx. 108 – 2 etween the IPDM E/R termi Resistance (£ Resistance (£	se. :UIT 2) 132 nals. 2)	Not existed Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1 3. Check the resistance be IPDM E/R Terminal No. 40	Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC the IPDM E/R. etween the ECM terminals. Resistance (£ 13 Approx. 108 – 1 etween the IPDM E/R terminals Resistance (£ 39 Approx. 108 – 1	se. :UIT 2) 132 nals. 2)	Not existed Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1 3. Check the resistance be IPDM E/R Terminal No. 40	Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC the IPDM E/R. etween the ECM terminals. Resistance (£ 13 Approx. 108 – 1 etween the IPDM E/R terminals Resistance (£ 39 Approx. 108 – 1	se. :UIT 2) 132 nals. 2)	Not existed Not existed
Connector No. M24 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK ECM AND IPDM 1. Remove the ECM and the text of the resistance between the text of text of the text of the text of text	Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC the IPDM E/R. etween the ECM terminals. Resistance (£ 13 Approx. 108 – 1 etween the IPDM E/R terminals Resistance (£ 39 Approx. 108 – 1	se. :UIT 2) 132 nals. 2)	Not existed Not existed

< 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 AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 8)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:000000005779189 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 Check the continuity between the AV control unit harness connector and the data link connector. With navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M210 M24 74 14 Existed Without navigation system (With rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M204 M24 80 14 Existed Without navigation system (Without rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. 86 6 Existed M85 M24 87 14 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 AV control unit and the data link connec-tor. NO >> Repair the main line between the AV control unit and the data link connector. LAN Ν

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000005779190

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

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

Data link connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M7	20	Existed
10124	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

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

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

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.	Term	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 4WAS main control unit and the driver seat control unit.

NO >> Repair the main line between the 4WAS main control unit and the driver seat 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:000000005779192

[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.	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 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	7	Existed
1017	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		hornood connector		Continuity
Connector No.	Terminal No.					
E106	7	E41	35	Existed		
E100	6		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:000000005779193

[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.	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-144, "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.

AV BRANCH LINE CIRCUIT

AV BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INF0ID:000000005779194
1.CHECK CONNECTOR			
 Turn the ignition switch O Disconnect the battery ca Check the terminals and side and connector side). Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin CHECK HARNESS FOR C 	ble from the negative ter connectors of the AV co <u>I?</u> al and connector.		and loose connection (unit
 Disconnect the connector Check the resistance betw Models with navigation sy 	ween the AV control unit	harness connector terminal	S.
	/ control unit harness connecto		Resistance (Ω)
Connector No. M210	90	inal No. 74	Approx. 54 – 66
- Models without navigation	system (With rear view	monitor)	
A	/ control unit harness connecto	Dr	Posistanco (O)
Connector No.	Termi	inal No.	Resistance (Ω)
M204	81	80	Approx. 54 – 66
- Models without navigation	n system (Without rear vi	ew monitor)	
A	/ control unit harness connecto	or	Popietanee (O)
Connector No.	Termi	inal No.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the AV cordNO >> Repair the AV cord3.CHECK POWER SUPPLYCheck the power supply and the	ntrol unit branch line. AND GROUND CIRCUI		
 Base audio without rear view Base audio with rear view m BOSE audio with navigation 	w monitor: <u>AV-40, "AV CC</u> nonitor: <u>AV-173, "AV CON</u> tion: <u>AV-297, "AV CONTF</u>	<u>DNTROL UNIT : Diagnosis</u> JTROL UNIT : Diagnosis Pr ROL UNIT : Diagnosis Proc	Procedure" ocedure" edure"
Is the inspection result norma	<u>l?</u>		
 Base audio with BOSE audio with BOSE audio with 	nout rear view monitor: <u>AV-2</u> n rear view monitor: <u>AV-2</u> thout navigation: <u>AV-328</u> th navigation: <u>AV-474, "E</u>	V-90, "Exploded View" 02, "Exploded View" , "Exploded View" xploded View"	
YES (Past error)>>Error was	s detected in the AV cont	rol unit branch line.	

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

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779195

[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.

	Resistance (Ω)		
Connector No.	Terminal No.		(100)3101100 (22)
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.

[CAN SYSTEM (TYPE 8)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005869128 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779197

[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.

	Resistance (Ω)		
Connector No.	Terminal No.		Resistance (22)
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-80, "Exploded View"</u>.

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

DLC BRANCH LINE C			[CAN SYSTEM (TYPE 8)]
	JIRCUIT		
Diagnosis Procedure			INFOID:0000000577919
.CHECK CONNECTOR			
. Turn the ignition switch OF	F.		
. Disconnect the battery cab	le from the negative termine		e, bend and loose connectior
(connector side and harnes		Connector for damage	
the inspection result normal?	•		
YES >> GO TO 2. NO >> Repair the terminal	and connector		
CHECK HARNESS FOR OF			
heck the resistance between t		minals.	
· · · · · · · · · · · · · · · · · · ·			
Connector No.	Data link connector Terminal	No	Resistance (Ω)
M24	6	14	Approx. 54 – 66
the measurement value withi	n the specification?		

< 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 (Ω)
M67	56 72		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-136, "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:000000005779199

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000005779200
1.CHECK CONNECTOR			
 Check the terminals and (unit side and connector) (unit s	cable from the negative terr d connectors of the steering r side). <u>nal?</u> inal and connector.	angle sensor for damage	e, bend and loose connection
	ering angle sensor harness conne		
Connector No.	Termir	nal No.	- Resistance (Ω)
M37	1	2	Approx. 54 – 66
3. CHECK POWER SUPPL Check the power supply an gram - BRAKE CONTROL S s the inspection result norm	d the ground circuit of the <u>SYSTEM -</u> ".	- steering angle sensor. Re	efer to <u>BRC-83, "Wiring Dia-</u>
YES (Present error)>>Rep	lace the steering angle sen	sor. Refer to BRC-110. "E	xploded View".
YES (Past error)>>Error wa	lace the steering angle sen as detected in the steering er supply and the ground ci	angle sensor branch line.	x <u>ploded View"</u> .
YES (Past error)>>Error wa	as detected in the steering	angle sensor branch line.	x <u>ploded View"</u> .

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779201

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-228, "Exploded View"</u>.

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

RAS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

	ECIRCUIT		
Diagnosis Procedure			INFOID:000000005779202
1.CHECK CONNECTOR			
3. Check the terminals an tion (unit side and conn	cable from the negative tern d connectors of the 4WAS r ector side).		age, bend and loose connec-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect	or of 4WAS main control un etween the 4WAS main con		or terminals.
	AS main control unit harness conne		Resistance (Ω)
Connector No.	Termin		
B54 s the measurement value w	1	8	Approx. 54 – 66
Check the power supply an Procedure (4WAS Main Cor s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT d the ground circuit of the 4 <u>htrol Unit)"</u> .	WAS main control unit. I I unit. Refer to <u>STC-185,</u> ain control unit branch lin	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (32)
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-107</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 8)]

INFOID:000000005779203

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOS	SIS >	[CAN SYSTEM (TYPE 8)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:0000000577920-
1.CHECK CONNECTOR			
 Check the terminals an and connector side). Is the inspection result norm 	cable from the negative term d connectors of the IPDM	minal. E/R for damage, bend and	loose connection (unit side
YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	etween the IPDM E/R harn	ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
E6	40	nal No. 39	Approx. 108 – 132
s the measurement value w	-	00	
YES >> GO TO 3. NO >> Repair the IPDN 3. CHECK POWER SUPPL	/I E/R branch line. Y AND GROUND CIRCUI ⁻		
Check the power supply and Is the inspection result norm	•	PDM E/R. Refer to <u>PCS-18</u> ,	<u>, "Diagnosis Procedure"</u> .
YES (Past error)>>Error w			1

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

IPDM E/R		Resistance (Ω)	
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.

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ECM and IPDM E/R

INFOID:000000005779205

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779206

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit h	arness connector	Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M210	90	M24	6	Existed	
WZ TO	74		14	Existed	

- Without navigation system (With rear view monitor)

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

Without navigation system (Without rear view monitor)

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

Is the inspection result normal?

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

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

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

/IAIN LINE BET	WEEN DLC A	ND ADP CIRCL	JIT	
Diagnosis Proced	ure			INFOID:000000005779207
	OR			
 Check the followir and harness side) Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	tery cable from the ne og terminals and com r M7 r B1 <u>normal?</u> terminal and connect	nectors for damage, k or. N CIRCUIT)	pend and loose conr	ection (connector side
. Check the continu	ty between the data li	ink connector and the	harness connector.	
	connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M7	20	Existed
the inspection result YES >> GO TO 3.	normal?			
	CONTINUITY (OPEN		and the harness con	
Check the continuity be				
		Terminal No.	22	Continuity
Check the continuity be	20 21		22 23	Existed
Check the continuity be Connector No.	20 21			

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005779208

[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.	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	M6	7	Existed
1017	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	s connector ABS actuator and electric unit (cor harness connector		ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	7	E 41	35	Existed	
E100	6	E41	14	Existed	

Is the inspection result normal?

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

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 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:000000005779209

[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 (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-144, "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.

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

AV BRANCH LINE C	IRCUIT		
Diagnosis Procedure			A INFOID:000000005779210
1.CHECK CONNECTOR			В
side and connector side). Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR C	ble from the negative terr connectors of the AV cor <u>I?</u> al and connector. DPEN CIRCUIT		and loose connection (unit
 Disconnect the connector Check the resistance betw Models with navigation sy 	ween the AV control unit h	narness connector terminals	5. F
Connector No.	/ control unit harness connecto	r nal No.	Resistance (Ω)
M210	90	74	
- Models without navigation	system (With rear view i	monitor)	
A	/ control unit harness connecto	r	Resistance (Ω)
Connector No.	Termir	nal No.	
M204	81	80	Approx. 54 – 66
- Models without navigation	n system (Without rear vie	ew monitor)	
AV	/ control unit harness connecto	r	J Resistance (Ω)
Connector No.	Termir	nal No.	
M85	86	87	Approx. 54 – 66
Is the measurement value withYES>> GO TO 3.NO>> Repair the AV core 3. CHECK POWER SUPPLY	ntrol unit branch line. AND GROUND CIRCUIT		L
Check the power supply and t Base audio without rear view Base audio with rear view m BOSE audio without navigation BOSE audio with navigation	w monitor: <u>AV-40, "AV CO</u> nonitor: <u>AV-173, "AV CON</u> tion: <u>AV-297, "AV CONTR</u>	NTROL UNIT : Diagnosis F TROL UNIT : Diagnosis Pro OL UNIT : Diagnosis Proce	Procedure" LA ocedure"
Is the inspection result norma	<u>l?</u>		IN
Base audio withBOSE audio with	ce the AV control unit. Re nout rear view monitor: <u>AV</u> n rear view monitor: <u>AV-20</u> thout navigation: <u>AV-328</u> , th navigation: <u>AV-474</u> , "Ex	/-90, "Exploded View" 02, "Exploded View" "Exploded View"	C
YES (Past error)>>Error was		ol unit branch line.	P

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779211

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to <u>SBC-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 9)]

TCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000005779212
1.CHECK CONNECTOR			
	able from the negative terr ninals and connectors for d		nnection (unit side and con-
Is the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
		arness connector terminals.	
Connector No.	Termir	nal No.	Resistance (Ω)
F51	3	8	Approx. 54 – 66
YES (Past error)>>Error wa	branch line. Y AND GROUND CIRCUIT the ground circuit of the T al? ace the control valve with sembly if control valve with	CM. Refer to <u>TM-212, "Diac</u> TCM. Refer to <u>TM-99, "C</u> TCM is not listed in the lat nch line.	omponent Parts Location".

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A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure

INFOID:000000005869129

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

iagnosis Procedure			INFOID:00000005779214
.CHECK CONNECTOR			
	able from the negative terr I connectors of the BCM f <u>al?</u> nal and connector.		ose connection (unit side and
. Disconnect the connecto			
. Check the resistance bet	tween the BCM harness co	onnector terminals.	
	BCM harness connector		Posistance (O)
Connector No.	Termir	nal No.	Resistance (Ω)
M122	91	90	Approx. 54 – 66
the measurement value wi			
s the measurement value wi YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPLY Check the power supply and s the inspection result normality	branch line. (AND GROUND CIRCUIT the ground circuit of the B		iagnosis Procedure".

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779215

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

M&A BRANCH LINI			
Diagnosis Procedure			INF0ID:000000005779216
1 .CHECK CONNECTOR			
 Check the terminals and nection (unit side and control 	cable from the negative termi d connectors of the unified m onnector side).		amage, bend and loose con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect	or of unified meter and A/C a stween the unified meter and		ector terminals.
	meter and A/C amp. harness conn		Resistance (Ω)
Connector No. M67	Terminal 56	No. 72	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply and IETER AND A/C AMP. : Dia	agnosis Procedure"		. Refer to <u>MWI-51, "UNIFIED</u>
YES (Past error)>>Error wa	al? ace the unified meter and A/ as detected in the unified me er supply and the ground circ	ter and A/C amp. branch	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779217

[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 steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-110, "Exploded View"</u>.

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure			INFOID:000000005779218
.CHECK CONNECTOR			
 Check the following tern nector side). Driver seat control unit Harness connector B46 Harness connector B59 the inspection result norm 	able from the negative termi ninals and connectors for da		onnection (unit side and con-
YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR			
. Disconnect the connect	or of driver seat control unit. tween the driver seat contro	l unit harness connector	terminals.
Driv	er seat control unit harness connec	tor	Papistanaa (O)
Connector No.	Termina	Νο	Resistance (Ω)
B451	3	19	Approx. 54 – 66
B451 the measurement value w YES >> GO TO 3. NO >> Repair the drive CHECK POWER SUPPL	3 ithin the specification? r seat control unit branch line Y AND GROUND CIRCUIT	19 9.	
B451 s the measurement value w YES >> GO TO 3. NO >> Repair the drive CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis	3 ithin the specification? r seat control unit branch line Y AND GROUND CIRCUIT the ground circuit of the driv s Procedure".	19 9.	Approx. 54 – 66 r to <u>ADP-65, "DRIVER SEAT</u>
B451 s the measurement value w YES >> GO TO 3. NO >> Repair the drive CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	3 ithin the specification? r seat control unit branch line Y AND GROUND CIRCUIT the ground circuit of the driv s Procedure".	19 e. er seat control unit. Refe nit. Refer to <u>ADP-228, "E</u> control unit branch line.	r to <u>ADP-65, "DRIVER SEAT</u>
B451 s the measurement value w YES >> GO TO 3. NO >> Repair the drive CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	3 ithin the specification? r seat control unit branch line Y AND GROUND CIRCUIT the ground circuit of the driv s Procedure". al? ace the driver seat control u as detected in the driver seat	19 e. er seat control unit. Refe nit. Refer to <u>ADP-228, "E</u> control unit branch line.	r to <u>ADP-65, "DRIVER SEAT</u>
B451 s the measurement value w YES >> GO TO 3. NO >> Repair the drive CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	3 ithin the specification? r seat control unit branch line Y AND GROUND CIRCUIT the ground circuit of the driv s Procedure". al? ace the driver seat control u as detected in the driver seat	19 e. er seat control unit. Refe nit. Refer to <u>ADP-228, "E</u> control unit branch line.	r to <u>ADP-65, "DRIVER SEAT</u>

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		1/63/3/01/06 (32)
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-107</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:000000005779219

ICC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

ICC BRANCH LINE	CIRCUIT			Δ
Diagnosis Procedure			INF01D:000000005779220	A
1.CHECK CONNECTOR				В
	cable from the negative ter d connectors of the ICC s onnector side).		mage, bend and loose con-	С
NO >> Repair the termi				D
2.CHECK HARNESS FOR				Е
	or of ICC sensor integrated stween the ICC sensor inte	d unit. egrated unit harness connec	tor terminals.	
ICC se	ensor integrated unit harness co	nnector	Basistanas (O)	F
Connector No.	Term	inal No.	Resistance (Ω)	
E67	3	6	Approx. 54 – 66	G
3.CHECK POWER SUPPL Check the power supply and		Т	Refer to <u>CCS-102, "Diagno-</u>	Н
sis Procedure". Is the inspection result norm	al?			I
YES (Present error)>>Repl YES (Past error)>>Error wa	lace the ICC sensor integr	ated unit. Refer to <u>CCS-134</u> nsor integrated unit branch li sircuit.		J
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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779221

[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 IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Exploded View".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 9)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000005779222 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M24 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. ${f 4}$. 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 (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< DTC/CIRCUIT DIAGNOSIS >

LAN-207

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 10)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:000000005779223 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 AV control unit harness connector and the data link connector. With navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M210 M24 74 14 Existed Without navigation system (With rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M204 M24 80 14 Existed Without navigation system (Without rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. 86 6 Existed M85 M24 87 14 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 AV control unit and the data link connec-tor. NO >> Repair the main line between the AV control unit and the data link connector. LAN Ν

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000005779224

[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 M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

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

Data link	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	N47	20	Existed	
11/124	14	M7	21	Existed	

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN ADP AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND RAS CIRCUIT

Diagnosis Procedure

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.

Continuity	
Existed	
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 4WAS main control unit and the driver seat control unit.

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

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[CAN SYSTEM (TYPE 10)]

INFOID:000000005779225

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005779226

[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.	Terminal No.		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 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	7	Existed	
1417	23		6	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	Harness connector		ABS actuator and electric unit (control unit) harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
EIUO	6	- ⊏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 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:000000005779227

[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.		
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-144, "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.

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

AV BRANCH LINE C	IRCUIT		0		
Diagnosis Procedure			A INFOID:000000005779228		
1. CHECK CONNECTOR			В		
side and connector side). Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR C	ble from the negative terr connectors of the AV cor I <u>?</u> al and connector. DPEN CIRCUIT		nd and loose connection (unit C		
 Disconnect the connector Check the resistance between the connector of the connector Models with navigation symptotic connector 	ween the AV control unit h	narness connector termin	als.		
AN Connector No.	/ control unit harness connecto	control unit harness connector Resistance (Ω)			
M210	90	74	Approx. 54 – 66 G		
- Models without navigation	n system (With rear view i	monitor)	н		
A	AV control unit harness connector Resistance (Ω)				
Connector No.	Termir	nal No.			
M204	81	80	Approx. 54 – 66		
- Models without navigation	n system (Without rear vie	ew monitor)			
A۱	AV control unit harness connector Resistance (Ω)				
Connector No.	Termir	nal No.			
M85	86	87	Approx. 54 – 66		
Is the measurement value with YES >> GO TO 3. NO >> Repair the AV con 3. CHECK POWER SUPPLY	ntrol unit branch line. AND GROUND CIRCUIT		L		
 Check the power supply and t Base audio without rear view Base audio with rear view m BOSE audio without navigation BOSE audio with navigation 	w monitor: <u>AV-40, "AV CC</u> nonitor: <u>AV-173, "AV CON</u> tion: <u>AV-297, "AV CONTR</u>	NTROL UNIT : Diagnosis TROL UNIT : Diagnosis I OL UNIT : Diagnosis Pro	s Procedure" LA Procedure" ocedure"		
Is the inspection result norma			1.4		
Base audio withBOSE audio with	ce the AV control unit. Renout rear view monitor: <u>AV</u> rear view monitor: <u>AV-20</u> chout navigation: <u>AV-328.</u> ch navigation: <u>AV-474, "Ex</u>	/-90, "Exploded View")2, "Exploded View" "Exploded View"	0		
YES (Past error)>>Error was		ol unit branch line.	P		

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779229

[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 control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to <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)]

	ECIRCUIT		
Diagnosis Procedure			INFOID:000000005779230
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d 3	minal. lamage, bend and loose cor	nection (unit side and con-
Is the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
1 Disconnect the connect	or of A/T accomply		
 Disconnect the connect Check the resistance be 	etween the A/T assembly h	arness connector terminals.	
2. Check the resistance be	etween the A/T assembly have a connector	r	Resistance (Ω)
	etween the A/T assembly have a connector		
2. Check the resistance be Connector No. F51	etween the A/T assembly have a connector A/T assembly harness connector Termin 3	r nal No.	Resistance (Ω) Approx. 54 – 66
2. Check the resistance be Connector No.	etween the A/T assembly have a connector assembly harness connector Termin 3 a connection and the specification? branch line.	r nal No. 8	
2. Check the resistance be Connector No. F51 Is the measurement value w YES >> GO TO 3. NO >> Repair the TCM	etween the A/T assembly have a connector Termin 3 vithin the specification? branch line.	r nal No. 8	Approx. 54 – 66
2. Check the resistance be Connector No. F51 Is the measurement value w YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm	A/T assembly harness connector Termir 3 vithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T hal?	r nal No. 8 T TCM. Refer to <u>TM-212, "Diac</u>	Approx. 54 – 66 mosis Procedure".
2. Check the resistance be Connector No. F51 Is the measurement value w YES >> GO TO 3. NO >> Repair the TCW 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep	A/T assembly harness connector Termin 3 within the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T hal? lace the control valve with	r nal No. 8 Г СМ. Refer to <u>TM-212, "Diac</u> n TCM. Refer to <u>TM-99, "C</u>	Approx. 54 – 66 mosis Procedure". omponent Parts Location".
2. Check the resistance be Connector No. F51 Is the measurement value w YES >> GO TO 3. NO >> Repair the TCW 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep (Replace A/T as YES (Past error)>>Error w	A/T assembly harness connector Termin 3 within the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T hal? lace the control valve with ssembly if control valve with as detected in the TCM bra	r nal No. 8 T CM. Refer to <u>TM-212, "Diac</u> n TCM. Refer to <u>TM-99, "C</u> n TCM is not listed in the late anch line.	Approx. 54 – 66 mosis Procedure". omponent Parts Location".
2. Check the resistance be Connector No. F51 Is the measurement value w YES >> GO TO 3. NO >> Repair the TCW 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep (Replace A/T as YES (Past error)>>Error w	A/T assembly harness connector Termin 3 within the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T hal? lace the control valve with ssembly if control valve with	r nal No. 8 T CM. Refer to <u>TM-212, "Diac</u> n TCM. Refer to <u>TM-99, "C</u> n TCM is not listed in the late anch line.	Approx. 54 – 66 mosis Procedure". omponent Parts Location".

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005869130

[CAN SYSTEM (TYPE 10)]

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:00000000577923
CHECK CONNECTOR			
	cable from the negative terr d connectors of the BCM f nal? inal and connector.		e connection (unit side and
Disconnect the connectCheck the resistance be	etween the BCM harness c	onnector terminals.	
	BCM harness connector		
Connector No	Tormi		Resistance (Ω)
Connector No. M122 s the measurement value w	91	nal No. 90	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779233

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

M&A BRANCH LINI Diagnosis Procedure			
			INFOID:00000005779234
1.CHECK CONNECTOR			
	cable from the negative tern d connectors of the unified i		amage, bend and loose con-
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2CUECK HARNESS FOR	inal and connector.		
2.CHECK HARNESS FOR 1. Disconnect the connect	or of unified meter and A/C	amp	
	etween the unified meter and		ector terminals.
Unified	I meter and A/C amp. harness cor	nnector	Resistance (Ω)
Connector No.	Termin		
M67 Is the measurement value w	56	72	Approx. 54 – 66
3. CHECK POWER SUPPL	the ground circuit of the ur		. Refer to <u>MWI-51, "UNIFIED</u>
ls the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa		eter and A/C amp. branch	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779235

[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 steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M37	1	1 2	

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-110, "Exploded View"</u>.

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

ADP BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INF01D:000000005779236
1. CHECK CONNECTOR			
 Turn the ignition switch 0 Disconnect the battery c Check the following term nector side). Driver seat control unit Harness connector B462 Harness connector B59 s the inspection result normative YES >> GO TO 2. NO >> Repair the terminit CHECK HARNESS FOR 	able from the negative terr ninals and connectors for d 2 <u>al?</u> nal and connector. OPEN CIRCUIT	amage, bend and loose cor	nnection (unit side and con-
. Check the resistance be	or of driver seat control unit tween the driver seat control er seat control unit harness conne	rol unit harness connector te	erminals.
Connector No.		nal No.	Resistance (Ω)
B451	3	19	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the driver CHECK POWER SUPPLY Check the power supply and CONTROL UNIT : Diagnosis s the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error was	the ground circuit of the dr <u>Procedure"</u> . al? ace the driver seat control	iver seat control unit. Refer unit. Refer to <u>ADP-228, "Ex</u>	
	r supply and the ground ci		

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RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779237

[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 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-185, "Exploded View".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:00000000577923
1. CHECK CONNECTOR			
 Check the terminals and and loose connection (upper terminal) 	able from the negative termin connectors of the ABS actu nit side and connector side).		ontrol unit) for damage, benc
s the inspection result norma YES >> GO TO 2. NO >> Repair the termin	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
 Check the resistance be 	tween the ABS actuator and	l electric unit (control ur	nit) harness connector termi-
nals.	nd electric unit (control unit) harnes	s connector	
nals. ABS actuator a	nd electric unit (control unit) harnes Terminal		- Resistance (Ω)
nals. ABS actuator a Connector No. E41	Terminal 35		- Resistance (Ω) Approx. 54 – 66
ABS actuator a Connector No. E41 S the measurement value wi YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPLY Check the power supply and	Terminal 35 thin the specification? actuator and electric unit (con (AND GROUND CIRCUIT d the ground circuit of the A	No. 14 ntrol unit) branch line.	Approx. 54 – 66
ABS actuator a Connector No. E41 Is the measurement value wi YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPLY Check the power supply and BRC-69, "Diagnosis Procedu Is the inspection result normal YES (Present error)>>Replation	Terminal 35 thin the specification? actuator and electric unit (con AND GROUND CIRCUIT d the ground circuit of the A <u>ire"</u> .	No. 14 ntrol unit) branch line. BS actuator and electric	Approx. 54 – 66
ABS actuator a Connector No. E41 Is the measurement value with YES >> GO TO 3. NO >> Repair the ABS and a structure of the ABS and a structur	Terminal 35 thin the specification? actuator and electric unit (con AND GROUND CIRCUIT the ground circuit of the A al?	No. 14 htrol unit) branch line. BS actuator and electric ectric unit (control unit). F	Approx. 54 – 66 c unit (control unit). Refer t Refer to <u>BRC-107, "Explode</u>

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< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779239

[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 s	ICC sensor integrated unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
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-134, "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 DIAGNOS	SIS >	[C	AN SYSTEM (TYPE 10)]
PDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INF0ID:00000000577924
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the IPDM	minal. E/R for damage, bend and	loose connection (unit side
YES >> GO TO 2.			
NO >> Repair the term			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of IPDM E/R. etween the IPDM E/R harn	ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.		nal No.	. ,
E6	40	39	Approx. 108 – 132
Is the inspection result norm	A E/R branch line. Y AND GROUND CIRCUI the ground circuit of the II hal?	PDM E/R. Refer to PCS-18	
YES (Past error)>>Error w			<u>-</u> -

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000005779241

[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	- Ground	Not existed
IVIZ4	14	_	Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

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

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

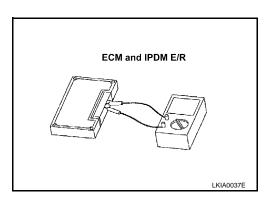
IPDI	M E/R	Resistance (Ω)	
Termi	inal No.		
40	39	Approx. 108 – 132	

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-228

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005779243

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M210	90	M24	6	Existed	
10/210	74	10124	14	Existed	

- Without navigation system (With rear view monitor)

AV control unit h	arness connector	Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M204	81	N04	6	Existed	
WI204	80	M24	14	Existed	

Without navigation system (Without rear view monitor)

AV control unit h	arness connector	Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M85	86	M04	6	Existed	
COIVI	87	M24	14	Existed	

Is the inspection result normal?

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

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

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

< DTC/CIRCUIT DIAG	MAIN LINE BET GNOSIS >	WEEN DLC ANI		SYSTEM (TYPE 11)]
MAIN LINE BET	WEEN DLC A	ND ABS CIRCL	JIT	
Diagnosis Proced	ure			INFOID:000000005779244
1.CHECK CONNECT	OR			
 Check the followin and harness side) Harness connecto Harness connecto Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	ttery cable from the ne ng terminals and conn r M6 r E106 <u>normal?</u> terminal and connect CONTINUITY (OPEN	nectors for damage, l or. I CIRCUIT)	pend and loose conne	ection (connector side
2. Check the continu	rness connectors M6 ity between the data li	nk connector and the	harness connector.	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	6		7	Existed
M24	14	M6	6	Existed
3. CHECK HARNESS	CONTINUITY (OPEN nnector of ABS actuat ity between the harne	I CIRCUIT) for and electric unit (c ss connector and the	ABS actuator and ele	ector M6.
Harness	connector		ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		14	Existed
YES (Past error)>>E	>Check CAN system ror was detected in th ic unit (control unit). main line between th	e main line between t		and the ABS actuator tuator and electric unit

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779245

[CAN SYSTEM (TYPE 11)]

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	nal 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-144, "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.

4WD BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

4WD BRANCH LIN	E CIRCUIT			٨
Diagnosis Procedure			INFOID:000000005779246	A
1.CHECK CONNECTOR				В
	cable from the negative terr ninals and connectors for d ctor	ninal. amage, bend and loose cor	nnection (unit side and con-	С
 Harness connector M11 	6			D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2. CHECK HARNESS FOR	inal and connector.			Е
 Disconnect the connect Check the resistance be 		it harness connector termina	als.	F
Α	WD control unit harness connect	-	Resistance (Ω)	G
Connector No.		nal No.		
F108	8	16	Approx. 54 – 66	Н
Is the measurement value wYESYESNO>> Repair the AWE 3. CHECK POWER SUPPL	control unit branch line.	r		1
	al? lace the AWD control unit.	Refer to <u>DLN-55, "Exploded</u>		J
YES (Past error)>>Error w NO >> Repair the powe	as detected in the AWD content of the ground cites and the ground cites and the ground cites and the ground cites are as a second content of the second co			K L LAN

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779247

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

Models with navigation system

	Resistance (Ω)		
Connector No.	Termi	nal No.	
M210	90	74	Approx. 54 – 66

Models without navigation system (With rear view monitor)

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

Models without navigation system (Without rear view monitor)

	AV control unit harness connecto	Resistance (Ω)		
Connector No.	Termi	nal No.	Resistance (22)	
M85	86	87	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Base audio without rear view monitor: AV-40, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view monitor: AV-173, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-297, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-448, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without rear view monitor: AV-90, "Exploded View"
- Base audio with rear view monitor: <u>AV-202, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-328</u>, "Exploded View"
- BOSE audio with navigation: AV-474, "Exploded View"

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

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure I. CHECK CONNECTOR I. Turn the ignition switch OFF. C. Disconnect the battery cable from the negative terminal. 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 Bithe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. C.CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of A/T assembly harness connector terminals. $A/T assembly harness connector Resistance between the A/T assembly harness connector terminals. \frac{A/T assembly harness connector No. Terminal No. Kesistance (Ω) Kesistance (Ω) Kesistance for 0. Kesistance f$	FCM BRANCH LINE CIRCUIT
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and 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) 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 TM-99, "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.	Diagnosis Procedure
 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 the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector for A/T assembly harness connector terminals. A/T assembly harness connector Repair the terminal and connector. 2. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector Resistance (Ω) A/T assembly harness connector Resistance (Ω) A/T assembly harness connector Repair the TCM branch line. 3. 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 TM-99. "Component Parts Location". (Replace A/T assembly ic ontrol valve with TCM is not listed in the latest parts list.) YES (Past error)>>Fror was detected in the TCM branch line.	.CHECK CONNECTOR
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of A/T assembly. 2. Check the resistance between the A/T assembly harness connector terminals.	 Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). A/T assembly Harness connector F103
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.	YES >> GO TO 2.
 Disconnect the connector of A/T assembly. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector Resistance (Ω) F51 Terminal No. F51 B the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. 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 TM-99, "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. 	
Connector No. Terminal No. Resistance (Ω) F51 3 8 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. NO >> Repair the TCM branch line. Scheck 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 TM-99, "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.	2. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector
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 TM-99, "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.	Resistance (Ω)
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 TM-99, "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.	F51 3 8 Approx. 54 – 66
INO >> Repair the power supply and the ground circuit.	 YES >> GO TO 3. NO >> Repair the TCM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to <u>TM-212, "Diagnosis Procedure"</u>. <u>s the inspection result normal?</u> YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-99, "Component Parts Location</u> (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005869135

[CAN SYSTEM (TYPE 11)]

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure			INFOID:00000000577925
1.CHECK CONNECTOR			
 Check the terminals and connector side). 	able from the negative tern I connectors of the BCM fo		se connection (unit side and
Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin 2. CHECK HARNESS FOR	nal and connector.		
1. Disconnect the connecto		onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	BCM harness connector Termin	al No.	Resistance (Ω)
M122	Termin 91	al No. 90	Resistance (Ω) Approx. 54 – 66
M122 <u>Is the measurement value wi</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPLY	Termin 91 thin the specification? branch line. Y AND GROUND CIRCUIT	90	Approx. 54 – 66
M122 Is the measurement value wi YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPLY Check the power supply and Is the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wat	Termin 91 thin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Bo al? ace the BCM. Refer to BCS	90 CM. Refer to <u>BCS-37, "Di</u> <u>S-80, "Exploded View"</u> . nch line.	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779251

[CAN SYSTEM (TYPE 11)]

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 11)]

M&A BRANCH LINI Diagnosis Procedure			
			INFOID:000000005779252
1.CHECK CONNECTOR			
	cable from the negative tern		amage, bend and loose con-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
	or of unified meter and A/C	amp.	
2. Check the resistance be	etween the unified meter an	d A/C amp. harness conne	ector terminals.
	I meter and A/C amp. harness cor		- Resistance (Ω)
Connector No. M67	Termin 56	nal No. 72	
Is the measurement value w		12	Approx. 54 – 66
3. CHECK POWER SUPPL		-	
Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm	agnosis Procedure".	nified meter and A/C amp.	Refer to <u>MWI-51, "UNIFIED</u>
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the unified meter and <i>A</i> as detected in the unified m er supply and the ground cir	eter and A/C amp. branch	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779253

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector			
Connector No.	Termi	Resistance (Ω)		
M37	1	2	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-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-110, "Exploded View"</u>.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure			INFOID:00000005779254
1. CHECK CONNECTOR			
3. Check the terminals and	able from the negative termin connectors of the ABS actu nit side and connector side).		ntrol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termir 2.CHECK HARNESS FOR	nal and connector.		
. Disconnect the connecto	r of ABS actuator and electr tween the ABS actuator and		it) harness connector termi-
nals.			
nals.	nd electric unit (control unit) harnes	ss connector	Pasistance (0)
nals.	nd electric unit (control unit) harnes Terminal		Resistance (Ω)
nals. ABS actuator a Connector No. E41 s the measurement value wi	Terminal 35		Resistance (Ω) Approx. 54 – 66
ABS actuator a Connector No. E41 Sthe measurement value wi YES >> GO TO 3. NO >> Repair the ABS a CHECK POWER SUPPLY Check the power supply and BRC-69. "Diagnosis Procedu Is the inspection result normative YES (Present error)>>Replation View".	Terminal 35 thin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A <u>ire"</u> .	No. 14 ntrol unit) branch line. BS actuator and electric ectric unit (control unit). R	Approx. 54 – 66 e unit (control unit). Refer to efer to <u>BRC-107, "Exploded</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779255

[CAN SYSTEM (TYPE 11)]

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.	Termi	Resistance (Ω)	
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Exploded View".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 11)]

	TION CIRCUIT		
Diagnosis Procedure			INFOID:0000000057792
1.CONNECTOR INSPECTI	ON		
1. Turn the ignition switch C			
	able from the negative terr onnectors on CAN commu		
 Check terminals and cor 	nectors for damage, bend	and loose connection.	
Is the inspection result norma	al?		
YES >> GO TO 2. NO >> Repair the termin	nal and connector.		
2. CHECK HARNESS CONT		T)	
Check the continuity betweer			
	Data link connector		
Connector No.	Termir	nal No.	Continuity
M24	6	14	Not existed
NO >> Check the harne 3. CHECK HARNESS CONT Check the continuity between		Т)	
Data link c	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M24	6		Not existed
	14		Not existed
s the inspection result norm:	212		
YES >> GO TO 4. NO >> Check the harne 4. CHECK ECM AND IPDM 1. Remove the ECM and th	ss and repair the root caus E/R TERMINATION CIRC		
YES >> GO TO 4. NO >> Check the harne 4. CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be	ss and repair the root caus E/R TERMINATION CIRC ie 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	ss and repair the root caus E/R TERMINATION CIRC ie IPDM E/R.	UIT	ECM and IPDM E/R
NO >> Check the harne 4.CHECK ECM AND IPDM 1. Remove the ECM and th 2. Check the resistance be ECM Terminal No.	ess and repair the root cause E/R TERMINATION CIRC The IPDM E/R. tween 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.	ss and repair the root caus E/R TERMINATION CIRC the IPDM E/R. tween the ECM terminals. Resistance (0 3 Approx. 108 – 1	UIT 2) 132	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.	ess and repair the root cause E/R TERMINATION CIRC the IPDM E/R. tween the ECM terminals. Resistance (Ω	UIT 2) 132	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.	ss and repair the root caus E/R TERMINATION CIRC the IPDM E/R. tween the ECM terminals. Resistance (0 3 Approx. 108 – 1 tween the IPDM E/R termi	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. 114 11 3. Check the resistance be IPDM E/R Terminal No.	ss and repair the root caus E/R TERMINATION CIRC the IPDM E/R. tween the ECM terminals. Resistance (G 3 Approx. 108 – 1 tween the IPDM E/R termi Resistance (G	UIT 2) 132 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 11 3. Check the resistance be	ss and repair the root caus E/R TERMINATION CIRC the IPDM E/R. tween the ECM terminals. Resistance (G 3 Approx. 108 – 1 tween the IPDM E/R termi Resistance (G	UIT 2) 132 nals.	

< DTC/CIRCUIT DIAGNOSIS >

LAN-243

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.

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 12)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:000000005779258 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 AV control unit harness connector and the data link connector. With navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M210 M24 74 14 Existed Without navigation system (With rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M204 M24 80 14 Existed Without navigation system (Without rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. 86 6 Existed M85 M24 87 14 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 AV control unit and the data link connec-tor. NO >> Repair the main line between the AV control unit and the data link connector. LAN Ν

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000005779259

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

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

Data link	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M7	20	Existed
11/124	14	IVI <i>1</i>	21	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

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

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

	GNOSIS > TWEEN ADP A		-	SYSTEM (TYPE 12)]
			on	
Diagnosis Procec				INFOID:000000005779260
1.CHECK CONNECT	ror			
 Check the followi and harness side) Harness connector Harness connector Harness connector Harness connector Harness connector Source and the second s	attery cable from the n ng terminals and con or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connec S CONTINUITY (OPEI arness connectors B1	nectors for damage, tor. N CIRCUIT) and M7.		nection (connector side
	uity between the harne		als.	<u> </u>
Connector No.	20	Terminal No.	22	Continuity Existed
B1	21		23	Existed
3.CHECK HARNESS	e main line between th S CONTINUITY (OPE) arness connectors M6 uity between the harne	N CIRCUIT) and E106.	unit and the harness	connector B1.
Harness	connector	Harness	connector	0 11 11
Connector No	Terminal No.	O a management and Nia	Terminal No.	- Continuity
Connector No.		Connector No.		
M7	22 23	- M6	7 6	Existed
M7 Solution State Not the second state Not	22 23 t normal? e main line between the S CONTINUITY (OPEI onnector of ABS actua uity between the harne	M6 ne harness connector N CIRCUIT) tor and electric unit (ess connector and the	6 M7 and M6. control unit).	
M7 Solution State Not the second state Not	22 23 t normal? e main line between the S CONTINUITY (OPEI onnector of ABS actua uity between the harne	M6 ne harness connector N CIRCUIT) tor and electric unit (d ess connector and the ABS actuator and el	6 M7 and M6. control unit). e ABS actuator and e	Existed

Is the inspection result normal?

6

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

E41

14

E106

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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 12)]

Diagnacia Dracadura	E CIRCUIT		
Diagnosis Procedure			INFOID:000000005779261
1. CHECK CONNECTOR			
	cable from the negative ter		e connection (unit side and
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	etween the ECM harness c	onnector terminals.	
Connector No	ECM harness connector	nal No	Resistance (Ω)
Connector No. M107	Termin 114	nal No. 113	Resistance (Ω) Approx. 108 – 132
	Termin 114 <i>rithin the specification?</i> I branch line.	113	
M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm	Termin 114 vithin the specification? I branch line. Y AND GROUND CIRCUIT d the ground circuit of the Enal?	113 Г СМ. Refer to <u>EC-144, "Diac</u>	Approx. 108 – 132 gnosis Procedure".
M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECW 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep <u>CONTROL UNI</u> YES (Past error)>>Error w	Termin 114 <i>i</i> thin the specification? I branch line. Y AND GROUND CIRCUIT d the ground circuit of the E hal? lace the ECM. Refer to E T (ECM) : Special Repair R	113 Γ CM. Refer to <u>EC-144, "Diac</u> <u>EC-17, "ADDITIONAL SER</u> Requirement". anch line.	Approx. 108 – 132

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779262

[CAN SYSTEM (TYPE 12)]

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 (Ω)		
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 12)]

AV BRANCH LINE C	IRCUIT		0	
Diagnosis Procedure			A INFOID:000000005779263	
1. CHECK CONNECTOR			В	
 Turn the ignition switch O Disconnect the battery ca Check the terminals and side and connector side). Is the inspection result normative YES >> GO TO 2. NO >> Repair the terminant 2.CHECK HARNESS FOR Content Disconnect the connector 	ble from the negative terr connectors of the AV cor I <u>?</u> al and connector. DPEN CIRCUIT		nd and loose connection (unit C	
 Check the resistance betw Models with navigation sy 	ween the AV control unit h	narness connector termin	alsF	
AN Connector No.	/ control unit harness connecto	r nal No.	Resistance (Ω)	
M210	90	74	Approx. 54 – 66 G	
- Models without navigation	n system (With rear view i	monitor)	н	
AV control unit harness connector				
Connector No.	Termir	minal No. Resistance (Ω)		
M204	81	80	Approx. 54 – 66	
- Models without navigation	n system (Without rear vie	ew monitor)		
A۱	V control unit harness connector Resistance (Ω)			
Connector No.	Termir	nal No.		
M85	86	87	Approx. 54 – 66	
Is the measurement value with YES >> GO TO 3. NO >> Repair the AV con 3. CHECK POWER SUPPLY	ntrol unit branch line. AND GROUND CIRCUIT		L	
 Check the power supply and t Base audio without rear view Base audio with rear view m BOSE audio without navigation BOSE audio with navigation 	w monitor: <u>AV-40, "AV CC</u> nonitor: <u>AV-173, "AV CON</u> tion: <u>AV-297, "AV CONTR</u>	NTROL UNIT : Diagnosi TROL UNIT : Diagnosis OL UNIT : Diagnosis Pro	s Procedure" LA Procedure" ocedure"	
Is the inspection result norma			1.4	
Base audio withBOSE audio with	ce the AV control unit. Renout rear view monitor: <u>AV</u> rear view monitor: <u>AV-20</u> chout navigation: <u>AV-328.</u> ch navigation: <u>AV-474, "Ex</u>	/-90, "Exploded View")2, "Exploded View" "Exploded View"	0	
YES (Past error)>>Error was		ol unit branch line.	P	

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779264

[CAN SYSTEM (TYPE 12)]

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.

[CAN SYSTEM (TYPE 12)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005869136 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779266

[CAN SYSTEM (TYPE 12)]

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-80, "Exploded View"</u>.

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

< DTC/CIRCUIT DIAGNOSIS >			[CAN SYSTEM (TYPE 12)]
DLC BRANCH LINE C	RCUIT		
Diagnosis Procedure			INF0ID:00000005779267
1.CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable Check the terminals and con (connector side and harness is the inspection result normal? 	from the negative ter nnectors of the data I		e, bend and loose connection
YES >> GO TO 2. NO >> Repair the terminal a	and connector.		
2. CHECK HARNESS FOR OPE			
Check the resistance between th	e data link connector	terminals.	
	Data link connector		
Connector No.	Termi	inal No.	Resistance (Ω)
M24	6	14	Approx. 54 – 66
s the measurement value within YES (Present error)>>Check Ca YES (Past error)>>Error was de NO >> Repair the data link o	AN system type decis	connector branch line ci	rcuit.
YES (Present error)>>Check CA YES (Past error)>>Error was de	AN system type decis	connector branch line ci	rcuit.
YES (Present error)>>Check CA YES (Past error)>>Error was de	AN system type decis	connector branch line ci	rcuit.
YES (Past error)>>Error was de	AN system type decis	connector branch line ci	rcuit.
YES (Present error)>>Check CA YES (Past error)>>Error was de	AN system type decis	connector branch line ci	rcuit.
YES (Present error)>>Check CA YES (Past error)>>Error was de	AN system type decis	connector branch line ci	rcuit.
YES (Present error)>>Check CA YES (Past error)>>Error was de	AN system type decis	connector branch line ci	rcuit.
YES (Present error)>>Check CA YES (Past error)>>Error was de	AN system type decis	connector branch line ci	rcuit.

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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779268

[CAN SYSTEM (TYPE 12)]

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	Terminal No.			
M67	56	72	Approx. 54 – 66		

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-136, "Exploded View".

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	IS >	Ι	CAN SYSTEM (TYPE 12)]
STRG BRANCH LIN	IE CIRCUIT		
Diagnosis Procedure			INFOID:000000005779269
1. CHECK CONNECTOR			
	able from the negative terr connectors of the steering side).		e, bend and loose connection
YES >> GO TO 2.	<u>al (</u>		
NO >> Repair the termin			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	r of steering angle sensor ween the steering angle s	ensor harness connector t	terminals.
Stee	ring angle sensor harness conne	ector	Basistance (0)
Connector No.	Termir	nal No.	Resistance (Ω)
M37	1	2	Approx. 54 – 66
Is the measurement value withYES>> GO TO 3.NO>> Repair the steering3.CHECK POWER SUPPLY	ng angle sensor branch lir		
Check the power supply and gram - BRAKE CONTROL S	I the ground circuit of the <u>YSTEM -"</u> .		efer to <u>BRC-83, "Wiring Dia-</u>
Is the inspection result normal YES (Present error)>>Replat YES (Past error)>>Error wa NO >> Repair the power	ace the steering angle sen	angle sensor branch line.	xploded View".

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779270

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B462
- Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Driv	Resistance (Ω)		
Connector No.	Termi		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-65, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-228, "Exploded View".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

Diagnosis Procedure			INFOID:0000000577927
.CHECK CONNECTOR			
 Check the terminals and and loose connection (upper terminal) 	able from the negative term I connectors of the ABS act nit side and connector side)	uator and electric unit (control unit) for damage, bend
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
	or of ABS actuator and elect		unit) harness connector termi-
nals.		,	,
nals.	ind electric unit (control unit) harn		
nals. ABS actuator a Connector No.		ess connector	Resistance (Ω)
nals. ABS actuator a Connector No. E41 s the measurement value w	and electric unit (control unit) harn Termina 35	ess connector	
nals. ABS actuator a Connector No. E41 s the measurement value with YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPLY	ind electric unit (control unit) harm Termina 35 ithin the specification? actuator and electric unit (c Y AND GROUND CIRCUIT d the ground circuit of the a are".	ess connector al No. 14 Dontrol unit) branch line.	Resistance (Ω)

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779272

[CAN SYSTEM (TYPE 12)]

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.	Termi	Resistance (Ω)		
E6	40	40 39		

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-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Exploded View".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 12)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000005779273 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M24 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. ${f 4}$. 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 (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< DTC/CIRCUIT DIAGNOSIS >

LAN-261

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.

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT [CAN SYSTEM (TYPE 13)] < DTC/CIRCUIT DIAGNOSIS > DTC/CIRCUIT DIAGNOSIS А MAIN LINE BETWEEN AV AND DLC CIRCUIT **Diagnosis** Procedure INFOID:000000005779274 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 AV control unit harness connector and the data link connector. With navigation system Е AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. F 90 6 Existed M210 M24 74 14 Existed Without navigation system (With rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Н 81 6 Existed M204 M24 80 14 Existed Without navigation system (Without rear view monitor) AV control unit harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. 86 6 Existed M85 M24 87 14 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 AV control unit and the data link connec-tor. NO >> Repair the main line between the AV control unit and the data link connector. LAN

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000005779275

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

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

Data link	connector Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M7	20	Existed
10124	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

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

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

MAIN LINE BE	GNOSIS > TWEEN ADP A	ND ABS CIRCI	-	SYSTEM (TYPE 13)]
Diagnosis Procec				
				INFOID:000000005779276
 Check the followi and harness side) Harness connector Harness connector Harness connector Harness connector Harness connector Harness connector Secondary CHECK HARNESS Disconnect the har 	attery cable from the n ng terminals and con). or B1 or M7 or M6 or E106 <u>t normal?</u>	nectors for damage, I tor. N CIRCUIT) and M7.		nection (connector side
	lity between the harne		S.	Orationity
Connector No.	20	Terminal No.	22	Continuity Existed
B1	21		23	Existed
•				
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha		N CIRCUIT) and E106.	init and the harness	
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPE) arness connectors M6	N CIRCUIT) and E106. ess connectors.	nit and the harness of the harnest o	connector B1.
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPE) arness connectors M6 uity between the harne	N CIRCUIT) and E106. ess connectors.		
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness	e main line between th S CONTINUITY (OPE) arness connectors M6 uity between the harne	N CIRCUIT) and E106. ess connectors. Harness	connector	connector B1.
YES >> GO TO 3. NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M7 Is the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the co 2. Check the continu harness connecto	e main line between the S CONTINUITY (OPE) arness connectors M6 uity between the harne connector Connector 22 23 t normal? e main line between the S CONTINUITY (OPE) ponnector of ABS actua uity between the harne or.	N CIRCUIT) and E106. ess connectors. Harness Connector No. M6 M6 N CIRCUIT) tor and electric unit (c ess connector and the	connector Terminal No. 7 6 M7 and M6. M7 and M6. ABS actuator and e	Continuity Existed
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M7 Is the inspection result YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the co 2. Check the continu harness connecto	e main line between the S CONTINUITY (OPE) arness connectors M6 uity between the harne connector Connector 22 23 t normal? e main line between the S CONTINUITY (OPE) onnector of ABS actua uity between the harne	N CIRCUIT) and E106. ess connectors. Harness Connector No. M6 N CIRCUIT) tor and electric unit (c ess connector and the ABS actuator and electric	connector Terminal No. 7 6 M7 and M6. ontrol unit).	Continuity Existed Existed

Is the inspection result normal?

6

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

E41

14

E106

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

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 13)]

Diagnosis Procedure					
1.CHECK CONNECTOR					
	able from the negative terr		e connection (unit side and		
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.				
1. Disconnect the connector		onnector terminals.			
	ECM harness connector		Resistance (Q)		
Connector No.	Termir	nal No.	Resistance (Ω)		
M107	Termiı 114	nal No. 113	Resistance (Ω) Approx. 108 – 132		
	Termin 114 thin the specification? branch line.	113			
M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPLY	Termin 114 thin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the E	113	Approx. 108 – 132		
M107 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl <u>CONTROL UNIT</u> YES (Past error)>>Error wa	Termin 114 thin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the E al? ace the ECM. Refer to E (ECM) : Special Repair R	113 T CM. Refer to <u>EC-144, "Dia</u> <u>EC-17, "ADDITIONAL SEF</u> <u>Requirement"</u> . anch line.	Approx. 108 – 132		

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779278

[CAN SYSTEM (TYPE 13)]

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 (Ω)			
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</u>, "Exploded View".

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

AV BRANCH LINE C	IRCUIT		
Diagnosis Procedure			A INFOID:000000005779279
1. CHECK CONNECTOR			В
side and connector side). Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR C	ble from the negative terr connectors of the AV cor <u>I?</u> al and connector. DPEN CIRCUIT		nd and loose connection (unit C
 Disconnect the connector Check the resistance between the connector of the connector Models with navigation symptotic connector 	ween the AV control unit h	narness connector termin	alsF
A\ Connector No.	/ control unit harness connecto	r nal No.	Resistance (Ω)
M210	90	74	Approx. 54 – 66 G
- Models without navigation	system (With rear view ا	monitor)	
A	/ control unit harness connecto	r	H Resistance (Ω)
Connector No.	Termir	nal No.	
M204	81	80	Approx. 54 – 66
- Models without navigation	system (Without rear vie	ew monitor)	
A	/ control unit harness connecto	r	 Resistance (Ω)
Connector No.	Termir	nal No.	
M85	86	87	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the AV con 3. CHECK POWER SUPPLY	ntrol unit branch line. AND GROUND CIRCUIT		L
 Check the power supply and t Base audio without rear view Base audio with rear view m BOSE audio without navigation BOSE audio with navigation 	w monitor: <u>AV-40, "AV CC</u> nonitor: <u>AV-173, "AV CON</u> tion: <u>AV-297, "AV CONTR</u>	NTROL UNIT : Diagnosis TROL UNIT : Diagnosis F OL UNIT : Diagnosis Pro	s Procedure" LA Procedure" ocedure"
Is the inspection result norma			1.4
Base audio withBOSE audio with	ce the AV control unit. Renout rear view monitor: <u>AV</u> n rear view monitor: <u>AV-20</u> thout navigation: <u>AV-328.</u> th navigation: <u>AV-474, "Ex</u>	/-90, "Exploded View")2, "Exploded View" "Exploded View"	0
YES (Past error)>>Error was		ol unit branch line.	Р

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779280

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to <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 13)]

TCM BRANCH LINE	CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000005779281	A
1. CHECK CONNECTOR				В
nector side). - A/T assembly	le from the negative teri		nnection (unit side and con-	С
 Harness connector F103 Harness connector M116 				D
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the termina				E
2. CHECK HARNESS FOR OF	PEN CIRCUIT			
		arness connector terminals.		F
Connector No.	•	nal No.	Resistance (Ω)	G
F51	3	8	Approx. 54 – 66	
YES (Past error)>>Error was	anch line. AND GROUND CIRCUIT e ground circuit of the T e the control valve with mbly if control valve with	CM. Refer to <u>TM-212, "Diac</u> TCM. Refer to <u>TM-99, "C</u> TCM is not listed in the lat nch line.	omponent Parts Location".	H I K
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A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

Diagnosis Procedure

INFOID:000000005869137

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

Diagnosis Procedure			INIE010-00000005770205
			INFOID:000000005779283
1. CHECK CONNECTOR			
	e from the negative terminal. onnectors of the BCM for da		se connection (unit side and
YES >> GO TO 2.			
NO >> Repair the terminal			
2. CHECK HARNESS FOR OF	PEN CIRCUIT		
Disconnect the service ter			
 Disconnect the connector of Check the resistance between 	een the BCM harness connec	ctor terminals.	
2. Check the resistance betwee	een the BCM harness connec BCM harness connector		Resistance (Ω)
	een the BCM harness connec		- Resistance (Ω) Approx. 54 – 66
2. Check the resistance betwee Connector No.	een the BCM harness connector BCM harness connector Terminal No. 91 n the specification? anch line.		
2. Check the resistance betwee Connector No. M122 <u>s the measurement value withi</u> YES >> GO TO 3. NO >> Repair the BCM brain	een the BCM harness connector BCM harness connector Terminal No. 91 n the specification? anch line. ND GROUND CIRCUIT	90	Approx. 54 – 66
2. Check the resistance between Connector No. M122 <u>s the measurement value within</u> YES >> GO TO 3. NO >> Repair the BCM brack 3. CHECK POWER SUPPLY A Check the power supply and the sthe inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was of the stress o	een the BCM harness connector BCM harness connector Terminal No. 91 n the specification? anch line. ND GROUND CIRCUIT e ground circuit of the BCM. If the BCM. Refer to <u>BCS-80.</u>	90 Refer to <u>BCS-37, "Dia</u>	Approx. 54 – 66
2. Check the resistance between Connector No. M122 <u>s the measurement value within</u> YES >> GO TO 3. NO >> Repair the BCM brack 3. CHECK POWER SUPPLY A Check the power supply and the sthe inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was of the stress o	een the BCM harness connector BCM harness connector Terminal No. 91 n the specification? anch line. ND GROUND CIRCUIT e ground circuit of the BCM. I be the BCM. Refer to <u>BCS-80.</u> detected in the BCM branch li	90 Refer to <u>BCS-37, "Dia</u>	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779284

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

Diagnosis Procedure			INFOID:000000005779285
1.CHECK CONNECTOR			
	cable from the negative tern d connectors of the unified		mage, bend and loose con-
s the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	or of unified meter and A/C etween the unified meter ar		ector terminals.
	d meter and A/C amp. harness co		Resistance (Ω)
Connector No. M67	56	nal No. 72	Approx. 54 – 66
		nch line.	
CHECK POWER SUPPL	Y AND GROUND CIRCUI		Refer to <u>MWI-51, "UNIFIED</u>
CHECK POWER SUPPL check the power supply and IETER AND A/C AMP. : Di	Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure".		Refer to <u>MWI-51, "UNIFIED</u>
CHECK POWER SUPPL heck the power supply and IETER AND A/C AMP. : Di the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure".	nified meter and A/C amp. A/C amp. Refer to <u>MWI-130</u> neter and A/C amp. branch	6, "Exploded View".
CHECK POWER SUPPL check the power supply and <u>IETER AND A/C AMP. : Di</u> the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and as detected in the unified n	nified meter and A/C amp. A/C amp. Refer to <u>MWI-130</u> neter and A/C amp. branch	6, "Exploded View".
CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and as detected in the unified n	nified meter and A/C amp. A/C amp. Refer to <u>MWI-130</u> neter and A/C amp. branch	6, "Exploded View".
CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and as detected in the unified n	nified meter and A/C amp. A/C amp. Refer to <u>MWI-130</u> neter and A/C amp. branch	6, "Exploded View".
3. CHECK POWER SUPPL Check the power supply and <u>METER AND A/C AMP. : Di</u> <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w	Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and as detected in the unified n	nified meter and A/C amp. A/C amp. Refer to <u>MWI-130</u> neter and A/C amp. branch	6, "Exploded View".

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779286

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-110, "Exploded View"</u>.

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

ADP BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:000000005779287
1.CHECK CONNECTOR			
 Turn the ignition switch (2) Disconnect the battery (2) Check the following term nector side). Driver seat control unit Harness connector B462 Harness connector B59 Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR 	cable from the negative term ninals and connectors for c 2 <u>al?</u> nal and connector. OPEN CIRCUIT	damage, bend and loose cor	nnection (unit side and con-
2. Check the resistance be	or of driver seat control uni etween the driver seat cont	rol unit harness connector te	erminals.
Connector No.		nal No.	Resistance (Ω)
B451	3	19	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis is the inspection result norm YES (Present error)>>Repl	the ground circuit of the di <u>s Procedure"</u> . al? lace the driver seat control	T river seat control unit. Refer unit. Refer to <u>ADP-228, "Ex</u>	
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the driver se er supply and the ground c		

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779289

[CAN SYSTEM (TYPE 13)]

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-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-107</u>, "Exploded <u>View</u>".

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

ICC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

Diagnosis Procedure 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Obscinnect 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 > GOTO2. No > Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ICC sensor integrated unit harness connector terminals. Image: Connector No. Image: Effort No.	ICC BRANCH LINE	CIRCUIT		
 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). 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 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) 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</u>, "Diagno-sis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ICC sensor integrated unit. Refer to <u>CCS-134</u>, "Exploded View". YES (Present error)>>Replace the ICC sensor integrated unit branch line. 	Diagnosis Procedure			INFOID:000000005779290
 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. ICC sensor integrated unit harness connector E67 3 6 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor integrated unit branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to CCS-102, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-134, "Exploded View". YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.	1.CHECK CONNECTOR			
2. Check the resistance between the ICC sensor integrated unit harness connector terminals. ICC sensor integrated unit harness connector Resistance (Ω) Connector No. Terminal No. E67 3 6 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor integrated unit branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to CCS-102, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-134, "Exploded View". YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.	 Disconnect the battery of 3. Check the terminals and nection (unit side and constrained by the inspection result norm YES >> GO TO 2. NO >> Repair the terminals and t	cable from the negative te d connectors of the ICC s onnector side). al? inal and connector.		mage, bend and loose con-
Connector No. Terminal No. Resistance (Ω) E67 3 6 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. 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, "Diagnosis Procedure".</u> s the inspection result normal? YES (Present error)>>Replace the ICC sensor integrated unit. Refer to <u>CCS-134, "Exploded View"</u> . YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.				ctor terminals.
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, "Diagnosis Procedure"</u> . Is the inspection result normal? YES (Present error)>>Replace the ICC sensor integrated unit. Refer to <u>CCS-134, "Exploded View"</u> . YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.				Resistance (Ω)
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, "Diagnosis Procedure"</u> . Is the inspection result normal? YES (Present error)>>Replace the ICC sensor integrated unit. Refer to <u>CCS-134, "Exploded View"</u> . YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.				Annar 54 - 00
NO >> Repair the power supply and the ground circuit.	Check the power supply and sis Procedure". Is the inspection result norm YES (Present error)>>Rep	d the ground circuit of the nal? lace the ICC sensor integr	ICC sensor integrated unit. rated unit. Refer to <u>CCS-134</u>	4, "Exploded View".
	NO >> Repair the powe	ar supply and the ground o	circuit.	

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005779291

[CAN SYSTEM (TYPE 13)]

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-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Exploded View".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 13)]

CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:000000005779292
1.CONNECTOR INSPECT	ION		
 Disconnect all the unit c Check terminals and co 	cable from the negative term onnectors on CAN commun nnectors for damage, benc	inication system.	
<u>s the inspection result norm</u> YES >> GO TO 2.	<u>al?</u>		
NO >> Repair the term			
2.CHECK HARNESS CON			
Check the continuity betwee	n the data link connector to	erminals.	
	Data link connector		
Connector No.	Termi	nal No.	Continuity
M24	6	14	Not existed
NO >> Check the harne CHECK HARNESS CON Check the continuity betwee		T)	
Data link	connector		Continuity
Connector No.	Terminal No.	Ground	
M24	6	-	Not existed
s the inspection result norm			Not existed
YES >> GO TO 4. NO >> Check the harne CHECK ECM AND IPDM 1. Remove the ECM and the	ess and repair the root cau E/R TERMINATION CIRC	UIT	
ECM			ECM and IPDM E/R
Terminal No.	Resistance (2)	
114 1 [.]	13 Approx. 108 – 7	132	
 Check the resistance be 	etween the IPDM E/R termi	inals.	
IPDM E/R	Resistance (2)	
Terminal No.			LKIA0037E
40 3	9 Approx. 108 – 1	132	
s the measurement value w YES >> GO TO 5. NO >> Replace the EC 5.CHECK SYMPTOM	ithin the specification? M and/or the IPDM E/R.		

< DTC/CIRCUIT DIAGNOSIS >

LAN-281

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.

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.