SECTION LAN SYSTEM

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DLC BRANCH LINE CIRCUIT	LAN
M&A BRANCH LINE CIRCUIT	Ν
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PRECAUTIONS

Precautions for Trouble Diagnosis

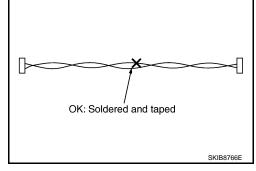
CAUTION:

- 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

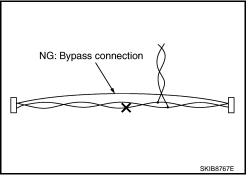
• Solder the repaired area and wrap tape around the soldered area. **NOTE:**

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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FUNCTION DIAGNOSIS CAN COMMUNICATION SYSTEM

System Description

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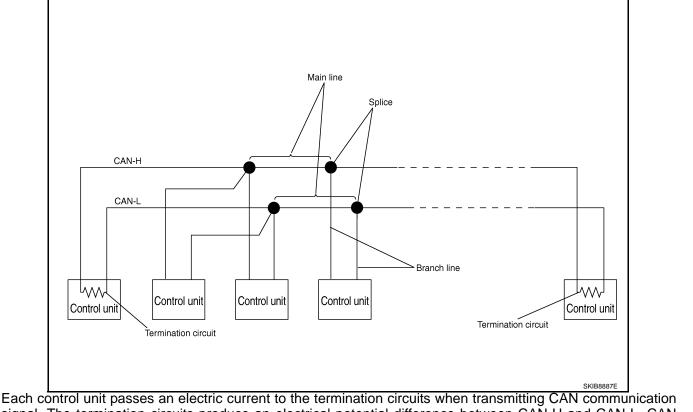
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- CAN communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network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

System Diagram



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

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

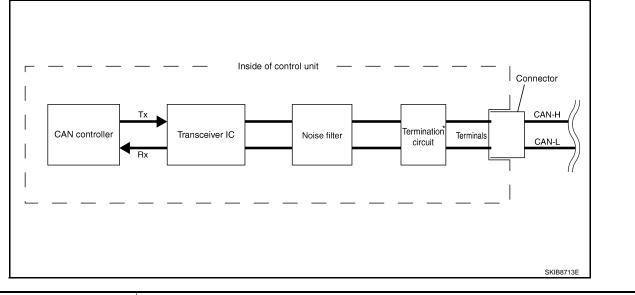
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< FUNCTION DIAGNOSIS >

[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.

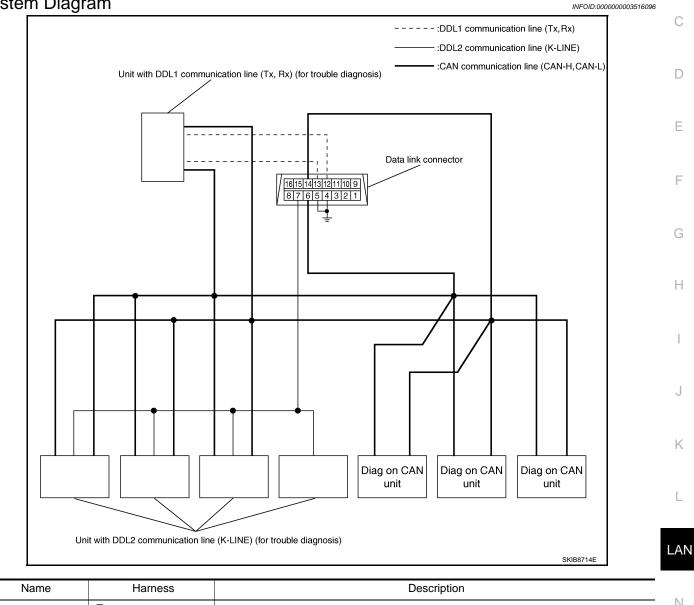
< FUNCTION DIAGNOSIS >

DIAG ON CAN

Description

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

System Diagram



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

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TROUBLE DIAGNOSIS

Condition of Error Detection

"U1000" or "U1001" is indicated on SELF-DIAG RESULTS on CONSULT-III if CAN communication signal is not transmitted or received between units for 2 seconds or more.

CAN COMMUNICATION SYSTEM ERROR

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

WHEN "U1000" OR "U1001" 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.

NOTE:

CAN communication system is normal if "U1000" or "U1001" is indicated on SELF-DIAG RESULTS of CON-SULT-III under the above conditions. Erase the memory of the self-diagnosis of each unit.

Symptom When Error Occurs in CAN Communication System

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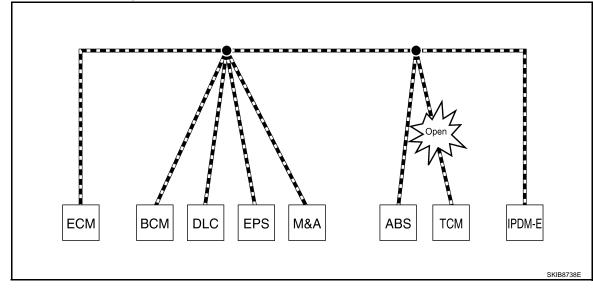
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to LAN-23, "Abbreviation List" for the unit abbreviation.

Example: TCM branch line open circuit



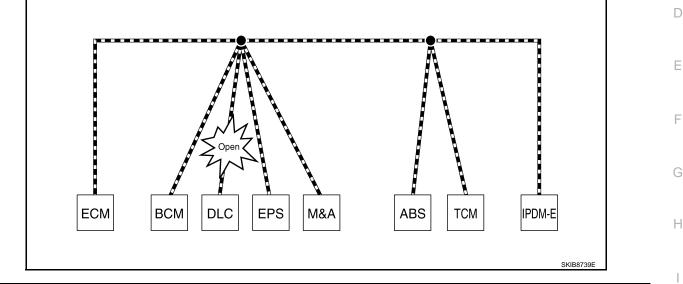
Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning chime does not sound.

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

Unit name	Symptom	٥
EPS control unit	Normal operation.	A
Combination meter	Shift position indicator and OD OFF indicator turn OFF.Warning lamps turn ON.	R
ABS actuator and electric unit (control unit)	Normal operation.	D
ТСМ	No impact on operation.	
IPDM E/R	Normal operation.	С

Example: Data link connector branch line open circuit



Unit name	Symptom	
ECM		
BCM		J
EPS control unit		
Combination meter	Normal operation.	K
ABS actuator and electric unit (control unit)		
ТСМ		
IPDM E/R	7	L

NOTE:

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

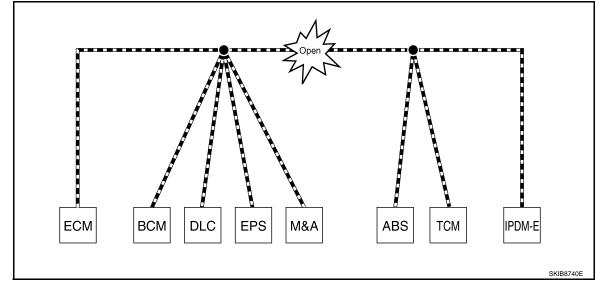
		N
Error	Difference of symptom	
Data link connector branch line open circuit	Normal operation.	
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.	0

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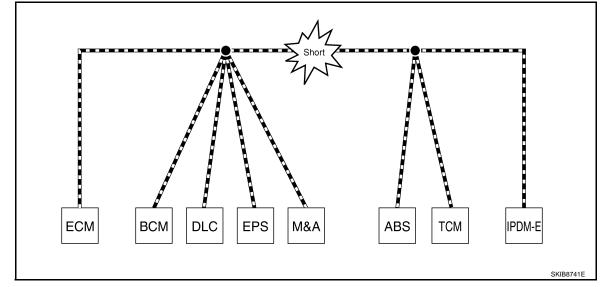
< FUNCTION DIAGNOSIS >

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



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

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



< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

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

CAN Diagnosis with CONSULT-III

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

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

Self-Diagnosis

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DTC	Self-diagnosis item (CONSULT-III indication)	DTC detection condition	Inspection/Action	
U1000	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.	Start the inspection. Re- fer to the applicable sec-	
01000		When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.		
U1001	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission-related diagnosis) for 2 seconds or more.	tion of the indicated control unit.	L
U1002	SYSTEM COMM	When a control unit is not transmitting or receiv- ing CAN communication signal for 2 seconds or less.		
U1010	CONTROL UNIT [CAN]	When an error is detected during the initial diag-	Replace the control unit	
P0607	ECM	nosis for CAN controller of each control unit.	indicating "U1010" or "P0607".	

CAN Diagnostic Support Monitor

MONITOR ITEM (CONSULT-III)

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Revision: 2007 November

< FUNCTION DIAGNOSIS >

Example: CAN DIAG SUPPORT MNTR indication

Withou	I PAST		vvitn	PAST	
EC	М		EC	СМ	
	PRSNT	PAST		PRSNT	PAST
INITIAL DIAG	OK		TRANSMIT DIAG	¦OK	OK
TRANSMIT DIAG	OK		VDC/TCS/ABS	[-]-
ГСМ	OK		METER/M&A	¦ OK	OK
/DC/TCS/ABS	UNKWN		BCM/SEC	OK	OK
METER/M&A	OK		ICC		-
icc	UNKWN		HVAC		
BCM/SEC	¦ OK	1	ТСМ	OK	OK
PDM E/R	OK	1	EPS	[]
			IPDM E/R	ОК	OK
			e4WD]-
			AWD/4WD	OK	OK

Without PAST

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

With PAST

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

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

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

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

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 bee run.)						
	OK	0	Normal at present						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has bee run.)								
	OK	0	Normal at present						
			Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)						
CAN_CIRC_2 – 9	UNKWN	1 – 50	Diagnosis not performed.						
			No control unit for receiving signals. (No applicable optional parts)						

How to Use CAN Communication Signal Chart

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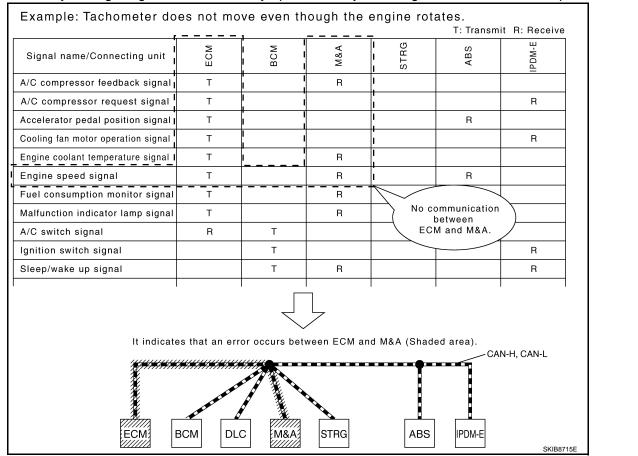
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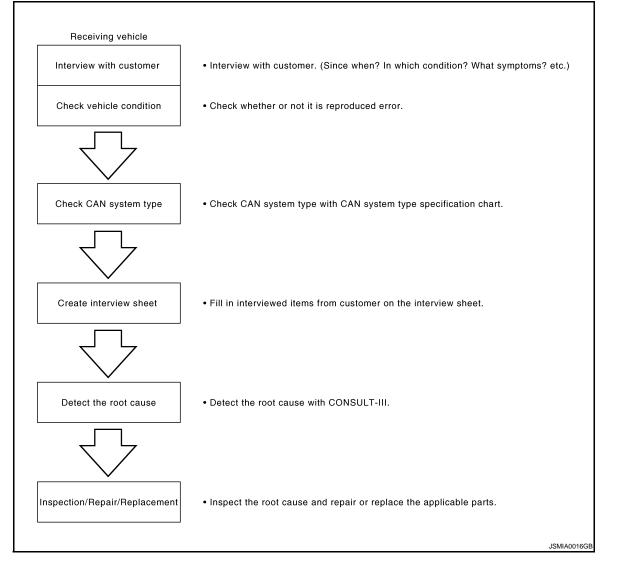
The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

INFOID:000000003516103



Trouble Diagnosis Procedure

INFOID:000000003516104

INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

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

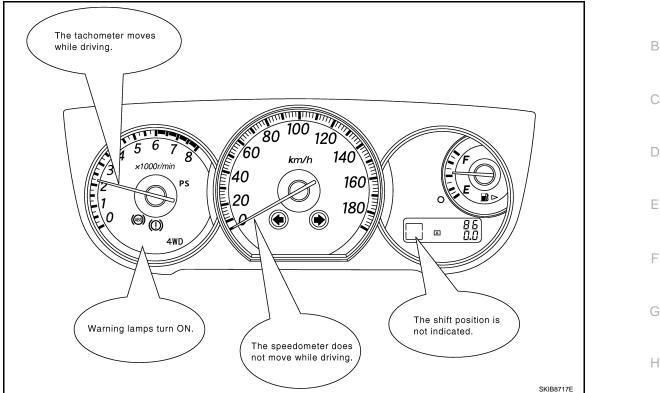
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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

NOTE:

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

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

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< BASIC INSPECTION >

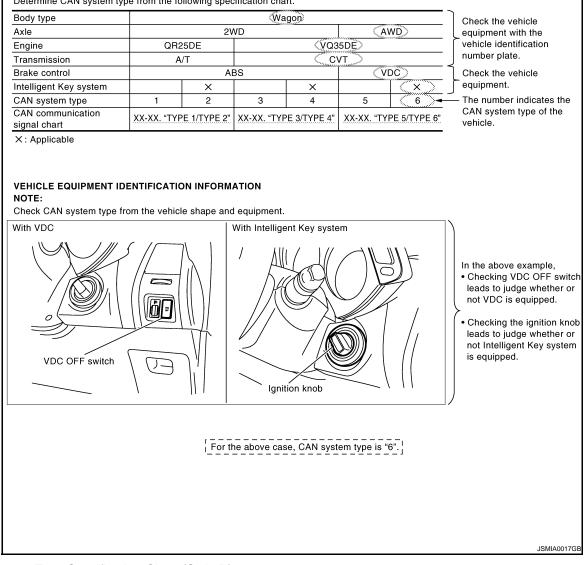
CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

Example:

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

CAN System Specification Chart

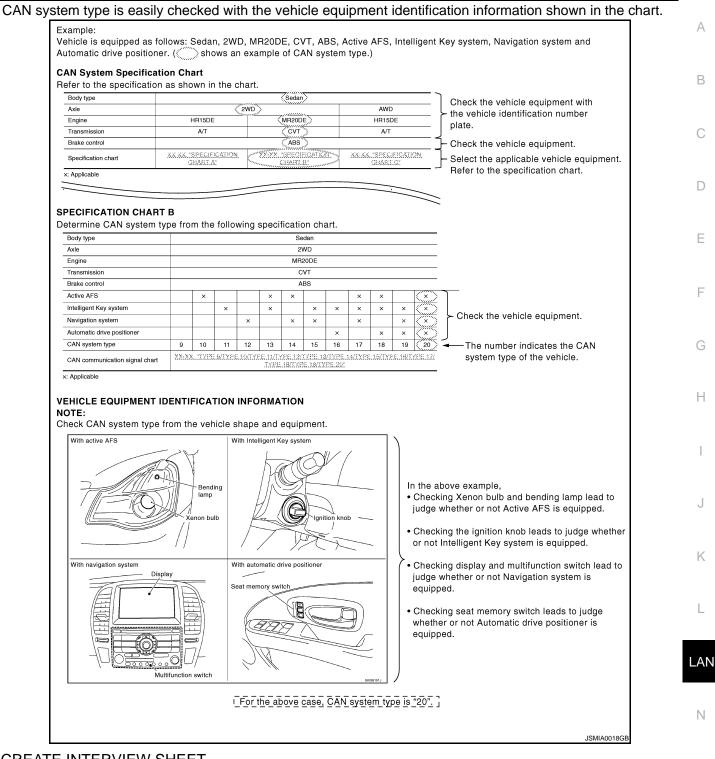
Determine CAN system type from the following specification chart.



CAN System Type Specification Chart (Style B) NOTE:

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



CREATE INTERVIEW SHEET

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

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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

CAN Communication System Diagnosis Interview She	et
Date received: 3, Feb. 2006	
Type: DBA-KG11 VIN No.: KG11-005040	
Model: BDRARGZ397EDA-E-J-	
First registration: 10, Jan. 2001 Mileage: 62,140	
CAN system type: Type 19	
Symptom (Results from interview with customer)	
 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.	
	JSMIA0019GB

DETECT THE ROOT CAUSE

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

HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

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

• For trouble diagnosis procedure, refer to LAN-18, "Trouble Diagnosis Procedure".

Abbreviation List

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

Abbreviation	Unit name	
4WD	AWD control unit	E
A-BAG	Air bag diagnosis sensor unit	
ABS	ABS actuator and electric unit (control unit)	
ADP	Driver seat control unit	F
AFS	AFS control unit	
AV	AV control unit	
BCM	BCM	(
DLC	Data link connector	
ECM	ECM	ŀ
ICC	ICC sensor integrated unit	
IPDM-E	IPDM E/R	
LANE	Lane camera unit	
M&A	Unified meter and A/C amp.	
STRG	Steering angle sensor	
ТСМ	ТСМ	

LAN-23

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[CAN]

INFOID:000000003137625

INFOID:000000003137626

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INFOID:000000003137628

INFOID:000000003137629

PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" INFOID:000000003511094

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 AIRBAG" 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 AIRBAG".
- 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 for Trouble Diagnosis

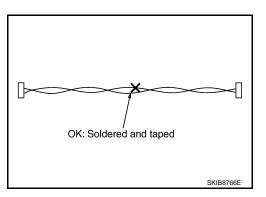
CAUTION:

- 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

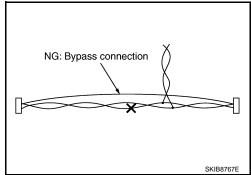
 Solder the repaired area and wrap tape around the soldered area. NOTE:

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.



Revision: 2007 November

• 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

w Sneet		INFOID:000000003
CAN Communication System	Diagnosis Interview Sheet	
	Date received:	
Туре:	VIN No.:	
Model:		
First registration:	Mileage:	
CAN system type:		
Symptom (Results from interview with custo	omer)	
Condition at inspection		
Error symptom : Present / Past		
	~	KIB8898E

FUNCTION DIAGNOSIS

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

Determine CAN system type from the following specification chart.

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

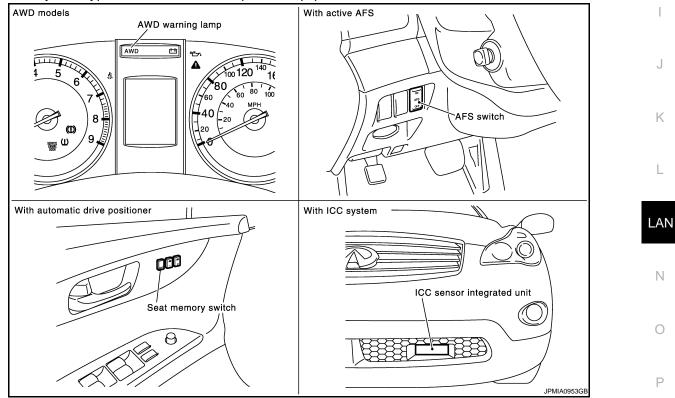
Body type	Wagon													
Axle			2WD	AWD										
Engine		VQ35HR												
Transmission		A/T												
Brake control	VDC													
Active AFS			×		×			×		×				
Automatic drive positioner		х	×	×	×		×	×	×	×				
ICC system				×	×				×	×				
CAN system type	1	2	3	4	5	6	7	8	9	10				
Start CAN Diagnosis (CONSULT-III)	1	2	3	4	5	6	7	8	9	10				

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



CAN Communication Signal Chart

INFOID:000000003137632

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

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

LAN-27

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< FUNCTION DIAGNOSIS >

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											Transn	nit R:	1
Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	M&A	STRG	TCM	ADP	ABS	00	IPDM-E
A/C compressor request signal	т												R
Accelerator pedal position signal	Т				R				R		R	R	
ASCD OD cancel request signal	Т								R				
ASCD operation signal	Т								R				
ASCD status signal	Т						R						
Closed throttle position signal	Т								R			R	
Cooling fan speed request signal	Т												R
Engine and A/T integrated control signal	T R								R T				
Engine coolant temperature signal	Т						R						
Engine speed signal	Т	R			R		R		R		R	R	
Engine status signal	Т		R			R							
Fuel consumption monitor signal	Т		R				R						
ICC brake switch signal	Т											R	
ICC prohibition signal	Т											R	
ICC steering switch signal	Т											R	
Malfunctioning indicator lamp signal	Т						R						
Power generation command value signal	Т												R
Snow mode switch signal	Т										R	R	
	Т											R	
Stop lamp switch signal						Т			R				
					R						Т	R	
Wide open throttle position signal	Т								R				
AFS OFF indicator lamp signal		Т					R						
A/C switch/indicator signal			T R				R T						
Rear window defogger switch signal			Т			R							
			Т			R				R			
System setting signal			R			Т							
			R							Т			
Detected lane condition signal				Т							R		
Lane camera status signal				Т							R		
Lane departure buzzer operation signal				Т							R		
Lane departure warning lamp signal				Т			R				R		
LDP ON indicator lamp signal				Т			R				R		
LDW operation signal				Т							R		
LDW switch signal				Т							R		
AWD signal					Т						R		
AWD warning lamp signal					Т		R						
						Т	R						
Buzzer output signal							R					Т	
Door switch signal			R			Т	R			R			R

< FUNCTION DIAGNOSIS >

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	M&A	STRG	TCM	ADP	ABS	00	IPDM-E	A
Door unlock signal						Т				R				
Front fog light request signal						Т	R						R	В
Front wiper request signal						Т						R	R	
High beam request signal						Т	R						R	С
Horn reminder signal						Т							R	
Ignition switch ON signal						T R							R T	D
Ignition switch signal						Т				R			· ·	
Interlock/PNP switch signal						T R							R T	E
Key ID signal						Т				R				
Key switch signal		1				т				R				F
Key warning lamp signal						т	R							
Low beam request signal						т							R	~
						Т	R							G
Meter display signal							R					Т		
Oil pressure switch signal						Т	R						-	Н
						R	_						Т	
Position light request signal						T	R						R	
Rear window defogger control signal	R		R			Т							R T	
Sleep wake up signal						Т	R			R			R	J
Starter control relay signal						т							R	0
						т							R	
Starter relay status signal						R							Т	K
Starting mode signal						т				R				
						Т							R	1
Steering lock relay signal						R							Т	
Theft warning horn request signal						Т							R	
Tire pressure signal						Т	R							LA
Turn indicator signal				R		Т	R				R			
A/C evaporator temperature signal	R						Т							N
A/C switch signal	R						Т							IN
Ambient temperature signal				R			Т							
Blower fan motor switch signal	R						Т							0
Distance to empty signal			R				Т							
Fuel level low warning signal			R				Т							_
Fuel level sensor signal	R						Т							Ρ
Manual mode shift down signal							Т		R					
Manual mode shift up signal							Т		R					
Manual mode signal							Т		R					
Not manual mode signal							Т		R					
Parking brake switch signal					R	R	Т							

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< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS >												L	CAI
Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	M&A	STRG	TCM	ADP	ABS	ICC	IPDM-E
Seat belt buckle switch signal						R	Т						
						R	Т						
Sleep-ready signal						R							Т
Target A/C evaporator temperature signal	R						Т						
	R	R	R	R		R	Т		R	R			F
Vehicle speed signal					R	R	R				Т	R	
Wake up signal						R	Т						
Steering angle sensor signal		R						Т			R		
A/T CHECK indicator lamp signal		R					R		Т				1
A/T self-diagnosis signal	R								т				
Current gear position signal									Т			R	
Manual mode indicator signal							R		Т			R	
N range signal						R			Т			R	+
Output shaft revolution signal	R								Т			R	+
P range signal						R			т	R		R	
R range signal									T	R		R	-
Shift position signal		R					R		T		R	R	
Turbine revolution signal	R								T			R	
A/T shift schedule change demand signal									R		Т	IN .	
ABS malfunction signal											T	R	
-									_				
ABS operation signal									R		T	R	-
ABS warning lamp signal							R				Т	_	<u> </u>
Brake pressure control signal											Т	R	
Brake warning lamp signal							R				Т		-
LDP buzzer request signal				R							Т		
LDP condition signal				R							Т		
LDP meter indication request signal				R							Т		
LDP operation signal				R							Т		
Side G sensor signal									R		Т		
SLIP indicator lamp signal							R				Т		
TCS malfunction signal											Т	R	
TCS operation signal											Т	R	
VDC malfunction signal											Т	R	
VDC OFF indicator lamp signal							R				Т		
VDC OFF switch signal											Т	R	
VDC operation signal											Т	R	
Deceleration degree commandment val- ue signal											R	т	
ICC operation signal	R											Т	-
ICC warning lamp signal							R					Т	<u> </u>
Target approach warning signal											R	Т	+
A/C compressor feedback signal	R						R						1
Control device (detention switch) signal	-					R	-						

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< FUNCTION DIAGNOSIS >

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	M&A	STRG	TCM	ADP	ABS	CC	IPDM-E	ļ
Front wiper stop position signal						R							Т	
High beam status signal	R	R											Т	E
Hood switch signal						R							Т	
Low beam status signal	R	R											Т	C
Push-button ignition switch status signal						R							Т	-
Steering lock unit status signal						R							Т	

NOTE:

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

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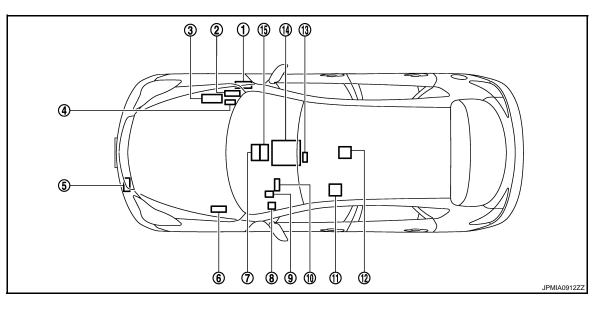
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COMPONENT DIAGNOSIS CAN COMMUNICATION SYSTEM

Component Parts Location

INFOID:000000003137633

[CAN]



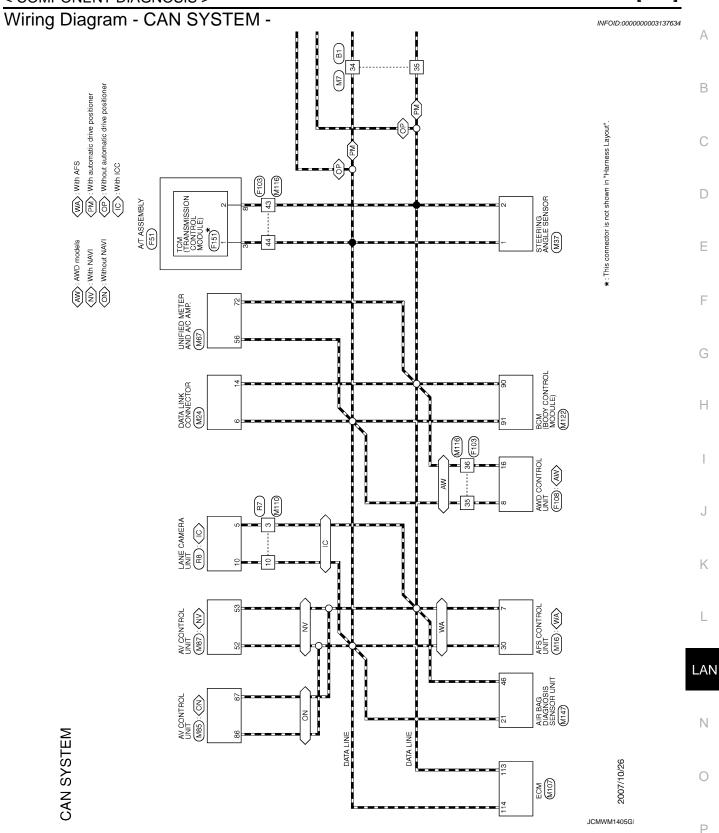
- 1. BCM M122
- 4. AWD control unit F108
- 7. Unified meter and A/C amp. M67
- 10. Steering angle sensor M37
- 13. Lane camera unit R8

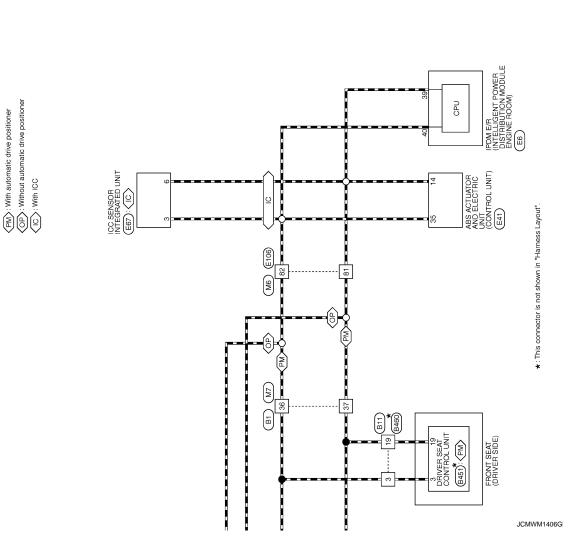
- 2. ECM M107
- 5. ICC sensor integrated unit E67
- 8. AFS control unit M16
- 11. Driver seat control unit B451
- 14. A/T assembly F51

- 3. IPDM E/R E6
- 6. ABS actuator and electric unit (control unit) E41
- 9. Data link connector M24
- 12. Air bag diagnosis sensor unit M147
- 15. AV control unit M85: Without NAVI M87: With NAVI

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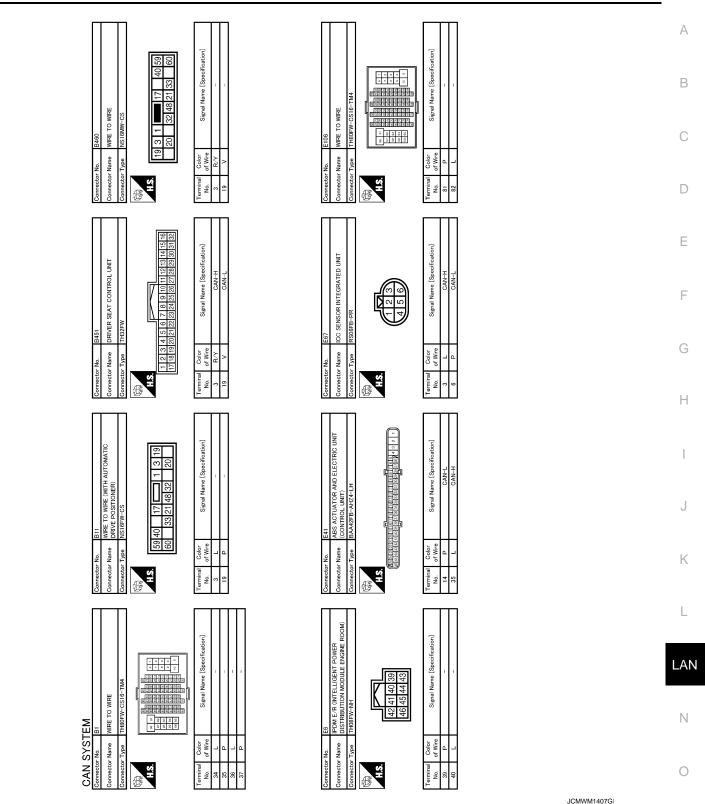






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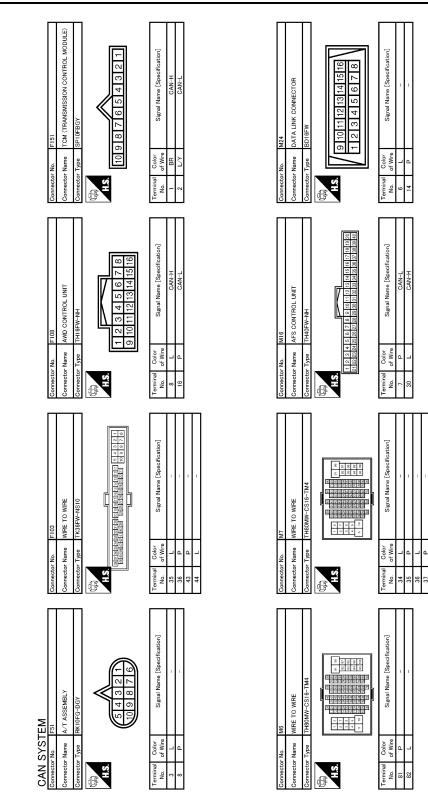
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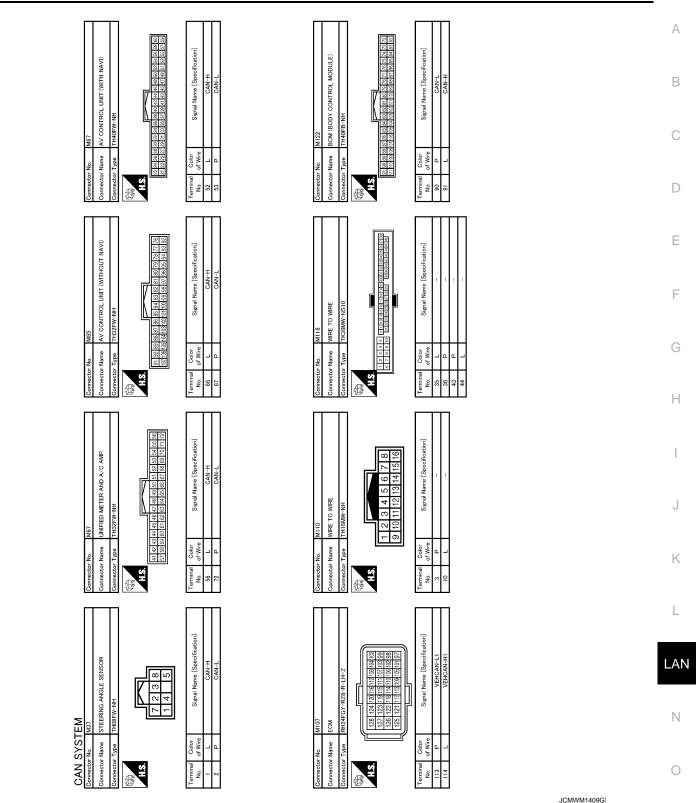


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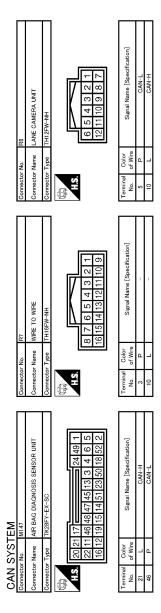
CAN COMMUNICATION SYSTEM

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Revision: 2007 November



JCMWM1410G

MALFUNCTION AREA CHART

< COMPONENT DIAGNOSIS >

MALFUNCTION AREA CHART

Main Line

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Malfunction Area	Reference	
Main line between AV control unit and data link connector	LAN-40, "Diagnosis Procedure"	
Main line between data link connector and TCM	LAN-41, "Diagnosis Procedure"	
Main line between TCM and ABS actuator and electric unit (control unit)	LAN-42, "Diagnosis Procedure"	
Main line between TCM and driver seat control unit	LAN-43, "Diagnosis Procedure"	
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-44, "Diagnosis Procedure"	

Branch Line

INFOID:000000003137636

Malfunction Area	Reference	
ECM branch line circuit	LAN-46, "Diagnosis Procedure"	
Air bag diagnosis sensor unit branch line circuit	LAN-47, "Diagnosis Procedure"	
AFS control unit branch line circuit	LAN-48, "Diagnosis Procedure"	
AV control unit branch line circuit	LAN-49, "Diagnosis Procedure"	
Lane camera unit branch line circuit	LAN-50, "Diagnosis Procedure"	
AWD control unit branch line circuit	LAN-51, "Diagnosis Procedure"	
BCM branch line circuit	LAN-52, "Diagnosis Procedure"	
Data link connector branch line circuit	LAN-53, "Diagnosis Procedure"	
Unified meter and A/C amp. branch line circuit	LAN-54, "Diagnosis Procedure"	
Steering angle sensor branch line circuit	LAN-55, "Diagnosis Procedure"	
TCM branch line circuit	LAN-56, "Diagnosis Procedure"	
Driver seat control unit branch line circuit	LAN-57, "Diagnosis Procedure"	
ABS actuator and electric unit (control unit) branch line circuit	LAN-58, "Diagnosis Procedure"	
ICC sensor integrated unit branch line circuit	LAN-59, "Diagnosis Procedure"	
IPDM E/R branch line circuit	LAN-60, "Diagnosis Procedure"	

Short Circuit

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Malfunction Area	Reference	
CAN communication circuit	LAN-61, "Diagnosis Procedure"	Ν

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

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[CAN]

INSPECTION 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 following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with NAVI

AV control unit h	arness connector	Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
IVIO7	53	10124	14	Existed

Models without NAVI

AV control unit I	narness connector	Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
COIVI	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.

< COMPONENT DIAC		WEEN DLC AN	D TCM CIRCUIT	[CAN]
MAIN LINE BET	WEEN DLC A	ND TCM CIRC	UIT	
Diagnosis Proced	ure			INFOID:000000003514551
INSPECTION PROCE	DURE			
1.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
	vitch OFF. tery cable from the n owing harness conne			
- Harness connecto		ink connector and the	harness connector.	
Data link	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	6		44	Existed

Is the inspection result normal?

M24

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

14

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

M116

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NO >> Repair the main line between the data link connector and the harness connector M116.

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MAIN LINE BETWEEN TCM AND ABS CIRCUIT

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MAIN LINE BETWEEN TCM AND ABS CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Harness connectors F103 and M116
- 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	
M116	44	M6	82	Existed	
WITO	43		81	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors M116 and M6.

${f 3.}$ 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	82	E 41	35	Existed	
EIUO	81	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 TCM 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).

	MAIN LINE BET	WEEN TCM ANI	D ADP CIRCUIT	
< COMPONENT DIA	GNOSIS >			[CAN]
MAIN LINE BET	WEEN TCM A	ND ADP CIRC	UIT	
Diagnosis Proced	ure			INFOID:000000003514553
NSPECTION PROCE	EDURE			
1.CHECK CONNECT	OR			
Check the followin and harness side)	ttery cable from the name ng terminals and con		pend and loose conn	ection (connector side
 Harness connecto Harness connecto 				
Is the inspection result	normal?			
YES >> GO TO 2.		1		
NO >> Repair the 2.CHECK HARNESS	terminal and connec			
 Disconnect the fol Harness connecto Harness connecto 	lowing harness conne rs F103 and M116	ectors.		
Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	44		34	Existed
M116		M7		Existed

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors M116 and M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	34	36	Existed
	35	37	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 TCM and the driver seat control unit.

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

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

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[CAN]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	36	34	Existed
ВТ	37	35	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

${ m 3.check}$ 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	36	M6	82	Existed
1017	37		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	82	E 41	35	Existed
EIUO	81	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

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

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15, "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

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

INFOID:000000003137645

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A-BAG BRANCH LINE CIRCUIT	
< COMPONENT DIAGNOSIS >	[CAN]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000003137648
1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".	
<u>Is the inspection result normal?</u> YES >> Replace the main harness.	
NO >> Replace parts whose air bag system has a malfunction.	

AFS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-64, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-200, "Removal and Installation".

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

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

INFOID:000000003137652

AV BRANCH LINE CIRCUIT

< COMPONENT DIAGNOS AV BRANCH LINE C			[CAN]
	IKCUII		
Diagnosis Procedure			INFOID:000000003137649
1.CHECK CONNECTOR			
1. Turn the ignition switch C			
	able from the negative term connectors of the AV cont		d and loose connection (unit
side and connector side)			
<u>s the inspection result norma</u> YES >> GO TO 2.	<u>1 /</u>		
NO >> Repair the termin			
CHECK HARNESS FOR	OPEN CIRCUIT		
. Disconnect the connecto Check the resistance bet	r of AV control unit. ween the AV control unit ha	vrace connector termina	
Models with NAVI			15.
Δ	V control unit harness connector		
Connector No.	Termina	l No.	Resistance (Ω)
M87	52	53	Approx. 54 – 66
Models without NAVI	L		
A	V control unit harness connector		
Connector No.	Termina	l No.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
s the measurement value wit	hin the specification?		
YES >> GO TO 3. NO >> Repair the AV co	ntral unit branch ling		
CHECK POWER SUPPLY	ntrol unit branch line.		
Check the power supply and		control unit Refer to the	following
Base audio without navigat	on: AV-51, "AV CONTROL	UNIT : Diagnosis Proced	<u>dure"</u>
BOSE audio without naviga BOSE audio with navigation			
the inspection result norma			
YES (Present error)>>Repla		er to the following.	
Base audio with	nout navigation: <u>AV-156, "R</u>	emoval and Installation"	
	thout navigation: <u>AV-412, "</u>		-
• BOSE audio wi YES (Past error)>>Error wa	th navigation: <u>AV-903, "Rei</u> s detected in the AV contro		
· · · · · · · · · · · · · · · · · · ·	supply and the ground circ		

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R7
- Harness connector M110

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of lane camera unit.

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

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	10	5	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>CCS-159</u>, "LANE CAMERA UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to <u>CCS-192, "Removal and Installation"</u>.

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

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

INFOID:000000003514554

4WD BRANCH LINE CIRCUIT

4WD BRANCH LINE CIRCUIT				
Diagnosis Procedure				[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 cornector side). AWD control unit Harness connector F103 Harness connector F103 Harness connector M116 s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of AWD control unit. 2. Check the resistance between the AWD control unit harness connector terminals. MWD control unit harness connector terminals. MWD control unit harness connector terminals. MWD control unit harness connector terminals. Connector No. Terminal No. Resistance (Ω) F108 8 16 Approx. 54 – 66 S the measurement value within the specification? YES YES NO >> Repair the AWD control unit branch line. 3.CHECK PO	4WD BRANCH LINE C	IRCUIT		
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and cornector side). 4. WD control unit Harness connector F103 Harness connector M116 is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of AWD control unit. 2. Check the resistance between the AWD control unit harness connector terminals. AWD control unit harness connector Connector No. Terminal No. F108 8 16 Approx. 54 – 66 S the measurement value within the specification? YES YES 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 DLN-21. "Diagnosis Procedure". S the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to DLN-44. "Removal and Installation". YES (Preasent error)>>Error was dete	Diagnosis Procedure			INFOID:00000003137647
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and cornector side). 4. WD control unit Harness connector F103 Harness connector M116 Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of AWD control unit. 2. Check the resistance between the AWD control unit harness connector terminals. AWD control unit harness connector Connector No. Terminal No. F108 8 16 Approx. 54 – 66 Is the measurement value within the specification? YES 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 DLN-21, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to DLN-44, "Removal and Installation".				
 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and cornector side). AWD control unit Harness connector F103 Harness connector M116 Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of AWD control unit harness connector terminals. AWD control unit harness connector terminals. AWD control unit harness connector 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 DLN-21, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to DLN-44, "Removal and Installation". YES (Past error)>>Error was detected in the AWD control unit branch line. 				
 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. <u>AWD control unit harness connector</u> Resistance (Ω) <u>Connector No.</u> <u>F108</u> <u>8</u> <u>16</u> <u>Approx. 54 - 66</u> 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-21, "Diagnosis Procedure".</u> Is the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation".</u> YES (Past error)>>Error was detected in the AWD control unit branch line. YES (Past error)>>Error was detected in the AWD control unit branch line. YES (Past error)>>Error was detected in the AWD control unit branch line. YES (Past error) YES (Past error)<!--</td--><td> Disconnect the battery cable Check the following terminal nector side). AWD control unit </td><td>from the negative</td><td></td><td>nnection (unit side and con-</td>	 Disconnect the battery cable Check the following terminal nector side). AWD control unit 	from the negative		nnection (unit side and con-
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.				
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.	Is the inspection result normal?			
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. 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 DLN-21, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to DLN-44, "Removal and Installation". YES (Past error)>>Error was detected in the AWD control unit branch line.		and connector		
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. F108 8 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 DLN-21, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to DLN-44, "Removal and Installation". YES (Past error)>>Error was detected in the AWD control unit branch line.	•			
Connector No. Terminal No. F108 8 16 Approx. 54 – 66 s 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 DLN-21, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to DLN-44, "Removal and Installation". YES (Past error)>>Error was detected in the AWD control unit branch line.				
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 DLN-21, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to DLN-44, "Removal and Installation". YES (Past error)>>Error was detected in the AWD control unit branch line.	Connector No.	Τε	erminal No.	Resistance (Ω)
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-21</u> , " <u>Diagnosis Procedure</u> ". Is the inspection result normal? YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44</u> , " <u>Removal and Installation</u> ". YES (Past error)>>Error was detected in the AWD control unit branch line.	F108	8	16	Approx. 54 – 66
<u>dure"</u> . <u>s the inspection result normal?</u> YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the AWD control unit branch line.	YES >> GO TO 3. NO >> Repair the AWD cor	trol unit branch line		
YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the AWD control unit branch line.	<u>dure"</u> .	ground circuit of t	he AWD control unit. Refer to	DLN-21, "Diagnosis Proce-
	YES (Present error)>>Replace YES (Past error)>>Error was de	etected in the AWD	control unit branch line.	and Installation".

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-41, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

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

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

Is the measurement value within the specification?

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

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

>> Repair the data link connector branch line. NO

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-53, "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-163, "Removal and Installa-</u> tion".

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

STRG BRANCH LINE CIRCUIT

	OTILO DILANOI		
< COMPONENT DIAGNOSI	S >		[CAN]
STRG BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000003137655
1.CHECK CONNECTOR			
(unit side and connector s	ble from the negative terr connectors of the steering side).	minal. g angle sensor for damage, b	end and loose connection
Is the inspection result normaYES>> GO TO 2.NO>> Repair the termin2.CHECK HARNESS FOR CO	al and connector.		
1. Disconnect the connector	r of steering angle sensor.	ensor harness connector ter	minals.
Steeri	ing angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termir	nal No.	
M37	1	2	Approx. 54 – 66
3.CHECK POWER SUPPLY Check the power supply and gram - BRAKE CONTROL SY Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error was	ng angle sensor branch lir AND GROUND CIRCUIT the ground circuit of the (STEM -". <u>I?</u> ce the steering angle sen	steering angle sensor. Refe sor. Refer to <u>BRC-113, "Rem</u> angle sensor branch line.	

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-162. "Removal and Installation".

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

ADP BRANCH LINE CIRCUIT

	ADI DIVANCII		
< COMPONENT DIAGNOSIS >			[CAN]
ADP BRANCH LINE CI	RCUIT		
Diagnosis Procedure			INFOID:00000003137656
1.CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable Check the following terminals nector side). Driver seat control unit Harness connector B460 			nnection (unit side and con-
- Harness connector B11			
Is the inspection result normal?			
YES >> GO TO 2. NO >> Repair the terminal a	nd connector		
NO >> Repair the terminal a 2.CHECK HARNESS FOR OPE			
 Disconnect the connector of Check the resistance between 			arminals
	in the driver seat contr		inninaio.
Driver sea	t control unit harness conne	ector	Resistance (Ω)
Connector No.	Termin	al No.	
B451	3	19	Approx. 54 – 66
Is the measurement value within	the specification?		
YES >> GO TO 3. NO >> Repair the driver sea	t control unit branch lir	ne.	
3. CHECK POWER SUPPLY AN			
Check the power supply and the g			
CONTROL UNIT : Diagnosis Pro			O ADI -39, DIVIVEN SEAT
Is the inspection result normal?			
YES (Present error)>>Replace t YES (Past error)>>Error was de NO >> Repair the power sup	tected in the driver sea	at control unit branch line.	emoval and Installation".

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ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator a	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-41, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-110, "Removal</u> <u>and Installation"</u>.

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

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

Revision: 2007 November

ICC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSI	S >		[CAN]
ICC BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:00000003137659
1. CHECK CONNECTOR			
 Turn the ignition switch O Disconnect the battery ca Check the terminals and nection (unit side and con 	ble from the negative tern connectors of the ICC se		mage, bend and loose con-
Is the inspection result normalYES>> GO TO 2.NO>> Repair the terminal	al and connector.		
2.CHECK HARNESS FOR C			
	veen the ICC sensor integ	grated unit harness connec	tor terminals.
ICC sen	sor integrated unit harness con	nector	Resistance (Ω)
Connector No.	Termin	al No.	
E67	3	6	Approx. 54 – 66
3.CHECK POWER SUPPLY Check the power supply and t Procedure". Is the inspection result normal YES (Present error)>>Replac tion". YES (Past error)>>Error was	ensor integrated unit branc AND GROUND CIRCUIT he ground circuit of the IC 12 ce the ICC sensor integr	C sensor integrated unit. R ated unit. Refer to <u>CCS-1</u> or integrated unit branch li	04, "Removal and Installa-

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		Tresistance (22)
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

	CAI			
< COMPONENT DIAGNO				[CAN]
CAN COMMUNIC	ATION (CIRCUIT		
Diagnosis Procedure	;			INFOID:00000003137661
1.CONNECTOR INSPEC	TION			
1. Turn the ignition switch				
2. Disconnect the battery	cable fron			
 Disconnect all the unit Check terminals and c 			nication system.	
Is the inspection result nor		for damage, send		
YES >> GO TO 2.				
NO >> Repair the term				
2.CHECK HARNESS CO				
Check the continuity betwe	een the dat	a link connector te	erminals.	
	Data	a link connector		Continuity
Connector No.			nal No.	-
M24		6	14	Not existed
Is the inspection result nor YES >> GO TO 3.	mal?			
	ness and r	epair the root caus	se.	
3. CHECK HARNESS CO		•		
Check the continuity betwe				
			U	
	k connector	Forminal No		Continuity
Connector No.		Terminal No. 6	Ground	Not existed
M24		14		Not existed
Is the inspection result nor	mal?			
YES >> GO TO 4.				
4		epair the root caus		
4. CHECK ECM AND IPD			UIT	
 Remove the ECM and Check the resistance I 				
ECM		- Resistance (Ω))	ECM and IPDM E/R
Terminal No.			~) 	
114	113	Approx. 108 – 1		
3. Check the resistance l	between th	e IPDM E/R termi	nals.	
IPDM E/R				LV
Terminal No.		Resistance (Ω	2)	LKIA0037E
40	39	Approx. 108 – 1	132	
Is the measurement value	within the	specification?		
YES >> GO TO 5.		-		
NO >> Replace the E	CM and/or	the IPDM E/R.		
5. CHECK SYMPTOM				

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

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< COMPONENT 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.

COMPONENT DIAG	IT DIAGNO			I SYSTEM (TYPE 1)]
AIN LINE BET	WEEN AV AN	D DLC CIRCUI	Т	
agnosis Procedu	ıre			INFOID:000000003515374
SPECTION PROCE	DURE			
CHECK HARNESS		N CIRCUIT)		
Disconnect the follo ECM AV control unit	ery cable from the n owing harness conne y between the AV co		nector and the data li	nk connector.
AV control unit ha	rness connector	Data link	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
Models without NA	53		14	Existed
Models without NA	VI			
AV control unit ha	rness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
	87		14	Existed
tor.	or was detected in th			d the data link connec- or.

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< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000003515376

[CAN SYSTEM (TYPE 1)]

INSPECTION 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 following harness connectors.
- ECM
- Harness connectors M116 and F103
- 4. 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	M116	44	Existed
10124	14	WITO	43	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 TCM.

NO >> Repair the main line between the data link connector and the harness connector M116.

agnosis Proced		ND ABS CIRCL	ЛТ	
	ure			INFOID:000000003515377
SPECTION PROCE				
CHECK CONNECT				
Check the followin and harness side) Harness connecto Harness connecto the inspection result ES >> GO TO 2. O >> Repair the CHECK HARNESS Disconnect the fol Harness connecto Harness connecto	ttery cable from the non- ng terminals and conn- r M6 r E106 <u>normal?</u> terminal and connect CONTINUITY (OPEN lowing harness conne rs F103 and M116	nectors for damage, b for. I CIRCUIT) ctors.	end and loose conne	ection (connector side
Connector No.	connector Terminal No.	Harness c Connector No.	connector Terminal No.	Continuity
	44	Connector No.	82	Existed
M116	43	M6	81	Existed
CHECK HARNESS Disconnect the co	CONTINUITY (OPEN nnector of ABS actuation ity between the harne	or and electric unit (co ss connector and the	ontrol unit). ABS actuator and ele	ctric unit (control unit)
	connector	ABS actuator and electric unit (control unit) harness connector Continuity		
Harness		Connector No.	Terminal No.	
Harness Connector No.	Terminal No.			
	Terminal No. 82 81	E41	35 14	Existed

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515383

1.CHECK 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-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 1)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:0000000351538
1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . Is the inspection result normal?	
YES >> Replace the main harness.NO >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515387

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M87	52 53		Approx. 54 – 66

Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
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 navigation: <u>AV-51, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-218</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-544, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation: AV-156, "Removal and Installation"
- BOSE audio without navigation: AV-412, "Removal and Installation"
- BOSE audio with navigation: <u>AV-903, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:00000003515390
1.CHECK CONNECTOR			
	able from the negative tern		se connection (unit side and
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the term	nal and connector		
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	etween the BCM harness co	onnector terminals.	
BCM harness connector		Resistance (Ω)	
			Resistance (Ω)
Connector No.	Termin		
M122	Termin 91	al No. 90	Resistance (Ω) Approx. 54 – 66
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCW 3. CHECK POWER SUPPL	Termin 91 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUIT	90	Approx. 54 – 66
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCW 3. CHECK POWER SUPPL Check the power supply and	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Browner of th	90	Approx. 54 – 66
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u>	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Bu	90 CM. Refer to <u>BCS-41, "Di</u>	Approx. 54 – 66 agnosis Procedure".
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCW 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the Board al? lace the BCM. Refer to BCS	90 CM. Refer to <u>BCS-41, "Di</u> S-84, "Removal and Instal	Approx. 54 – 66 agnosis Procedure".
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Bu	90 CM. Refer to <u>BCS-41, "Di</u> S-84, "Removal and Instal nch line.	Approx. 54 – 66 agnosis Procedure".
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the Boal? lace the BCM. Refer to BCS as detected in the BCM bra	90 CM. Refer to <u>BCS-41, "Di</u> S-84, "Removal and Instal nch line.	Approx. 54 – 66 agnosis Procedure".
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the Boal? lace the BCM. Refer to BCS as detected in the BCM bra	90 CM. Refer to <u>BCS-41, "Di</u> S-84, "Removal and Instal nch line.	Approx. 54 – 66 agnosis Procedure".
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the Boal? lace the BCM. Refer to BCS as detected in the BCM bra	90 CM. Refer to <u>BCS-41, "Di</u> S-84, "Removal and Instal nch line.	Approx. 54 – 66 agnosis Procedure".
M122 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	Termin 91 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the Boal? lace the BCM. Refer to BCS as detected in the BCM bra	90 CM. Refer to <u>BCS-41, "Di</u> S-84, "Removal and Instal nch line.	Approx. 54 – 66 agnosis Procedure".

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< COMPONENT DIAGNOSIS >

< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515391

[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			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 1)]

Diagnosis Procedure			INFOID:00000003515392
1.CHECK CONNECTOR			
 Check the terminals and nection (unit side and control 	cable from the negative termina d connectors of the unified met onnector side).		lamage, bend and loose con-
<u>Is the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi			
2. CHECK HARNESS FOR			
2. Check the resistance be	or of unified meter and A/C am etween the unified meter and A	C amp. harness conr	nector terminals.
Unified meter and A/C amp. harness connector Resistance (Ω)		Besistance (Q)	
Connector No.	Terminal N		
M67	56	0. 72	Approx. 54 – 66
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL	56 vithin the specification? ed meter and A/C amp. branch	72 line.	Approx. 54 – 66
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia	56 within the specification? ed meter and A/C amp. branch Y AND GROUND CIRCUIT d the ground circuit of the unifie agnosis Procedure".	72 line.	Approx. 54 – 66
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> .	56 within the specification? ed meter and A/C amp. branch Y AND GROUND CIRCUIT d the ground circuit of the unifie agnosis Procedure".	72 line. d meter and A/C amp C amp. Refer to <u>MWI</u>	Approx. 54 – 66 D. Refer to <u>MWI-53, "UNIFIED</u> -163, "Removal and Installa-
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	56 within the specification? ed meter and A/C amp. branch Y AND GROUND CIRCUIT d the ground circuit of the unifie agnosis Procedure". hal? lace the unified meter and A/C	72 Iine. Id meter and A/C amp C amp. Refer to <u>MW</u> r and A/C amp. branc	Approx. 54 – 66 D. Refer to <u>MWI-53, "UNIFIED</u> -163, "Removal and Installa-

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< COMPONENT DIAGNOSIS >

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515393

[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	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-90, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-113, "Removal and Installation".

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

Diagnosis Procedure 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). 4. AT 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 harness connector terminals. A/T assembly harness connector terminal No. F51 3 8 Approx.54-66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-162, "Removal and Installation". YES (Pease neror)>=Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Pease neror)>=Replace the Control valve with TCM. Refer to TM-162, "Removal and Installation". NO >> Repair the power supply and the ground circuit.		E 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). 4. AT assembly 4. Harness connector F103 5. Harness connector M116 5. the 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.	Diagnosis Procedure			INFOID:00000003515394
 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. ArT assembly harness connector F51 3 Resistance (Ω) F51 3 Repair the TCM branch line. 3. Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation".	CHECK CONNECTOR			
1. Disconnect the connector of A/T assembly. 2. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector Resistance (Ω) Connector No. Terminal No. F51 3 8 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	 Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 the inspection result norm YES >> GO TO 2. 	cable from the negative tern minals and connectors for c 3 6 <u>nal?</u>		nnection (unit side and con-
2. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector Resistance (Ω) Connector No. Terminal No. F51 3 8 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line. TM-162, "Removal and Installation".				
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. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.		etween the A/T assembly h		
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-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	Connector No.	-		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-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162. "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	F51	3	8	Approx. 54 – 66
	YES >> GO TO 3. NO >> Repair the TCM 3.CHECK POWER SUPPL	l branch line. Y AND GROUND CIRCUI		nosis Procedure".

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

ABS actuator a	Resistance (Ω)	
Connector No.	Termi	1(63)3(8)106 (22)
E41	35	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 BRC-41, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-110, "Removal</u> <u>and Installation"</u>.

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

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

Revision: 2007 November

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:0000000351539
1.CHECK CONNECTOR			
 Check the terminals and and connector side). <u>s the inspection result norm</u> YES >> GO TO 2. 	cable from the negative terr d connectors of the IPDM al?	ninal. E/R for damage, bend and	loose connection (unit side
NO >> Repair the termine the service of the service			
. Disconnect the connect		ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.		nal No.	
E6 s the measurement value w	40 ithin the specification?	39	Approx. 108 – 132
s the measurement value w YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPL Check the power supply and the inspection result norm	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IF al?	PDM E/R. Refer to <u>PCS-19</u>	, "Diagnosis Procedure".
s the measurement value w YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPL Check the power supply and s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IF al? lace the IPDM E/R. Refer t	PDM E/R. Refer to <u>PCS-19</u> to <u>PCS-34. "Removal and Ir</u> /R branch line.	, "Diagnosis Procedure".

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

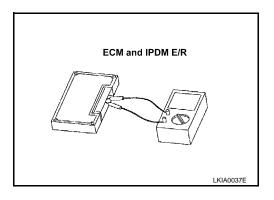
IPDN	Resistance (Ω)	
Terminal No.		
40 39		Approx. 108 – 132

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-76

INFOID:000000003515400

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

Inspection result	
Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.	А
6. CHECK UNIT REPRODUCTION	В
Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF.	
 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication system. 	С
 NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. 	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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[CAN SYSTEM (TYPE 2)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000003515407

INSPECTION 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 following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with NAVI

AV control unit h	arness connector	Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
IVIO7	53	10124	14	Existed

Models without NAVI

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

<pre>< COMPONENT DIAG</pre>				N SYSTEM (TYPE 2)]	
MAIN LINE BET	WEEN DLC A	ND TCM CIRCU	JIT		A
Diagnosis Procedu	ure			INFOID:000000003515409	~
INSPECTION PROCE 1.CHECK HARNESS		N CIRCUIT)			В
	vitch OFF. tery cable from the n owing harness conne				С
- Harness connector		link connector and the	harness connector.		D
Data link c	connector	Harness	connector	Continuity	Ε
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity	
M04	6	M44C	44	Existed	
M24	14	– M116	43	Existed	F
Is the inspection result	normal?			1	

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 TCM. NO >> Repair the main line between the data link connector and the harness connector M116.

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MAIN LINE BETWEEN TCM AND ADP CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN TCM AND ADP CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Harness connectors F103 and M116

- Harness connectors M7 and B1
- 2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M116	44	M7	34	Existed
101110	43		35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors M116 and M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	36	Existed
	35	37	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 TCM and the driver seat control unit.

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

INFOID:000000003515413

MAIN LINE BET	FWEEN ADP A	ND ABS CIRC	JIT	
Diagnosis Proced	lure			INFOID:000000003515414
	TOR			
 Check the following and harness side) Harness connectore <l< td=""><td>Ittery cable from the n ng terminals and con or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connec 6 CONTINUITY (OPEI orness connectors B1</td><td>tor. N CIRCUIT) and M7.</td><td></td><td>nection (connector side</td></l<>	Ittery cable from the n ng terminals and con or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connec 6 CONTINUITY (OPEI orness connectors B1	tor. N CIRCUIT) and M7.		nection (connector side
	ity between the harne		ls.	Qualitatitat
Connector No.	36	Terminal No.	34	Continuity Existed
B1	37		35	Existed
3. CHECK HARNESS	e main line between th CONTINUITY (OPE) Inness connectors M6 Ity between the harne	N CIRCUIT) and E106.	unit and the harness o	connector B1.
Harness	connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M7	36	M6	82	Existed
s the inspection result YES >> GO TO 4. NO >> Repair the 1. CHECK HARNESS	e main line between th CONTINUITY (OPE)	e harness connectors N CIRCUIT)		Existed
 Check the continu harness connecto 	r.	ess connector and the		lectric unit (control unit)
Harness Connector No.	connector Terminal No.		connector Terminal No.	Continuity
E106	82	E41	35	Existed

Is the inspection result normal?

81

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

< COMPONENT DIAGNOSIS >

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

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

ECM BRANCH LINE			115010 00000000000000000000000000000000
_			INFOID:00000003515416
.CHECK CONNECTOR			
 Turn the ignition switch OI Disconnect the battery cal Check the terminals and connector side). 	ole from the negative terr		se connection (unit side and
s the inspection result normal	<u>?</u>		
YES >> GO TO 2. NO >> Repair the termina	al and connector		
CHECK HARNESS FOR O			
. Disconnect the connector			
. Check the resistance betw		onnector terminals.	
	ECM barness connector		
Connector No	ECM harness connector	al No	Resistance (Ω)
Connector No. M107	ECM harness connector Termir 114	nal No. 113	
M107	Termir 114		Resistance (Ω) Approx. 108 – 132
M107 s the measurement value with YES >> GO TO 3.	Termir 114 nin the specification?		
M107 s the measurement value with YES >> GO TO 3. NO >> Repair the ECM b	Termir 114 hin the specification? ranch line.	113	
M107 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY	Termir 114 hin the specification? ranch line. AND GROUND CIRCUIT	113	Approx. 108 – 132
M107 <u>S the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY Check the power supply and the second	Termir 114 nin the specification? ranch line. AND GROUND CIRCUIT ne ground circuit of the E	113	Approx. 108 – 132
M107 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY Check the power supply and the s the inspection result normal	Termir 114 hin the specification? ranch line. AND GROUND CIRCUIT he ground circuit of the E ?	113 CM. Refer to <u>EC-133, "Dia</u>	Approx. 108 – 132 gnosis Procedure".
M107 S the measurement value with YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY Check the power supply and the s the inspection result normal YES (Present error)>>Replace	Termir 114 hin the specification? ranch line. AND GROUND CIRCUIT the ground circuit of the E ? be the ECM. Refer to E	113 CM. Refer to <u>EC-133, "Dia</u> <u>C-15, "ADDITIONAL_SEF</u>	Approx. 108 – 132 gnosis Procedure".
M107 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b J .CHECK POWER SUPPLY Check the power supply and the <u>s the inspection result normal</u> YES (Present error)>>Replace <u>CONTROL UNIT</u> YES (Past error)>>Error was	Termir 114 nin the specification? ranch line. AND GROUND CIRCUIT ne ground circuit of the E 2 ce the ECM. Refer to E Special Repair Requirer detected in the ECM bra	113 CM. Refer to <u>EC-133, "Dia</u> <u>C-15, "ADDITIONAL_SEF</u> nent". nch line.	Approx. 108 – 132 gnosis Procedure".
M107 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM b J .CHECK POWER SUPPLY Check the power supply and the <u>s the inspection result normal</u> YES (Present error)>>Replace <u>CONTROL UNIT</u> YES (Past error)>>Error was	Termir 114 nin the specification? ranch line. AND GROUND CIRCUIT ne ground circuit of the E 2 ce the ECM. Refer to E 5 Special Repair Requirer	113 CM. Refer to <u>EC-133, "Dia</u> <u>C-15, "ADDITIONAL_SEF</u> nent". nch line.	Approx. 108 – 132 gnosis Procedure".

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< COMPONENT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

YES >> Replace the main harness.

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

INFOID:000000003515418

[CAN SYSTEM (TYPE 2)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

AV BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000003515420
1.CHECK CONNECTOR			
 Check the terminals and side and connector side and connector side and connector side and connector side and connection result norm YES >> GO TO 2. NO >> Repair the termination of ter	cable from the negative terr d connectors of the AV cor). al? inal and connector. OPEN CIRCUIT	ntrol unit for damage, ben	ad and loose connection (unit
	AV control unit harness connecto	r	Resistance (Ω)
Connector No.		nal No.	
M87	52	53	Approx. 54 – 66
Models without NAVI			
	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termir	nal No.	
M85	86	87	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply and Base audio without naviga BOSE audio without naviga BOSE audio with navigation the inspection result norm YES (Present error)>>Rep • Base audio wi	lace the AV control unit. Re thout navigation: <u>AV-156.</u> "	V control unit. Refer to the LUNIT : Diagnosis Proce OL UNIT : Diagnosis Proced UNIT : Diagnosis Proced fer to the following. Removal and Installation	<u>dure"</u> cedure" lure"
 BOSE audio v YES (Past error)>>Error way 	vithout navigation: <u>AV-412,</u> vith navigation: <u>AV-903, "Re</u> as detected in the AV contr er supply and the ground ci	emoval and Installation" ol unit branch line.	<u>"</u>

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515423

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-41, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation".

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 2)]

	IS >		CAN SYSTEM (TYPE 2)]
DLC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000003515424
1.CHECK CONNECTOR			
	able from the negative termina connectors of the data link c ess side). al?		end and loose connection
2.CHECK HARNESS FOR (
	n the data link connector termi	inals.	
	Data link connector		
Connector No.	Terminal No	 D.	Resistance (Ω)
M24	6	14	Approx. 54 – 66

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified	d meter and A/C amp. harness co	nnector	Resistance (Ω)
Connector No.	Termi		
M67	56	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-53, "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-163, "Removal and Installa-</u> tion".

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:000000003515425

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

Diagnosis Procedure			
			INFOID:00000003515420
1.CHECK CONNECTOR			
	cable from the negative term I connectors of the steering a side).		bend and loose connection
YES >> GO TO 2.			
NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of steering angle sensor. Stween the steering angle se	nsor harness connector te	erminals.
	ering angle sensor harness connect	tor	Resistance (Ω)
Connector No.	Termina		
M37	1	2	Approx. 54 – 66
- the sum			
s the measurement value w YES >> GO TO 3. NO >> Repair the steer 3.CHECK POWER SUPPL	ing angle sensor branch line).	
YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL Check the power supply an gram - BRAKE CONTROL S	ing angle sensor branch line Y AND GROUND CIRCUIT d the ground circuit of the s		er to <u>BRC-90, "Wiring Dia</u> -
YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL Check the power supply an gram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	ing angle sensor branch line Y AND GROUND CIRCUIT d the ground circuit of the s	teering angle sensor. Ret or. Refer to <u>BRC-113, "Re</u> ngle sensor branch line.	
YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL Check the power supply an gram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	ing angle sensor branch line Y AND GROUND CIRCUIT d the ground circuit of the s SYSTEM -". al? ace the steering angle sense as detected in the steering a	teering angle sensor. Ret or. Refer to <u>BRC-113, "Re</u> ngle sensor branch line.	
YES >> GO TO 3. NO >> Repair the steer CHECK POWER SUPPL Check the power supply an gram - BRAKE CONTROL S s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	ing angle sensor branch line Y AND GROUND CIRCUIT d the ground circuit of the s SYSTEM -". al? ace the steering angle sense as detected in the steering a	teering angle sensor. Ret or. Refer to <u>BRC-113, "Re</u> ngle sensor branch line.	

Revision: 2007 November

< COMPONENT DIAGNOSIS >

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515427

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	A/T assembly harness connector	r	Resistance (Ω)
Connector No.	Terminal No.		Resistance (12)
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-89, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation".

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

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

ADP BRANCH LINE	CIRCUIT			,
Diagnosis Procedure			INFOID:000000003515428	F
1. CHECK CONNECTOR				E
 Check the following term nector side). Driver seat control unit Harness connector B460 	able from the negative terr ninals and connectors for d		nnection (unit side and con-	C
- Harness connector B11 Is the inspection result normal YES >> GO TO 2. NO >> Repair the termination 2.CHECK HARNESS FOR	nal and connector. OPEN CIRCUIT			I
2. Check the resistance be	or of driver seat control unit tween the driver seat control er seat control unit harness control	rol unit harness connector t	erminals.	
Connector No.		nal No.	Resistance (Ω)	(
B451	3	19	Approx. 54 – 66	
3. CHECK POWER SUPPLY	r seat control unit branch li Y AND GROUND CIRCUIT	Г		
Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result normal	Procedure".	iver seat control unit. Refer	10 ADP-39, DRIVER SEAT	,
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe		at control unit branch line.	emoval and Installation".	
				L
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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

$\mathbf{3}$. 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 BRC-41, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-110, "Removal</u> <u>and Installation"</u>.

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

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

INFOID:00000003515430

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

515 >		[] = = = = []
INE CIRCUIT		
		INFOID:00000003515432
		loose connection (unit side
nal?		
inal and connector		
	ness connector terminals.	
IPDM E/R harness connector		
		Resistance (Ω)
40	39	Approx. 108 – 132
d the ground circuit of the nal? blace the IPDM E/R. Refer vas detected in the IPDM E	IPDM E/R. Refer to <u>PCS-19</u> to <u>PCS-34, "Removal and I</u> E/R branch line.	
	OFF. cable from the negative te id connectors of the IPDM nal? inal and connector. COPEN CIRCUIT tor of IPDM E/R. etween the IPDM E/R har IPDM E/R harness connector Term 40 vithin the specification? M E/R branch line. _Y AND GROUND CIRCU d the ground circuit of the nal? blace the IPDM E/R. Refer vas detected in the IPDM I	OFF. cable from the negative terminal. Id connectors of the IPDM E/R for damage, bend and <u>hal?</u> inal and connector. COPEN CIRCUIT tor of IPDM E/R. etween the IPDM E/R harness connector terminals. IPDM E/R harness connector 40 39 within the specification? M E/R branch line. LY AND GROUND CIRCUIT d the ground circuit of the IPDM E/R. Refer to <u>PCS-19</u>

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

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

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

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

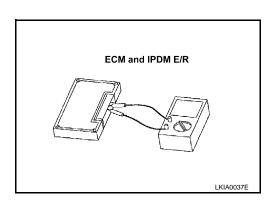
Is the measurement value within the specification?

YES >> GO TO 5.

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

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

LAN-94



INFOID:000000003515433

CAN COMMUNICATION CIRCUIT

< COMPONENT 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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[CAN SYSTEM (TYPE 3)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000003515573

INSPECTION 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 following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with NAVI

AV control unit h	arness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
10107	53	11/24	14	Existed

Models without NAVI

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

Is the inspection result normal?

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

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

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

< COMPONENT DIAG		TWEEN DLC ANI		I SYSTEM (TYPE 3)]	
MAIN LINE BET	WEEN DLC A	ND TCM CIRC	UIT		A
Diagnosis Proced	ure			INFOID:000000003515575	A
INSPECTION PROCE	DURE				В
1. CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)			
3. Disconnect the foll	vitch OFF. tery cable from the n owing harness conne				С
ECMHarness connectorCheck the continui		link connector and the	harness connector.		C
Data link o	connector	Harness	connector	Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	– M116	44	Existed	
ıvı∠4	14	- 10110	43	Existed	F

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 TCM. NO >> Repair the main line between the data link connector and the harness connector M116.

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MAIN LINE BETWEEN TCM AND ADP CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN TCM AND ADP CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Harness connectors F103 and M116

- Harness connectors M7 and B1
- 2. Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M116	44	M7	34	Existed
WITO	43		35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors M116 and M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	nal No.	Continuity
B1	34	36	Existed
	35	37	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 TCM and the driver seat control unit.

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

INFOID:000000003515579

< COMPONENT DIA	GNOSIS >				I N SYSTEM (TYPE 3)]
	WEEN ADP A	ND ABS	CIRCU	JIT	
Diagnosis Proced	lure				INFOID:000000003515580
	OR				
 Check the followin and harness side) Harness connector Harness connector Harness connector Harness connector Sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha 	ttery cable from the n ng terminals and con r B1 r M7 r M6 r E106 <u>t normal?</u> e terminal and connec	tor. N CIRCUIT) and M7.	damage, I		nection (connector side
Connector No.		Termin		s.	Continuity
	36			34	Existed
B1	37			35	Existed
3.CHECK HARNESS Disconnect the ha Check the continu	rness connectors M6 ity between the harne connector	N CIRCUIT) and E106. ess connecte	Drs. Harness	connector	Continuity
Connector No.	Terminal No.	Connec	tor No.	Terminal No.	
M7	36 37	M	6	82	Existed
 CHECK HARNESS Disconnect the co Check the continut harness connecto 	e main line between th CONTINUITY (OPE) nnector of ABS actua ity between the harne	N CIRCUIT) tor and elec ess connect	tric unit (cor or and the uator and ele	ontrol unit).	electric unit (control unit)
Connector No.	Terminal No.	Connec	tor No.	Terminal No.	
E106	82	- F4	.1	35	Existed

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Is the inspection result normal?

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

81

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

< COMPONENT DIAGNOSIS >

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)]

Diagnosis Procedure			INFOID:0000000351558
1. CHECK CONNECTOR			
Check the terminals and connector side).	able from the negative terr connectors of the ECM f		se connection (unit side and
<u>s the inspection result norma</u> YES >> GO TO 2. NO >> Repair the termir 2.CHECK HARNESS FOR (nal and connector.		
 Disconnect the connecto Check the resistance bet 	r of ECM. ween the ECM harness co	onnector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	Resistance (Ω)
M107	Termir 114	nal No. 113	- Resistance (Ω) Approx. 108 – 132
	Termir 114 thin the specification? branch line. YAND GROUND CIRCUIT the ground circuit of the E al?	113 - CM. Refer to <u>EC-133, "Dia</u>	Approx. 108 – 132

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< COMPONENT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. 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.

[CAN SYSTEM (TYPE 3)]

INFOID:000000003515584

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

	E CIRCUIT		
Diagnosis Procedure			INFOID:000000003515585
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the AFS co		and loose connection (unit
s the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
1. Disconnect the connect	or of AFS control unit.		
2. Check the resistance be	etween the AFS control unit	t harness connector termina	lls.
	AFS control unit harness connecto	or	5
Connector No.	Termi	nal No.	Resistance (Ω)
M16	30	7	Approx. 54 – 66
s the measurement value w	vithin the specification?	-	πρριολ. 54 - 66
YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure is the inspection result norm YES (Present error)>>Rep	control unit branch line. Y AND GROUND CIRCUIT the ground circuit of the <u>".</u> hal? lace the AFS control unit. F	AFS control unit. Refer to Refer to <u>EXL-200, "Removal</u>	EXL-64, "AFS CONTROL
YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	control unit branch line. Y AND GROUND CIRCUIT the ground circuit of the <u>".</u> hal? lace the AFS control unit. F	AFS control unit. Refer to Refer to <u>EXL-200, "Removal</u> trol unit branch line.	EXL-64, "AFS CONTROL
NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an <u>UNIT : Diagnosis Procedure</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	control unit branch line. Y AND GROUND CIRCUIT Ind the ground circuit of the " hal? lace the AFS control unit. F as detected in the AFS con	AFS control unit. Refer to Refer to <u>EXL-200, "Removal</u> trol unit branch line.	EXL-64, "AFS CONTROL

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515586

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (12)
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 navigation: <u>AV-51, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-218</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-544, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation: AV-156, "Removal and Installation"
- BOSE audio without navigation: AV-412, "Removal and Installation"
- BOSE audio with navigation: <u>AV-903, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

BCM BRANCH LINE CIRCUIT

 1. CHECK 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. <u>BCM harness connector</u> <u>Resistance (Ω)</u> <u>M122</u> 91 90 <u>Approx. 54 - 66</u> Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. <u>3. CHECK POWER SUPPLY AND GROUND CIRCUIT</u> Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-41</u>, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>> Replace the BCM. Refer to <u>BCS-84</u>, "Removal and Installation". YES (Present error)>> Replace the BCM. Refer to <u>BCS-84</u>, "Removal and Installation". YES (Present error)>> Replace the BCM. Refer to <u>BCS-84</u>, "Removal and Installation". YES (Present error)>> Replace the BCM. Refer to <u>BCS-84</u>, "Removal and Installation".			INFOID:0000000351558
 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) M122 91 90 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation". YES (Past error)>>Error was detected in the BCM branch line.			
$\begin{array}{llllllllllllllllllllllllllllllllllll$	cable from the negative terminal d connectors of the BCM for da		ose connection (unit side and
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. Image: Connector No. BCM harness connector Resistance (Ω) Connector No. M122 91 90 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation". YES (Past error)>>Error was detected in the BCM branch line.	<u>al?</u>		
1. Disconnect the connector of BCM. 2. Check the resistance between the BCM harness connector terminals. Image: Second state of the second state o	inal and connector.		
2. Check the resistance between the BCM harness connector terminals. BCM harness connector Resistance (Ω) Connector No. Terminal No. M122 91 90 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation". YES (Past error)>>Error was detected in the BCM branch line.	OPEN CIRCUIT		
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 BCS-41, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation". YES (Past error)>>Error was detected in the BCM branch line.		ctor terminals.	
Connector No. Terminal No. M122 91 90 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation". YES (Past error)>>Error was detected in the BCM branch line.			Resistance (Ω)
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the BCM branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation". YES (Past error)>>Error was detected in the BCM branch line.	Terminal No		
YES >> GO TO 3. NO >> Repair the BCM branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the BCM. Refer to BCS-84, "Removal and Installation". YES (Past error)>>Error was detected in the BCM branch line.	91	90	Approx. 54 – 66
NO >> Repair the power supply and the ground circuit.	Y AND GROUND CIRCUIT	Refer to BCS-41, "D	iagnosis Procedure"
s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w		cable from the negative terminal d connectors of the BCM for da <u>nal?</u> inal and connector. OPEN CIRCUIT or of BCM. etween the BCM harness connector BCM harness connector BCM harness connector 1 branch line. Y AND GROUND CIRCUIT	cable from the negative terminal. d connectors of the BCM for damage, bend and loc nal? inal and connector. OPEN CIRCUIT or of BCM. etween the BCM harness connector terminals. BCM harness connector 91 92

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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515590

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	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 3)]

Diagnosis Procedure			INFOID:00000003515591
1.CHECK CONNECTOR			
	cable from the negative termi d connectors of the unified m onnector side).		amage, bend and loose con-
YES >> GO TO 2. NO >> Repair the termi	inal and connector		
2.CHECK HARNESS FOR			
	or of unified meter and A/C a etween the unified meter and		ector terminals.
Unified	meter and A/C amp. harness conn	ector	Desistance (O)
Connector No.	Terminal	No.	Resistance (Ω)
M67	56	No. 72	Approx. 54 – 66
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL	56 ithin the specification? ed meter and A/C amp. brand Y AND GROUND CIRCUIT	72 Sh line.	Approx. 54 – 66
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL	56 ithin the specification? ed meter and A/C amp. brand Y AND GROUND CIRCUIT I the ground circuit of the unit agnosis Procedure".	72 Sh line.	
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	56 Tithin the specification? Ted meter and A/C amp. brance Y AND GROUND CIRCUIT The ground circuit of the unit agnosis Procedure". al? lace the unified meter and A as detected in the unified meter	72 ch line. fied meter and A/C amp A/C amp. Refer to <u>MWI</u> ter and A/C amp. branc	Approx. 54 – 66 . Refer to <u>MWI-53, "UNIFIED</u> -163, "Removal and Installa-
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	56 ithin the specification? 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	72 ch line. fied meter and A/C amp A/C amp. Refer to <u>MWI</u> ter and A/C amp. branc	Approx. 54 – 66 . Refer to <u>MWI-53, "UNIFIED</u> -163, "Removal and Installa-

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515592

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	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-90, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-113, "Removal and Installation".

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

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

 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and 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. 		E 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. M/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-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Present error)>> Error was detected in the TCM branch line. <td>Diagnosis Procedure</td> <td></td> <td></td> <th>INFOID:00000003515593</th>	Diagnosis Procedure			INFOID:00000003515593
 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 harness connector terminals. A/T assembly harness connector the connector of A/T assembly harness connector terminals. A/T assembly harness connector 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-89. "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162. "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	1.CHECK 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 Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 Is the inspection result norm YES >> GO TO 2. 	cable from the negative term ninals and connectors for da 3 6 <u>nal?</u>		nnection (unit side and con-
1. Disconnect the connector of A/T assembly. 2. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector Resistance (Ω) Connector No. Terminal No. F51 3 8 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	•			
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. NO >> Repair the TCM branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.		etween the A/T assembly ha	rness connector terminals	
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-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	Connector No.	Termin	al No.	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-89, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	F51	3	8	Approx. 54 – 66
	YES >> GO TO 3.	·		

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< COMPONENT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515594

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.

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

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-59, "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-209, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

ABS BRANCH LINE			
Diagnosis Procedure			INFOID:00000003515596
.CHECK CONNECTOR			
Check the terminals and	able from the negative termi connectors of the ABS actunit side and connector side). al? nal and connector.	ator and electric unit (co	ntrol unit) for damage, bend
	or of ABS actuator and electr etween the ABS actuator and		it) harness connector termi-
ABS actuator a	nd electric unit (control unit) harnes	ss connector	
Connector No.	Terminal	No.	Resistance (Ω)
F41	35		
the measurement value w		14	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPLY Check the power supply and RC-41. "Diagnosis Procedues the inspection result norm YES (Present error)>>Repland and Installation"	thin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A <u>are</u> ". al? ace the ABS actuator and ele	ntrol unit) branch line. BS actuator and electric ectric unit (control unit). F	unit (control unit). Refer to Refer to <u>BRC-110, "Removal</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515598

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

IPDM E/R harness connector			Resistance (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-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:00000003515599 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M24 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< COMPONENT DIAGNOSIS >

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< COMPONENT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

	NOSIS >		[CAN	I SYSTEM (TYPE 4)]
		D DLC CIRCUI	т	
			1	
agnosis Procedu	ure			INFOID:000000003515605
SPECTION PROCE	DURE			
CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)		
Disconnect the follo ECM AV control unit	tery cable from the n owing harness conne by between the AV co		nnector and the data li	nk connector.
AV control unit ha	irness connector	Data link	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
	53		14	Existed
Models without NA	VI			
AV control unit ha	rness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
he inspection result	87		14	Existed
ES (Past error)>>Err tor.	or was detected in th	type decision again. he main line between he AV control unit and		d the data link connec- or.

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< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000003515607

[CAN SYSTEM (TYPE 4)]

INSPECTION 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 following harness connectors.
- ECM
- Harness connectors M116 and F103
- 4. Check the continuity between the data link connector and the harness connector.

Data link	a link connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	6	M116	44	Existed
10124	14	WITO	43	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 TCM.

NO >> Repair the main line between the data link connector and the harness connector M116.

< COMPONENT DIA(WEEN T			UIT [CAN SYSTEM (TYP	E 4)]
MAIN LINE BET		ND ADF	P CIRC			
Diagnosis Proced	ure				INF01D:0000000)003515611
INSPECTION PROCE	EDURE					
1. CHECK CONNECT	OR					
	ttery cable from the ne ng terminals and conr r M7			bend and loose	connection (connector	r side
Is the inspection result YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS	terminal and connect					
 Harness connecto Harness connecto 			ors.			
Harness	connector		Harness	connector	Continuitu	
Connector No.	Terminal No.	Connec	tor No.	Terminal No.	Continuity	
M116	44	M	7	34	Existed	
	43	IVI	1	35	Existed	
Is the inspection result YES >> GO TO 3. NO >> Repair the 3. CHECK HARNESS Check the continuity be	main line between th CONTINUITY (OPEN	N CIRCUIT)		6 M116 and M7.		
Connector No.		Termina	al No.		Continuity	
	34			36	Existed	

Is the inspection result normal?

B1

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

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

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000003515612

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
D1	36	34	Existed
ВТ	37	35	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	ess connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	36	M6	82	Existed
1017	37		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	Harness connector		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	82	E41	35	Existed
EIUO	81		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

< COMPONENT 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:000000003515614

1.CHECK 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-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 4)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000003515616
1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . Is the inspection result normal?	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515618

[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 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 NAVI

Connector No. Terminal No. Terminal No. M87 52 53 Approx. 54 – 66	AV control unit harness connector			Resistance (Ω)
M87 52 53 Approx. 54 – 66	Connector No.	Termi	Resistance (52)	
	M87	52	Approx. 54 – 66	

Models without NAVI

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: <u>AV-51, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-218, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-544</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

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

- Base audio without navigation: AV-156, "Removal and Installation"
- BOSE audio without navigation: AV-412, "Removal and Installation"
- BOSE audio with navigation: <u>AV-903, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

LANE BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000003515619
1.CHECK CONNECTOR			
	able from the negative te inals and connectors for) <u>al?</u> nal and connector.		connection (unit side and con-
		nit harness connector terr	minals.
Connector No.		ninal No.	Resistance (Ω)
R8	10	5	Approx. 54 – 66
3. CHECK POWER SUPPLY Check the power supply and JNIT : Diagnosis Procedure' s the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error was	camera unit branch line. (AND GROUND CIRCU I the ground circuit of the <u>al?</u> ace the lane camera unit.	a lane camera unit. Refer . Refer to <u>CCS-192, "Rem</u> mera unit branch line.	to <u>CCS-159, "LANE CAMERA</u>
NO Demain the measure	r supply and the around (circuit	

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515621

[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.	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-41, "Diagnosis Procedure"</u>. Is the inspection result normal?

is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-84, "Removal and Installation"</u>.

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

	SIS >		[CAN SYSTEM (TYPE 4)]
DLC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000003515622
CHECK CONNECTOR			
	able from the negative terr d connectors of the data li ness side). <u>al?</u> nal and connector.		bend and loose connection
Check the resistance betwee		terminals.	
Connector No.	Data link connector	nal No.	- Resistance (Ω)
M24	6	14	Approx. 54 – 66

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Unified	Resistance (Ω)	
Connector No.	Termi	
M67	56	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-53, "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-163, "Removal and Installa-</u> tion".

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

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:00000003515624
1.CHECK CONNECTOR			
 Check the terminals and (unit side and connector <u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR 	able from the negative termi I connectors of the steering a side). al? nal and connector. OPEN CIRCUIT		, bend and loose connection
Check the resistance be	or of steering angle sensor. tween the steering angle ser		erminals.
Connector No.	ering angle sensor harness connect Terminal		Resistance (Ω)
M37	1	2	Approx. 54 – 66
s the measurement value w	itnin the specification?		
NO >> Repair the steer	ing angle sensor branch line		
NO >> Repair the steer CHECK POWER SUPPL Check the power supply and ram - BRAKE CONTROL S is the inspection result norm	Y AND GROUND CIRCUIT d the ground circuit of the s <u>YSTEM -"</u> . al?	eering angle sensor. Re	
NO >> Repair the steer CHECK POWER SUPPL Check the power supply and ram - BRAKE CONTROL S the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT d the ground circuit of the s <u>YSTEM -"</u> .	eering angle sensor. Re or. Refer to <u>BRC-113, "Re</u> ngle sensor branch line.	

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515625

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

A/T assembly harness connector			Resistance (Ω)
Connector No.	Termir		
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-89, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to TM-162. "Removal and Installation".

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

ADP BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000003515626
1.CHECK CONNECTOR			
 Check the following tern nector side). Driver seat control unit Harness connector B466 	cable from the negative ten ninals and connectors for		onnection (unit side and con-
Harness connector B11 <u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect 2. Check the resistance be	or of driver seat control un etween the driver seat con	trol unit harness connector	terminals.
	er seat control unit harness con		Resistance (Ω)
Connector No. B451	3	inal No.	Approx. 54 – 66
CHECK POWER SUPPL	the ground circuit of the c	Т	r to <u>ADP-59, "DRIVER SEAT</u>
YES (Present error)>>Repl YES (Past error)>>Error wa	lace the driver seat contro	I unit. Refer to <u>ADP-209, "R</u> eat control unit branch line. circuit.	emoval and Installation".

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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).
- 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.	Termi		
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 BRC-41, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-110, "Removal</u> <u>and Installation"</u>.

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

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

INFOID:00000003515628

ICC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

ICC BRANCH LINE	CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000003515629	A
1.CHECK CONNECTOR				В
	cable from the negative terr d connectors of the ICC se	ninal. ensor integrated unit for dan	nage, bend and loose con-	С
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.			D
2.CHECK HARNESS FOR				F
	or of ICC sensor integrated etween the ICC sensor integrated	unit. grated unit harness connect	or terminals.	
ICC se	ensor integrated unit harness con	nector	Resistance (Ω)	F
Connector No.	Termir	nal No.		
E67	3	6	Approx. 54 – 66	G
3. CHECK POWER SUPPL	sensor integrated unit bran Y AND GROUND CIRCUIT	F		Н
Check the power supply and <u>Procedure</u> ".	J.	CC sensor integrated unit. R	efer to <u>CCS-77, "Diagnosis</u>	I
tion"	lace the ICC sensor integ	rated unit. Refer to <u>CCS-10</u> sor integrated unit branch lir		J
	er supply and the ground ci		IG.	K
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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515630

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000003515631 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M24 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the ECM and/or the IPDM E/R. 5.CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

< COMPONENT DIAGNOSIS >

LAN-133

< COMPONENT 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.

OMPONENT DIAG		SIS		I SYSTEM (TYPE 5)]
AIN LINE BET	WEEN AV AN	D DLC CIRCUI	Г	
agnosis Procedu	ıre			INFOID:000000003515637
SPECTION PROCE	DURE			
CHECK HARNESS		N CIRCUIT)		
Disconnect the follo ECM AV control unit	ery cable from the n owing harness conne y between the AV co		nector and the data li	nk connector.
AV control unit ha	rness connector	Data link	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
	53		14	Existed
Models without NA	VI			
AV control unit ha	rness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
he inspection result i	87		14	Existed
ES (Past error)>>Err tor.	or was detected in th	type decision again. he main line between t he AV control unit and t		d the data link connec- or.

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000003515639

[CAN SYSTEM (TYPE 5)]

INSPECTION 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 following harness connectors.
- ECM
- Harness connectors M116 and F103
- 4. 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	M116	44	Existed	
10124	14	WITO	43	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 TCM.

NO >> Repair the main line between the data link connector and the harness connector M116.

< COMPONENT DIA		WEEN TCM A		N SYSTEM (TYPE 5)]
MAIN LINE BET		ND ADP CIR	-	
Diagnosis Proced	ure			INFOID:000000003515643
1.CHECK CONNECT	ÖR			
 Check the followin and harness side) Harness connecto Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the fol Harness connecto Harness connecto 	r M7 r B1 <u>normal?</u> terminal and connect CONTINUITY (OPEN lowing harness conne rs F103 and M116	tor. N CIRCUIT)	e, bend and loose conr	nection (connector side
Harness	connector	Harne	ess connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M116	44	M7	34	Existed
WITTO	43	1017	35	Existed
Is the inspection result YES >> GO TO 3. NO >> Repair the 3. CHECK HARNESS Check the continuity b	main line between th CONTINUITY (OPEN	N CIRCUIT)		
Connector No.		Terminal No.		Continuity
B1	34		36	Existed
DI	35		37	Existed

Is the inspection result normal?

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

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

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Existed

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000003515644

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	36	34	Existed
ы	37	35	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M7	36	M6	82	Existed	
1117	37		81	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	82	E41	35	Existed	
EIUO	81		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

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515646

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.

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

ECM harness connector			Resistance (Ω)
Connector No.	Termi	Resistance (32)	
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 5)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:00000003515648
1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . Is the inspection result normal?	
YES >> Replace the main harness.NO >> Replace parts whose air bag system has a malfunction.	

< COMPONENT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515649

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-64, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-200, "Removal and Installation".

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:00000003515650
1.CHECK CONNECTOR			
 Check the terminals and side and connector side side and connector side side and connector side side and connection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR Disconnect the connector side side and connector side side side and connector side side side side side side side side	able from the negative terr d connectors of the AV cor <u>al?</u> nal and connector. OPEN CIRCUIT or of AV control unit.		and loose connection (unit
	AV control unit harness connecto	r	Resistance (Ω)
Connector No.		nal No.	
M87	52	53	Approx. 54 – 66
Models without NAVI			
1	AV control unit harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
M85	86	87	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply and Base audio without naviga BOSE audio without naviga BOSE audio with navigatio the inspection result norm YES (Present error)>>Repl • Base audio wit • BOSE audio wit	the ground circuit of the A tion: <u>AV-51, "AV CONTRO</u> ation: <u>AV-218, "AV CONTR</u> n: <u>AV-544, "AV CONTROL</u> al? ace the AV control unit. Re thout navigation: <u>AV-156, "</u>	V control unit. Refer to the L UNIT : Diagnosis Proced OL UNIT : Diagnosis Proced UNIT : Diagnosis Procedu fer to the following. Removal and Installation" "Removal and Installation"	<u>ure"</u> edure" ire"
	(10.03)	emoval and installation	

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LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515651

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R7
- Harness connector M110

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of lane camera unit.

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

L	Lane camera unit harness connector			
Connector No.	Termi	Resistance (Ω)		
R8	10	5	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>CCS-159</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to <u>CCS-192, "Removal and Installation"</u>.

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNO	SIS >		[CAN SYSTEM (TYPE 5)]
BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000003515653
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the BCM f		e connection (unit side and
NO >> Repair the term			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of BCM. Stween the BCM harness co	onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
M122	91	90	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and	l branch line. Y AND GROUND CIRCUIT		ignosis Procedure".
YES (Past error)>>Error w	nal? lace the BCM. Refer to <u>BC</u> as detected in the BCM bra er supply and the ground ci	anch line.	ation".

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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515654

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:00000003515655
1.CHECK CONNECTOR			
 Check the terminals and nection (unit side and co ls the inspection result norm 	cable from the negative term d connectors of the unified r onnector side).		damage, bend and loose con-
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR			
2. Check the resistance be	or of unified meter and A/C a stween the unified meter and	d A/C amp. harness con	nector terminals.
	meter and A/C amp. harness con		Resistance (Ω)
Connector No.	Termina	al No.	
M07	50	70	Annual 54 66
M67 Is the measurement value w	56 ithin the specification?	72	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL	ithin the specification? ed meter and A/C amp. bran Y AND GROUND CIRCUIT	ch line.	
Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia	ithin the specification? ed meter and A/C amp. bran Y AND GROUND CIRCUIT I the ground circuit of the un agnosis Procedure".	ch line.	Approx. 54 – 66 p. Refer to <u>MWI-53, "UNIFIED</u>
Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	ithin the specification? ed meter and A/C amp. bran Y AND GROUND CIRCUIT I the ground circuit of the un agnosis Procedure". al? lace the unified meter and as detected in the unified meter	ch line. ified meter and A/C am A/C amp. Refer to <u>MW</u> eter and A/C amp. brand	p. Refer to <u>MWI-53, "UNIFIED</u> I-163, "Removal and Installa-
Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	ithin the specification? ed meter and A/C amp. bran Y AND GROUND CIRCUIT I the ground circuit of the un agnosis Procedure". al? ace the unified meter and	ch line. ified meter and A/C am A/C amp. Refer to <u>MW</u> eter and A/C amp. brand	p. Refer to <u>MWI-53, "UNIFIED</u> I-163, "Removal and Installa-
Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	ithin the specification? ed meter and A/C amp. bran Y AND GROUND CIRCUIT I the ground circuit of the un agnosis Procedure". al? lace the unified meter and as detected in the unified meter	ch line. ified meter and A/C am A/C amp. Refer to <u>MW</u> eter and A/C amp. brand	p. Refer to <u>MWI-53, "UNIFIED</u> I-163, "Removal and Installa-
Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	ithin the specification? ed meter and A/C amp. bran Y AND GROUND CIRCUIT I the ground circuit of the un agnosis Procedure". al? lace the unified meter and as detected in the unified meter	ch line. ified meter and A/C am A/C amp. Refer to <u>MW</u> eter and A/C amp. brand	p. Refer to <u>MWI-53, "UNIFIED</u> I-163, "Removal and Installa-

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515656

[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-90, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-113, "Removal and Installation".

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

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

	E CIRCUIT		
Diagnosis Procedure			INFOID:00000003515657
1.CHECK CONNECTOR			
 Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 	cable from the negative termin ninals and connectors for dar 3 6 <u>nal?</u> inal and connector.		nnection (unit side and con-
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of A/T assembly. etween the A/T assembly harr	ness connector terminals	
	A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal	No.	
F51	3	8	
Is the measurement value w	vithin the specification?	0	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the TCM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	l branch line. Y AND GROUND CIRCUIT d the ground circuit of the TCI	M. Refer to <u>TM-89, "Diag</u> M. Refer to <u>TM-162, "Re</u> ch line.	nosis Procedure".

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< COMPONENT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515658

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.

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

Driv	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-59, "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-209, "Removal and Installation".

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

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

	CIRCUIT			
Diagnosis Procedure			INFOID:00000003515660	
.CHECK CONNECTOR				
Check the terminals and	able from the negative termin a connectors of the ABS acturnit side and connector side). al? nal and connector.		ntrol unit) for damage, bend	
	or of ABS actuator and electr	ic unit (control unit).		
	etween the ABS actuator and		t) harness connector termi-	
ABS actuator a	and electric unit (control unit) harnes	ss connector	Resistance (0)	
Connector No.	Terminal	Ne	Resistance (Ω)	
		INO.		
	35 ithin the specification?	14	Approx. 54 – 66	
the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL theck the power supply an RC-41. "Diagnosis Procedu the inspection result norm YES (Present error)>>Repl and Installation"	ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A ure". al? ace the ABS actuator and ele	14 ntrol unit) branch line. BS actuator and electric ectric unit (control unit). R	unit (control unit). Refer to efer to <u>BRC-110, "Removal</u>	

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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.

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

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-77, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to <u>CCS-104</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

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

INFOID:000000003515661

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

PDM-E BRANCH LINE CIRCUIT	
	INFOID:000000003515662
.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, bend ar and connector side). <u>the inspection result normal?</u> YES >> GO TO 2.	nd loose connection (unit side
NO >> Repair the terminal and connector.	
CHECK HARNESS FOR OPEN CIRCUIT	
Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminals.	
IPDM E/R harness connector	Resistance (Ω)
Connector No. Terminal No.	
E64039the measurement value within the specification?	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. • CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-</u> <u>the inspection result normal?</u> YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-34. "Removal and</u> YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit.	

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CAN COMMUNICATION CIRCUIT

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.

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

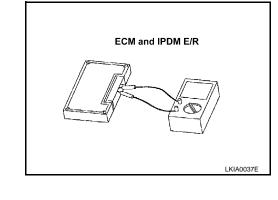
Is the measurement value within the specification?

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-154

INFOID:000000003515663

CAN COMMUNICATION CIRCUIT

< COMPONENT 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	В			
Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF.				
 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication system. 	С			
 NOTE: ECM and IPDM E/R have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. 	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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[CAN SYSTEM (TYPE 6)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000003515669

INSPECTION 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 following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with NAVI

AV control unit h	AV control unit harness connector		Data link connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M87	52	2M24	6	Existed
IVIO7	53	10124	14	Existed

Models without NAVI

AV control unit h	arness connector	Data link connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M85	86	M24	6	Existed	
COM	87	10124	14	Existed	

Is the inspection result normal?

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

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

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

< COMPONENT DIAG		WEEN DLC AND		SYSTEM (TYPE 6)]	
MAIN LINE BET	WEEN DLC AI	ND TCM CIRCU	JIT		Λ
Diagnosis Proced	ure			INFOID:000000003515671	A
INSPECTION PROCE	-	I CIRCUIT)			В
	witch OFF. ttery cable from the ne owing harness conne				С
Harness connectoCheck the continuit		ink connector and the	harness connector.		D
Data link	connector	Harness of	connector	Continuity	Е
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M116	44	Existed	
10124	14	IVI I IO	43	Existed	F

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 TCM. NO >> Repair the main line between the data link connector and the harness connector M116.

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< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN TCM AND ABS CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Harness connectors F103 and M116
- 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	
M116	44	M6	82	Existed	
	43	OIVI V	81	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors M116 and 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	Harness connector		ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	o. Terminal No.	
E106	82	– E41	35	Existed
EIUO	81	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 TCM 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).

[CAN SYSTEM (TYPE 6)]

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:00000000351567
1. CHECK CONNECTOR			
3. Check the terminals and connector side).	ble from the negative termin connectors of the ECM for		ose connection (unit side and
<u>s the inspection result normal</u> YES >> GO TO 2. NO >> Repair the termina 2.CHECK HARNESS FOR C	al and connector.		
Disconnect the connector Check the resistance betv	veen the ECM harness con	nector terminals.	
 Check the resistance betw 	veen the ECM harness con ECM harness connector		Resistance (Ω)
2. Check the resistance betw Connector No. M107	ECM harness con ECM harness connector Terminal 114		
2. Check the resistance betw Connector No.	Veen the ECM harness con ECM harness connector Terminal 114 hin the specification?	No.	
2. Check the resistance betw Connector No. M107 S the measurement value with YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY Check the power supply and t S the inspection result normal YES (Present error)>>Replace	Veen the ECM harness con ECM harness connector Terminal 114 hin the specification? AND GROUND CIRCUIT he ground circuit of the ECI ? ce the ECM. Refer to EC	No. 113 M. Refer to <u>EC-133, "D</u> -15, "ADDITIONAL SE	Approx. 108 – 132
2. Check the resistance betw Connector No. M107 S the measurement value with YES >> GO TO 3. NO >> Repair the ECM b 3.CHECK POWER SUPPLY Check the power supply and t S the inspection result normal YES (Present error)>>Replay CONTROL UNIT YES (Past error)>>Error was	veen the ECM harness con ECM harness connector Terminal 114 hin the specification? branch line. AND GROUND CIRCUIT he ground circuit of the ECI ? ce the ECM. Refer to EC: : Special Repair Requirement	No. 113 M. Refer to <u>EC-133, "D</u> -15. "ADDITIONAL SE nt". ch line.	Approx. 108 – 132

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< COMPONENT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. 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.

[CAN SYSTEM (TYPE 6)]

INFOID:000000003515680

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

	CIRCUIT		
Diagnosis Procedure			INFOID:00000003515682
1.CHECK CONNECTOR			
 Check the terminals ar side and connector side <u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connect 	cable from the negative terr nd connectors of the AV cor e). nal? ninal and connector. R OPEN CIRCUIT	ntrol unit for damage, ben	nd and loose connection (unit
	AV control unit harness connector	r	Resistance (Ω)
Connector No.		nal No.	
M87	52	53	Approx. 54 – 66
Models without NAVI			
	AV control unit harness connector	r	Posistance (O)
Connector No.	Termir	nal No.	Resistance (Ω)
M85	86	87	Approx. 54 – 66
CHECK POWER SUPP heck the power supply an Base audio without navig BOSE audio without navig BOSE audio with navigati the inspection result norm YES (Present error)>>Rep	blace the AV control unit. Re vithout navigation: <u>AV-156.</u> "	V control unit. Refer to the L UNIT : Diagnosis Proce OL UNIT : Diagnosis Proce UNIT : Diagnosis Proced	dure" cedure" ture"

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515684

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AWD control unit.

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

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-21, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation"</u>.

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

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNO	SIS >		[CAN SYSTEM (TYPE 6)]
BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000003515685
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the BCM f		e connection (unit side and
NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of BCM. Stween the BCM harness co	onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
M122	91	90	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and	l branch line. Y AND GROUND CIRCUIT		ignosis Procedure".
YES (Past error)>>Error w			ation".

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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515686

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	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 6)]

M&A BRANCH LINE CIRCUIT
Diagnosis Procedure
.CHECK CONNECTOR
 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 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 unified meter and A/C amp. Check the resistance between the unified meter and A/C amp. harness connector terminals.
Unified meter and A/C amp. harness connector Resistance (Ω)
Connector No. Terminal No. M67 56 72 Approx. 54 – 66
s the measurement value within the specification?
YES >> GO TO 3. NO >> Repair the unified meter and A/C amp. branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT
Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to MWI-53, "UNIFIED
METER AND A/C AMP. : Diagnosis Procedure".
s the inspection result normal? YES (Present error)>>Replace the unified meter and A/C amp. Refer to <u>MWI-163, "Removal and Installa-</u> <u>tion"</u> .
s the inspection result normal? YES (Present error)>>Replace the unified meter and A/C amp. Refer to <u>MWI-163, "Removal and Installa-</u>
s the inspection result normal? YES (Present error)>>Replace the unified meter and A/C amp. Refer to <u>MWI-163, "Removal and Installa-</u> <u>tion"</u> . YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
s the inspection result normal? YES (Present error)>>Replace the unified meter and A/C amp. Refer to <u>MWI-163, "Removal and Installa-</u> <u>tion"</u> . YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515688

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector		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-90, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-113, "Removal and Installation".

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

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

Diagnosis Procedure 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connector side). A/T assembly Harness connector F103 Harness connector M116 s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of A/T assembly. 2. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector F51 3 8 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line.	nection (unit side and con-
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connector side). A/T assembly Harness connector F103 Harness connector M116 <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of A/T assembly. Check the resistance between the A/T assembly harness connector terminals. 	nection (unit side and con-
 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connector side). A/T assembly Harness connector F103 Harness connector M116 <u>s the inspection result normal?</u> 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. 	nection (unit side and con-
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 A/T assembly harness connector Connector No. Terminal No. F51 3 S the measurement value within the specification? YES	
1. Disconnect the connector of A/T assembly. 2. Check the resistance between the A/T assembly harness connector terminals. A/T assembly harness connector Connector No. Terminal No. F51 3 s the measurement value within the specification? YES >> GO TO 3.	
Connector No. Terminal No. F51 3 s the measurement value within the specification? YES >> GO TO 3.	
F5138s the measurement value within the specification?YESYES	Resistance (Ω)
YES >> GO TO 3.	Approx. 54 – 66
B.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to <u>TM-89</u> , "Diagno <u>s the inspection result normal?</u> YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-162</u> , "Rem YES (Past error)>>Error was detected in the TCM branch line. NO >> Repair the power supply and the ground circuit.	

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator a	and electric unit (control unit) har	ness connector	Resistance (Ω)	
Connector No.	Terminal No.		(22)	
E41	35	14	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to BRC-41, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-110, "Removal</u> <u>and Installation"</u>.

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

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

Revision: 2007 November

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

< COMPONENT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 6)]
PDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:00000003515694
1.CHECK CONNECTOR			
	cable from the negative tern d connectors of the IPDM		d loose connection (unit side
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
. Disconnect the connect		ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	Termi	nal No.	
E6	40	39	Approx. 108 – 132
s the measurement value w YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPL Check the power supply and	I E/R branch line. Y AND GROUND CIRCUI		9, "Diagnosis Procedure".
s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	ace the IPDM E/R. Refer	R branch line.	Installation".

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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
M24	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	
Terminal No.		Resistance (Ω)
114	113	Approx. 108 – 132

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

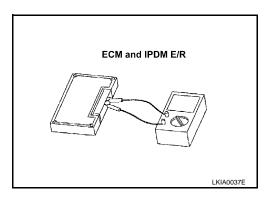
IPDN	IPDM E/R	
Terminal No.		Resistance (Ω)
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



LAN-170

INFOID:000000003515695

CAN COMMUNICATION CIRCUIT

< COMPONENT 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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[CAN SYSTEM (TYPE 7)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000003515701

INSPECTION 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 following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with NAVI

AV control unit harness connector		Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
IVIO7	53	10124	14	Existed

Models without NAVI

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

Is the inspection result normal?

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

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

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

< COMPONENT DIAG		WEEN DLC AN	D TCM CIRCUIT [CAN	N SYSTEM (TYPE 7)]	
MAIN LINE BET	WEEN DLC A	ND TCM CIRC	UIT		Λ
Diagnosis Proced	Diagnosis Procedure			INFOID:000000003515703	A
INSPECTION PROCE	DURE				В
1. CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)			
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect the following harness connectors. 					С
 ECM Harness connector Check the continui 	rs M116 and F103 ty between the data li	nk connector and the	harness connector.		D
Data link connector Harness connector		Continuity	Ε		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M24	6	M116	44	Existed	_
IVIZ4	14	WITO	43	Existed	F

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 TCM. NO >> Repair the main line between the data link connector and the harness connector M116.

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MAIN LINE BETWEEN TCM AND ADP CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN TCM AND ADP CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Harness connectors F103 and M116

- Harness connectors M7 and B1
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		iector Harness c		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M116	44	M7	34	Existed		
	43	1017	35	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors M116 and M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	36	Existed
	35	37	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 TCM and the driver seat control unit.

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

[CAN SYSTEM (TYPE 7)]

COMPONENT DIA	GNOSIS >			AN SYSTEM (TYPE 7)]
AIN LINE BE	TWEEN ADP A	ND ABS CIRC	UIT	
Diagnosis Proced	lure			INFOID:00000003515708
	TOR			
 Check the followi and harness side) Harness connector Harness connector Harness connector Harness connector Sthe inspection resul YES >> GO TO 2. NO >> Repair the 	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	nectors for damage, tor.	bend and loose cor	nnection (connector side
	S CONTINUITY (OPE			
	uity between the harne		als.	
Connector No.		Terminal No.		Continuity
B1	36		34	Existed
	37		35	Existed
CHECK HARNESS Disconnect the ha	e main line between th S CONTINUITY (OPE) arness connectors M6 uity between the harne connector Terminal No.	N CIRCUIT) and E106. ess connectors.	unit and the harness	Continuity
	36		82	Existed
M7	37	- M6	81	Existed
LCHECK HARNESS	e main line between th S CONTINUITY (OPEI onnector of ABS actua uity between the harne	N CIRCUIT) tor and electric unit (ess connector and th	control unit). e ABS actuator and o	electric unit (control unit)
Harness	connector	ABS actuator and e		
Harness Connector No.	connector Terminal No.		s connector Terminal No.	Continuity

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Is the inspection result normal?

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

81

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

< COMPONENT DIAGNOSIS >

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 7)]

ECM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000003515710
1.CHECK CONNECTOR			
	ble from the negative termina connectors of the ECM for d		se connection (unit side and
YES >> GO TO 2. NO >> Repair the termina 2.CHECK HARNESS FOR OI	l and connector.		
 Disconnect the connector of Check the resistance betw 	een the ECM harness conne	ector terminals.	
	ECM harness connector		Resistance (Ω)
Connector No.		Terminal No.	
M107	114	113	Approx. 108 – 132
<u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ECM br	·		
3. CHECK POWER SUPPLY	AND GROUND CIRCUIT	Refer to FC-133 "Di	aonosis Procedure"
3. CHECK POWER SUPPLY A Check the power supply and the sthe inspection result normal?	AND GROUND CIRCUIT ne ground circuit of the ECM.		-
3. CHECK POWER SUPPLY A Check the power supply and the sthe inspection result normal? YES (Present error)>>Replace <u>CONTROL UNIT :</u> YES (Past error)>>Error was	AND GROUND CIRCUIT the ground circuit of the ECM. 2 the the ECM. Refer to <u>EC-1</u> Special Repair Requirement	5. "ADDITIONAL SE <u>t"</u> . line.	-
3. CHECK POWER SUPPLY A Check the power supply and the sthe inspection result normal? YES (Present error)>>Replace <u>CONTROL UNIT :</u> YES (Past error)>>Error was	AND GROUND CIRCUIT the ground circuit of the ECM. the the ECM. Refer to <u>EC-1</u> <u>Special Repair Requirement</u> detected in the ECM branch	5. "ADDITIONAL SE <u>t"</u> . line.	-

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< COMPONENT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

YES >> Replace the main harness.

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

INFOID:000000003515712

[CAN SYSTEM (TYPE 7)]

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:00000003515714
1 .CHECK CONNECTOR			
 Check the terminals and side and connector side side and connector side side and connector side side and connection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR Disconnect the connector 	able from the negative terr I connectors of the AV cor al? nal and connector. OPEN CIRCUIT	ntrol unit for damage, bei	nd and loose connection (unit
	V control unit harness connecto	r	
Connector No.		nal No.	Resistance (Ω)
M87	52	53	Approx. 54 – 66
Models without NAVI			
/	V control unit harness connecto	r	Resistance (Ω)
Connector No.	Termiı	nal No.	
M85	86	87	Approx. 54 – 66
CHECK POWER SUPPL heck the power supply and Base audio without naviga BOSE audio without navig BOSE audio with navigatio	the ground circuit of the A tion: <u>AV-51, "AV CONTRO</u> ation: <u>AV-218, "AV CONTR</u> n: <u>AV-544, "AV CONTROL</u>	V control unit. Refer to th UNIT : Diagnosis Proce	edure" ocedure"
 BOSE audio w 		Removal and Installation "Removal and Installation	
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the AV contr r supply and the ground ci		

< COMPONENT DIAGNOSIS >

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515716

[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).
- AWD control unit
- Harness connector F103
- Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AWD control unit.

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

A	AWD control unit harness connector		
Connector No.	Terminal No.		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-21, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation"</u>.

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

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 7)]
BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000003515717
1.CHECK CONNECTOR			
 Check the terminals an connector side). <u>Is the inspection result norm</u> YES >> GO TO 2. 	cable from the negative terr d connectors of the BCM f al?		se connection (unit side and
NO >> Repair the term			
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of BCM. etween the BCM harness co	onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
M122	91	90	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPL Check the power supply and	l branch line. Y AND GROUND CIRCUIT		agnosic Procedure"
Is the inspection result norm YES (Present error)>>Rep	al? lace the BCM. Refer to <u>BC</u>	S-84, "Removal and Install	
	as detected in the BCM bra er supply and the ground ci		

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515718

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:000000003515719
1.CHECK CONNECTOR			
 Check the terminals and nection (unit side and co 	cable from the negative termina d connectors of the unified met onnector side).		amage, bend and loose con-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
2. Check the resistance be	or of unified meter and A/C am stween the unified meter and A	C amp. harness conne	ector terminals.
	meter and A/C amp. harness connec		Resistance (Ω)
Connector No	Terminal N		
Connector No.	Terminal N		
M67	56	72	Approx. 54 – 66
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL	56 ithin the specification? ed meter and A/C amp. branch Y AND GROUND CIRCUIT	72 line.	
M67 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia	56 ithin the specification? ed meter and A/C amp. branch Y AND GROUND CIRCUIT I the ground circuit of the unifie agnosis Procedure".	72 line.	
M67 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL' Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	56 ithin the specification? ed meter and A/C amp. branch Y AND GROUND CIRCUIT I the ground circuit of the unifie agnosis Procedure". al? lace the unified meter and A/C as detected in the unified mete	72 line. d meter and A/C amp. C amp. Refer to <u>MWI-</u> r and A/C amp. branch	Refer to <u>MWI-53, "UNIFIED</u> 163, "Removal and Installa-
M67 Is the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPL' Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error wa	56 ithin the specification? ed meter and A/C amp. branch Y AND GROUND CIRCUIT I the ground circuit of the unifie agnosis Procedure". al? lace the unified meter and A/C	72 line. d meter and A/C amp. C amp. Refer to <u>MWI-</u> r and A/C amp. branch	Refer to <u>MWI-53, "UNIFIED</u> 163, "Removal and Installa-

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515720

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector			
Connector No.	Termi	Resistance (Ω)		
M37	1	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-90, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-113, "Removal and Installation".

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

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515722

[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 B460
- Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.

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

Driv	Driver seat control unit harness connector			
Connector No.	Termi	Resistance (Ω)		
B451	3	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-59, "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-209, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

ABS BRANCH LINE			
Diagnosis Procedure			INFOID:000000003515724
1.CHECK CONNECTOR			
3. Check the terminals and	cable from the negative termi d connectors of the ABS actunity nit side and connector side).	ator and electric unit (co	ntrol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termi	nal and connector		
2.CHECK HARNESS FOR			
	or of ABS actuator and electretween the ABS actuator and		it) harness connector termi-
ABS actuator :	and electric unit (control unit) harnes	es connoctor	
		ss connector	Resistance (Ω)
Connector No.	Terminal	I No.	Resistance (Ω)
Connector No. E41 s the measurement value w	Terminal 35		Resistance (Ω) Approx. 54 – 66
Connector No. E41 <u>is the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply an <u>BRC-41. "Diagnosis Procedu</u> <u>is the inspection result norm</u> YES (Present error)>>Repl <u>and Installation</u> "	Terminal 35 ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A ure". al? ace the ABS actuator and el	14 ontrol unit) branch line. ABS actuator and electric ectric unit (control unit). F	Approx. 54 – 66 unit (control unit). Refer to Refer to <u>BRC-110, "Removal</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515726

[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.

	Resistance (Ω)	
Connector No.	Termi	
E6	40	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".

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:00000000351572
1 .CONNECTOR INSPECT	ION		
1. Turn the ignition switch	OFF.		
2. Disconnect the battery of	cable from the negative terr		
	connectors on CAN commune nnectors for damage, bend		
Is the inspection result norm	•		
YES >> GO TO 2.			
• ·	inal and connector.		
2.CHECK HARNESS CON	ITINUITY (SHORT CIRCUI	T)	
Check the continuity betwee	en the data link connector te	erminals.	
	Data link connector		
Connector No.	Termir	nal No.	Continuity
M24	6	14	Not existed
s the inspection result norm	nal?		
YES >> GO TO 3.			
•	ess and repair the root caus		
3 . CHECK HARNESS CON	ITINUITY (SHORT CIRCUI	T)	
Check the continuity betwee	en the data link connector a	nd the ground.	
 Data link	connector		
Connector No.	Terminal No.		Continuity
	6	Ground	Not existed
M24	14		Not existed
s the inspection result norm	nal?		
s the inspection result norm YES >> GO TO 4.	nal?		<u> </u>
YES >> GO TO 4.	nal? ess and repair the root caus	se.	
YES >> GO TO 4. NO >> Check the harm	ess and repair the root caus		
YES >> GO TO 4. NO >> Check the harn CHECK ECM AND IPDN 1. Remove the ECM and t	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R.		
YES >> GO TO 4. NO >> Check the harn CHECK ECM AND IPDM 1. Remove the ECM and t	ess and repair the root caus I E/R TERMINATION CIRC		
YES >> GO TO 4. NO >> Check the harm 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R.		ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harm 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R.	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harm 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No.	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harm 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No.	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1	UIT	ECM and IPDM E/R
NO >> Check the harm 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harm 4.CHECK ECM AND IPDM 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No.	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1 etween the IPDM E/R termin	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harm 4.CHECK ECM AND IPDW 1. Remove the ECM and t 2. Check the resistance be ECM Terminal No. 114 1 3. Check the resistance be	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1	UIT	ECM and IPDM E/R
YES >> GO TO 4. NO >> Check the harm 4.CHECK ECM AND IPDN 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.	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1 etween the IPDM E/R termin	UIT 2) 32 nals.	
YES >> GO TO 4. NO >> Check the harm 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 3	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1 etween the IPDM E/R termin Resistance (Ω 39 Approx. 108 – 1	UIT 2) 32 nals.	
YES >> GO TO 4. NO >> Check the harm 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 3	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1 etween the IPDM E/R termin Resistance (Ω 39 Approx. 108 – 1	UIT 2) 32 nals.	
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	ess and repair the root caus I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals. Resistance (Ω 13 Approx. 108 – 1 etween the IPDM E/R termin Resistance (Ω 39 Approx. 108 – 1	UIT 2) 32 nals.	

< COMPONENT DIAGNOSIS >

LAN-189

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.

COMPONENT DIAG		SIS		I SYSTEM (TYPE 8)]
AIN LINE BET	WEEN AV AN	D DLC CIRCUI	Г	
agnosis Procedu	ıre			INFOID:000000003515733
SPECTION PROCE	DURE			
CHECK HARNESS		N CIRCUIT)		
Disconnect the follo ECM AV control unit	ery cable from the n owing harness conne y between the AV co		nector and the data li	nk connector.
AV control unit ha	rness connector	Data link	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
	53		14	Existed
Models without NA	/			
AV control unit ha	rness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M85	86	M24	6	Existed
the inspection result	87		14	Existed
ES (Present error)>> ES (Past error)>>Err tor.	Check CAN system or was detected in the			d the data link connec- or.

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000003515735

[CAN SYSTEM (TYPE 8)]

INSPECTION 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 following harness connectors.
- ECM
- Harness connectors M116 and F103
- 4. 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	M116	44	Existed
10124	14	WITO	43	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 TCM.

NO >> Repair the main line between the data link connector and the harness connector M116.

< COMPONENT DIA		WEEN T	CM AN		I SYSTEM (TYPE 8)]
MAIN LINE BET			⁻ CIRC	-	
Diagnosis Proced	ure				INFOID:000000003515739
INSPECTION PROCE					E
1.CHECK CONNECT	OR				
 Check the followin and harness side) Harness connecto Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the fol Harness connecto Harness connecto 	r M7 r B1 terminal and connect CONTINUITY (OPEN lowing harness conne rs F103 and M116	tor. N CIRCUIT	damage,	bend and loose conn	ection (connector side
Harness	connector		Harness	connector	Continuity
Connector No.	Terminal No.	Connec	ctor No.	Terminal No.	Continuity
M116	44	Ν	17	34	Existed
Is the inspection result YES >> GO TO 3. NO >> Repair the 3. CHECK HARNESS Check the continuity b	main line between th CONTINUITY (OPEN)	35 s M116 and M7.	Existed
Connector No.		Termir	nal No.		Continuity
B1	34			36	Existed
BI	35			37	Existed

Is the inspection result normal?

35

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

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

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Existed

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000003515740

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	36	34	Existed
	37	35	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
MZ	M7 36 N 37 N	M6	82	Existed	
1717			81	Existed	

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control un harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	82	E 41	35	Existed	
E106	81	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

< COMPONENT 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:000000003515742

1.CHECK 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.		Tresistance (22)
M107	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 8)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000003515744
1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . <u>Is the inspection result normal?</u> YES >> Replace the main harness.	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515745

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-64, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-200, "Removal and Installation".

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:00000003515746
1.CHECK CONNECTOR			
 Check the terminals and side and connector side, side and connector side, side and connector side, side and connection result normation (Section 1) and the terminal section (Section 1	able from the negative terr l connectors of the AV cor al? nal and connector. OPEN CIRCUIT or of AV control unit.		and loose connection (unit
ļ	AV control unit harness connector	r	Resistance (Ω)
Connector No.		nal No.	
M87	52	53	Approx. 54 – 66
Models without NAVI			
ŀ	AV control unit harness connector	r	Resistance (Ω)
Connector No.	Termir	nal No.	
M85	86	87	Approx. 54 – 66
CHECK POWER SUPPLY heck the power supply and Base audio without navigation BOSE audio without navigation BOSE audio with navigation the inspection result normation YES (Present error)>>Repl • Base audio with • BOSE audio with	the ground circuit of the A tion: <u>AV-51, "AV CONTROL</u> ation: <u>AV-218, "AV CONTR</u> n: <u>AV-544, "AV CONTROL</u> al? ace the AV control unit. Re thout navigation: <u>AV-156, "</u>	V control unit. Refer to the L UNIT : Diagnosis Proced OL UNIT : Diagnosis Proced UNIT : Diagnosis Procedu fer to the following. Removal and Installation" "Removal and Installation"	<u>ure"</u> edure" ire"
YES (Past error)>>Error wa		ol unit branch line.	

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515748

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AWD control unit
- 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.	Termi		
F108	8	16	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-21, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation"</u>.

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNO	SIS >		[CAN SYSTEM (TYPE 8)]
BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000003515749
1.CHECK CONNECTOR			
 Check the terminals ar connector side). <u>Is the inspection result norm</u> YES >> GO TO 2. 	cable from the negative terr id connectors of the BCM f nal?		e connection (unit side and
NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect			
	etween the BCM harness co	onnector terminals.	
	BCM harness connector		
Connector No.	T	nal No.	Resistance (Ω)
M122	91	90	Approx. 54 – 66
Is the measurement value v	vithin the specification?		
YES >> GO TO 3. NO >> Repair the BCM	I branch line		
3.CHECK POWER SUPPL		-	
Check the power supply an			gnosis Procedure".
Is the inspection result norn	nal?		
	lace the BCM. Refer to BC		<u>ation"</u> .
	as detected in the BCM bra er supply and the ground ci		

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515750

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

CHECK CONNECTOR			
-CHECK CONNECTOR			
Check the terminals and nection (unit side and co	cable from the negative ter d connectors of the unified onnector side).		damage, bend and loose con-
the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR			
	or of unified meter and A/C etween the unified meter an		nector terminals.
Unified meter and A/C amp. harness connector		Resistance (Ω)	
Connector No.	Termi	Terminal No.	
M67	56	72	Approx. 54 – 66
CHECK POWER SUPPL	ed meter and A/C amp. bra Y AND GROUND CIRCUI I the ground circuit of the u	Т	p. Refer to <u>MWI-53, "UNIFIED</u>
IETER AND A/C AMP. : Dia the inspection result norm	agnosis Procedure".		
YES (Present error)>>Rep <u>tion"</u> YES (Past error)>>Error wa	lace the unified meter and as detected in the unified r	neter and A/C amp. bran	'I-163, "Removal and Installa- ch line.
NO >> Repair the powe	er supply and the ground c	ircuit.	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515752

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Resistance (Ω)		
Connector No.	Termi		
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-90, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-113, "Removal and Installation".

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

TCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000003515753
1.CHECK CONNECTOR			
	able from the negative tern inals and connectors for d		nnection (unit side and con-
Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin			
2. CHECK HARNESS FOR			
	tween the A/T assembly ha	irness connector terminals.	
Connector No.	A/T assembly harness connector Termin	al No	Resistance (Ω)
F51	3	8	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPLY Check the power supply and Is the inspection result normative YES (Present error)>>Replay YES (Past error)>>Error wat NO >> Repair the power	branch line. (AND GROUND CIRCUIT the ground circuit of the To al? ace the control valve with T	CM. Refer to <u>TM-89, "Diagr</u> CM. Refer to <u>TM-162, "Re</u> nch line.	

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515754

[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 B460
- Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.

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

Driv	Driver seat control unit harness connector		
Connector No.	Termi	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-59, "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-209, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

	CIRCUIT		
Diagnosis Procedure			INFOID:00000003515756
CHECK CONNECTOR			
3. Check the terminals and	able from the negative termina connectors of the ABS actua nit side and connector side). al?		ontrol unit) for damage, bend
2. CHECK HARNESS FOR			
nals.	tween the ABS actuator and	Ň	it) harness connector termi-
Connector No.	Terminal N		Resistance (Ω)
E41	35	14	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPLY	actuator and electric unit (cont	trol unit) branch line.	
Check the power supply and <u>BRC-41. "Diagnosis Procedu</u> <u>s the inspection result norma</u> YES (Present error)>>Repl <u>and Installation</u> ".	I the ground circuit of the AB <u>re"</u> .	ctric unit (control unit). I	Refer to <u>BRC-110, "Removal</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515758

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
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.

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

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-19, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 8)]

CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:00000003515759
1.CONNECTOR INSPECT	ION		
Disconnect all the unit c	cable from the negative term connectors on CAN commu nnectors for damage, benc <u>nal?</u> inal and connector.	nication system. I and loose connection.	
Check the continuity betwee			
	Data link connector		
Connector No.	Termi	nal No.	Continuity
M24	6	14	Not existed
NO >> Check the harne 3.CHECK HARNESS CON Check the continuity betwee		T)	
Data link	connector		Continuity
Connector No.	Terminal No.	Ground	
M24	6 14	_	Not existed Not existed
4.CHECK ECM AND IPDM 1. Remove the ECM and t	ess and repair the root cau I E/R TERMINATION CIRC	UIT	
ECM Terminal No.	Resistance (ECM and IPDM E/R
	13 Approx. 108 – · etween the IPDM E/R termi	//	
IPDM E/R	Resistance (2)	
			LKIA0037E
Terminal No.		132	
	39 Approx. 108 – 7		

< COMPONENT DIAGNOSIS >

LAN-209

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.

COMPONENT DIAG	NOSIS >		DLC CIRCUIT	N SYSTEM (TYPE 9)]
		D DLC CIRCUI	т	
			1	
agnosis Procedu	lie			INFOID:000000003515765
SPECTION PROCE	DURE			
CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
Disconnect the follo ECM AV control unit	ery cable from the n owing harness conne y between the AV co		nnector and the data li	nk connector.
AV control unit ha	rness connector	Data link	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M87	52	M24	6	Existed
Models without NA	53 /I		14	Existed
AV control unit ha	rness connector	Data link	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	86	••••	6	Existed
M85	87	M24	14	Existed
tor.	Check CAN system or was detected in the			d the data link connec- or.

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000003515767

[CAN SYSTEM (TYPE 9)]

INSPECTION 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 following harness connectors.
- ECM
- Harness connectors M116 and F103
- 4. 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	M116	44	Existed
10124	14		43	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 TCM.

NO >> Repair the main line between the data link connector and the harness connector M116.

		WEEN T			I SYSTEM (TYPE 9)]
< COMPONENT DIAG		ND ADF	P CIRCI	-	
Diagnosis Proced	ure				INFOID:000000003515771
INSPECTION PROCE	EDURE				
1.CHECK CONNECT	OR				
 Check the followir and harness side) Harness connecto Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the fol Harness connecto Harness connecto 	ttery cable from the ne ng terminals and conr r M7 r B1 normal? terminal and connect CONTINUITY (OPEN lowing harness conne rs F103 and M116	tor. N CIRCUIT)	damage, b	end and loose conn	ection (connector side
Harness	connector		Harness o	connector	Continuity
Connector No.	Terminal No.	Connec	tor No.	Terminal No.	
M116	44	M	7	34	Existed
Is the inspection result YES >> GO TO 3. NO >> Repair the 3. CHECK HARNESS Check the continuity be	normal? main line between th CONTINUITY (OPEN	I CIRCUIT)	minals.		Continuity
Connector No.	34	Iermina	ai No.	36	Continuity Existed
B1	34			30	Existed

Is the inspection result normal?

35

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

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

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Existed

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000003515772

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termir	Continuity	
D1	36	34	Existed
ы	37	35	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	36	M6	82	Existed
1717	37		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	82	Ε 44	35	Existed
EIUO	E106 81	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

< COMPONENT 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:000000003515774

1.CHECK 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	Tresistance (22)	
M107	114 113		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-133, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-15. "ADDITIONAL SERVICE WHEN REPLACING</u> <u>CONTROL UNIT : Special Repair Requirement"</u>.

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

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 9)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:00000003515776
1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-5, "Work Flow"</u> . Is the inspection result normal?	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515778

[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 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 NAVI

	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
M87	52	53	Approx. 54 – 66

Models without NAVI

	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.

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

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

- Base audio without navigation: <u>AV-51, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-218</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"
- BOSE audio with navigation: <u>AV-544, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation: AV-156, "Removal and Installation"
- BOSE audio without navigation: AV-412, "Removal and Installation"
- BOSE audio with navigation: <u>AV-903, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

LAINE BRAINCH LIIN	IE CIRCUIT		
Diagnosis Procedure			INFOID:00000003515779
1.CHECK CONNECTOR			
	cable from the negative ten ninals and connectors for 0 <u>al?</u> Inal and connector.		onnection (unit side and con-
		unit harness connector termi	nals.
Connector No.		minal No.	Resistance (Ω)
R8	10	5	Approx. 54 – 66
3. CHECK POWER SUPPL' Check the power supply and JNIT : Diagnosis Procedure s the inspection result norm	camera unit branch line. Y AND GROUND CIRCU d the ground circuit of the <u>al?</u> lace the lane camera unit	e lane camera unit. Refer to t. Refer to <u>CCS-192, "Remo</u>	OCCS-159, "LANE CAMERA val and Installation".
YES (Past error)>>Error wa	er supply and the ground		

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515780

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AWD control unit
- 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	WD control unit harness connect	or	Resistance (Ω)
Connector No.	Termi	nal No.	
F108	8	16	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-21, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation"</u>.

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNO	SIS >		[CAN SYSTEM (TYPE 9)]
BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000003515781
1. CHECK CONNECTOR			
	cable from the negative terr d connectors of the BCM f		e connection (unit side and
NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of BCM. Stween the BCM harness co	onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
M122	91	90	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and	l branch line. Y AND GROUND CIRCUIT		agnosis Procedure".
YES (Past error)>>Error w	<u>al?</u> lace the BCM. Refer to <u>BC3</u> as detected in the BCM bra er supply and the ground ci	inch line.	ation".
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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515782

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

M&A BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:00000003515783
1.CHECK CONNECTOR			
 Turn the ignition switch OFF Disconnect the battery cable Check the terminals and connection (unit side and connection) 	e from the negative ter nnectors of the unified		mage, bend and loose con-
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal a			
2.CHECK HARNESS FOR OPI	EN CIRCUIT		
 Disconnect the connector of Check the resistance betwe 	en the unified meter ar	nd A/C amp. harness conne	ctor terminals.
	er and A/C amp. harness co		Resistance (Ω)
Connector No. M67	Termi 56	nal No. 72	Approx. 54 – 66
Is the measurement value within		12	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the unified m 3. CHECK POWER SUPPLY Af	eter and A/C amp. bra	Г	
Check the power supply and the METER AND A/C AMP. : Diagno		inified meter and A/C amp.	Refer to <u>MWI-53, "UNIFIED</u>
Is the inspection result normal? YES (Present error)>>Replace tion".			
YES (Past error)>>Error was d NO >> Repair the power su			ine.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515784

[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	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termi	nal No.	
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-90, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-113, "Removal and Installation".

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

.CHECK CONNECTOR . Turn the ignition switch OFF. . Disconnect the battery cable from the negative terminal. . Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). . A/T assembly Harness connector F103 Harness connector M116 St the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of A/T assembly. . Check the resistance between the A/T assembly harness connector terminals. Mariness connector No. Image: Art assembly harness connector Resistance (Ω) Connector No. Terminal No. F51 3 8 Approx. 54 – 66 St the measurement value within the specification? YES >> GO TO 3.	CM BRANCH LIN	E CIRCUIT		
Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). A/T assembly Harness connector F103 Harness connector M116 Sthe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT 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 3 8 Approx. 54 - 66 8 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-89, "Diagnosis Procedure". a the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>>Error was detected in the TCM branch line.	Diagnosis Procedure			INFOID:00000003515785
 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 F103 Harness connector M116 s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of A/T assembly. Connector No. Terminal No. F51 3 8 Approx. 54 - 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. CHECK He POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". a the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line. 	.CHECK CONNECTOR			
A/T assembly harness connector Resistance (Ω) Connector No. Terminal No. F51 3 8 Approx. 54 – 66 S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". S the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line. TM-162, "Removal and Installation".	 Disconnect the battery 6 Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR 	cable from the negative te minals and connectors for 03 16 <u>nal?</u> ninal and connector.		nnection (unit side and con-
Connector No. Terminal No. Resistance (Ω) F51 3 8 Approx. 54 – 66 S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. 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-89, "Diagnosis Procedure". S the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.		etween the A/T assembly		
a the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCM branch line. J.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to TM-89, "Diagnosis Procedure". as the inspection result normal? YES (Present error)>>Replace the control valve with TCM. Refer to TM-162, "Removal and Installation". YES (Past error)>>Error was detected in the TCM branch line.	Connector No.	-		Resistance (Ω)
 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-89, "Diagnosis Procedure"</u>. <u>s the inspection result normal?</u> YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-162, "Removal and Installation"</u>. YES (Past error)>>Error was detected in the TCM branch line. 	F51	3	8	Approx. 54 – 66
	YES >> GO TO 3. NO >> Repair the TCM CHECK POWER SUPPL Check the power supply and s the inspection result norm	I branch line. Y AND GROUND CIRCL d the ground circuit of the nal?	TCM. Refer to <u>TM-89, "Diag</u>	

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< COMPONENT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515786

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.

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

Driv	er seat control unit harness conn	ector	Resistance (Ω)
Connector No.	Termi	nal No.	
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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-59, "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-209, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

	CIRCUIT		
Diagnosis Procedure			INFOID:00000003515788
.CHECK CONNECTOR			
 Check the terminals and and loose connection (us the inspection result norm YES >> GO TO 2. NO >> Repair the terminals 	cable from the negative termin d connectors of the ABS actu nit side and connector side). <u>al?</u> nal and connector.		ntrol unit) for damage, bend
CHECK HARNESS FOR	OPEN CIRCUIT	is welt (sectors) welt)	
. Check the resistance be nals.	etween the ABS actuator and	d electric unit (control uni	t) harness connector termi-
	and electric unit (control unit) harnes	ss connector	Desistance (O)
		NI-	Resistance (Ω)
Connector No. E41	Terminal 35	No. 14	
E41 s the measurement value w	35	-	Approx. 54 – 66
E41 the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL heck the power supply an RC-41, "Diagnosis Procedu the inspection result norm YES (Present error)>>Repland Installation"	35 ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A <u>ure"</u> . al? ace the ABS actuator and electric	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-110, "Removal</u>
E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an RC-41, "Diagnosis Procedus the inspection result norm YES (Present error)>>Repland Installation" YES (Past error)>>Error was	35 ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A ure". al? ace the ABS actuator and ele	14 ntrol unit) branch line. BS actuator and electric ectric unit (control unit). R tor and electric unit (cont	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-110, "Removal</u>

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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.	Termi		
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-77, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to <u>CCS-104</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

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

INFOID:00000003515789

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure			INFOID:0000000035157
1.CHECK CONNECTOR			
 Turn the ignition switch C Disconnect the battery ca Check the terminals and and connector side). 	able from the negative ter		nd loose connection (unit side
s the inspection result norma	<u>al?</u>		
YES >> GO TO 2.			
NO >> Repair the termin			
2.CHECK HARNESS FOR (
 Disconnect the connecto Check the resistance bet 	r of IPDM E/R. ween the IPDM E/R harr	ess connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	Termi	nal No.	
E6	40	39	Approx. 108 – 132
E6 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the IPDM 3. CHECK POWER SUPPLY	thin the specification? E/R branch line.		Approx. 108 – 132
s the measurement value with YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and	thin the specification? E/R branch line. AND GROUND CIRCUI the ground circuit of the I	Γ	
s the measurement value with YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wather the second	thin the specification? E/R branch line. AND GROUND CIRCUI the ground circuit of the I al? ace the IPDM E/R. Refer	Г PDM E/R. Refer to <u>PCS-</u> to <u>PCS-34. "Removal and</u> /R branch line.	19, "Diagnosis Procedure".
s the measurement value with YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wather the second	thin the specification? E/R branch line. AND GROUND CIRCUT the ground circuit of the I al? ace the IPDM E/R. Refer s detected in the IPDM E	Г PDM E/R. Refer to <u>PCS-</u> to <u>PCS-34. "Removal and</u> /R branch line.	19, "Diagnosis Procedure".
s the measurement value with YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wather the second	thin the specification? E/R branch line. AND GROUND CIRCUT the ground circuit of the I al? ace the IPDM E/R. Refer s detected in the IPDM E	Г PDM E/R. Refer to <u>PCS-</u> to <u>PCS-34. "Removal and</u> /R branch line.	19, "Diagnosis Procedure".
s the measurement value with YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wather the second	thin the specification? E/R branch line. AND GROUND CIRCUT the ground circuit of the I al? ace the IPDM E/R. Refer s detected in the IPDM E	Г PDM E/R. Refer to <u>PCS-</u> to <u>PCS-34. "Removal and</u> /R branch line.	19, "Diagnosis Procedure".
s the measurement value with YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wather the second	thin the specification? E/R branch line. AND GROUND CIRCUT the ground circuit of the I al? ace the IPDM E/R. Refer s detected in the IPDM E	Г PDM E/R. Refer to <u>PCS-</u> to <u>PCS-34. "Removal and</u> /R branch line.	19, "Diagnosis Procedure".
s the measurement value with YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error wather the second	thin the specification? E/R branch line. AND GROUND CIRCUT the ground circuit of the I al? ace the IPDM E/R. Refer s detected in the IPDM E	Г PDM E/R. Refer to <u>PCS-</u> to <u>PCS-34. "Removal and</u> /R branch line.	19, "Diagnosis Procedure".

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

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

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

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

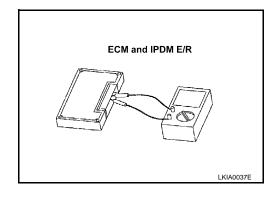
Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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



LAN-230

INFOID:000000003515791

CAN COMMUNICATION CIRCUIT

< COMPONENT 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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[CAN SYSTEM (TYPE 10)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000003515797

INSPECTION 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 following harness connectors.
- ECM
- AV control unit
- 4. Check the continuity between the AV control unit harness connector and the data link connector.
- Models with NAVI

AV control unit h	ontrol unit harness connector Data link connector		Continuity		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M87	52	M24	6	Existed	
10107	53	11/24	14	Existed	

Models without NAVI

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

< (COMPONENT DIA	MAIN LINE BET GNOSIS >	WEEN DLC ANI		SYSTEM (TYPE 10)]	
Μ	AIN LINE BET	WEEN DLC AI	ND TCM CIRC	UIT		А
Di	agnosis Proced	ure			INFOID:000000003515799	A
IN	SPECTION PROCE	EDURE				В
1	CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)			
1. 2. 3.		witch OFF. ttery cable from the ne lowing harness conne				С
- - 4.	Harness connecto	rs M116 and F103 ity between the data li	ink connector and the	harness connector.		D
_	Data link	connector	Harness	connector	Continuity	Ε
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	M24	6	M116	44	Existed	_
	11124	14	IVITO	43	Existed	F

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 TCM.

NO >> Repair the main line between the data link connector and the harness connector M116.

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MAIN LINE BETWEEN TCM AND ADP CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN TCM AND ADP CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Harness connectors F103 and M116

- Harness connectors M7 and B1
- 2. Check the continuity between the harness connectors.

Harness connector		rness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M116	44	M7	34	Existed	
M116	43	1/17	35	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors M116 and M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	34	36	Existed
	35	37	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 TCM and the driver seat control unit.

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

[CAN SYSTEM (TYPE 10)]

< COMPONENT DIA		WEEN AD	P ANI		- SYSTEM (TYPE 10)]
AIN LINE BE		ND ABS C	IRCL	-	0.012(1.1.2.10)]
Diagnosis Procec	lure				INFOID:000000003515804
1.CHECK CONNECT	ΓOR				
	attery cable from the ne ng terminals and con). or B1 or M7 or M6			pend and loose conr	nection (connector side
- ·					
1. Disconnect the ha	arness connectors B1 a uity between the harne	and M7.	erminal	S.	
Connector No.		Terminal N	l o.		Continuity
B1	36			34 35	Existed
3.CHECK HARNESS 1. Disconnect the ha		N CIRCUIT) and E106.		nit and the harness o	connector B1.
Harness	connector		Harness	connector	
Connector No.	Terminal No.	Connector		Terminal No.	- Continuity
M7	36	M6		82	Existed
4.CHECK HARNESS	e main line between th S CONTINUITY (OPEN onnector of ABS actual uity between the harne	N CIRCUIT)	unit (co	ontrol unit).	Existed
	connector		harness o	ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector	INO.	Terminal No. 35	Existed
E106		E41	-		

Is the inspection result normal?

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

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

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Existed

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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 10)]

Diagnosis Procedure			INFOID:00000000351580
CHECK CONNECTOR			
	able from the negative tern		ose connection (unit side and
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termin	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connector Check the resistance be 	or of ECM. tween the ECM harness co	onnector terminals.	
Connector No	ECM harness connector	al No	Resistance (Ω)
Connector No. M107	ECM harness connector Termin 114	al No. 113	
M107	Termin 114		
	Termin 114 ithin the specification? branch line.	113	
M107 <u>s the measurement value wi</u> YES >> GO TO 3. NO >> Repair the ECM 3. CHECK POWER SUPPLY Check the power supply and	Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the E	113	Approx. 108 – 132
M107 <u>s the measurement value wi</u> YES >> GO TO 3. NO >> Repair the ECM 3. CHECK POWER SUPPLY Check the power supply and <u>s the inspection result norma</u>	Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Ed al?	113 CM. Refer to <u>EC-133, "Di</u>	Approx. 108 – 132 agnosis Procedure".
M107 <u>s the measurement value wi</u> YES >> GO TO 3. NO >> Repair the ECM 3. CHECK POWER SUPPLY Check the power supply and <u>s the inspection result norma</u> YES (Present error)>>Repla	Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Ed al?	113 CM. Refer to <u>EC-133, "Di</u> C-15, "ADDITIONAL SE	Approx. 108 – 132
M107 s the measurement value with YES >> GO TO 3. NO >> Repair the ECM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replay CONTROL UNITY YES (Past error)>>Error was	Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Ed al? ace the ECM. Refer to <u>E</u> <u>C: Special Repair Requiren</u> as detected in the ECM bra	113 CM. Refer to <u>EC-133, "Di</u> <u>C-15, "ADDITIONAL SE</u> <u>nent"</u> . nch line.	Approx. 108 – 132 agnosis Procedure".
M107 s the measurement value with YES >> GO TO 3. NO >> Repair the ECM CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replay CONTROL UNITY YES (Past error)>>Error was	Termin 114 ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the Ed al? ace the ECM. Refer to E F : Special Repair Requirent	113 CM. Refer to <u>EC-133, "Di</u> <u>C-15, "ADDITIONAL SE</u> <u>nent"</u> . nch line.	Approx. 108 – 132 agnosis Procedure".

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< COMPONENT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

YES >> Replace the main harness.

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

INFOID:000000003515808

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:00000003515809
1. CHECK CONNECTOR			
	able from the negative termin I connectors of the AFS cont		l and loose connection (unit
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
 Disconnect the connect Check the resistance be 	or of AFS control unit. tween the AFS control unit h	arness connector termina	als.
А	FS control unit harness connector		Resistance (Ω)
Connector No.	Terminal	No.	
M16	30	7	Approx. 54 – 66
3. CHECK POWER SUPPL' Check the power supply an <u>UNIT : Diagnosis Procedure</u> is the inspection result norm	d the ground circuit of the A	AFS control unit. Refer to	EXL-64, "AFS CONTROL
YES (Past error)>>Error wa	ace the AFS control unit. Rel as detected in the AFS contro or supply and the ground circle	ol unit branch line.	l and Installation".
YES (Past error)>>Error wa	ace the AFS control unit. Ref as detected in the AFS contro	ol unit branch line.	<u>I and Installation"</u> .

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515810

[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 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 NAVI

Connector No. Terminal No. Terminal No. M87 52 53 Approx. 54 – 66	AV control unit harness connector			Resistance (Ω)
M87 52 53 Approx. 54 – 66	Connector No.	Terminal No.		
	M87	52 53		Approx. 54 – 66

Models without NAVI

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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: <u>AV-51, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio without navigation: <u>AV-218, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-544</u>, "<u>AV CONTROL UNIT</u>: <u>Diagnosis Procedure</u>"

Is the inspection result normal?

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

- Base audio without navigation: AV-156, "Removal and Installation"
- BOSE audio without navigation: AV-412, "Removal and Installation"
- BOSE audio with navigation: <u>AV-903, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

< COMPONENT DIAGNOSIS >			[CAN SYSTEM (TYPE 10)]
LANE BRANCH LINE CIR	CUIT		A
Diagnosis Procedure			INFOID:00000003515811
1.CHECK CONNECTOR			В
 Turn the ignition switch OFF. Disconnect the battery cable from Check the following terminals and nector side). Lane camera unit Harness connector R7 Harness connector M110 Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and ca CHECK HARNESS FOR OPEN CI 	l connectors for d		connection (unit side and con- C D
 Disconnect the connector of lane Check the resistance between the 		it harness connector tern	F
Lane camera	unit harness connect	or	G G
Connector No.	Termir	nal No.	Resistance (Ω)
R8	10	5	Approx. 54 – 66
Is the measurement value within the s YES >> GO TO 3. NO >> Repair the lane camera u 3. CHECK POWER SUPPLY AND GI Check the power supply and the grou UNIT : Diagnosis Procedure".	nit branch line. ROUND CIRCUIT		H I to <u>CCS-159, "LANE CAMERA</u> J

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to CCS-192, "Removal and Installation".

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

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

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515812

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AWD control unit
- 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.		
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-21, "Diagnosis Proce-</u> <u>dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-44, "Removal and Installation"</u>.

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:0000000351581
1. CHECK CONNECTOR			
	DFF. able from the negative termin d connectors of the BCM for		e connection (unit side and
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
 Disconnect the connect Check the resistance be 	or of BCM. tween the BCM harness conr	nector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Terminal I	No.	
M122	91	00	
		90	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPL Check the power supply and the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the BCM	1. Refer to <u>BCS-41, "Dia</u> 14, <u>"Removal and Installa</u> h line.	gnosis Procedure".

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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515814

[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.	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 10)]

Diagnosis Procedure			INFOID:000000003515815
1.CHECK CONNECTOR			
 Check the terminals and nection (unit side and co 	able from the negative ter connectors of the unified onnector side).		amage, bend and loose con-
Is the inspection result normalYES>> GO TO 2.NO>> Repair the terminal			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
2. Check the resistance be	or of unified meter and A/C tween the unified meter an	nd A/C amp. harness conr	ector terminals.
	meter and A/C amp. harness co		Resistance (Ω)
Connector No. M67	56	nal No.	
-		72	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPL	ithin the specification? ed meter and A/C amp. brack Y AND GROUND CIRCUI	anch line. T	
Is the measurement value wi YES >> GO TO 3. NO >> Repair the unifie 3. CHECK POWER SUPPLY Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm	ithin the specification? ed meter and A/C amp. bra Y AND GROUND CIRCUI I the ground circuit of the u agnosis Procedure". al?	nch line. T Inified meter and A/C amp	. Refer to <u>MWI-53, "UNIFIED</u>
Is the measurement value wi YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPLY Check the power supply and METER AND A/C AMP. : Dia Is the inspection result normation YES (Present error)>>Replication YES (Past error)>>Error was	ithin the specification? ed meter and A/C amp. bra Y AND GROUND CIRCUI the ground circuit of the u agnosis Procedure". al? ace the unified meter and as detected in the unified r	anch line. T unified meter and A/C amp d A/C amp. Refer to <u>MWI</u> neter and A/C amp. branc	. Refer to <u>MWI-53, "UNIFIED</u> -163, "Removal and Installa-
Is the measurement value wi YES >> GO TO 3. NO >> Repair the unifie 3.CHECK POWER SUPPLY Check the power supply and METER AND A/C AMP. : Dia Is the inspection result normation YES (Present error)>>Repl <u>tion"</u> . YES (Past error)>>Error was	ithin the specification? ed meter and A/C amp. bra Y AND GROUND CIRCUI the ground circuit of the u agnosis Procedure". al? ace the unified meter and	anch line. T unified meter and A/C amp d A/C amp. Refer to <u>MWI</u> neter and A/C amp. branc	. Refer to <u>MWI-53, "UNIFIED</u> -163, "Removal and Installa-

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515816

[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.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Termi		
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-90, "Wiring Dia-gram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-113, "Removal and Installation"</u>.

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

< COMPONENT DIAGNOSI	S >	[C	AN SYSTEM (TYPE 10)]
TCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000003515817
1.CHECK CONNECTOR			
 Check the following termin nector side). A/T assembly Harness connector F103 Harness connector M116 Is the inspection result normal YES >> GO TO 2. NO >> Repair the termina CHECK HARNESS FOR C Disconnect the connector 	ble from the negative terminal. hals and connectors for damage <u>?</u> al and connector. PEN CIRCUIT		nnection (unit side and con-
A/	T assembly harness connector		
Connector No.	Terminal No.		Resistance (Ω)
F51	3	8	Approx. 54 – 66
Is the inspection result normal YES (Present error)>>Replac YES (Past error)>>Error was	ranch line. AND GROUND CIRCUIT he ground circuit of the TCM. Re	efer to <u>TM-162, "Rer</u>	

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< COMPONENT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515818

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B460
- Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.

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

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-59, "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-209, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:00000003515820
.CHECK CONNECTOR			
. Check the terminals and	able from the negative termina I connectors of the ABS actua nit side and connector side).		ntrol unit) for damage, bend
NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
 Check the resistance be 	etween the ABS actuator and	electric unit (control uni	harness connector termi-
nals.	and electric unit (control unit) harness	connector	
nals.	and electric unit (control unit) harness Terminal N		Resistance (Ω)
nals. ABS actuator a	Terminal N 35		Resistance (Ω) Approx. 54 – 66
ABS actuator a Connector No. E41 the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL heck the power supply and RC-41. "Diagnosis Procedu the inspection result norm YES (Present error)>>Repl and Installation"	Terminal N 35 ithin the specification? actuator and electric unit (conf Y AND GROUND CIRCUIT d the ground circuit of the AB <u>ure"</u> . al? ace the ABS actuator and elect	o. 14 rol unit) branch line. S actuator and electric tric unit (control unit). R	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-110, "Removal</u>

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ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000003515821

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-77, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to <u>CCS-104</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

< COMPONENT DIAGNOSI	S >	[0	CAN SYSTEM (TYPE 10)]
PDM-E BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000003515822
1 .CHECK CONNECTOR			
and connector side). <u>s the inspection result normal</u> YES >> GO TO 2. NO >> Repair the termina	ble from the negative terr connectors of the IPDM I <u>?</u> al and connector.		loose connection (unit side
2.CHECK HARNESS FOR C			
 Disconnect the connector Check the resistance betw 		ess connector terminals.	
	DDM E/P harposs connector		
Connector No.	IPDM E/R harness connector Resis		Resistance (Ω)
E6	40	39	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and t s the inspection result normal YES (Present error)>>Replay YES (Past error)>>Error was NO >> Repair the power	AND GROUND CIRCUIT he ground circuit of the IF ? ce the IPDM E/R. Refer t	PDM E/R. Refer to <u>PCS-19</u> o <u>PCS-34. "Removal and Ir</u> R branch line.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

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

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

IPDM E/R		Resistance (Ω)	
Terminal No.		Resistance (22)	
40	39	Approx. 108 – 132	

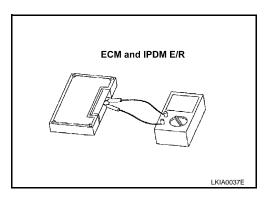
Is the measurement value within the specification?

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-252

INFOID:000000003515823

CAN COMMUNICATION CIRCUIT

< COMPONENT 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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