SECTION LAN SYSTEM

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< PRECAUTION > PRECAUTION А PRECAUTIONS **Precautions for Trouble Diagnosis** INFOID:000000004221510 В **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. D Precautions for Harness Repair INFOID:000000004221511 • Solder the repaired area and wrap tape around the soldered area. NOTE: Ε A fray of twisted lines must be within 110 mm (4.33 in). F OK: Soldered and taped SKIB8766E Н 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 NG: Bypass connection line are lost. X Κ SKIB8767E L 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

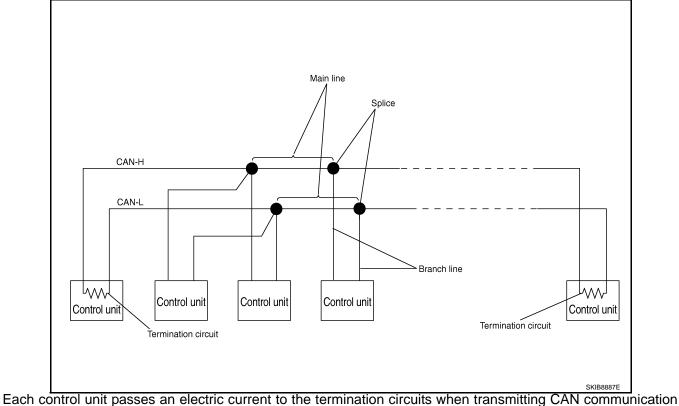
System Description

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- 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



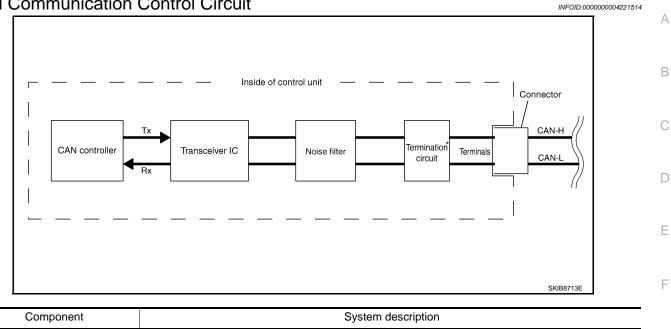
signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

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-7, "CAN Communication Control Circuit".

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

CAN Communication Control Circuit



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

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

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< FUNCTION DIAGNOSIS >

DIAG ON CAN

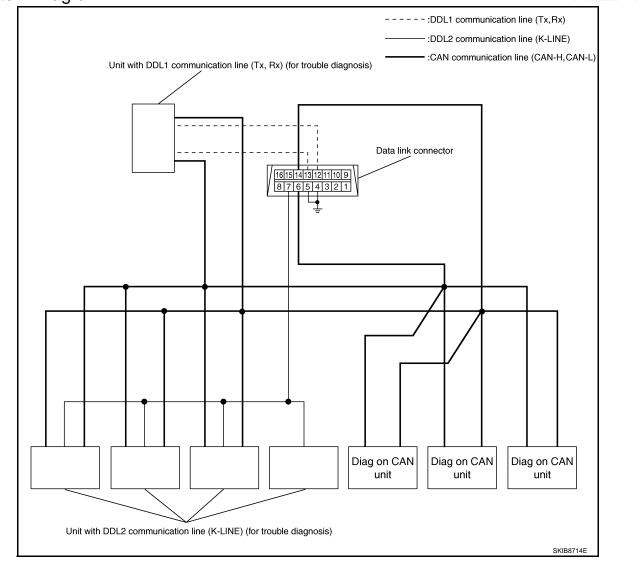
Description

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

System Diagram



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

[CAN FUNDAMENTAL]

< FUNCTION DIAGNOSIS > **TROUBLE DIAGNOSIS**

Condition of Error Detection

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SKIB8738E

Condition of Error Detection	INFOID:000000004221517
"U1000" or "U1001" is indicated on SELF-DIAG RESULTS on CONSULT-III if C not transmitted or received between units for 2 seconds or more.	AN communication signal is $_{\sf B}$
 CAN COMMUNICATION SYSTEM ERROR CAN communication line open (CAN-H, CAN-L, or both) CAN communication line short (ground, between CAN communication lines, oth Error of CAN communication control circuit of the unit connected to CAN communication 	
WHEN "U1000" OR "U1001" IS INDICATED EVEN THOUGH CAN COMM NORMAL	UNICATION SYSTEM IS
 Removal/installation of parts: Error may be detected when removing and installi and related parts while turning the ignition switch ON. (A DTC except for C detected.) 	
 Fuse blown out (removed): CAN communication of the unit may cease. Voltage drop: Error may be detected if voltage drops due to discharged batte 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 carri 	n). es out CAN communication,
 malfunctions (Depending on the control unit which carries out CAN communicat Error may be detected if reprogramming is not completed normally. NOTE: 	ion). G
CAN communication system is normal if "U1000" or "U1001" is indicated on SEL SULT-III under the above conditions. Erase the memory of the self-diagnosis of each section of the self-diagnosis of each section.	
Symptom When Error Occurs in CAN Communication System	INFOID:000000004221518
In CAN communication system, multiple units mutually transmit and receive signa and receive signals if any error occurs on CAN communication line. Under this co related to the root cause malfunction or go into fail-safe mode.	
ERROR EXAMPLE	J
 NOTE: Each vehicle differs in symptom of each unit under fail-safe mode and CAN con Refer to <u>LAN-20</u>, "Abbreviation List" for the unit abbreviation. 	-
Example: TCM branch line open circuit	K
	L
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Sopen Z	N
ECM BCM DLC EPS M&A ABS TCM	IPDM-E

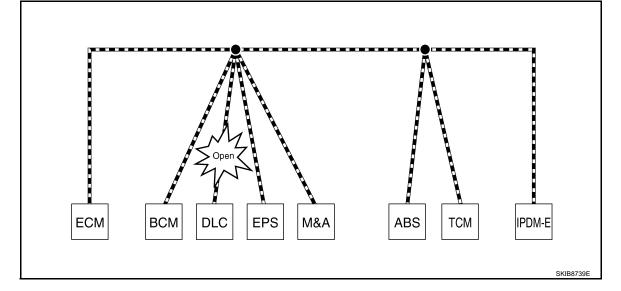
Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning chime does not sound.

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

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

Example: Data link connector branch line open circuit



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

NOTE:

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

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

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

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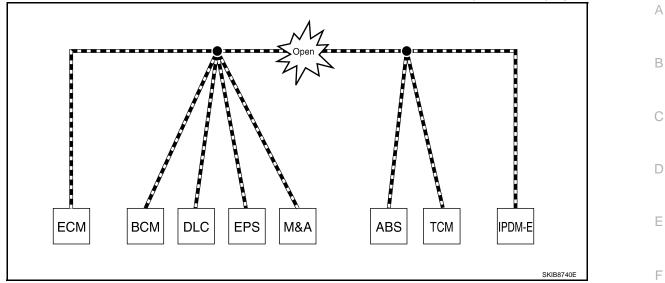
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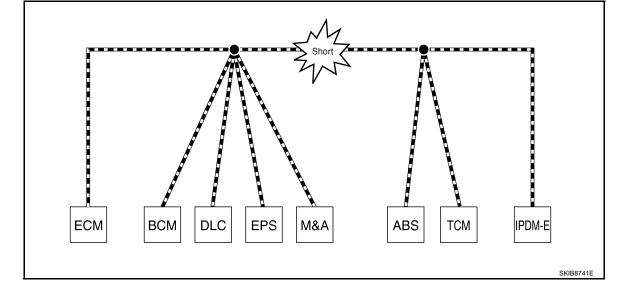
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Example: Main Line Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Open Circuit



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 >

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

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

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

Self-Diagnosis

INFOID:000000004221520

DTC	Self-diagnosis item (CONSULT-III indication)	DTC detection condition	Inspection/Action	
U0101	LOST COMM (TCM)	When ECM is not transmitting or receiving CAN com- munication signal of OBD (emission-related diagnosis) from TCM for 2 seconds or more.		
U0164	LOST COMM (HVAC)	When ECM is not transmitting or receiving CAN com- munication signal of OBD (emission-related diagnosis) from A/C auto amp. for 2 seconds or more.		
U1000	CAN COMM CIRCUIT	When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.	Start the inspection. Refer to the applicable section of the indicated control unit.	
U1001	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN com- munication signal other than OBD (emission-related di- agnosis) for 2 seconds or more.		
U1002	SYSTEM COMM	When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less.		
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for	Replace the control unit in-	
P0607	ECM	CAN controller of each control unit.	dicating "U1010" or "P0607".	

CAN Diagnostic Support Monitor

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MONITOR ITEM (CONSULT-III)

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

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Example: CAN DIAG SUPPORT MNTR indication

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

Without PAST

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

With PAST

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

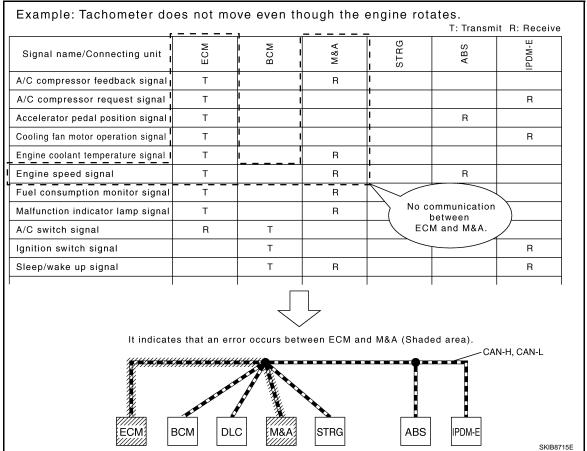
Example: Vehicle Display

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

How to Use CAN Communication Signal Chart

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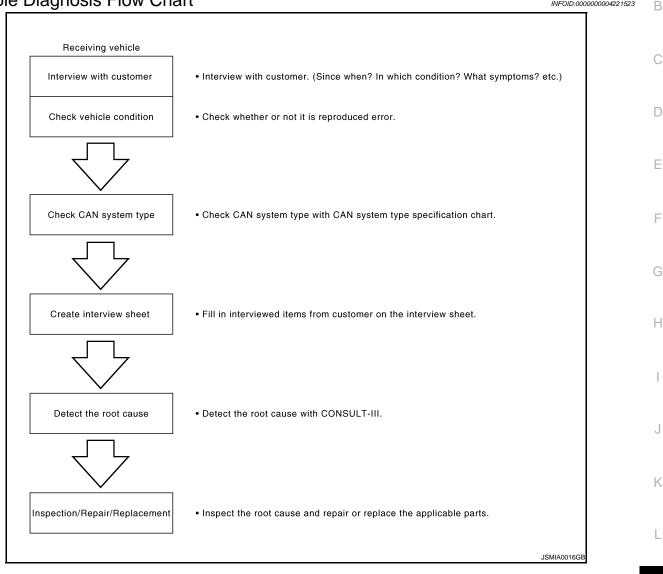
The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



< BASIC INSPECTION >

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart



Trouble Diagnosis Procedure

INTERVIEW WITH CUSTOMER

Ν 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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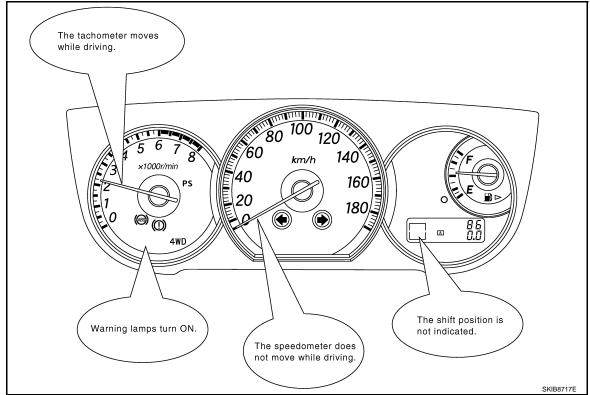
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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

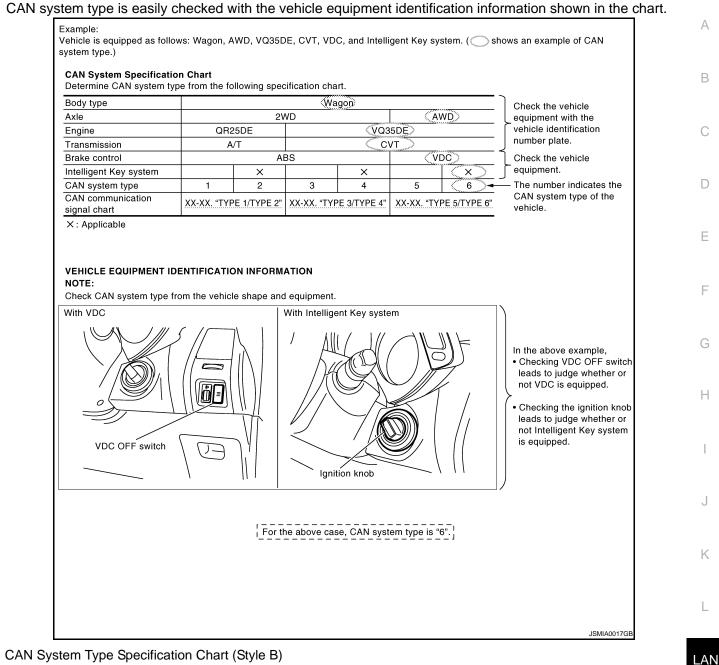
NOTE:

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

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

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



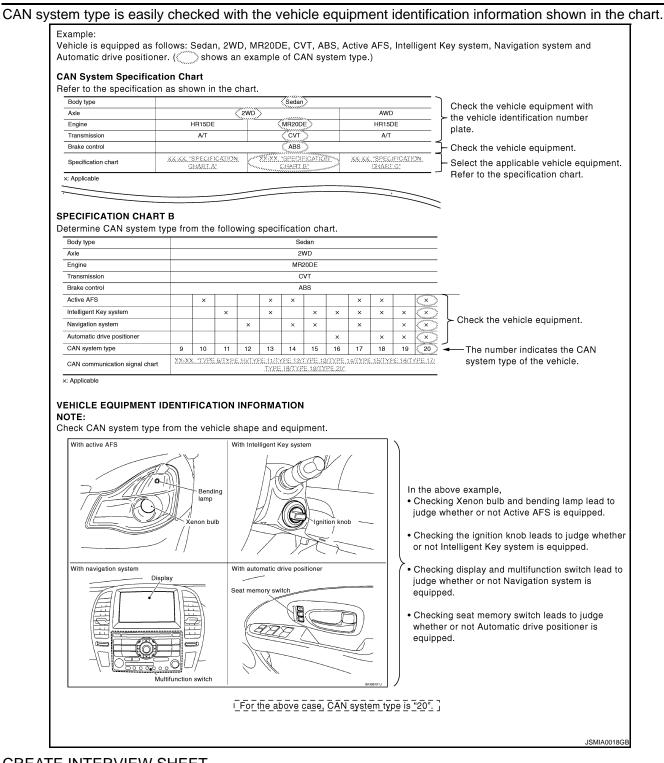
NOTE:

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< 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.

[CAN FUNDAMENTAL]

< BASIC INSPECTION > Interview Sheet (Example)

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

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

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HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

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

• For trouble diagnosis procedure, refer to LAN-15, "Trouble Diagnosis Procedure".

Abbreviation List

INFOID:000000003899135

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

Abbreviation	Unit name
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
ADP	Driver seat control unit
AV	AV control unit
BCM	BCM
DLC	Data link connector
ECM	ECM
HVAC	A/C auto amp.
IPDM-E	IPDM E/R
M&A	Combination meter
STRG	Steering angle sensor
ТСМ	ТСМ

[CAN]

< PRECAUTION > PRECAUTION PRECAUTIONS

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

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS 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".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

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

Precautions for Trouble Diagnosis

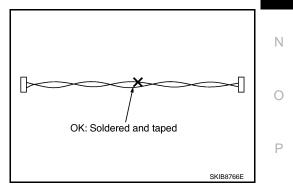
CAUTION:

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

Precautions for Harness Repair

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

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



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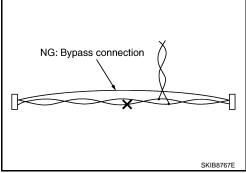
[CAN]

PRECAUTIONS

< PRECAUTION >

 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.

< BASIC INSPECTION >

[CAN]

А

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Inte	rview	Sheet

iew Sheet	INFOID:000000003899139	В
CAN Communication System Diagnosis Interview Sheet		
Date received:		С
		D
Type: VIN No.:		
Model:		E
First registration: Mileage:		F
CAN system type:		G
Symptom (Results from interview with customer)		Н
		I
		J
		K
		L
Condition at inspection		
Error symptom : Present / Past		LAI
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	SKIB8898E	

FUNCTION DIAGNOSIS

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

INFOID:000000004019095

Determine CAN system type from the following specification chart.

NOTE: Refer to <u>LAN-15</u>, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

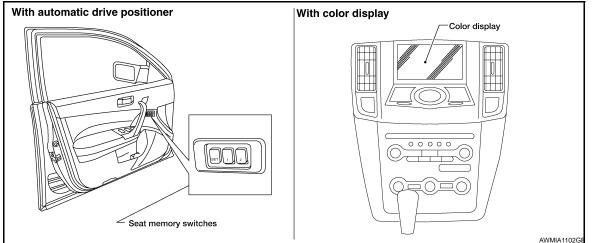
Body type	Sedan							
Axle	2WD							
Engine		VQ35DE						
Transmission	CVT							
Brake control	VDC							
Destination	Except for Mexico For Mexico					/lexico		
Automatic drive positioner		×		×		×		
Color display			×	×				
CAN system type	1	2	3	4	5	6		

 \times : Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



CAN Communication Signal Chart

INFOID:000000004173639

Refer to <u>LAN-14</u>, "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart. NOTE:

Refer to LAN-20, "Abbreviation List" for the abbreviations of the connecting units.

								T: Tra	ansmit R	: Receive
Signal name/Connecting unit	ECM	ADP	AV	HVAC	STRG	BCM	M&A	ABS	TCM	IPDM-E
A/C compressor request signal	Т									R
Accelerator pedal position signal	Т							R	R	
ASCD CRUISE indicator signal	Т						R			
ASCD SET indicator signal	Т						R			
Closed throttle position signal	Т								R	



[CAN]

< FUNCTION DIAGNOSIS >

Signal name/Connecting unit	ECM	ADP	AV	HVAC	STRG	BCM	M&A	ABS	TCM	IPDM-E	А
Cooling fan speed request signal	Т									R	-
Engine and CVT integrated control signal	T R								R T		- В
Engine coolant temperature signal	Т		R	R		R	R	R	R		- C
Engine speed signal	Т		R	R			R	R	R		
Engine status signal	Т					R					-
Fuel consumption monitor signal	Т		R				R T				_ D
Malfunction indicator lamp signal	Т						R				-
Power generation command value signal	Т									R	_ E
System setting signal		T R	R T			T R					- - F
			т	R							-
A/C control signal			R	Т							-
A/C switch signal	R			T		т					- G
Blower fan motor switch signal	R			Т		Т					-
Steering angle sensor signal					Т			R			- н
Buzzer output signal						Т	R				-
Cornering lamp request signal						Т				R	-
Day time running light request signal				R		Т				R	-
Door lock/unlock status signal		R				Т					-
Door switch signal		R	R			Т	R			R	- J
Front fog light request signal				R		Т	R			R	-
Front wiper request signal				R		Т		R		R	-
High beam request signal				R		Т	R	R		R	K
Horn chirp signal						Т				R	-
Ignition switch signal		R				T R				R T	_ L
Key fob door unlock signal		R				Т					-
Key fob ID signal		R				Т					LA
Key switch signal		R				Т					-
Key warning signal						Т	R				- - N
Low beam request signal				R		Т				R	- 11
Oil pressure switch signal						T R	R R			т	- - - 0
Position light request signal				R		Т	R	R		R	-
Rear window defogger switch signal				R		Т				R	-
Sleep wake up signal		R				Т	R			R	P
Stop lamp switch signal						Т			R		-
Theft warning horn request signal						Т				R	-
Trunk switch signal			R			Т	R				-
Turn indicator signal				R		Т	R	R			-
Distance to empty signal			R				Т				-

< FUNCTION DIAGNOSIS >

Signal name/Connecting unit	ECM	ADP	AV	HVAC	STRG	BCM	M&A	ABS	TCM	IPDM-E
Fuel level low warning signal			R				Т			
Fuel level sensor signal	R						Т			
Manual mode shift down signal							Т		R	
Manual mode shift up signal							Т		R	
Manual mode signal							Т		R	
Market information signal			R				Т			
Not manual mode signal							Т		R	
Paddle shifter shift down signal [*]							Т		R	
Paddle shifter shift up signal [*]							Т		R	
Parking brake switch signal			R			R	Т	R		
Seat belt buckle switch signal						R	Т			
						R	Т			
Sleep-ready signal						R				Т
	R	R	R			R	Т			R
Vehicle speed signal						R	R	Т	R	
ABS operation signal								Т	R	
ABS warning lamp signal							R	Т		
Brake warning lamp signal							R	Т		
SLIP indicator lamp signal							R	Т		
VDC OFF indicator lamp signal							R	Т		
VDC operation signal								Т	R	
CVT indicator lamp signal							R		Т	
CVT self-diagnosis signal	R								Т	
Input shaft revolution signal	R							R	Т	
Manual mode indicator signal							R	R	Т	
Output shaft revolution signal	R							R	Т	
P range signal		R	R			R	R	R	Т	
R range signal		R	R			R	R	R	Т	
Shift position signal							R		Т	
A/C compressor feedback signal				R						т
Cooling fan speed signal	R									Т
Control device (detention switch) signal		R				R				Т
Front wiper stop position signal						R				т
High beam status signal	R		R							Т
Hood switch signal			R			R				Т
Low beam status signal	R		R							Т
Push-button ignition switch status signal						R				Т
				R		Т				R
Rear window defogger control signal	R		R	R						Т
Steering lock unit status signal						R				Т

*: Models with paddle shifter

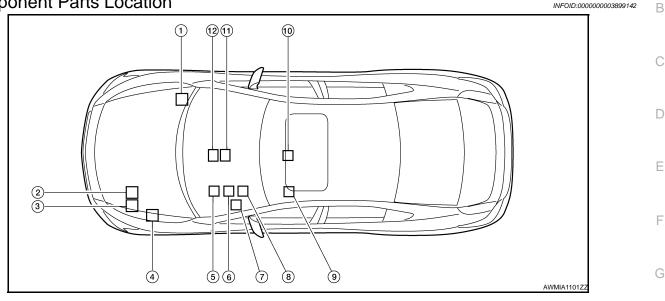
NOTE:

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

LAN-26

COMPONENT DIAGNOSIS CAN COMMUNICATION SYSTEM

Component Parts Location



- ABS actuator and electric unit (con- 2. 1. trol unit) E26
- IPDM E/R E17 4.
- 7. Data link connector M22
- 10. Air bag diagnosis sensor unit M35
- TCM F15
- BCM M19 5.
- 8. Steering angle sensor M53
- 11. A/C auto amp. M37
- ECM E10 3.
- Combination meter M24 6.
- 9. Driver seat control unit B203
- 12. AV control unit M46: Without NAVI M139: With NAVI

[CAN]

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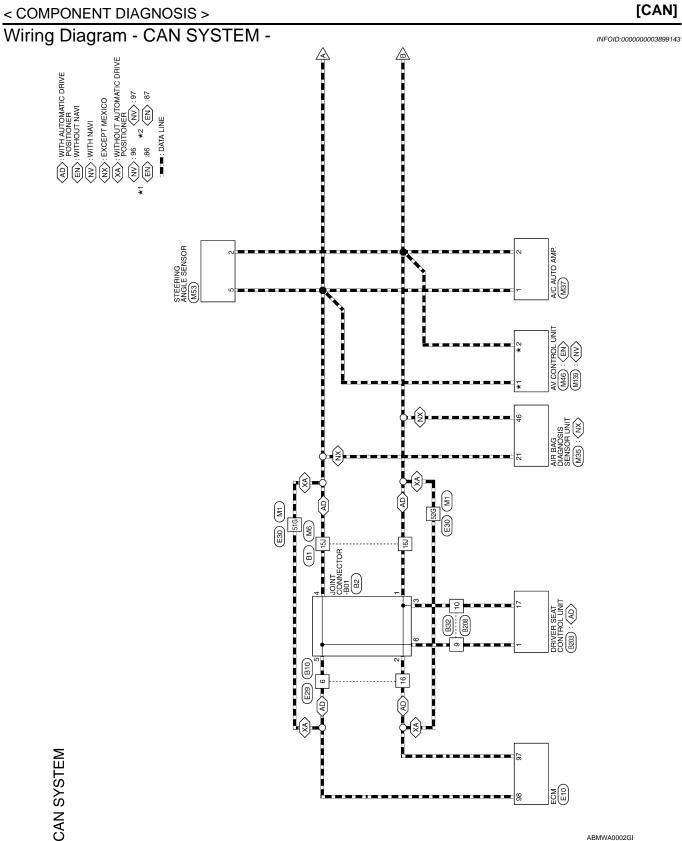
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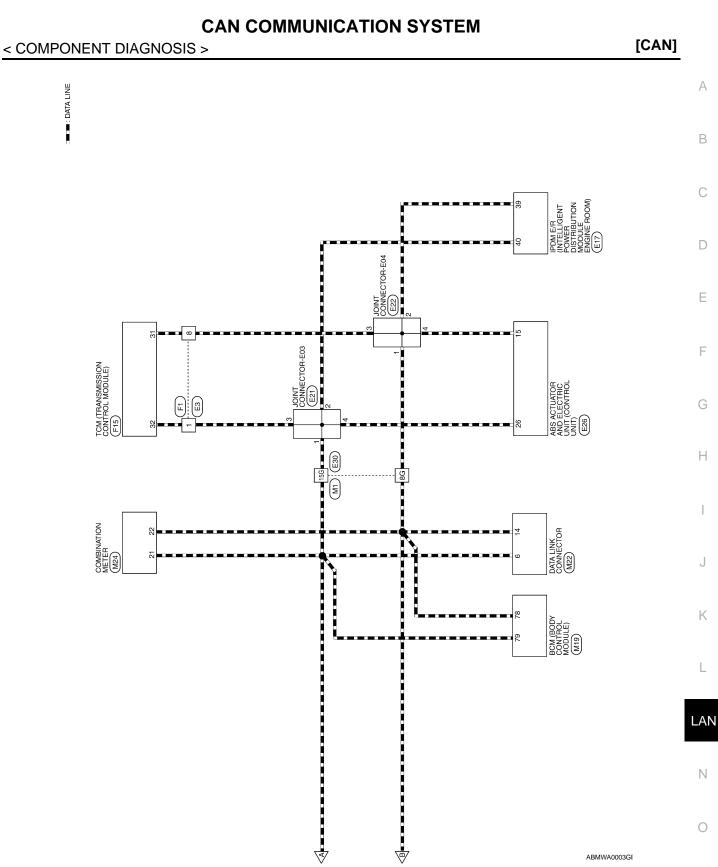
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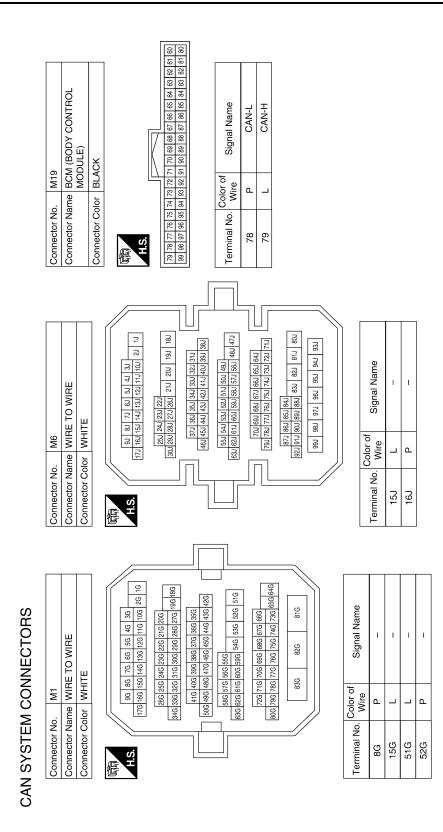
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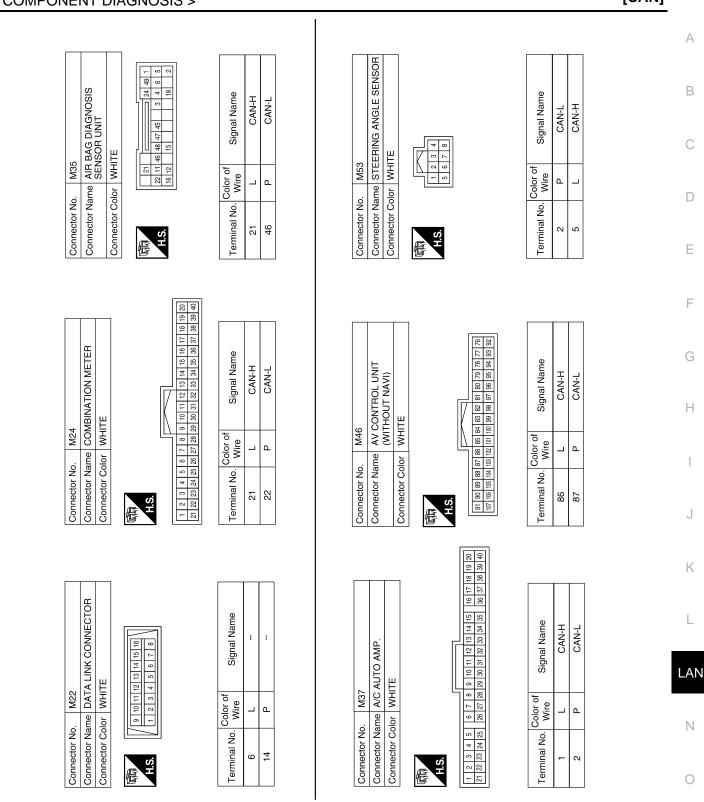


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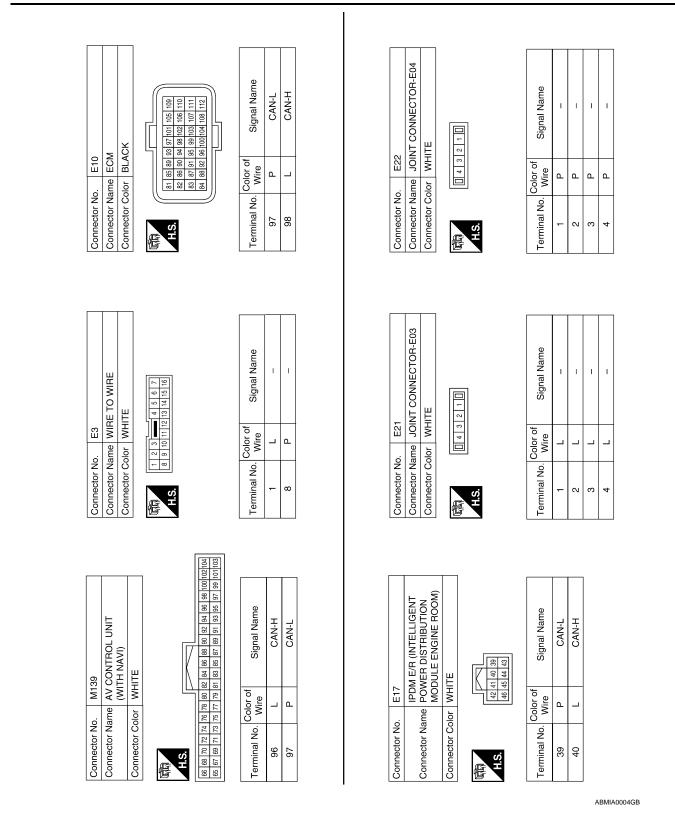


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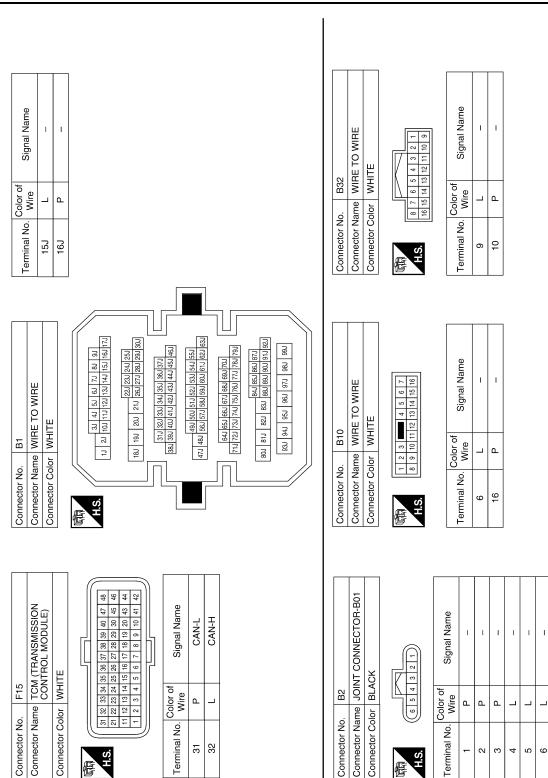
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NENT DIAGNOSIS >		[CAN]
	Connector No. F1 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE Milite 1 3 2 1 Milite 3 2 1	
O WIRE 3 2 1 1 10 2 1 Signal 1 10 2 1	Signal Name	
	Der Color of Mire	
Connector No. Connector Name Connector Color H.S. Terminal No. Colo 6 L	Terminal No. 8G 15G 52G 52G	
E26 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) BLACK BLACK 6 17 18 19 20 21 22 22 22 5 6 7 8 9 10 11 12 13 1 5 6 7 8 9 10 11 12 13 2 5 6 7 2 8 9 10 11 12 13 1 5 6 7 2 12 22 22 22 5 6 7 2 12 22 22 22 22 22 22 22 22 22 22 22 2	Connector No. E30 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE Connector Color WHITE 16 26 406 416 226 246 240 540 46 16 16 16 16 16 16 16 16 16 16 16 16 16	
ctor No.	Connector No. E30 Connector Name WIRE T Connector Name WIRE T Connector Color WHITE 16 200 201 101 100 100	
Connee Connee Connee H.S. Termin	Connee Connee H.S.	
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Inector No. B208 Inector Name WIRE TO WIRE Inector Color WHITE Inector Color WHITE Inector Color MHITE Inector Color MHITE Inector Color MHITE	or No. B208 or Name WIRE TC or Color WHITE 9 10 11 12 11 P P P	Connector No. B208 Connector Name WIRE TC Connector Color WHITE	Connector No. B208 Connector Name WIRE TC Connector Color WHITE
inector No. B2 inector Name W inector Color W innal No. Color o 9 L 10 P	Connector No. B2 Connector Name W Connector Color W Gonnector Color W Connector Color W Connector Color W Connector Color W Connector Color W Connector Color W	Connector Nam Connector Nam Connector Colo Connector Colo Connector Nam Connector Nam	Connector Nam Connector Nam Connector Colo Connector Colo Connector Nam Connector Nam

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MALFUNCTION AREA CHART

< COMPONENT DIAGNOSIS >

MALFUNCTION AREA CHART

Main Line

INFOID:000000003899144

Malfunction Area	Reference
Main line between driver seat control unit and A/C auto amp.	LAN-37, "Diagnosis Procedure"
Main line between driver seat control unit and air bag diagnosis sensor unit	LAN-38, "Diagnosis Procedure"
Main line between air bag diagnosis sensor unit and A/C auto amp.	LAN-39, "Diagnosis Procedure"
Main line between A/C auto amp. and data link connector	LAN-40, "Diagnosis Procedure"
Main line between data link connector and ABS actuator and electric unit (control unit)	LAN-41, "Diagnosis Procedure"

Branch Line

INFOID:000000003899145

Malfunction Area	Reference
ECM branch line circuit	LAN-42, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-43, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-44, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-45, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-46, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-47, "Diagnosis Procedure"
BCM branch line circuit	LAN-48, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-49, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-50, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-51, "Diagnosis Procedure"
TCM branch line circuit	LAN-52, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-53, "Diagnosis Procedure"

Short Circuit

INFOID:000000003899146

Malfunction Area	Reference
CAN communication circuit	LAN-54, "Diagnosis Procedure"

		ND HVAC CIRC	דוו וי	
agnosis Proced	ure			INFOID:000000004230608
PECTION PROCE	DURE			
CHECK CONNECT	OR			
Check the followin and harness side). Harness connector Harness connector the inspection result S >> GO TO 2. D >> Repair the CHECK HARNESS Disconnect the follow Harness connector Harness connector	B1 M6 normal? terminal and connec CONTINUITY (OPEN owing harness conne s B208 and B32 s B1 and M6	nectors for damage, b tor. N CIRCUIT) ectors.	end and loose conne	ection (connector side
Check the continue Harness of	ty between the harne	ess connectors.	opportor	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	9		15J	Existed
	10	B1 -	401	Eviptod
B32 -	-		16J	Existed
ne inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the cor	normal? main line between th CONTINUITY (OPEN nector of A/C auto a		B32 and B1.	
ne inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the cor	normal? main line between th CONTINUITY (OPE) nector of A/C auto a ty between the harne	N CIRCUIT) mp.	B32 and B1. A/C auto amp. harnes	s connector.
ne inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the cor Check the continui	normal? main line between th CONTINUITY (OPE) nector of A/C auto a ty between the harne	N CIRCUIT) mp. ess connector and the <i>i</i>	B32 and B1. A/C auto amp. harnes	
ne inspection result ES >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the cor Check the continui Harness of Connector No.	normal? main line between th CONTINUITY (OPE) nector of A/C auto a ty between the harne	N CIRCUIT) mp. ess connector and the <i>r</i> A/C auto amp. ha Connector No.	B32 and B1. A/C auto amp. harness	s connector.
the inspection result S >> GO TO 3. D >> Repair the CHECK HARNESS Disconnect the corr Check the continui Harness of	normal? main line between th CONTINUITY (OPE) nector of A/C auto a ty between the harne connector Terminal No.	N CIRCUIT) mp. ess connector and the / A/C auto amp. ha	B32 and B1. A/C auto amp. harness arness connector Terminal No.	s connector. Continuity

NO >> Repair the main line between the harness connector M6 and the A/C auto amp.

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MAIN LINE BETWEEN ADP AND A-BAG CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND A-BAG 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 B1
- Harness connector M6

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 B208 and B32
- Harness connectors B1 and M6
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B32	9	B1	15J	Existed
032	10	DI	16J	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors B32 and B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of A/C auto amp.

2. Check the continuity between the harness connector and the A/C auto amp. harness connector.

Harness	connector	A/C auto amp. h	arness connector	- Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M6	15J	M37	1	Existed
IVIO	16J		2	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 air bag diagnosis sensor unit.

NO >> Repair the main line between the harness connector M6 and the air bag diagnosis sensor unit.

MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT < COMPONENT DIAGNOSIS > [CAN] MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT Diagnosis Procedure INSPECTION PROCEDURE INFOLDOBOLO004230979 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 1.

- 3. Disconnect the following harness connectors.
- Models without automatic drive positioner
- Harness connectors E30 and M1
- A/C auto amp.
- Models with automatic drive positioner
- Harness connectors B1 and M6
- A/C auto amp.
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.
- Models without automatic drive positioner

Harness	connector	A/C auto amp. ha	arness connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M1	51G	M37	1	Existed	-
	52G	10137	2	Existed	-

Models with automatic drive positioner

Harness	connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
M6	15J	M37	1	Existed
IVIO	16J		2	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 air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

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MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000003899147

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
- A/C auto amp.
- 4. Check the continuity between the A/C auto amp. harness connector and the data link connector.

A/C auto amp. h	arness connector	Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M37	1	M22	6	Existed	
10137	2	IVIZZ	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 A/C auto amp. and the data link connector.

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

COMPONENT DIA		WEEN DLC AND		
				[CAN]
JAIN LINE BE	TWEEN DLC AI	ND ABS CIRCU	ЛΤ	
Diagnosis Proced	dure			INFOID:000000004019324
NSPECTION PROC				
.CHECK CONNEC				
. Turn the ignition s				
. Disconnect the ba	attery cable from the ne ing terminals and coni). or M1		end and loose conne	ection (connector side
the inspection resul	t normal?			
YES >> GO TO 2.				
_ ·	e terminal and connect			
	S CONTINUITY (OPEN			
	arness connectors M1 uity between the data li		harness connector.	
Data link	< connector	Harness c	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
	14		8G	Existed
•				
YES >> GO TO 3 NO >> Repair the CHECK HARNESS	e main line between th S CONTINUITY (OPEN	N CIRCUIT)		ector M1.
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne	N CIRCUIT) for and electric unit (cc	ontrol unit).	
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne	N CIRCUIT) for and electric unit (cc	ontrol unit). ABS actuator and ele ctric unit (control unit)	ectric unit (control unit)
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne or.	N CIRCUIT) for and electric unit (co ess connector and the ABS actuator and elec	ontrol unit). ABS actuator and ele ctric unit (control unit)	
NO >> Repair the CHECK HARNESS Disconnect the co Check the continum harness connector Harness Connector No.	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne or.	ABS actuator and electric unit (co	ontrol unit). ABS actuator and ele ctric unit (control unit) onnector	ectric unit (control unit)
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector Harness	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne or.	N CIRCUIT) for and electric unit (co ess connector and the ABS actuator and elec harness c	ontrol unit). ABS actuator and electric unit (control unit) connector Terminal No.	ectric unit (control unit) Continuity
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector Harness Connector No. E30	e main line between th S CONTINUITY (OPEN onnector of ABS actual uity between the harne or. s connector Terminal No. 15G 8G <u>It normal?</u>	ABS actuator and electric unit (consistent of the connector and the connector and the connector of the connector of the connector No.	ontrol unit). ABS actuator and electric unit (control unit) connector Terminal No. 26	ectric unit (control unit) Continuity Existed
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector Harness Connector No. E30 Sthe inspection resul YES (Present error)> YES (Past error)>>E and elect NO >> Repair the	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne or. s connector s connector Terminal No. 15G 8G It normal? >>Check CAN system Fror was detected in th ric unit (control unit). e main line between th	ABS actuator and electric unit (consistent of the set o	ontrol unit). ABS actuator and electric unit (control unit) connector Terminal No. 26 15 ne data link connector	ectric unit (control unit) Continuity Existed Existed
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector Harness Connector No. E30 s the inspection resul YES (Present error): YES (Past error)>>E and elect	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne or. s connector s connector Terminal No. 15G 8G It normal? >>Check CAN system Fror was detected in th ric unit (control unit). e main line between th	ABS actuator and electric unit (consistent of the set o	ontrol unit). ABS actuator and electric unit (control unit) connector Terminal No. 26 15 ne data link connector	ectric unit (control unit) Continuity Existed Existed
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector Harness Connector No. E30 Sthe inspection resul YES (Present error)> YES (Past error)>>E and elect NO >> Repair the	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne or. s connector s connector Terminal No. 15G 8G It normal? >>Check CAN system Fror was detected in th ric unit (control unit). e main line between th	ABS actuator and electric unit (consistent of the set o	ontrol unit). ABS actuator and electric unit (control unit) connector Terminal No. 26 15 ne data link connector	ectric unit (control unit) Continuity Existed Existed
YES >> GO TO 3 NO >> Repair the CHECK HARNESS Disconnect the co Check the continu- harness connector Harness Connector No. E30 Sthe inspection resul YES (Present error) YES (Past error) YES (Past error) State of the content Address Connector No.	e main line between th S CONTINUITY (OPEN onnector of ABS actuat uity between the harne or. s connector s connector Terminal No. 15G 8G It normal? >>Check CAN system Fror was detected in th ric unit (control unit). e main line between th	ABS actuator and electric unit (consistent of the set o	ontrol unit). ABS actuator and electric unit (control unit) connector Terminal No. 26 15 ne data link connector	ectric unit (control unit) Continuity Existed Existed

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Models without automatic drive positioner
- ECM
- Harness connector E30
- Harness connector M1
- Models with automatic drive positioner
- ECM
- Harness connector E29
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

	ECM harness connector		
Connector No.	Termi	Resistance (Ω)	
E10	98	97	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-143, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-13</u>, "<u>BASIC INSPECTION</u> : <u>Special Repair Require-</u> <u>ment</u>".

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

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

ADP BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN]

ADP BRANCH LINE				А
Diagnosis Procedure			INFOID:000000004217833	~
1.CHECK CONNECTOR				В
	cable from the negative term ninals and connectors for da 8		nection (unit side and con-	C
Is the inspection result norm	<u>al?</u>			
YES >> GO TO 2. NO >> Repair the termi				Е
2.CHECK HARNESS FOR	OPEN CIRCUIT			
	or of driver seat control unit. Stween the driver seat contro		rminals.	F
Drive	er seat control unit harness conne	ctor	Posistance (0)	G
Connector No.	Termina	al No.	Resistance (Ω)	
B203	1	17	Approx. 54 – 66	Н
Is the measurement value wYESYESNO>> Repair the drive 3. CHECK POWER SUPPLY	r seat control unit branch lin	e.		I
Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm	<u>s Procedure"</u> .	ver seat control unit. Refer t	o <u>ADP-46, "DRIVER SEAT</u>	J
YES (Past error)>>Error wa	lace the driver seat control uses detected in the driver seater supply and the ground cire	at control unit branch line.	moval and Installation".	K
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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-3, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

COMPONENT DIAGNOS			[CAN]
AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:0000000389915
NSPECTION PROCEDUR	RE		
1.CHECK CONNECTOR			
 Check the terminals and side and connector side side and connector side s the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2. CHECK HARNESS FOR Disconnect the connector 2. Check the resistance be 	cable from the negative term d connectors of the AV con). <u>al?</u> inal and connector. OPEN CIRCUIT	rol unit for damage, ben	d and loose connection (uni
Models without NAVI	AV control unit harness connector		
Connector No.	Termina	al No.	Resistance (Ω)
M46	86	87	Approx. 54 – 66
Models with NAVI			
	AV control unit harness connector		
	AV control unit harness connector Termina	al No.	- Resistance (Ω)
	Termina 96	al No. 97	- Resistance (Ω) Approx. 54 – 66

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HVAC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

HVAC 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 A/C auto 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 A/C auto amp.

2. Check the resistance between the A/C auto amp. harness connector terminals.

	A/C auto amp. harness connector			
Connector No.	Termi	Resistance (Ω)		
M37	1	2	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to the following.

Models with color display: <u>HAC-63, "A/C AUTO AMP. : Diagnosis Procedure"</u>

Models with monochrome display: <u>HAC-186</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to <u>HAC-123</u>, "<u>Removal and Installation</u>" (with color display) or <u>HAC-231</u>, "<u>Removal and Installation</u>" (with monochrome display).

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

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

LAN-46

[CAN]

STRG BRANCH LINE CIRCUIT

	STRO BRANCI		
< COMPONENT DIAGNOSI			[CAN]
STRG BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000003899154
INSPECTION PROCEDURE	:		
1.CHECK CONNECTOR	-		
 Turn the ignition switch O Disconnect the battery ca 	ble from the negative terr		
3. Check the terminals and (unit side and connector s		g angle sensor for damage, I	bend and loose connection
Is the inspection result norma	,		
YES >> GO TO 2.			
NO >> Repair the termin 2.CHECK HARNESS FOR C			
 Disconnect the connector Check the resistance betw 		ensor harness connector te	rminals.
	ing angle sensor harness conne		Resistance (Ω)
Connector No. M53	5	nal No.	Approx. 54 – 66
	-	Z	Approx. 54 – 66
<u>Is the measurement value wit</u> YES >> GO TO 3.	nin the specification?		
	ng angle sensor branch lir	1e.	
3. CHECK POWER SUPPLY	AND GROUND CIRCUIT	Г	
Check the power supply and	the ground circuit of the	steering angle sensor. Refe	er to BRC-79, "Wiring Dia-
<u>gram"</u> .			
Is the inspection result norma			
YES (Present error)>>Repla YES (Past error)>>Error was			moval and installation".
	supply and the ground ci		

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BCM BRANCH LINE 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 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 (C		Resistance (0)
Connector No.			
M19	79	78	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-87, "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

< COMPONENT DIAGNOS	SIS >		[CAN]
DLC BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000003899152
NSPECTION PROCEDUR			
1. CHECK CONNECTOR			
I. Turn the ignition switch	OFF. cable from the negative term	ninal.	
	d connectors of the data li		e, bend and loose connection
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi	nal and connector		
2. CHECK HARNESS FOR			
Check the resistance betwee		erminals.	
	Data link connector		
Connector No.	Termi	nal No.	Resistance (Ω)
M22	6	14	Approx. 54 – 66
Is the measurement value w	ithin the specification?		
YES (Present error)>>Che YES (Past error)>>Error wa NO >> Repair the data			rcuit.

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LAN-49

M&A BRANCH LINE 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 terminals and connectors of the combination meter 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

C	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to <u>MWI-37, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-144, "Removal and Installation".

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

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

LAN-50

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS	>		[CAN]
ABS BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:00000003899155
INSPECTION PROCEDURE			
1.CHECK CONNECTOR	_		_
and loose connection (unit s	e from the negative ter nnectors of the ABS a	ctuator and electric unit (con	trol unit) for damage, bend
<u>Is the inspection result normal?</u> YES >> GO TO 2.			
NO >> Repair the terminal	and connector.		
2.CHECK HARNESS FOR OP	EN CIRCUIT		
nals.	lectric unit (control unit) ha	and electric unit (control unit) harness connector termi-
Connector No.		inal No.	Resistance (Ω)
E26	26	15	Approx. 54 – 66
Is the measurement value within YES >> GO TO 3. NO >> Repair the ABS actor 3.CHECK POWER SUPPLY AN Check the power supply and the BRC-79, "Wiring Diagram". Is the inspection result normal? YES (Present error)>>Replace View". YES (Past error)>>Error was do NO >> Repair the power su	uator and electric unit ND GROUND CIRCUI e ground circuit of the the ABS actuator and etected in the ABS ac	e ABS actuator and electric electric unit (control unit). Re tuator and electric unit (contro	efer to <u>BRC-103, "Exploded</u>
	ppiy and the ground t	incuit.	

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TCM BRANCH LINE 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 (unit side and connector side).
- TCM
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of TCM.

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

	TCM harness connector Resistance (s Connector No. Terminal No.		Resistance (O)
Connector No.			
F15	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

 ${
m 3.}$ Check power supply and ground circuit

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-122, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to <u>TM-166, "Exploded View"</u>.
- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< COMPONENT DIAGNO	SIS >		[CAN]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:00000003899157
INSPECTION PROCEDUR	RE		
1.CHECK CONNECTOR			
3. Check the terminals an and connector side).	cable from the negative terr d connectors of the IPDM I		loose connection (unit side
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term			
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of IPDM E/R. etween the IPDM E/R harne	ess connector terminals.	
	IPDM E/R harness connector		
Connector No.	Termir	al No.	Resistance (Ω)
E17	40	39	Approx. 108 – 132
Is the measurement value wYES>> GO TO 3.NO>> Repair the IPDN 3. CHECK POWER SUPPL	/ E/R branch line.		I
YES (Past error)>>Error w		o <u>PCS-40, "Removal and Ir</u> R branch line.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INSPECTION 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.	Terminal No.		Continuity	
M22	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	
M22	6	Giouna	Not existed
W122	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	CM	Resistance (Ω)	
Termi	nal No.		
98	97	Approx. 108 – 132	

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

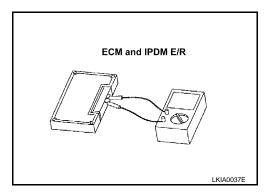
IPDI	IPDM E/R	
Termi	nal No.	Resistance (Ω)
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM



[CAN]

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN]

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

Reproduced>>GO TO 6

Non-reproduced>>Start the diagnosis	again. F	Follow the	trouble	diagnosis	procedure	when pa	ast error	is	В
detected.									
6. CHECK UNIT REPRODUCTION									
									\cap

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.
- 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.

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COMPONENT DIAGNOSIS MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000004236932

[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.
- Models without automatic drive positioner
- Harness connectors E30 and M1
- A/C auto amp.
- Models with automatic drive positioner
- Harness connectors B1 and M6
- A/C auto amp.
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.
- Models without automatic drive positioner

Harness	connector	A/C auto amp. h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M1	51G	M37	1	Existed
IVI I	52G	10137	2	Existed

Models with automatic drive positioner

Harness	connector	A/C auto amp. h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M6	15J	M37	1	Existed
Ινιο	16J	10137	2	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 air bag diagnosis sensor unit and the A/C auto amp.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

COMPONENT DIA	GNOSIS >		[CAN	SYSTEM (TYPE 1)]
MAIN LINE BET	WEEN HVAC	AND DLC CIRC	CUIT	
Diagnosis Proced	lure			INFOID:000000004236934
NSPECTION PROCI				
4		N CIRCUIT)		
 Disconnect the fol ECM A/C auto amp. 	ttery cable from the ne lowing harness conne		nector and the data li	nk connector.
A/C auto amp. h	arness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M22	6	Existed
	2		14	Existed
s the inspection result	t normal?			Existed
YES (Present error)> YES (Past error)>>E tor.	>Check CAN system rror was detected in the rror was detected in the rror was detected in the		the A/C auto amp. and	d the data link connec-

MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

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MAIN LINE BETWEEN DLC 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 M1
- Harness connector E30

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 M1 and E30.

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

Data link	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14		8G	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M1.

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		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
E30	8G	E20	15	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

[CAN SYSTEM (TYPE 1)]

< COMPONENT DIAGNOSIS >

Diagnosis Procedure			INF01D:00000004236936
NSPECTION PROCEDUR	2E		
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of 	cable from the negative tern ninals and connectors for c		onnection (unit side and con-
 ECM Harness connector E30 Harness connector M1 Models with automatic of ECM 	drive positioner		
 Harness connector E29 Harness connector B10 the inequestion result permission)		
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
1. Disconnect the connect	or of ECM. etween the ECM harness c	onnector terminals.	
 Disconnect the connect Check the resistance be 	or of ECM. etween the ECM harness c ECM harness connector		- Resistance (Ω)
1. Disconnect the connect	or of ECM. etween the ECM harness c ECM harness connector	onnector terminals. nal No. 97	
 Disconnect the connect Check the resistance be Connector No. 	or of ECM. etween the ECM harness c ECM harness connector Termin 98 vithin the specification?	nal No. 97	– Resistance (Ω) Approx. 108 – 132
1. Disconnect the connect 2. Check the resistance be Connector No. E10 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECW 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep ment".	or of ECM. etween the ECM harness c ECM harness connector Termin 98 vithin the specification? I branch line. Y AND GROUND CIRCUIT d the ground circuit of the E hal?	nal No. 97 CM. Refer to <u>EC-143, "Dia</u> C-13, "BASIC INSPECTIC	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-3, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

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

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

< COMPONENT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 1)]
HVAC BRANCH LIN	IE CIRCUIT		
Diagnosis Procedure			INFOID:0000000423694
1.CHECK CONNECTOR			
 Check the terminals and side and connector side 	able from the negative terr d connectors of the A/C au).		I and loose connection (unit
Is the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR			
1. Disconnect the connect			
		narness connector terminals	S.
	A/C auto amp. harness connecto	r	
Connector No.		nal No.	Resistance (Ω)
M37	1	2	Approx. 54 – 66
^ '	auto amp. branch line.		
3. CHECK POWER SUPPL			
Check the power supply andModels with color display:			ollowing.
Models with monochrome	display: <u>HAC-186, "A/C AL</u>	JTO AMP. : Diagnosis Proc	edure"
Is the inspection result norm	<u>al?</u>		
YES (Present error)>>Repl	ace the A/C auto amp. Re	efer to <u>HAC-123, "Removal</u>	and Installation" (with color
YES (Past error)>>Error wa		<u>ation"</u> (with monochrome di amp. branch line.	ispiay).
	er supply and the ground ci		

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STRG BRANCH LINE 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 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.	
M53	5	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-79, "Wiring Dia-</u> gram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106, "Removal and Installation"</u>.

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

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

	ECIRCUIT		
Diagnosis Procedure			INF01D:00000004236942
INSPECTION PROCEDUR	E		
1.CHECK CONNECTOR			
	able from the negative termi		se connection (unit side and
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR	nal and connector.		
. Disconnect the connect		nector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Terminal		
M19	79	78	Approx. 54 – 66
<u>s the measurement value w</u> YES >> GO TO 3.			
NO >> Repair the BCM			
NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and	Y AND GROUND CIRCUIT the ground circuit of the BC	M. Refer to <u>BCS-41, "Dia</u>	agnosis Procedure".
NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the BC	87, "Removal and Install	

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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE 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 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.	
M22	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.

< COMPONENT DIAGNOSIS >

1&A BRANCH LINE	CIRCUIT		
iagnosis Procedure			INFOID:00000004236944
ISPECTION PROCEDURE	=		
.CHECK CONNECTOR	_		
	able from the negative term connectors of the combin		pend and loose connection
the inspection result normative YES >> GO TO 2. NO >> Repair the termin	al and connector.		
Disconnect the connecto			
Check the resistance bet	ween the combination met	er harness connector term	inals.
	ween the combination met		
		or	INAIS. Resistance (Ω)
Con Connector No. M24	nbination meter harness connecto Termina 21	or	
Connector No. M24 the measurement value wit YES >> GO TO 3. NO >> Repair the combi	nbination meter harness connecto Termina 21 hin the specification? nation meter branch line.	or al No. 22	Resistance (Ω) Approx. 54 – 66
Connector No. M24 the measurement value with YES >> GO TO 3. NO >> Repair the combination of the combina	hbination meter harness connector Termina 21 hin the specification? nation meter branch line. AND GROUND CIRCUIT the ground circuit of the c re". 1? the combination meter.	or al No. 22 combination meter. Refer to Refer to <u>MWI-144, "Remo</u> ion meter branch line.	Resistance (Ω) Approx. 54 – 66

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ABS BRANCH LINE 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 terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi		
E26	26	15	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-79, "Wiring Diagram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</u>.

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

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

< COMPONENT DIAGNOSIS >

Diagnosis Procedure			INFOID:0000000423694
NSPECTION PROCEDUR	E		
1.CHECK CONNECTOR			
	able from the negative ter		nnection (unit side and con-
Harness connector F1			
 Harness connector E3 s the inspection result norm 	212		
YES >> GO TO 2.			
NO >> Repair the termi			
2.CHECK HARNESS FOR			
 Disconnect the connector Check the resistance be 	or of TCM. tween the TCM harness c	onnector terminals.	
	TCM harness connector		
			Resistance (Ω)
Connector No.	Termi	nal No.	· · ·
F15	Termi 32	nal No. 31	Resistance (Ω) Approx. 54 – 66
F15	Termi 32 thin the specification?		· · ·
F15 s the measurement value w YES >> GO TO 3.	Termi 32 thin the specification? branch line.	31	· · ·
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and	Termi 32 thin the specification? branch line. Y AND GROUND CIRCUI	31	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL	Termi 32 thin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the	31	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl	Termi 32 ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM	31 T TCM. Refer to <u>TM-122, "V</u> -166, "Exploded View".	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 Ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM as detected in the TCM brain	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 Ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM as detected in the TCM brain	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 Ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM as detected in the TCM brain	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 Ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM as detected in the TCM brain	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>ROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 Ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM as detected in the TCM brain	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 Ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM as detected in the TCM brain	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	Termi 32 Ithin the specification? branch line. Y AND GROUND CIRCUI d the ground circuit of the al? ace the TCM. Refer to TM as detected in the TCM brain	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66

IPDM-E BRANCH LINE 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 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		
E17	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-21, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-40, "Removal and Installation".

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

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

< COMPONENT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 1)]
CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:00000000423694
NSPECTION PROCEDUR	۶F		
1.CONNECTOR INSPECT			
Disconnect all the unit of	cable from the negative terr connectors on CAN commu onnectors for damage, bend	nication system.	
NO >> Repair the term			
2.CHECK HARNESS CON			
Check the continuity betwee	en the data link connector te		
	Data link connector		- Continuity
Connector No. M22	Termin 6	nal No.	Not existed
s the inspection result norm	-	14	Not existed
YES >> GO TO 3.	ess and repair the root cau	se.	
YES >> GO TO 3. NO >> Check the harno CHECK HARNESS CON Check the continuity betwee	ITINUITY (SHORT CIRCUI on the data link connector a	T)	
YES >> GO TO 3. NO >> Check the harne 3.CHECK HARNESS CON Check the continuity betwee	ITINUITY (SHORT CIRCUI en the data link connector a connector	T)	Continuity
YES >> GO TO 3. NO >> Check the harne 3.CHECK HARNESS CON Check the continuity betwee Data link Connector No.	ITINUITY (SHORT CIRCUI on the data link connector a	T)	Continuity
YES >> GO TO 3. NO >> Check the harne 3.CHECK HARNESS CON Check the continuity betwee Data link Connector No.	ITINUITY (SHORT CIRCUI en the data link connector a connector Terminal No. 6 14	T) Ind the ground.	
YES >> GO TO 3. NO >> Check the harno 3.CHECK HARNESS CON Check the continuity betwee Data link Connector No. M22 S the inspection result norm YES >> GO TO 4. NO >> Check the harno 4.CHECK ECM AND IPDM 1. Remove the ECM and t	ITINUITY (SHORT CIRCUI en the data link connector a connector Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC	T) Ind the ground. Ground	Not existed
YES >> GO TO 3. NO >> Check the harno 3.CHECK HARNESS CON Check the continuity betwee Data link Connector No. M22 S the inspection result norm YES >> GO TO 4. NO >> Check the harno 4.CHECK ECM AND IPDM 1. Remove the ECM and t	ITINUITY (SHORT CIRCUI en the data link connector a connector Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC he IPDM E/R.	T) Ind the ground. Ground se. CUIT	Not existed
YES >> GO TO 3. NO >> Check the harm 3.CHECK HARNESS CON Check the continuity betwee Data link Connector No. M22 s the inspection result norm 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.	ITINUITY (SHORT CIRCUI en the data link connector a connector Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC he IPDM E/R. etween the ECM terminals.	T) Ind the ground. Ground se. CUIT	Not existed Not existed
YES >> GO TO 3. NO >> Check the harm 3.CHECK HARNESS CON Check the continuity betwee Data link Connector No. M22 s the inspection result norm 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. 98 9	ITINUITY (SHORT CIRCUI en the data link connector a connector Terminal No. 6 14 nal? ess and repair the root cause I E/R TERMINATION CIRC the IPDM E/R. etween the ECM terminals.	T) Ind the ground. Ground se. CUIT	Not existed Not existed
YES >> GO TO 3. NO >> Check the harm 3.CHECK HARNESS CON Check the continuity betweed Data link Connector No. M22 S the inspection result norm 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. 98 9	ITINUITY (SHORT CIRCUI en the data link connector a connector Terminal No. 6 14 14 14 14 14 14 14 14 14 14 14 14 14	T) Ind the ground. Ground se. SUIT 2) 132 nals.	Not existed Not existed

5.CHECK SYMPTOM

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

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

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.

AIN LINE BE	TWEEN ADP AI	ND A-BAG CIR	CUIT	
agnosis Procec	lure			INFOID:000000004236952
SPECTION PROC				
CHECK CONNECT	OR			
Check the followi and harness side) Harness connector Harness connector the inspection result (ES >> GO TO 2. IO >> Repair the CHECK HARNESS	or B1 or B1 or M6 t normal? terminal and connect CONTINUITY (OPEN lowing harness conne	nectors for damage, b or. N CIRCUIT)	end and loose conn	ection (connector side
Harness connector Harness connector	ors B1 and M6			
Harness connector Harness connector Check the continu	ors B1 and M6 ity between the harne		connector	
Harness connector Harness connector Check the continu	ors B1 and M6	ss connectors. Harness o Connector No.	connector Terminal No.	Continuity
Harness connector Harness connector Check the continu Harness Connector No.	ors B1 and M6 ity between the harne connector	Harness of Connector No.		Continuity Existed
Harness connector Harness connector Check the continu Harness	ors B1 and M6 ity between the harne connector Terminal No. 9 10	Harness o	Terminal No.	-
Harness connector Harness connector Check the continu Harness Connector No. B32 the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the co Check the continu	ors B1 and M6 ity between the harne connector Terminal No. 9 10 t normal? e main line between the 5 CONTINUITY (OPEN nnector of A/C auto ar ity between the harne	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the A	Terminal No. 15J 16J B32 and B1. A/C auto amp. harne	Existed
Harness connector Harness connector Check the continu Harness Connector No. B32 the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the co Check the continu Harness	rs B1 and M6 ity between the harne connector Terminal No. 9 10 t normal? e main line between th 5 CONTINUITY (OPEN nnector of A/C auto ar ity between the harne	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the A/C auto amp. ha	Terminal No. 15J 16J B32 and B1. A/C auto amp. harne	Existed
Harness connector Harness connector Check the continu Harness Connector No. B32 the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the co Check the continu	ors B1 and M6 ity between the harne connector Terminal No. 9 10 t normal? e main line between th 5 CONTINUITY (OPEN nnector of A/C auto ar ity between the harne connector Terminal No.	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the A	Terminal No. 15J 16J B32 and B1. A/C auto amp. harne arness connector Terminal No.	Existed Existed ss connector. Continuity
Harness connector Harness connector Check the continu Harness Connector No. B32 the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the co Check the continu Harness	rs B1 and M6 ity between the harne connector Terminal No. 9 10 t normal? e main line between th 5 CONTINUITY (OPEN nnector of A/C auto ar ity between the harne	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the A/C auto amp. ha	Terminal No. 15J 16J B32 and B1. A/C auto amp. harne	Existed Existed ss connector.

MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000004236953

[CAN SYSTEM (TYPE 2)]

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.
- Models without automatic drive positioner
- Harness connectors E30 and M1
- A/C auto amp.
- Models with automatic drive positioner
- Harness connectors B1 and M6
- A/C auto amp.
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.
- Models without automatic drive positioner

Harness	A/C auto amp. harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M1	51G	M37	1	Existed
	52G	10137	2	Existed

Models with automatic drive positioner

Harness	connector	A/C auto amp. harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M6	15J	M37	1	Existed	
MO	16J	10137	2	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 air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

	GNOSIS >		[CAN	SYSTEM (TYPE 2)
AIN LINE BE	TWEEN HVAC A	AND DLC CIRC	CUIT	
iagnosis Proced	dure			INFOID:0000000042365
SPECTION PROC	EDURE			
.CHECK HARNES	S CONTINUITY (OPEN	I CIRCUIT)		
Disconnect the fo ECM A/C auto amp.	witch OFF. attery cable from the ne llowing harness conne uity between the A/C at	ctors.	nector and the data lir	nk connector.
	harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
MOZ	1		6	E 1.4.1
M37	2	M22	14	Existed
the inspection resul	t normal?		-	Existed
the inspection resul (ES (Present error)> (ES (Past error)>>E tor.	_	type decision again. le main line between t	14 the A/C auto amp. and	Existed

MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

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MAIN LINE BETWEEN DLC 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 M1
- Harness connector E30

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 M1 and E30.

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

Data link	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	6 M1	15G	Existed
IVIZZ	14		8G	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M1.

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		ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
F20	15G	E26	26	Existed
E30 8G		⊑20	15	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

[CAN SYSTEM (TYPE 2)]

ECM BRANCH LIN			INFOID:000000004236957	A
INSPECTION PROCEDUR	?F			В
1.CHECK CONNECTOR				D
	cable from the negative term ninals and connectors for c		onnection (unit side and con-	C
 ECM Harness connector E30 Harness connector M1 Models with automatic of ECM 	drive positioner			E
 Harness connector E29 Harness connector B10 				F
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2.CHECK HARNESS FOR	inal and connector.			G
 Disconnect the connect Check the resistance be 	or of ECM. Stween the ECM harness c	onnector terminals.		Η
	ECM harness connector		Resistance (Ω)	
E10	98	nal No. 97	Approx. 108 – 132	
Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL	vithin the specification?			J
Check the power supply and Is the inspection result norm YES (Present error)>>Rep <u>ment"</u> .	al?		agnosis Procedure". DN : Special Repair Require-	L
YES (Past error)>>Error w				LAN
NO >> Repair the powe	er supply and the ground ci	ircuit.		

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004236958

[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).
- Driver seat control unit
- Harness connector B208
- Harness connector B32

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Termi	Resistance (22)	
B203	1	17	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-46, "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-193, "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.

COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 2)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000004236959
CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-3, "Work Flow"</u> .	
<u>s the inspection result normal?</u> YES >> Replace the main harness.	
NO >> Replace parts whose air bag system has a malfunction.	

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004236961

[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 A/C auto 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 A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

A/C auto amp. harness connector			Resistance (Ω)
Connector No.	Termir		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the A/C auto amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to the following.

Models with color display: <u>HAC-63, "A/C AUTO AMP. : Diagnosis Procedure"</u>

Models with monochrome display: <u>HAC-186</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to <u>HAC-123</u>, "<u>Removal and Installation</u>" (with color display) or <u>HAC-231</u>, "<u>Removal and Installation</u>" (with monochrome display).

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

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

STRG BRANCH LIN				
Diagnosis Procedure			INF01D:000000004236962	A
INSPECTION PROCEDUR	E			
	E			
1.CHECK CONNECTOR				
 Turn the ignition switch (Disconnect the battery c 	DFF. able from the negative ter	minal.		(
3. Check the terminals and	connectors of the steering	g angle sensor for damage,	bend and loose connection	
(unit side and connector				
<u>Is the inspection result norma</u> YES >> GO TO 2.				
NO >> Repair the termin	nal and connector.			
2. CHECK HARNESS FOR	OPEN CIRCUIT			
1. Disconnect the connecto	or of steering angle sensor			
		sensor harness connector te	rminals.	
Stee	ring angle sensor harness conner	ector		
Connector No.		nal No.	Resistance (Ω)	(
M53	5	2	Approx. 54 – 66	
Is the measurement value wi	thin the specification?			
YES >> GO TO 3.				
`	ng angle sensor branch li			
3.CHECK POWER SUPPLY				
Check the power supply and gram".	the ground circuit of the	steering angle sensor. Ref	er to <u>BRC-79, "Wiring Dia-</u>	
Is the inspection result norma	al?			
· · · · ·		nsor. Refer to <u>BRC-106, "Re</u>	moval and Installation".	
YES (Past error)>>Error wa				
NO >> Repair the powe	r supply and the ground ci	iicuit.		
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BCM BRANCH LINE 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 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)	
M19	79	78	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 <u>BCS-87, "Removal and Installation"</u>.

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

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

SIS >		
E CIRCUIT		
		INFOID:0000000423696
OFF		
cable from the negative term	ninal.	hand and large same offen
id connectors of the data lif	ik connector for damage,	bend and loose connection
nal?		
inal and connector.		
OPEN CIRCUIT		
en the data link connector te	erminals.	
Data link connector		
	al No.	Resistance (Ω)
6	14	Approx. 54 – 66
	E CIRCUIT RE OFF. cable from the negative term ind connectors of the data line rness side). hal? inal and connector. COPEN CIRCUIT ten the data link connector termin Compared to the data link connector termin Compared to the specification? inthin the specification? inthin the specification? inthin the specification?	E CIRCUIT RE OFF. cable from the negative terminal. ad connectors of the data link connector for damage, rness side). nal? inal and connector. COPEN CIRCUIT ven the data link connector terminals. Data link connector Image: Data link connector 0 14 vithin the specification? eck CAN system type decision again. ras detected in the data link connector branch line circular

M&A BRANCH LINE 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 terminals and connectors of the combination meter 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector			
Connector No.	Termi	Resistance (Ω)		
M24	21 22		Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to <u>MWI-37, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-144, "Removal and Installation".

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

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

< COMPONENT DIAGNOS	SIS >	[0	CAN SYSTEM (TYPE 2)]
ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000004236966
INSPECTION PROCEDUR	E		
1. CHECK CONNECTOR			
3. Check the terminals and	able from the negative tern a connectors of the ABS ac nit side and connector side al?	ctuator and electric unit (con	trol unit) for damage, bend
2.CHECK HARNESS FOR			
 Check the resistance be nals. 	or of ABS actuator and electiveen the ABS actuator a	and electric unit (control unit	,
Connector No.	Termi	nal No.	Resistance (Ω)
E26	26	15	Approx. 54 – 66
Is the measurement value w	ithin the specification?		
YES >> GO TO 3. NO >> Repair the ABS	actuator and alastria unit (control unit) bronch ling	
3.CHECK POWER SUPPL	actuator and electric unit (,	
			unit (control unit) Defer to
Check the power supply an <u>BRC-79</u> , "Wiring Diagram".		ADS actuator and electric	
Is the inspection result norm	al?		
	ace the ABS actuator and	electric unit (control unit). Re	efer to <u>BRC-103, "Exploded</u>
	as detected in the ABS act or supply and the ground ci	uator and electric unit (contro	ol unit) branch line.

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TCM BRANCH LINE 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 (unit side and connector side).
- TCM
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of TCM.

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

	TCM harness connector		
Connector No.	Termi	Resistance (Ω)	
F15	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

 ${
m 3.}$ Check power supply and ground circuit

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-122, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to <u>TM-166, "Exploded View"</u>.
- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

Diagnosis Procedure			INF0/D:000000004236968
INSPECTION PROCEDUR	E		
1.CHECK CONNECTOR			
	able from the negative term		l loose connection (unit side
Is the inspection result norma	al?		
YES >> GO TO 2. NO >> Repair the termin 2. CHECK HARNESS FOR			
 Disconnect the connector Check the resistance between the connector 	r of IPDM E/R. tween the IPDM E/R harnes	ss connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	Termina		Resistance (Ω)
Connector No. E17	Termina 40	al No. 39	Resistance (Ω) Approx. 108 – 132
Connector No. E17 Is the measurement value wi YES >> GO TO 3. NO >> Repair the IPDM	Termina 40 thin the specification? E/R branch line.		
Connector No. E17 Is the measurement value wi YES >> GO TO 3. NO >> Repair the IPDM 3. CHECK POWER SUPPLY Check the power supply and Is the inspection result normation of the inspection of the inspectin of the inspection of the inspection of t	Termina 40 thin the specification? E/R branch line. Y AND GROUND CIRCUIT the ground circuit of the IPI al? ace the IPDM E/R. Refer to	39 DM E/R. Refer to <u>PCS-21</u> <u>PCS-40, "Removal and I</u> branch line.	Approx. 108 – 132 , "Diagnosis Procedure".

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INSPECTION 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	
M22	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
 M22	6	Giouna	Not existed
W122	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

E	Resistance (Ω)	
Termi	nal No.	
98	97	Approx. 108 – 132

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

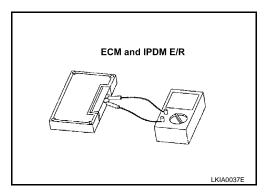
IPDI	/I E/R	Resistance (Ω)
Termi	nal No.	
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM



CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 2)]
Connect all the connectors. Check if the symptoms described in the "customer)" are reproduced.	Symptom (Results from interview with
Inspection result	
Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble dia detected.	agnosis procedure when past error is
6. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each u 1. Turn the ignition switch OFF.	nit.
2. Disconnect the battery cable from the negative terminal.	
 Disconnect one of the unit connectors of CAN communication system NOTE: 	em.
 ECM and IPDM E/R have a termination circuit. Check other units fi 4. Connect the battery cable to the negative terminal. Check if the (Results from interview with customer)" are reproduced. NOTE: 	
Although unit-related error symptoms occur, do not confuse them v Inspection result	vith other symptoms.
Reproduced>>Connect the connector. Check other units as per the at Non-reproduced>>Replace the unit whose connector was disconnector	

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Diagnosis Procedure

INFOID:000000004236832

[CAN SYSTEM (TYPE 3)]

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.
- Models without automatic drive positioner
- Harness connectors E30 and M1
- A/C auto amp.
- Models with automatic drive positioner
- Harness connectors B1 and M6
- A/C auto amp.
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.
- Models without automatic drive positioner

Harness	connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M1	51G	M37	1	Existed
	52G	IVI37	2	Existed

Models with automatic drive positioner

Harness	connector	A/C auto amp. harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M6	15J	M37	1	Existed	
IVIO	16J	10137	2	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 air bag diagnosis sensor unit and the A/C auto amp.
- NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

COMPONENT DIA	GNOSIS >		[CAN	SYSTEM (TYPE 3)]
IAIN LINE BE	TWEEN HVAC	AND DLC CIRC	CUIT	
iagnosis Proced	dure			INFOID:000000004236834
ISPECTION PROC	EDURE			
.CHECK HARNES	S CONTINUITY (OPEN	N CIRCUIT)		
Disconnect the for ECM A/C auto amp.	witch OFF. attery cable from the ne llowing harness conne uity between the A/C a	ectors.	nnector and the data lir	ık connector.
A/C auto amp	harness connector	Data link	Data link connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Connector No.			Terminal No. 6	Existed
Connector No. M37 the inspection resu	Terminal No. 1 2 It normal?	M22		· .
Connector No. M37 <u>the inspection resu</u> YES (Present error): YES (Past error):>E tor.	Terminal No.	M22 type decision again. ne main line between	6 14 the A/C auto amp. and	Existed Existed
Connector No. M37 <u>the inspection resu</u> YES (Present error): YES (Past error):>E tor.	Terminal No. 1 2 <u>t normal?</u> >>Check CAN system rror was detected in th	M22 type decision again. ne main line between	6 14 the A/C auto amp. and	Existed Existed
Connector No. M37 <u>the inspection resu</u> YES (Present error): YES (Past error):>E tor.	Terminal No. 1 2 <u>t normal?</u> >>Check CAN system rror was detected in th	M22 type decision again. ne main line between	6 14 the A/C auto amp. and	Existed Existed

MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

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MAIN LINE BETWEEN DLC 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 M1
- Harness connector E30

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 M1 and E30.

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

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14		8G	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M1.

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.		
E30	15G	E26	26	Existed	
ESU	8G	E20	15	Existed	

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

[CAN SYSTEM (TYPE 3)]

COMPONENT DIAGNOSI	3>		
ECM BRANCH LINE	CIRCUIT		
agnosis Procedure			INFOID:00000004236836
•	_		
ISPECTION PROCEDURE	<u>:</u>		
.CHECK CONNECTOR			
 Turn the ignition switch O Disconnect the battery ca Check the following terminector side). Models without automatic 	ble from the negative terr nals and connectors for d		connection (unit side and con-
ECM Harness connector E30 Harness connector M1			
Models with automatic dr ECM Harness connector E29 Harness connector B10	ve positioner		
the inspection result norma ES >> GO TO 2. IO >> Repair the termin			
CHECK HARNESS FOR C			
Disconnect the connector Check the resistance betw		onnector terminals.	
Connector No.		nal No.	Resistance (Ω)
E10	98	97	Approx. 108 – 132
the measurement value wit YES >> GO TO 3. NO >> Repair the ECM b CHECK POWER SUPPLY	pranch line.	-	
neck the power supply and the inspection result norma (ES (Present error)>>Repla ment".	<u>I?</u>		<u> Diagnosis Procedure"</u> . ION : Special Repair Require-
ES (Past error)>>Error was	s detected in the ECM bra supply and the ground ci		

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-3, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

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

INFOID:000000004236838

[CAN SYSTEM (TYPE 3)]

	SIS >		[CAN SYSTEM (TYPE 3)]
BRANCH LINE	CIRCUIT		
agnosis Procedure			INFOID:000000004236839
PECTION PROCEDUR	E		
CHECK CONNECTOR			
Check the terminals an side and connector side <u>he inspection result norm</u> ES >> GO TO 2. O >> Repair the term CHECK HARNESS FOR	cable from the negative terminal d connectors of the AV control). <u>al?</u> nal and connector. OPEN CIRCUIT		d and loose connection (unit
Models without NAVI	or of AV control unit. tween the AV control unit harne	ess connector termina	ls.
Connector No.	AV control unit harness connector Terminal No.		Resistance (Ω)
M46	86		Approx. 54 – 66
Models with NAVI		-	
	AV control unit harness connector		
Connector No.	Terminal No).	Resistance (Ω)
M139	96	97	Approx. 54 – 66
•	ithin the specification? ontrol unit branch line. Y AND GROUND CIRCUIT I the ground circuit of the AV co	ntrol unit. Refer to the	following.

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004236840

[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 A/C auto 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 A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

A/C auto amp. harness connector			Resistance (Ω)
Connector No.	Termir		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the A/C auto amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to the following.

Models with color display: <u>HAC-63, "A/C AUTO AMP. : Diagnosis Procedure"</u>

Models with monochrome display: <u>HAC-186</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to <u>HAC-123</u>, "<u>Removal and Installation</u>" (with color display) or <u>HAC-231</u>, "<u>Removal and Installation</u>" (with monochrome display).

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

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

STRG BRANCH LIN	E CIRCUIT			
Diagnosis Procedure			INF0ID:000000004236841	1
	_			
INSPECTION PROCEDURI	=			
1.CHECK CONNECTOR				
 Turn the ignition switch C Disconnect the battery ca)FF. able from the negative term	minal.		
3. Check the terminals and	connectors of the steering	g angle sensor for damage,	bend and loose connection	
(unit side and connector Is the inspection result norma	•			
YES >> GO TO 2.	<u>41 /</u>			
NO >> Repair the termin	nal and connector.			
2. CHECK HARNESS FOR (OPEN CIRCUIT			
	r of steering angle sensor			
2. Check the resistance bet	ween the steering angle s	ensor harness connector te	rminals.	
Steer	ing angle sensor harness conne	ector	Desistence (0)	
Connector No.	Termi	nal No.	Resistance (Ω)	
M53	5	2	Approx. 54 – 66	
Is the measurement value with	thin the specification?			
YES >> GO TO 3. NO >> Repair the steeri	ng angle sensor branch lir			
3. CHECK POWER SUPPLY				
Check the power supply and			er to BRC-79 "Wiring Dia-	
gram".	The ground circuit of the	steering angle sensor. Ref	er to <u>DRO-73, Winng Dia-</u>	
Is the inspection result norma	<u>al?</u>			
YES (Present error)>>Repla YES (Past error)>>Error wa			moval and Installation".	
	r supply and the ground ci			
	· · · · ·			

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BCM BRANCH LINE 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 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.		
M19	79	78	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to BCS-41, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-87, "Removal and Installation"</u>.

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

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOS	>>		
DLC BRANCH LINE			
iagnosis Procedure			INFOID:00000004236843
SPECTION PROCEDUR			
.CHECK CONNECTOR	. 🗠		
Turn the ignition switch (OFF.		
Disconnect the battery c	cable from the negative ter		e, bend and loose connection
(connector side and harr			
the inspection result norm: YES >> GO TO 2.	<u>al?</u>		
NO >> Repair the termin	nal and connector.		
CHECK HARNESS FOR	OPEN CIRCUIT		
heck the resistance betwee	en the data link connector	terminals.	
	Data link connector		Resistance (Ω)
Connector No. M22	Termi 6	nal No. 14	Approx. 54 – 66
the measurement value w		17	7.pp/0x. 04 00

M&A BRANCH LINE 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 terminals and connectors of the combination meter 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

C	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to <u>MWI-37, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-144, "Removal and Installation".

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

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

< COMPONENT DIAGNOS	IS >	[CAN SYSTEM (TYPE 3)]
ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000004236845
INSPECTION PROCEDUR	E		
1.CHECK CONNECTOR			
3. Check the terminals and	able from the negative terr connectors of the ABS ac nit side and connector side	ctuator and electric unit (con	trol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR	nal and connector.		
 Check the resistance be nals. 	or of ABS actuator and electiveen the ABS actuator and electric unit (control unit) har	and electric unit (control unit	,
Connector No.	· · · ·	nal No.	Resistance (Ω)
E26	26	15	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPLY	actuator and electric unit (,	
Check the power supply and BRC-79, "Wiring Diagram".	al?		
<u>View"</u> YES (Past error)>>Error wa		electric unit (control unit). Re uator and electric unit (contr rcuit.	

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TCM BRANCH LINE 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 (unit side and connector side).
- TCM
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of TCM.

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

TCM harness connector			Resistance (Ω)
Connector No.	Termi		
F15	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

 ${
m 3.}$ Check power supply and ground circuit

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-122, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to <u>TM-166, "Exploded View"</u>.
- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

			INFOID:00000004236847
Diagnosis Procedure			INFOID:00000004236847
NSPECTION PROCEDURE			
.CHECK CONNECTOR			
	ble from the negative termin		d loose connection (unit side
the inspection result normal	<u>?</u>		
(ES >> GO TO 2.			
NO >> Repair the termina .CHECK HARNESS FOR O			
Disconnect the connector Check the resistance betw	of IPDM E/R. /een the IPDM E/R harness	connector terminals.	
			-
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	40 Terminal	No. 39	Approx 109 122
	-	39	Approx. 108 – 132
the measurement velue with			
	in the specification?		
′ES >> GO TO 3.			
YES >> GO TO 3. NO >> Repair the IPDM E	/R branch line.		
YES >> GO TO 3. NO >> Repair the IPDM E CHECK POWER SUPPLY A	R branch line.	M E/R. Refer to <u>PCS-2</u>	I, "Diagnosis Procedure".
YES >> GO TO 3. NO >> Repair the IPDM E CHECK POWER SUPPLY A neck the power supply and th	R branch line. AND GROUND CIRCUIT ne ground circuit of the IPD	M E/R. Refer to <u>PCS-2</u>	I, "Diagnosis Procedure".
 YES >> GO TO 3. NO >> Repair the IPDM E CHECK POWER SUPPLY and the complexity of the inspection result normal? YES (Present error)>>Replace 	AND GROUND CIRCUIT e ground circuit of the IPD ce the IPDM E/R. Refer to <u>F</u>	PCS-40, "Removal and	
YES >> GO TO 3. NO >> Repair the IPDM E CHECK POWER SUPPLY A neck the power supply and the the inspection result normal YES (Present error)>>Replac YES (Past error)>>Error was	AND GROUND CIRCUIT e ground circuit of the IPD the IPDM E/R. Refer to <u>F</u> detected in the IPDM E/R I	<u>PCS-40, "Removal and</u> pranch line.	
 YES >> GO TO 3. NO >> Repair the IPDM E CHECK POWER SUPPLY A heck the power supply and the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was 	AND GROUND CIRCUIT e ground circuit of the IPD ce the IPDM E/R. Refer to <u>F</u>	<u>PCS-40, "Removal and</u> pranch line.	
YES >> GO TO 3. NO >> Repair the IPDM E CHECK POWER SUPPLY A heck the power supply and the the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was	AND GROUND CIRCUIT e ground circuit of the IPD the IPDM E/R. Refer to <u>F</u> detected in the IPDM E/R I	<u>PCS-40, "Removal and</u> pranch line.	
NO >> Repair the IPDM E CHECK POWER SUPPLY heck the power supply and the the inspection result normal YES (Present error)>>Replac YES (Past error)>>Error was	AND GROUND CIRCUIT e ground circuit of the IPD the IPDM E/R. Refer to <u>F</u> detected in the IPDM E/R I	<u>PCS-40, "Removal and</u> pranch line.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INSPECTION 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	Continuity	
M22	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
 M22	6	Giouna	Not existed
W122	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

E	Resistance (Ω)	
Terminal No.		
98 97		Approx. 108 – 132

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

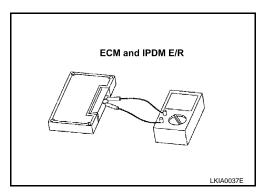
IPDN	IPDM E/R		
Terminal No.		Resistance (Ω)	
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM



[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 3)]
Connect all the connectors. Check if the symptoms described in the 'customer)" are reproduced.	"Symptom (Results from interview with
Inspection result	
Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble dia detected.	agnosis procedure when past error is
6. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each u 1. Turn the ignition switch OFF.	unit.
 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication syst NOTE: 	iem.
 ECM and IPDM E/R have a termination circuit. Check other units fi 4. Connect the battery cable to the negative terminal. Check if the (Results from interview with customer)" are reproduced. NOTE: 	
Although unit-related error symptoms occur, do not confuse them v Inspection result	with other symptoms.
Reproduced>>Connect the connector. Check other units as per the al Non-reproduced>>Replace the unit whose connector was disconnected	

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MAIN LINE BETWEEN ADP AND A-BAG CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN ADP AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000004236849

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 B1
- Harness connector M6

Is the inspection result normal?

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Harness connectors B208 and B32
- Harness connectors B1 and M6
- 2. Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B32	9	B1	15J	Existed	
DJZ	10		16J	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the harness connectors B32 and B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of A/C auto amp.

2. Check the continuity between the harness connector and the A/C auto amp. harness connector.

Harness	connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
MG	15J	M37	1	Existed
IVIO	M6 16J		2	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 air bag diagnosis sensor unit.

NO >> Repair the main line between the harness connector M6 and the air bag diagnosis sensor unit.

				SYSTEM (TYPE 4)
AIN LINE BE	FWEEN A-BAG	AND HVAC CI	RCUIT	
agnosis Proced	lure			INFOID:0000000042368
SPECTION PROC	EDURE			
		N CIRCUIT)		
Disconnect the fo Models without at	attery cable from the n llowing harness conne utomatic drive position prs E30 and M1	ectors.		
A/C auto amp. Models with autor Harness connecto A/C auto amp. Check the continu		ess connector and the <i>i</i>	A/C auto amp. harnes	ss connector.
A/C auto amp. Models with autor Harness connecto A/C auto amp. Check the continu Models without au	ors B1 and M6 uity between the harne	er	-	
A/C auto amp. Models with autor Harness connecto A/C auto amp. Check the continu Models without au	ors B1 and M6 uity between the harne utomatic drive position		-	ss connector. Continuity
A/C auto amp. Models with autor Harness connecto A/C auto amp. Check the continu Models without au Harness Connector No.	ors B1 and M6 uity between the harne utomatic drive position	A/C auto amp. ha	arness connector	
A/C auto amp. Models with autor Harness connecto A/C auto amp. Check the continu Models without au	ors B1 and M6 uity between the harne utomatic drive position connector Terminal No.	er A/C auto amp. ha	arness connector Terminal No.	Continuity
A/C auto amp. Models with autor Harness connector A/C auto amp. Check the continu Models without au Harness Connector No.	ors B1 and M6 uity between the harne utomatic drive position connector Terminal No. 51G	A/C auto amp. ha	Terminal No.	Continuity Existed
A/C auto amp. Models with autor Harness connecto A/C auto amp. Check the continu Models without au Harness Connector No. M1 Models with autor	ors B1 and M6 uity between the harne utomatic drive position connector Terminal No. 51G 52G	A/C auto amp. ha	Terminal No. 1 2	Continuity Existed Existed
A/C auto amp. Models with autor Harness connecto A/C auto amp. Check the continu Models without au Harness Connector No. M1 Models with autor	ors B1 and M6 uity between the harne utomatic drive position connector Terminal No. 51G 52G matic drive positioner	A/C auto amp. ha Connector No. M37	Terminal No. 1 2	Continuity Existed
A/C auto amp. Models with autor Harness connector A/C auto amp. Check the continu Models without au Harness Connector No. M1 Models with autor Harness	ors B1 and M6 uity between the harne utomatic drive position connector Terminal No. 51G 52G matic drive positioner	A/C auto amp. ha Connector No. M37 A/C auto amp. ha	Terminal No. 1 2 arness connector	Continuity Existed Existed

MAIN LINE BETWEEN A-BAG AND HVAC CIRCUIT

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the A/C auto amp.

NO >> Repair the main line between the air bag diagnosis sensor unit and the A/C auto amp.

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MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004236852

[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
- A/C auto amp.
- 4. Check the continuity between the A/C auto amp. harness connector and the data link connector.

A/C auto amp. harness connector		Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M37	1	M22	6	Existed	
10137	2	IVIZZ	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 A/C auto amp. and the data link connector.

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

	MAIN LINE BET	WEEN DLC AN		
< COMPONENT DIA			-	SYSTEM (TYPE 4)]
MAIN LINE BE	TWEEN DLC AI	ND ABS CIRCU		
Diagnosis Procec	lure			INFOID:000000004236853
NSPECTION PROC	EDURE			
1.CHECK CONNECT	ſOR			
 Check the followi and harness side) Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the hat 	attery cable from the ne ng terminals and coni a. or M1 or E30 <u>t normal?</u>	nectors for damage, I tor. N CIRCUIT) and E30.		ection (connector side
Data link		Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
s the inspection resul	14		8G	Existed
CHECK HARNESS	-	N CIRCUIT) for and electric unit (c ess connector and the	ontrol unit). ABS actuator and ele	ector M1.
Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
s the inspection resul	8G		15	Existed
YES (Past error)>>E and electr	ic unit (control unit). e main line between th	e main line between t		and the ABS actuator

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Models without automatic drive positioner
- ECM
- Harness connector E30
- Harness connector M1
- Models with automatic drive positioner
- ECM
- Harness connector E29
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Termi		
E10	98	97	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-143, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-13, "BASIC INSPECTION : Special Repair Require-</u> <u>ment"</u>.

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

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

ADP BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000004236853
1.CHECK CONNECTOR			
	able from the negative terr ninals and connectors for d	ninal. amage, bend and loose cor	nection (unit side and con-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
1. Disconnect the connect	or of driver seat control unit	ol unit harness connector te	erminals.
	er seat control unit harness conne		Resistance (Ω)
Connector No.	Termir		
B203	1	17	Approx. 54 – 66
e tha mageuramant valua w			
YES >> GO TO 3. NO >> Repair the drive	r seat control unit branch li		
	r seat control unit branch lin Y AND GROUND CIRCUIT the ground circuit of the dr		to <u>ADP-46, "DRIVER SEAT</u>
YES >> GO TO 3. NO >> Repair the drive 3.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	r seat control unit branch lin Y AND GROUND CIRCUIT the ground circuit of the dr <u>s Procedure</u> ". al? ace the driver seat control	iver seat control unit. Refer unit. Refer to <u>ADP-193, "Re</u> at control unit branch line.	
YES >> GO TO 3. NO >> Repair the drive 3.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	r seat control unit branch lin Y AND GROUND CIRCUIT the ground circuit of the dr <u>Procedure</u> ". al? ace the driver seat control as detected in the driver se	iver seat control unit. Refer unit. Refer to <u>ADP-193, "Re</u> at control unit branch line.	

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-3, "Work Flow".

Is the inspection result normal?

YES >> Replace the main harness.

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

INFOID:000000004236856

[CAN SYSTEM (TYPE 4)]

	SIS >		[CAN SYSTEM (TYPE 4)]
V BRANCH LINE (CIRCUIT		
agnosis Procedure			INFOID:000000004236857
SPECTION PROCEDUR	E		
CHECK CONNECTOR			
	able from the negative termina d connectors of the AV control). <u>al?</u> nal and connector.		d and loose connection (unit
Models without NAVI	tween the AV control unit harne	ess connector terminal	S.
	AV control unit harness connector	<u>,</u>	Resistance (Ω)
Connector No. M46	Terminal No 86	87	Approx. 54 – 66
Madels with NAVI	00	07	Αρμιοχ. 34 – 66
	AV control unit harness connector		
,			
Connector No.	Terminal No).	Resistance (Ω)
	96	97	Approx. 54 – 66

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004236858

[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 A/C auto 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 A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

	A/C auto amp. 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 A/C auto amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to the following.

Models with color display: <u>HAC-63, "A/C AUTO AMP. : Diagnosis Procedure"</u>

Models with monochrome display: <u>HAC-186</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to <u>HAC-123</u>, "<u>Removal and Installation</u>" (with color display) or <u>HAC-231</u>, "<u>Removal and Installation</u>" (with monochrome display).

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

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

	IE CIRCUIT		
Diagnosis Procedure			INFOID:00000004236859
INSPECTION PROCEDUR	E		
1.CHECK CONNECTOR			
	able from the negative terr connectors of the steering	minal. g angle sensor for damage, l	pend and loose connection
s the inspection result norma	,		
YES >> GO TO 2. NO >> Repair the termin	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	r of steering angle sensor ween the steering angle s	ensor harness connector ter	minals.
Stee	ring angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termir	a al Nia	
M53	5	2	Approx. 54 – 66
M53 s the measurement value wi YES >> GO TO 3. NO >> Repair the steeri	5 thin the specification? ng angle sensor branch lir	2 ne.	Approx. 54 – 66
M53 <u>s the measurement value wi</u> YES >> GO TO 3. NO >> Repair the steeri 3. CHECK POWER SUPPLY Check the power supply and gram".	5 thin the specification? ng angle sensor branch lir AND GROUND CIRCUIT the ground circuit of the	2 ne.	
M53 Is the measurement value wi YES >> GO TO 3. NO >> Repair the steeri 3.CHECK POWER SUPPLY Check the power supply and gram". Is the inspection result normation YES (Present error)>>Replation YES (Past error)>>Error watched the steering of the	5 thin the specification? ng angle sensor branch lir AND GROUND CIRCUIT the ground circuit of the al? ace the steering angle sen	2 ne. 5 steering angle sensor. Refe sor. Refer to <u>BRC-106, "Rer</u> angle sensor branch line.	er to <u>BRC-79, "Wiring Dia-</u>

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BCM BRANCH LINE 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 terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

	BCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M19	79	78	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-87, "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

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSI	S >		
LC BRANCH LINE	CIRCUIT		
iagnosis Procedure			INFOID:0000000423686
SPECTION PROCEDURE	:		
.CHECK CONNECTOR	-		
Turn the ignition switch O	FF		
. Disconnect the battery ca	ble from the negative ter		
 Check the terminals and (connector side and harnow) 		INK connector for damage	e, bend and loose connection
s the inspection result norma	<u> ?</u>		
YES >> GO TO 2. NO >> Repair the termin	al and connector.		
CHECK HARNESS FOR C			
Check the resistance betweer	the data link connector	terminals.	
	Data link connector		
Connector No.		nal No.	Resistance (Ω)
M22	6	14	Approx. 54 – 66

M&A BRANCH LINE 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 terminals and connectors of the combination meter 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to <u>MWI-37, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-144, "Removal and Installation".

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

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

< COMPONENT DIAGNOS	IS >	[CAN SYSTEM (TYPE 4)]
ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000004236863
INSPECTION PROCEDUR	E		
1. CHECK CONNECTOR			
3. Check the terminals and	able from the negative terr connectors of the ABS ac nit side and connector side	tuator and electric unit (con	trol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR	nal and connector.		
 Check the resistance be nals. 	r of ABS actuator and elec tween the ABS actuator a nd electric unit (control unit) harr	nd electric unit (control unit	t) harness connector termi-
Connector No.	· · · ·	nal No.	Resistance (Ω)
E26	26	15	Approx. 54 – 66
Is the measurement value wi YES >> GO TO 3. NO >> Repair the ABS 3 3.CHECK POWER SUPPLY	actuator and electric unit (,	
Check the power supply and	the ground circuit of the	ABS actuator and electric	unit (control unit). Refer to
	al?		
Is the inspection result norma YES (Present error)>>Repla <u>View"</u> .	ace the ABS actuator and e		efer to <u>BRC-103, "Exploded</u>
Is the inspection result norma YES (Present error)>>Repla <u>View"</u> . YES (Past error)>>Error wa	ace the ABS actuator and e	uator and electric unit (contr	efer to <u>BRC-103, "Exploded</u>
View". YES (Past error)>>Error wa	ace the ABS actuator and on some some some some some some some some	uator and electric unit (contr	efer to <u>BRC-103, "Exploded</u>

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TCM BRANCH LINE 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 (unit side and connector side).
- TCM
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of TCM.

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

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
F15	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

 ${
m 3.}$ Check power supply and ground circuit

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-122, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to <u>TM-166, "Exploded View"</u>.
- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

Diagnosis Procedure			INFOID:00000004236865		
•					
.CHECK CONNECTOR					
	ble from the negative termin		d loose connection (unit side		
the inspection result normal	<u> ?</u>				
YES >> GO TO 2.	-				
NO >> Repair the termina					
CHECK HARNESS FOR C					
Disconnect the connector Check the resistance betw	of IPDM E/R. veen the IPDM E/R harness	connector terminals			
Oneok the resistance bet					
	IPDM E/R harness connector		Resistance (Ω)		
Connector No.	Terminal	No.			
E17	40	39	Approx. 108 – 132		
			11		
	nin the specification?				
/ES >> GO TO 3.					
YES >> GO TO 3. NO >> Repair the IPDM	E/R branch line.				
YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY	E/R branch line. AND GROUND CIRCUIT	M E/P. Pofor to PCS 2			
YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY neck the power supply and t	E/R branch line. AND GROUND CIRCUIT he ground circuit of the IPD	M E/R. Refer to <u>PCS-2</u>			
YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY heck the power supply and t the inspection result normal	E/R branch line. AND GROUND CIRCUIT he ground circuit of the IPDI		1, "Diagnosis Procedure".		
 YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY heck the power supply and t the inspection result normal YES (Present error)>>Replat YES (Past error)>>Error was 	E/R branch line. AND GROUND CIRCUIT he ground circuit of the IPDI <u>1?</u> ce the IPDM E/R. Refer to <u>F</u> detected in the IPDM E/R t	CS-40, "Removal and pranch line.	1, "Diagnosis Procedure".		
YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY heck the power supply and t the inspection result normal YES (Present error)>>Replay YES (Past error)>>Error was	E/R branch line. AND GROUND CIRCUIT he ground circuit of the IPDI I <u>?</u> ce the IPDM E/R. Refer to <u>F</u>	CS-40, "Removal and pranch line.	1, "Diagnosis Procedure".		
NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and t the inspection result normal YES (Present error)>>Replay YES (Past error)>>Error was	E/R branch line. AND GROUND CIRCUIT he ground circuit of the IPDI <u>1?</u> ce the IPDM E/R. Refer to <u>F</u> detected in the IPDM E/R t	CS-40, "Removal and pranch line.	1, "Diagnosis Procedure".		
YES >> GO TO 3. NO >> Repair the IPDM CHECK POWER SUPPLY Check the power supply and t the inspection result normal YES (Present error)>>Replay YES (Past error)>>Error was	E/R branch line. AND GROUND CIRCUIT he ground circuit of the IPDI <u>1?</u> ce the IPDM E/R. Refer to <u>F</u> detected in the IPDM E/R t	CS-40, "Removal and pranch line.	1, "Diagnosis Procedure".		

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INSPECTION 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.	Terminal No.		Continuity
M22	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
M22	6	Giouna	Not existed
W122	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Termi	Terminal No.		
98	97	Approx. 108 – 132	

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

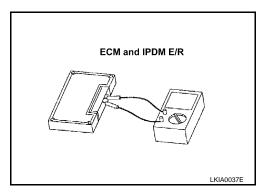
IPDN	/I E/R	Resistance (Ω)	
Terminal No.		Resistance (12)	
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM



CAN COMMUNICATION CIRCUIT

< C	COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 4)]	
	nnect all the connectors. Check if the symptoms described in the "Symptom stomer)" are reproduced.	(Results from interview with	А
Ins	pection result		
	eproduced>>GO TO 6. on-reproduced>>Start the diagnosis again. Follow the trouble diagnosis p detected.	rocedure when past error is	В
6.	CHECK UNIT REPRODUCTION		
Per 1.	form the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF.		С
2.	Disconnect the battery cable from the negative terminal.		
3.	Disconnect one of the unit connectors of CAN communication system.		D
4.	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 (Results from interview with customer)" are reproduced. NOTE:	s described in the "Symptom	E
	Although unit-related error symptoms occur, do not confuse them with other	symptoms.	
Ins	pection result		F
R	eproduced>>Connect the connector. Check other units as per the above proc on-reproduced>>Replace the unit whose connector was disconnected.	edure.	G

LAN-121

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COMPONENT DIAGNOSIS MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004236902

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
- A/C auto amp.
- 4. Check the continuity between the A/C auto amp. harness connector and the data link connector.

A/C auto amp. I	arness connector	Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M22	6	Existed
M37	2		14	Existed

Is the inspection result normal?

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

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

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

		WEEN DLC ANI		
< COMPONENT DIA		ND ABS CIRCL	-	SYSTEM (TYPE 5)]
Diagnosis Proced				INFOID:000000004236903
-				141 012.00000004230303
1.CHECK CONNECT				
 3. Check the followi and harness side) Harness connector Harness connector Is the inspection result YES >> GO TO 2. 	attery cable from the ne ng terminals and con or M1 or E30 <u>t normal?</u> e terminal and connect	nectors for damage, I	pend and loose conne	ection (connector side
	arness connectors M1 ity between the data I		harness connector.	
			connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No. 15G	Existed
M22	14	M1	8G	Existed
3.CHECK HARNESS 1. Disconnect the co	e main line between th CONTINUITY (OPEN Innector of ABS actuat uity between the harne	NCIRCUIT) for and electric unit (c	ontrol unit).	ector M1.
Harness	connector		ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
	8G		15	Existed
YES (Past error)>>E and electr	Check CAN system rror was detected in th ic unit (control unit). e main line between th	e main line between t		and the ABS actuator

LAN-123

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Models without automatic drive positioner
- ECM
- Harness connector E30
- Harness connector M1
- Models with automatic drive positioner
- ECM
- Harness connector E29
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Termi	Resistance (22)	
E10	98	97	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-143, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-13, "BASIC INSPECTION : Special Repair Require-</u> <u>ment"</u>.

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

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

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

< COMPONENT DIAGNO	SIS >	[[CAN SYSTEM (TYPE 5)]
HVAC BRANCH LIN	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000004236908
1. CHECK CONNECTOR			
 Check the terminals an side and connector side the inspection result norm YES >> GO TO 2. 	cable from the negative terr d connectors of the A/C au e). nal?		and loose connection (unit
NO >> Repair the term 2.CHECK HARNESS FOR			
	etween the A/C auto amp. I	narness connector terminals	S.
Connector No.	A/C auto amp. harness connecto	nal No.	Resistance (Ω)
M37	1	2	Approx. 54 – 66
3. CHECK POWER SUPPL Check the power supply and	auto amp. branch line. Y AND GROUND CIRCUI	VC auto amp. Refer to the fo	ollowing.
Is the inspection result norm YES (Present error)>>Rep	display: <u>HAC-186, "A/C AL</u> <u>nal?</u> lace the A/C auto amp. Re	JTO AMP. : Diagnosis Proce	and Installation" (with color
YES (Past error)>>Error w	as detected in the A/C auto er supply and the ground ci	o amp. branch line.	σριαγ).

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STRG BRANCH LINE CIRCUIT

INSPECTION PROCEDURE

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector		
Connector No.	Termi	Resistance (Ω)	
M53	5	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-79, "Wiring Dia-</u> gram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-106, "Removal and Installation"</u>.

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

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

LAN-126

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

BCM BRANCH LIN	ECIRCUIT			Δ
Diagnosis Procedure			INFOID:000000004236910	А
INSPECTION PROCEDUR	E			В
1. CHECK CONNECTOR				
 Turn the ignition switch Disconnect the battery of Check the terminals an connector side). 	able from the negative terr	minal. for damage, bend and loose	e connection (unit side and	С
Is the inspection result norm	al?			D
YES >> GO TO 2. NO >> Repair the termi	nal and connector.			
2. CHECK HARNESS FOR				E
 Disconnect the connect Check the resistance be 	or of BCM. tween the BCM harness co	onnector terminals.		F
	BCM harness connector		Resistance (Ω)	
Connector No.	Termir	nal No.		G
M19	79	78	Approx. 54 – 66	
Is the measurement value wYESYESNO>> Repair the BCM 3. CHECK POWER SUPPL	branch line.	r		Н
Check the power supply and	•	CM. Refer to <u>BCS-41, "Diac</u>	nosis Procedure".	1
YES (Past error)>>Error wa	ace the BCM. Refer to BC		<u>tion"</u> .	J
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DLC BRANCH LINE 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 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	Resistance (12)	
M22	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.

	CIRCUIT		
Diagnosis Procedure			INFOID:00000004236912
NSPECTION PROCEDURE	=		
1. CHECK CONNECTOR	-		
	able from the negative tern		pend and loose connection
s the inspection result norma YES >> GO TO 2. NO >> Repair the termin CHECK HARNESS FOR 0	al and connector.		
Disconnect the connectoCheck the resistance bet		ter harness connector termi	nals.
Con	nbination meter harness connect	tor	
			Resistance (Ω)
Connector No.	Termin	al No.	
M24	21		Resistance (Ω) Approx. 54 – 66
M24 <u>S the measurement value wit</u> YES >> GO TO 3. NO >> Repair the combi	21 hin the specification? nation meter branch line.	al No. 22	
M24 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the combi 3. CHECK POWER SUPPLY Check the power supply and METER : Diagnosis Procedur	21 thin the specification? nation meter branch line. AND GROUND CIRCUIT the ground circuit of the o	al No. 22	Approx. 54 – 66
M24 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the combi 3. CHECK POWER SUPPLY Check the power supply and METER : Diagnosis Procedur <u>s the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error was	21 thin the specification? nation meter branch line. AND GROUND CIRCUIT the ground circuit of the or re". ace the combination meter.	22 22 combination meter. Refer to . Refer to <u>MWI-144, "Remo</u> ion meter branch line.	Approx. 54 – 66

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ABS BRANCH LINE 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 terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi		
E26	26	15	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-79, "Wiring Diagram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-103</u>, "Exploded <u>View"</u>.

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

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

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Diagnosis Procedure			INFOID:00000004236914
NSPECTION PROCEDUR	RE		
1.CHECK CONNECTOR			
 Check the following terr nector side). TCM Harness connector F1 Harness connector E3 the inspection result norm 	cable from the negative tern ninals and connectors for c	minal. Jamage, bend and loose co	nnection (unit side and con-
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
Disconnect the connect Check the resistance be	etween the TCM harness c	onnector terminals.	
	TCM harness connector		
			Resistance (Ω)
Connector No.		nal No.	
F15	32	nal No. 31	Resistance (Ω) Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻	31	
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply an <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	32 <u>within the specification?</u> branch line. Y AND GROUND CIRCUIT d the ground circuit of the <u>ral?</u> lace the TCM. Refer to <u>TM</u>	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply an <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻ d the ground circuit of the <u>tal?</u> lace the TCM. Refer to <u>TM</u> as detected in the TCM bra	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply an <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻ d the ground circuit of the <u>tal?</u> lace the TCM. Refer to <u>TM</u> as detected in the TCM bra	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply an <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻ d the ground circuit of the <u>tal?</u> lace the TCM. Refer to <u>TM</u> as detected in the TCM bra	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply an <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻ d the ground circuit of the <u>tal?</u> lace the TCM. Refer to <u>TM</u> as detected in the TCM bra	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 s the measurement value w YES >> GO TO 3. NO >> Repair the TCM CHECK POWER SUPPL Check the power supply an ROL SYSTEM -". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻ d the ground circuit of the <u>tal?</u> lace the TCM. Refer to <u>TM</u> as detected in the TCM bra	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply an <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻ d the ground circuit of the <u>tal?</u> lace the TCM. Refer to <u>TM</u> as detected in the TCM bra	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66
F15 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply an <u>IROL SYSTEM -"</u> . <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was	32 <u>ithin the specification?</u> branch line. Y AND GROUND CIRCUI ⁻ d the ground circuit of the <u>tal?</u> lace the TCM. Refer to <u>TM</u> as detected in the TCM bra	31 T TCM. Refer to <u>TM-122, "V</u> - <u>166, "Exploded View"</u> . anch line.	Approx. 54 – 66

IPDM-E BRANCH LINE 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 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.		
E17	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-21, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-40, "Removal and Installation".

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

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

LAN-132

COMPONENT DIAGNO	SIS >		[CAN SYSTEM (TYPE 5)
CAN COMMUNICA	ATION CIRCUIT		
Diagnosis Procedure			INFOID:000000042365
NSPECTION PROCEDU	RE		
. Turn the ignition switch			
Disconnect the batteryDisconnect all the unit	cable from the negative ter connectors on CAN commonnectors for damage, ben	unication system.	
s the inspection result norr			
YES >> GO TO 2. NO >> Repair the term	ningland connector		
· '	ninal and connector. NTINUITY (SHORT CIRCU	ШТ)	
	en the data link connector		
	Data link connector		Continuity
Connector No. M22	6	ninal No.	Not existed
s the inspection result norr	-	14	NOT EXISTED
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS CO	ness and repair the root cat NTINUITY (SHORT CIRCU	IIT)	
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS COI Check the continuity betwe	NTINUITY (SHORT CIRCU	IIT)	
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS COI Check the continuity betwe	NTINUITY (SHORT CIRCU	IIT) and the ground.	Continuity
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS CON Check the continuity betwe Data link Connector No.	NTINUITY (SHORT CIRCU en the data link connector	IIT)	Continuity Not existed
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS CO Check the continuity betwe Data link Connector No.	NTINUITY (SHORT CIRCU een the data link connector k connector Terminal No. 6 14	IIT) and the ground.	
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS CON Check the continuity betwe Data link Connector No. M22 So the inspection result norr YES >> GO TO 4. NO >> Check the harr CHECK ECM AND IPDM . Remove the ECM and	NTINUITY (SHORT CIRCU een the data link connector k connector Terminal No. 6 14 mal? ness and repair the root cau M E/R TERMINATION CIRC	IIT) and the ground. Ground use. CUIT	Not existed
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS CON Check the continuity betwe Data link Connector No. M22 So the inspection result norr YES >> GO TO 4. NO >> Check the harr CHECK ECM AND IPDM . Remove the ECM and	NTINUITY (SHORT CIRCU een the data link connector k connector Terminal No. 6 14 mal? Ness and repair the root cau M E/R TERMINATION CIRC the IPDM E/R. between the ECM terminals	IIT) and the ground. Ground Use. CUIT	Not existed
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS CON Check the continuity betwe Data link Connector No. M22 S the inspection result norr YES >> GO TO 4. NO >> Check the harr CHECK ECM AND IPDM Remove the ECM and Check the resistance b	NTINUITY (SHORT CIRCU een the data link connector k connector 6 14 mal? hess and repair the root cau M E/R TERMINATION CIRC the IPDM E/R.	IIT) and the ground. Ground Use. CUIT	Not existed Not existed
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS CON Check the continuity betwe Data link Connector No. M22 Sthe inspection result norr YES >> GO TO 4. NO >> Check the harr CHECK ECM AND IPDM CHECK ECM AND IPDM Remove the ECM and Check the resistance b ECM Terminal No.	NTINUITY (SHORT CIRCU een the data link connector k connector Terminal No. 6 14 mal? Ness and repair the root cau M E/R TERMINATION CIRC the IPDM E/R. between the ECM terminals	IIT) and the ground. Ground Use. CUIT G. (Ω)	Not existed Not existed
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS COI Check the continuity betwe Data link Connector No. M22 Sthe inspection result norr YES >> GO TO 4. NO >> Check the harr CHECK ECM AND IPDM . Remove the ECM and Check the resistance b ECM Terminal No. 98	NTINUITY (SHORT CIRCU een the data link connector k connector 6 14 mal? Ness and repair the root cau M E/R TERMINATION CIRC the IPDM E/R. between the ECM terminals Resistance (IIT) and the ground. Ground use. CUIT 5. (Ω) 132	Not existed Not existed
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS COI Check the continuity betwe Data link Connector No. M22 Sthe inspection result norr YES >> GO TO 4. NO >> Check the harr CHECK ECM AND IPDN Remove the ECM and Check the resistance b ECM Terminal No. 98 Check the resistance b	NTINUITY (SHORT CIRCU een the data link connector k connector Terminal No. 6 14 mal? ness and repair the root cau M E/R TERMINATION CIRC the IPDM E/R. between the ECM terminals Resistance (97 Approx. 108 –	IIT) and the ground. Ground Use. CUIT . (Ω) 132 ninals.	Not existed Not existed
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS COL Check the continuity betwe Data link Connector No. M22 Sthe inspection result norr YES >> GO TO 4. NO >> Check the harr CHECK ECM AND IPDM CHECK ECM AND IPDM Remove the ECM and Check the resistance b ECM Terminal No. 98 Check the resistance b IPDM E/R Terminal No.	NTINUITY (SHORT CIRCU een the data link connector k connector 6 14 mal? ness and repair the root cau M E/R TERMINATION CIRC the IPDM E/R. between the ECM terminals Resistance (97 Approx. 108 – between the IPDM E/R term	IIT) and the ground. Ground Use. CUIT . (Ω) 132 hinals. (Ω)	Not existed Not existed

5. CHECK SYMPTOM

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

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

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.

	NT DIAGNO			
AIN LINE BET	WEEN ADP A	ND HVAC CIRC	CUIT	
iagnosis Proced	ure			INFOID:000000004236882
SPECTION PROCE	EDURE			
.CHECK CONNECT	OR			
Check the followir and harness side). Harness connecto Harness connecto the inspection result (ES >> GO TO 2. NO >> Repair the CHECK HARNESS	r B1 r M6 normal? terminal and connect CONTINUITY (OPEN lowing harness conne- rs B208 and B32 rs B1 and M6	nectors for damage, b or. I CIRCUIT)	bend and loose conne	ection (connector side
	ity between the harnes		connector	
	-		connector Terminal No.	Continuity
Harness Connector No.	connector	Harness of Connector No.		Continuity Existed
Harness Connector No. B32 the inspection result	connector Terminal No. 9 10	Harness	Terminal No.	
Harness Connector No. B32 the inspection result (ES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the con	connector Terminal No. 9 10	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp.	Terminal No. 15J 16J B32 and B1.	Existed
Harness Connector No. B32 the inspection result (ES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the con Check the continu	connector Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN nnector of A/C auto ar	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the	Terminal No. 15J 16J B32 and B1.	Existed Existed
Harness Connector No. B32 the inspection result (ES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the con Check the continu	connector Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN nnector of A/C auto ar ity between the harnes	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the	Terminal No. 15J 16J B32 and B1. A/C auto amp. harnes	Existed
Harness Connector No. B32 the inspection result (ES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the con Check the continu Harness Connector No.	connector Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN nnector of A/C auto ar ity between the harnes	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the A/C auto amp. ha Connector No.	Terminal No. 15J 16J B32 and B1. A/C auto amp. harnes	Existed Existed
Harness Connector No. B32 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS Disconnect the con Check the continu Harness	connector Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN nnector of A/C auto ar ity between the harnes connector Terminal No. 15J 16J	Harness of Connector No. B1 e harness connectors I CIRCUIT) mp. ss connector and the A/C auto amp. ha	Terminal No. 15J 16J B32 and B1. A/C auto amp. harnes arness connector Terminal No.	Existed Existed ss connector. Continuity

LAN-135

MAIN LINE BETWEEN HVAC AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004236883

[CAN SYSTEM (TYPE 6)]

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
- A/C auto amp.
- 4. Check the continuity between the A/C auto amp. harness connector and the data link connector.

A/C auto amp. h	arness connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M22	6	Existed
10137	2	IVIZZ	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 A/C auto amp. and the data link connector.

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

	MAIN LINE BET	WEEN DLC AN		
< COMPONENT DIA			-	SYSTEM (TYPE 6)]
MAIN LINE BET	I WEEN DLC A	ND ABS CIRCU		
Diagnosis Procec	lure			INFOID:000000004236884
INSPECTION PROC	EDURE			
1.CHECK CONNECT	TOR			
 Check the following and harness side) Harness connector Harness connector Harness connector Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the hard 	Ittery cable from the non- ng terminals and con- or M1 or E30 <u>t normal?</u> e terminal and connect	nectors for damage, I tor. N CIRCUIT) and E30.		ection (connector side
Data link	connector	Harness	connector	.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G 8G	Existed
3.CHECK HARNESS 1. Disconnect the co	e main line between th CONTINUITY (OPEN nnector of ABS actua ity between the harne	N CIRCUIT) tor and electric unit (c	ontrol unit).	ector M1.
	connector		ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
Is the inspection result	8G		15	Existed
YES (Present error)> YES (Past error)>>E and electr	>Check CAN system rror was detected in th ic unit (control unit). main line between the main line between t	e main line between t		r and the ABS actuator tuator and electric unit

LAN-137

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Models without automatic drive positioner
- ECM
- Harness connector E30
- Harness connector M1
- Models with automatic drive positioner
- ECM
- Harness connector E29
- Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

	ECM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E10	98	97	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-143, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to <u>EC-13, "BASIC INSPECTION : Special Repair Require-</u> <u>ment"</u>.

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

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

ADP BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:000000004236886
CHECK CONNECTOR			_
	able from the negative terr ninals and connectors for d		nnection (unit side and con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of driver seat control unit tween the driver seat contr		erminals.
	er seat control unit harness conne		Resistance (Ω)
Connector No.	Termir		
B203	1	17	Approx. 54 – 66
	ithin the specification?		
YES >> GO TO 3.	r seat control unit branch li		
YES >> GO TO 3. NO >> Repair the drive 3. CHECK POWER SUPPL Check the power supply and	r seat control unit branch li Y AND GROUND CIRCUIT the ground circuit of the dr	-	to ADP-46, "DRIVER SEAT
YES >> GO TO 3. NO >> Repair the driver CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis	r seat control unit branch li Y AND GROUND CIRCUIT the ground circuit of the dr <u>Procedure</u> ".	-	to <u>ADP-46, "DRIVER SEAT</u>
YES >> GO TO 3. NO >> Repair the driver CHECK POWER SUPPLY Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	r seat control unit branch li Y AND GROUND CIRCUIT the ground circuit of the dr <u>Procedure</u> ". al? ace the driver seat control	- iver seat control unit. Refer unit. Refer to <u>ADP-193, "R</u> at control unit branch line.	
YES >> GO TO 3. NO >> Repair the driver CHECK POWER SUPPLY Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	r seat control unit branch li Y AND GROUND CIRCUIT the ground circuit of the dr <u>Procedure</u> ". al? ace the driver seat control as detected in the driver se	- iver seat control unit. Refer unit. Refer to <u>ADP-193, "R</u> at control unit branch line.	
YES >> GO TO 3. NO >> Repair the driver CHECK POWER SUPPLY Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	r seat control unit branch li Y AND GROUND CIRCUIT the ground circuit of the dr <u>Procedure</u> ". al? ace the driver seat control as detected in the driver se	- iver seat control unit. Refer unit. Refer to <u>ADP-193, "R</u> at control unit branch line.	
YES >> GO TO 3. NO >> Repair the driver CHECK POWER SUPPLY Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	r seat control unit branch li Y AND GROUND CIRCUIT the ground circuit of the dr <u>Procedure</u> ". al? ace the driver seat control as detected in the driver se	- iver seat control unit. Refer unit. Refer to <u>ADP-193, "R</u> at control unit branch line.	

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004236889

[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 A/C auto 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 A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

	A/C auto amp. harness connecto	r	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 A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to the following.

Models with color display: <u>HAC-63, "A/C AUTO AMP. : Diagnosis Procedure"</u>

Models with monochrome display: <u>HAC-186. "A/C AUTO AMP. : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to <u>HAC-123</u>, "<u>Removal and Installation</u>" (with color display) or <u>HAC-231</u>, "<u>Removal and Installation</u>" (with monochrome display).

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

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

STRG BRANCH LIN	IE CIRCUIT		
Diagnosis Procedure			INFOID:00000004236890
INSPECTION PROCEDURI	E		
1.CHECK CONNECTOR			
	able from the negative terr connectors of the steering	minal. g angle sensor for damage, l	pend and loose connection
s the inspection result norma	al?		
YES >> GO TO 2. NO >> Repair the termin			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	r of staaring angle concer		
		sensor harness connector te	rminals.
 Check the resistance bet 		sensor harness connector te	
2. Check the resistance bet Stee Connector No.	tween the steering angle s	ector nal No.	Resistance (Ω)
2. Check the resistance bet Stee Connector No. M53	tween the steering angle s ring angle sensor harness conne Termin 5	sensor harness connector tel	
2. Check the resistance bet Stee Connector No. M53 <u>s the measurement value wi</u> YES >> GO TO 3. NO >> Repair the steeri	tween the steering angle s ring angle sensor harness conne Termin 5 thin the specification? ng angle sensor branch lir	sensor harness connector tel ector nal No. 2	Resistance (Ω)
Check the resistance bet Steel Connector No. M53 s the measurement value wir YES >> GO TO 3. NO >> Repair the steeri CHECK POWER SUPPLY Check the power supply and ram".	tween the steering angle sensor harness connecting angle sensor harness connection in the specification? Ing angle sensor branch ling AND GROUND CIRCUIT the ground circuit of the ground circuit of	eensor harness connector ter ector nal No. 2 ne. F	Resistance (Ω) Approx. 54 – 66
2. Check the resistance bet Steel Connector No. M53 Sthe measurement value wi YES >> GO TO 3. NO >> Repair the steeri 3.CHECK POWER SUPPLY Check the power supply and gram". S the inspection result normal YES (Present error)>>Replat YES (Past error)>>Error wa	tween the steering angle sensor harness connecting angle sensor harness connecting angle sensor harness connecting angle sensor branch limeration of the ground circuit of the g	sensor harness connector ter ector nal No. 2 ne. 5 5 5 5 5 5 5 5 5 6 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	Resistance (Ω) Approx. 54 – 66 er to <u>BRC-79, "Wiring Dia-</u>

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BCM BRANCH LINE 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 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.		
M19	79	78	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-87, "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

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNO	2002		
LC BRANCH LIN	E CIRCUIT		
agnosis Procedure			INFOID:00000004236892
SPECTION PROCEDUI	RE		
.CHECK CONNECTOR			
. Turn the ignition switch	OFF.		
. Disconnect the battery	cable from the negative term		e, bend and loose connection
(connector side and ha		ik connector for damage	
s the inspection result norn	nal?		
YES >> GO TO 2. NO >> Repair the term	ninal and connector.		
CHECK HARNESS FOR	R OPEN CIRCUIT		
heck the resistance betwe	een the data link connector te	erminals.	
	Data link connector		Resistance (Ω)
Connector No.	Termina		
M22	6	14	Approx. 54 – 66

M&A BRANCH LINE CIRCUIT

INFOID:000000004236893

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 terminals and connectors of the combination meter 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to <u>MWI-37, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-144, "Removal and Installation".

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

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

	SIS >	Ľ	CAN SYSTEM (TYPE 6)]
ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000004236894
INSPECTION PROCEDUR	E		
1.CHECK CONNECTOR			
 Check the terminals and and loose connection (u <u>Is the inspection result norm</u> YES >> GO TO 2. 	able from the negative terr I connectors of the ABS ac nit side and connector side al?	ctuator and electric unit (con	trol unit) for damage, bend
NO >> Repair the termi 2.CHECK HARNESS FOR			
nals. ABS actuator a	and electric unit (control unit) har	ness connector	Bosistance (0)
Connector No.			
	Termin	nal No.	Resistance (Ω)
E26	26	nal No. 15	Approx. 54 – 66
E26 Is the measurement value w YES >> GO TO 3.	26 ithin the specification?	15	
E26 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS	26 ithin the specification? actuator and electric unit (15 control unit) branch line.	
E26 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply and	26 ithin the specification? actuator and electric unit (Y AND GROUND CIRCUIT	15 control unit) branch line.	Approx. 54 – 66
E26 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply and BRC-79, "Wiring Diagram".	26 ithin the specification? actuator and electric unit (Y AND GROUND CIRCUIT d the ground circuit of the	15 control unit) branch line.	Approx. 54 – 66
E26 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply and BRC-79, "Wiring Diagram". Is the inspection result norm YES (Present error)>>Repl	26 ithin the specification? actuator and electric unit (Y AND GROUND CIRCUIT d the ground circuit of the al?	15 control unit) branch line.	Approx. 54 – 66 unit (control unit). Refer to
E26 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply and BRC-79, "Wiring Diagram". Is the inspection result norm YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error wa	26 ithin the specification? actuator and electric unit (Y AND GROUND CIRCUIT d the ground circuit of the al? ace the ABS actuator and b	15 control unit) branch line. Γ ABS actuator and electric electric unit (control unit). Re uator and electric unit (contr	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-103, "Exploded</u>
E26 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply and BRC-79, "Wiring Diagram". Is the inspection result norm YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error was	26 ithin the specification? actuator and electric unit (Y AND GROUND CIRCUIT d the ground circuit of the al? ace the ABS actuator and a as detected in the ABS actu	15 control unit) branch line. Γ ABS actuator and electric electric unit (control unit). Re uator and electric unit (contr	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-103, "Exploded</u>

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TCM BRANCH LINE 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 (unit side and connector side).
- TCM
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of TCM.

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

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
F15	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

 ${
m 3.}$ Check power supply and ground circuit

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-122, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to <u>TM-166, "Exploded View"</u>.
- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

INSPECTION 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 (u 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. harness connector terminals. IPDM E/R harness connector Connector No. E17 40 39 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-21. "Diagnosis Procedu	IECK 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 (u 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) E17 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				
 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 (u 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. 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 	urn the ignition switch OFF			
$\begin{array}{rcl} YES & >> GO TO 2. \\ NO & >> Repair the terminal and connector. \\ \hline 2. CHECK HARNESS FOR OPEN CIRCUIT \\ \hline 1. Disconnect the connector of IPDM E/R. \\ \hline 2. Check the resistance between the IPDM E/R harness connector terminals. \\ \hline \hline & IPDM E/R harness connector \\ \hline & Connector No. \\ \hline & E17 & 40 & 39 & Approx. 108 - 132 \\ \hline & Is the measurement value within the specification? \\ YES & >> GO TO 3. \\ NO & >> Repair the IPDM E/R branch line. \\ \hline 3. CHECK POWER SUPPLY AND GROUND CIRCUIT \\ \hline \end{array}$	isconnect the battery cable find the terminals and connect the terminals are the terminals and the terminals are			d loose connection (unit side
$\begin{array}{llllllllllllllllllllllllllllllllllll$	inspection result normal?			
$\begin{array}{c c} 2. \mbox{CHECK HARNESS FOR OPEN CIRCUIT} \\ \hline 1. \mbox{Disconnect the connector of IPDM E/R.} \\ \hline 2. \mbox{Check the resistance between the IPDM E/R harness connector terminals.} \\ \hline \hline & IPDM E/R harness connector & Resistance (\Omega) \\ \hline & IPDM E/R harness connector & Resistance (\Omega) \\ \hline & IPDM E/R harness connector & Resistance (\Omega) \\ \hline & ITT & 40 & 39 & Approx. 108 - 132 \\ \hline & Is the measurement value within the specification? \\ YES >> GO TO 3. \\ NO >> Repair the IPDM E/R branch line. \\ \hline & 3. CHECK POWER SUPPLY AND GROUND CIRCUIT \\ \hline \end{array}$		d connector.		
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. E17 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	•			
Connector No. Terminal No. E17 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			ess connector terminals.	Resistance (Q)
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	Connector No.	Termir	nal No.	
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT	E17	40	39	Approx. 108 – 132
Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-21, "Diagnosis Procedu	>> GO TO 3. >> Repair the IPDM E/R I	oranch line.	r	
		round circuit of the IF	PDM E/R. Refer to PCS-2	1, "Diagnosis Procedure".
Is the inspection result normal?				
YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-40, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit.	(Past error)>>Error was dete	ected in the IPDM E/	R branch line.	Installation".
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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INSPECTION 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.	Terminal No.		Continuity
M22	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
 M22	6	Giouna	Not existed
MZZ	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.		
98	97	Approx. 108 – 132

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

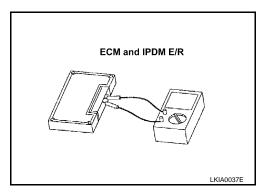
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM



CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 6)]
Connect all the connectors. Check if the symptoms described in the "Sympto customer)" are reproduced.	m (Results from interview with A
Inspection result	
Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	procedure when past error is B
6. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF.	C
2. Disconnect the battery cable from the negative terminal.	
3. Disconnect one of the unit connectors of CAN communication system.	D
 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 sympton (Results from interview with customer)" are reproduced. NOTE: 	ns described in the "Symptom $_{ extsf{E}}$
Although unit-related error symptoms occur, do not confuse them with othe	er symptoms.
Inspection result	F
Reproduced>>Connect the connector. Check other units as per the above pro Non-reproduced>>Replace the unit whose connector was disconnected.	G

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