SECTION LAN SYSTEM

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CAN COMMUNICATION CIRCUIT

< PRECAUTION > PRECAUTION А PRECAUTIONS Precautions for Trouble Diagnosis INFOID:000000007252594 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:000000007252595 • 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 • Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

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SYSTEM DESCRIPTION CAN COMMUNICATION SYSTEM

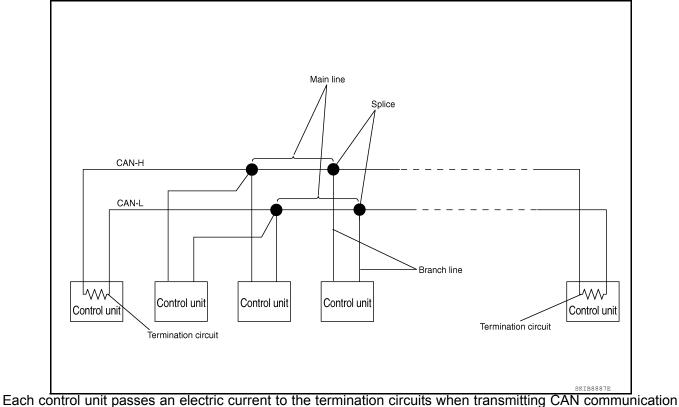
System Description

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- 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



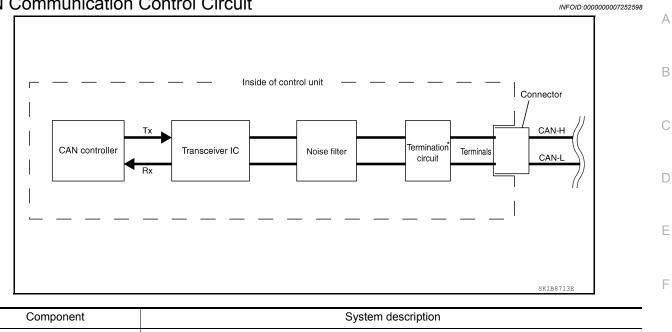
signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

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".

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

CAN Communication Control Circuit



Component	Oystern description	
CAN controller	It controls CAN communication signal transmission and reception, error detection, etc.	G
Transceiver IC	It converts digital signal into CAN communication signal, and CAN communication signal into digital signal.	
Noise filter	It eliminates noise of CAN communication signal.	Н
Termination circuit [*] (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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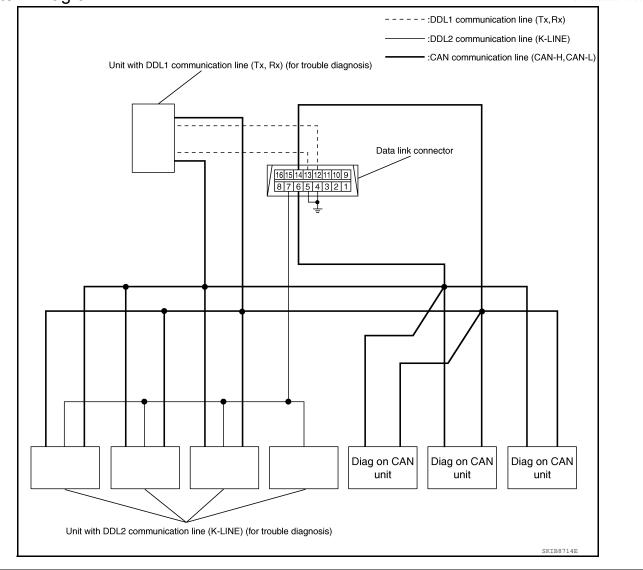
DIAG ON CAN

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]

[CAN FUNDAMENTAL]

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< SYSTEM DESCRIPTION >

TROUBLE DIAGNOSIS

Condition of Error Detection

DTC (e.g. U1000 and U1001) of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT if a CAN communication signal is not transmitted or received between units for 2 seconds or more.

CAN COMMUNICATION SYSTEM ERROR

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

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

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

CAUTION:

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

Symptom When Error Occurs in CAN Communication System

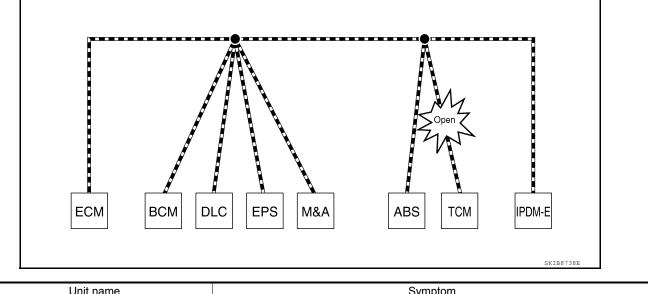
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to <u>LAN-20</u>, "Abbreviation List" for the unit abbreviation.

Example: TCM branch line open circuit



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

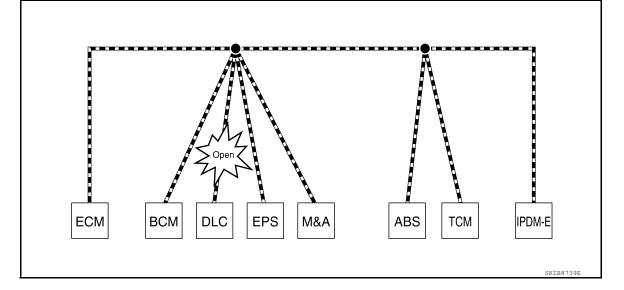


< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Symptom			
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:

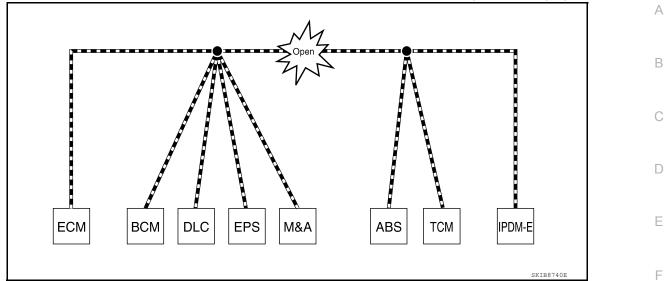
- When data link connector branch line is open, transmission and reception of CAN communication signals are not affected. Therefore, no symptoms occur. However, be sure to repair malfunctioning circuit.
- The model (all units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with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

< SYSTEM DESCRIPTION >

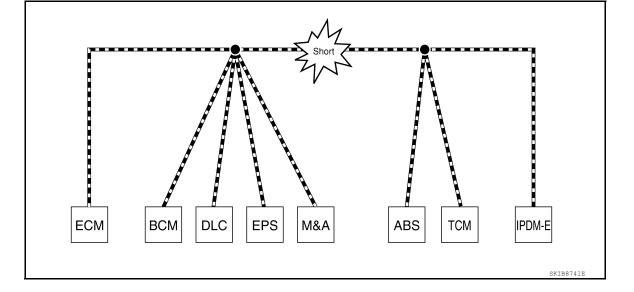
[CAN FUNDAMENTAL]

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.					
ВСМ	 Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. 					
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



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< SYSTEM DESCRIPTION >

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

INFOID:000000007252603

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

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

Self-Diagnosis

INFOID:000000007252604

If communication signals cannot be transmitted or received among units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT "Self Diagnostic Result" screen. **NOTE:**

The following table shows examples of CAN communication-related DTC. For other DTC, refer to the applicable sections.

DTC	Self-diagnosis item (CONSULT indication)		DTC detection condition	Inspection/Action
111000	U1000 CAN COMM CIRCUIT Except When a control unit (except for ECM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.		
01000		for ECM transmitting or receiving CAN communication		Start the inspection. Re- fer to the applicable sec- tion of the indicated
U1001	CAN COMM CIRCUIT	cation sig	M is not transmitting or receiving CAN communi- nal other than OBD (emission-related diagnosis) onds or more.	
U1002	SYSTEM COMM	When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less.		
U1010	CONTROL UNIT(CAN)	When an CAN con	Replace the control unit indicating "U1010".	

CAN Diagnostic Support Monitor

MONITOR ITEM (CONSULT)

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< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

Withou	t PAST		With	PAST			
ECM		EC	M				
	PRSNT F	PAST		PRSNT	PAST		
INITIAL DIAG	OK		TRANSMIT DIAG	¦OK	¦OK		
TRANSMIT DIAG	OK		VDC/TCS/ABS	[-]-		
ТСМ	OK		METER/M&A	¦ OK	¦OK		
VDC/TCS/ABS	UNKWN		BCM/SEC	OK	OK		
METER/M&A	OK		ICC	-	-		
ICC	UNKWN		HVAC	 -			
BCM/SEC	OK		ТСМ	l ok	¦ΟK		
IPDM E/R	OK		EPS	[-]-		
			IPDM E/R	OK	OK		
			e4WD		<u>j</u> -		
			AWD/4WD	OK	OK	1	

Without PAST

Item	PRSNT	Description	0
Initial diagnosia	OK	Normal at present	
Initial diagnosis	NG	Control unit error (Except for some control units)	
	OK	Normal at present	
Transmission diagnosis		Unable to transmit signals for 2 seconds or more.	
	UNKWN	Diagnosis not performed	
	OK	Normal at present	
Control unit name		Unable to receive signals for 2 seconds or more.	
(Reception diagnosis)	UNKWN	Diagnosis not performed	
		No control unit for receiving signals. (No applicable optional parts)	

With PAST

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

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

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

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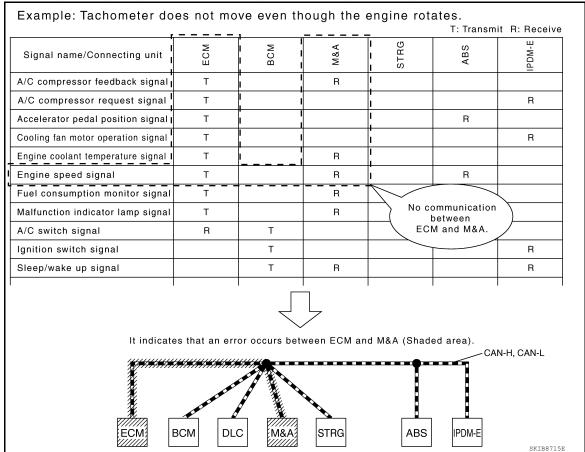
Example: Vehicle Display

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 bee run.)	
CAN_CIRC_1 (Transmission diagnosis)	OK	0	Normal at present	
	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)		1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has beer run.)	
	UNKWN		Diagnosis not performed.	
			No control unit for receiving signals. (No applicable optiona parts)	

How to Use CAN Communication Signal Chart

INFOID:000000007252606

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.



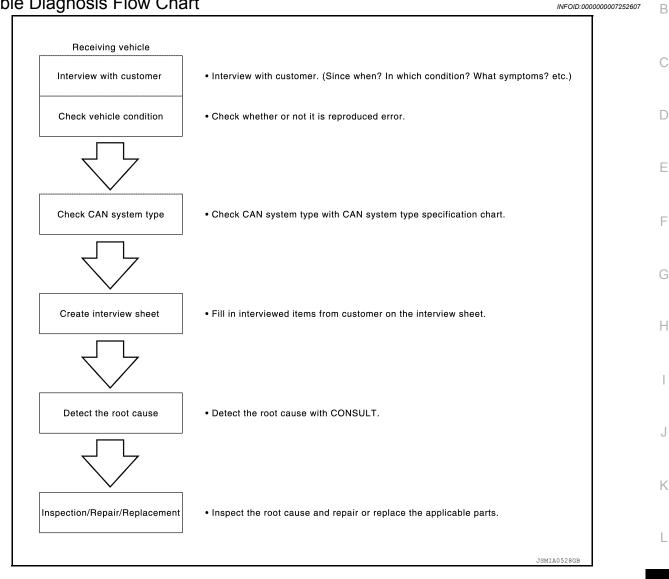
< BASIC INSPECTION >

[CAN FUNDAMENTAL]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

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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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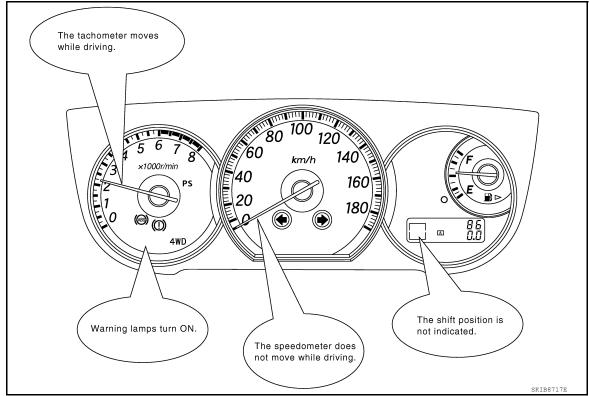
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[CAN FUNDAMENTAL]

• 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.

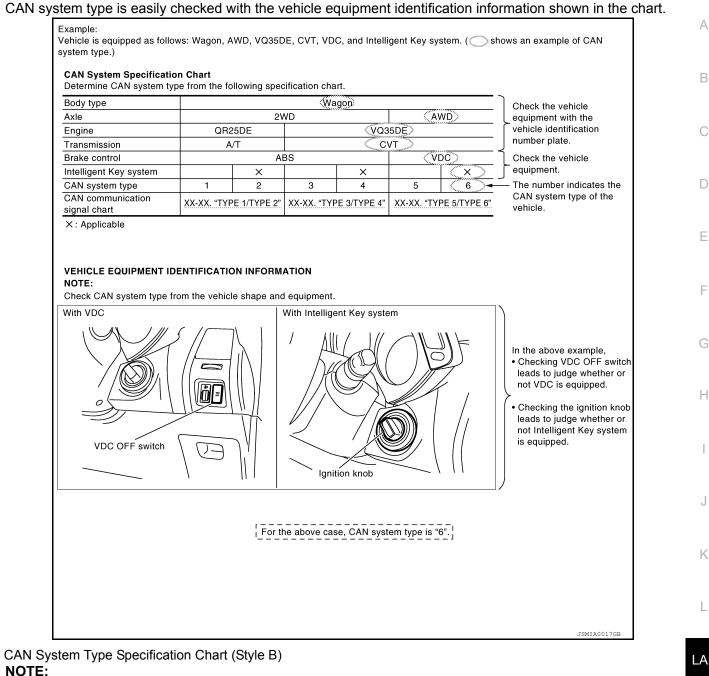
NOTE:

- This chart is used if CONSULT 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]

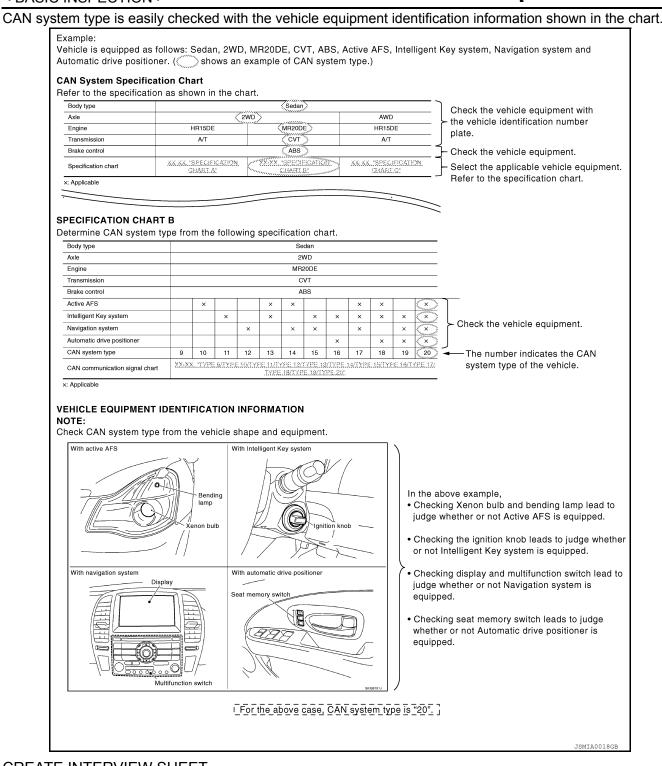


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[CAN FUNDAMENTAL]



CREATE INTERVIEW SHEET

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

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Interview Sheet (Example)
CAN Communication System Diagnosis Interview Sheet
Date received: 3, Feb. 2006
Type: DBA-KG11 VIN No.: KG11-005040

		Date received:	3, Feb. 2006]
Туре:	DBA-KG11] VIN No.:	KG11-005040]
Model:	BDRARGZ397EDA-E-J-]
First registration:	10, Jan. 2001] Mileage:	62,140]
CAN syste	m type: Type 19]		
Symptom (Re	sults from interview with cust	omer)		,
	es suddenly turn ON while dri e does not restart after stopp	-	ng the ignition	
	ng fan continues rotating while	e turning the ignition swit	ch ON.	
Condition at in	nspection			_
Error Sympto	om: Present / Past			
While turni • The head	e does not start. ng the ignition switch ON, lamps (Lo) turn ON, and the o or lamp does not turn ON.	cooling fan continues rot	ating.	
				JSMIA0019GB

DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

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HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

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[CAN]

• 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:000000007252610

Unit name abbreviations in CONSULT 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			

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PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT **PRF-TENSIONER**" INFOID:000000007252611

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 D air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Trouble Diagnosis

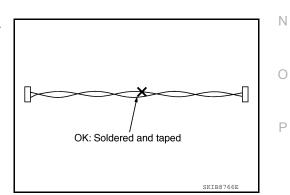
CAUTION:

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

Precautions for Harness Repair

 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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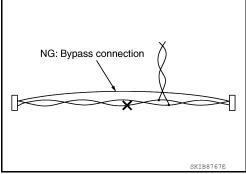
LAN

PRECAUTIONS

< PRECAUTION >

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

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]

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

ew Sneet	INFOID:000000007252615	В
CAN Communication System Diagnosis Interview Sheet		
Date received:		С
		C
Type: VIN No.:		_
Model:		E
First registration: Mileage:		F
CAN system type:		G
Symptom (Results from interview with customer)		Н
		1
		I
		J
		K
Condition at inspection		L
Error symptom : Present / Past		LA
		N
		0
		P
SI	KIB8898E	

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

INFOID:000000007252616

Determine CAN system type from the following specification chart. **NOTE:**

Refer to LAN-15, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type			Se	edan		
Axle			2	WD		
Engine			VQ:	35DE		
Transmission			С	VT		
Brake control			V	DC		
Destination		Except f	or Mexico		For N	lexico
Automatic drive positioner		×		×		×
Color display			×	×		×
CAN system type	1	2	3	4	5	6

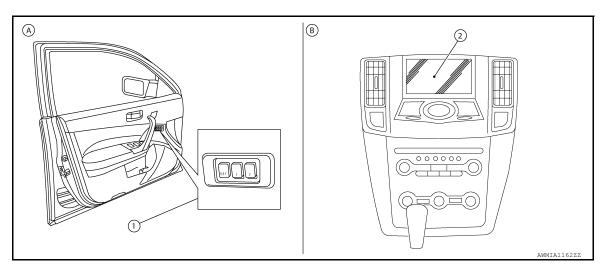
 \times : Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Α.

Check CAN system type from the vehicle shape and equipment.



- 1. Seat memory switches
- 2. Color display
- With automatic drive positioner B. With color display

CAN Communication Signal Chart

INFOID:000000007252617

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 F	R: Receive
Signal name/Connecting unit	ECM	ADP	BCM	M&A	AV	HVAC	STRG	ABS	TCM	IPDM-E
A/C compressor request signal	Т									R
Accelerator pedal position signal	Т							R	R	

< SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	ADP	BCM	M&A	AV	HVAC	STRG	ABS	TCM	IPDM-E	/
ASCD CRUISE indicator signal	Т			R							
ASCD SET indicator signal	Т			R							ŀ
Closed throttle position signal	Т								R		
Cooling fan speed request signal	Т									R	(
Engine and CVT integrated control signal	T R								R T		
Engine coolant temperature signal	T		R	R	R	R		R	R		l
Engine speed signal	Т			R	R	R		R	R		
Engine status signal	Т		R								
	Т			R							
Fuel consumption monitor signal				Т	R						
Fuel filler cap warning display signal	Т			R							
Malfunction indicator lamp signal	Т			R							
Power generation command value signal	Т									R	
		Т	Т		R						
System setting signal		R	R		Т						
A/C switch signal	R		Т			Т					
Blower fan motor switch signal	R		Т			Т					
Steering angle sensor signal					R ^{*1}		Т	R			
Buzzer output signal			Т	R							
Cornering lamp request signal			Т							R	
Day time running light request signal			Т			R				R	
Door lock/unlock status signal		R	Т								
Door switch signal		R	Т	R	R					R	
Front fog light request signal			Т	R		R				R	
Front wiper request signal			Т			R		R		R	
High beam request signal			Т	R		R		R		R	
Horn chirp signal			Т							R	
		R	Т							R	
Ignition switch signal			R							Т	L
Key fob door unlock signal		R	Т								
Key fob ID signal		R	Т								
Key switch signal		R	Т								
Key warning signal			Т	R							
Low beam request signal			Т			R				R	
			Т	R							
Oil pressure switch signal			R	R						Т	
Position light request signal			Т	R		R		R		R	
			Т			R				R	
Rear window defogger control signal	R				R	R				Т	
Rear window defogger switch signal			Т			R				R	
Sleep wake up signal		R	Т	R						R	
Stop lamp switch signal			т						R		

Revision: August 2012

[CAN]

< SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	ADP	BCM	M&A	AV	HVAC	STRG	ABS	TCM	IPDM-E
Theft warning horn request signal			Т							R
Trunk switch signal			Т	R	R					
Turn indicator signal			Т	R		R		R		
Distance to empty signal				Т	R					
Fuel filler cap warning reset signal	R			Т						
Fuel level low warning signal				Т	R					
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				Т	R					
Non manual mode signal				Т					R	
Paddle shifter shift down signal ^{*2}				Т					R	
Paddle shifter shift up signal ^{*2}				Т					R	
Parking brake switch signal			R	т	R			R		
Seat belt buckle switch signal			R	Т						
			R	Т						-
Sleep-ready signal			R							Т
	R	R	R	Т	R					R
Vehicle speed signal			R	R				Т	R	
					Т	R				
A/C control signal					R	Т				
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
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

< SYSTEM DESCRIPTION >

Signal name/Connecting unit	ECM	ADP	BCM	M&A	AV	HVAC	STRG	ABS	TCM	IPDM-E	A
Low beam status signal	R				R					Т	_
Push-button ignition switch status signal			R							Т	В
Steering lock unit status signal			R							Т	

*1: Models with rear view monitor

*²: 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.

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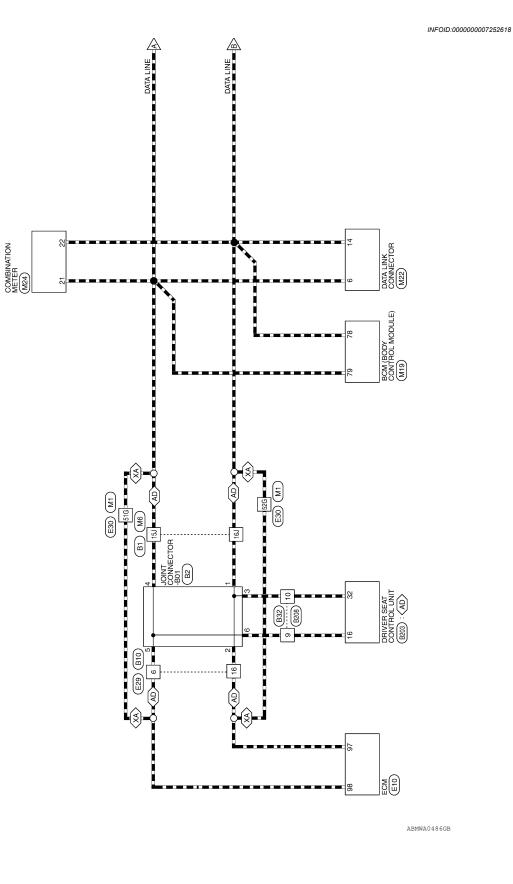
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< WIRING DIAGRAM > WIRING DIAGRAM

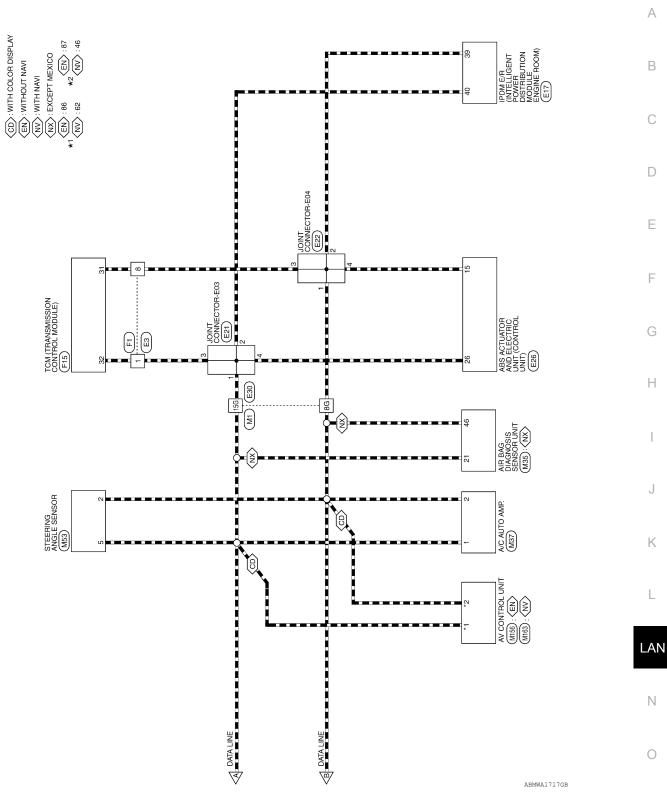
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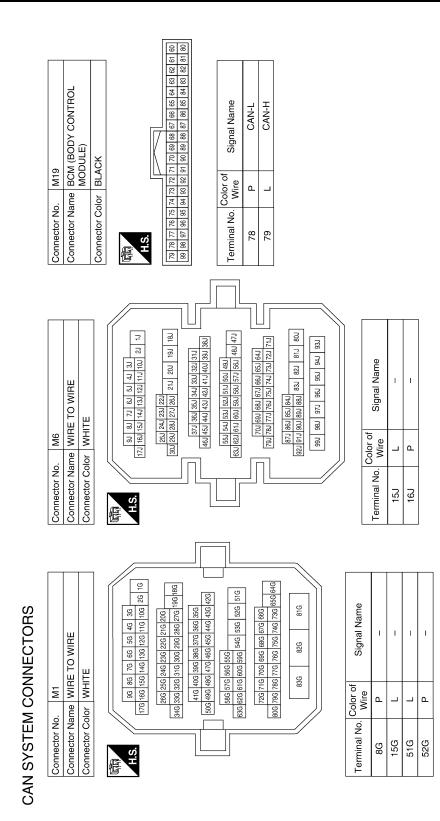




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< WIRING DIAGRAM >	[CAN]
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Connector No. M35 Connector Name AIR BAG DIAGNOS Connector Name SENSOR UNIT Connector Name SENSOR UNIT Connector Name Sensor Name Terminal No. Vilie Signal Nam 21 L CAN-H 23 L CAN-H 246 M156 Connector Name M156 MitHour Navii) Connector Name M156 Signal Name Signal Name Signal Name Signal Name Signal Name Signal Name Signal Name P Contractor Name P Signal Name Signal Name	E
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i ANGLE SENS Signal Name CAN-H CAN-H CAN-H CAN-L CAN-L CAN-L CAN-L CAN-L CAN-L	G
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No. No. M24 No. Name COI WH No. No. No. No. No. M53 S2 S2 Name S1 S2 S2 No. M53 S2 S2 No. M53 S2 S2 Name STE N N No. M53 S2 S2 No. M53 S2 S2 Name STE N N No. M53 S2 S2 No. M53 S2 S2 S2 No. N N N N	I
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	K
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b E10 b ECM BLACK BLACK 86 893 97/101 105 109 86 894 98 102 106 110 87 91 95 99/100 107 111 88 89 1001 04 108 112	e Signal Name CAN-L CAN-L	E22 JOINT CONNECTOR-E04 WHITE	of Signal Name
Connector No. E10 Connector Name ECM Connector Color BLAC	Terminal No. Color of Wire 97 P 98 L	Connector No. E Connector Name J Connector Color V H.S	Terminal No. Color of Mire 2 P
Connector No. E3 Connector Name WIRE TO WIRE Connector Color WHITE Image: State of the stateof the state of the state of the state of the stateof the s	Terminal No. Color of Wire Signal Name 1 L - 8 P -	Connector No. E21 Connector Name JOINT CONNECTOR-E03 Connector Color WHITE Image: State of the stat	Terminal No. Color of Wire Signal Name 1 L - 2 L - 3 L -
Connector No. M163 Connector Name AV CONTROL UNIT Connector Color WHITE Connector Color WHITE	Terminal No. Color of Signal Name 46 P CAN-L 62 L CAN-H	Connector No. E17 Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM) Connector Color WHITE	Terminal No.Color of WireSignal Name39PCAN-L40LCAN-H

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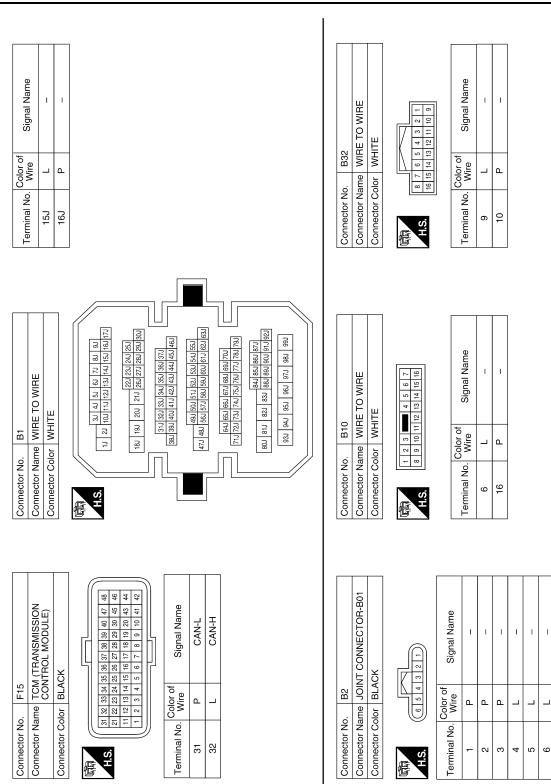
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Signal Name	С
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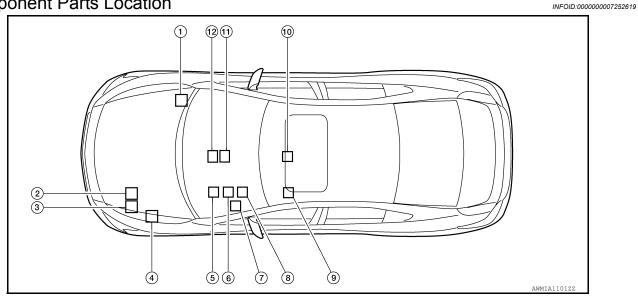
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TO WIRE			5 6 7 8 13 14 15 16	Signal Name
Connector Name WIRE TO WIRE Connector Color WHITE	olor WHITE		1 2 3 4 5 9 10 11 12 13	Color of Wire O/V GR/B
	Connector Né	Connector Color WHITE	品.S.H	Terminal No. 9 10
	TROL		1 10	e
	DRIVER SEAT CONTROL		0 11 12 13 14 15 16 5 27 28 29 30 31 32	Signal Name CAN-H CAN-L
υ			6 7 8 9 22 23 24 25 26	Color of Wire O/V GR/B
	Connector Name	Connector Color	H.S. 17 18 19 20 21 5	Terminal No. 16 32
	<u> ŏ</u>	<u> </u> 3		Ĕ

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DTC/CIRCUIT DIAGNOSIS CAN COMMUNICATION SYSTEM

Component Parts Location



- 1. ABS actuator and electric unit (con- 2. trol unit) E26
- 4. IPDM E/R E17
- 7. Data link connector M22
- 10. Air bag diagnosis sensor unit M35
- 2. TCM F15
- 5. BCM M19
- 8. Steering angle sensor M53
- 11. A/C auto amp. M37
- 3. ECM E10
- 6. Combination meter M24
- 9. Driver seat control unit B203
- 12. AV control unit
 - M156: Without navigation system M163: With navigation system

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

MALFUNCTION AREA CHART

Main Line

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Malfunction area	Reference	
Main line between driver seat control unit and data link connector	LAN-38. "Diagnosis Procedure"	
Main line between data link connector and A/C auto amp.	LAN-39, "Diagnosis Procedure"	
Main line between A/C auto amp. and ABS actuator and electric unit (control unit)	LAN-40. "Diagnosis Procedure"	
Main line between A/C auto amp. and air bag diagnosis sensor unit	LAN-41. "Diagnosis Procedure"	
Main line between air bag diagnosis sensor unit and ABS actuator and electric unit (control unit)	LAN-42, "Diagnosis Procedure"	

Branch Line

INFOID:000000007252621

Malfunction area	Reference	F
ECM branch line circuit	LAN-43, "Diagnosis Procedure"	
Driver seat control unit branch line circuit	LAN-44, "Diagnosis Procedure"	
BCM branch line circuit	LAN-45, "Diagnosis Procedure"	G
Data link connector branch line circuit	LAN-46, "Diagnosis Procedure"	
Combination meter branch line circuit	LAN-47, "Diagnosis Procedure"	H
AV control unit branch line circuit	LAN-48, "Diagnosis Procedure"	
A/C auto amp. branch line circuit	LAN-49, "Diagnosis Procedure"	
Steering angle sensor branch line circuit	LAN-50, "Diagnosis Procedure"	
Air bag diagnosis sensor unit branch line circuit	LAN-51, "Diagnosis Procedure"	
ABS actuator and electric unit (control unit) branch line circuit	LAN-52, "Diagnosis Procedure"	
TCM branch line circuit	LAN-53, "Diagnosis Procedure"	J
IPDM E/R branch line circuit	LAN-54, "Diagnosis Procedure"	

Short Circuit

Malfunction area	Reference
CAN communication circuit	LAN-55. "Diagnosis Procedure"

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MAIN LINE BETWEEN ADP AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000007252623

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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
D32	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)

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

Harness	connector	Data link	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M6	15J	M22	6	Existed
OIVI	16J	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 driver seat control unit and the data link connector.

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

Ν	AIN LINE BET	WEEN DLC AND	HVAC CIRCUIT	
< DTC/CIRCUIT DIAG	SNOSIS >			[CAN]
MAIN LINE BET	WEEN DLC A	ND HVAC CIRC	CUIT	
Diagnosis Proced	ure			INFOID:000000007252624
1.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
	tery cable from the n owing harness conne		A/C auto amp. harnes	
	,			ss connector.
	-	A/C auto amp. ha	arness connector	
4. Check the continui	-	A/C auto amp. ha Connector No.	arness connector Terminal No.	SS CONNECTOR.
4. Check the continui Data link	connector			

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 A/C auto amp.

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

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MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000007252625

[CAN]

1.CHECK CONNECTOR

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

- A/C auto amp.
- Harness connectors M1 and E30
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
10137	2		8G	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the A/C auto amp. 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
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 A/C auto amp. 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).

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- A/C auto amp.
- Harness connectors M1 and E30
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.

A/C auto amp. h	arness connector	Harness	connector	Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	F
M37	1	M1	15G	Existed	
IVIS7	2	IVII	8G	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 air bag diagnosis sensor unit.

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

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MAIN LINE BETWEEN A-BAG AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND ABS CIRCUIT

Diagnosis Procedure

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[CAN]

1.CHECK CONNECTOR

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

- A/C auto amp.
- Harness connectors M1 and E30
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
10137	2		8G	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the air bag diagnosis sensor unit 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
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 air bag diagnosis sensor unit 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).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
ECM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:0000000725262
1. CHECK CONNECTOR			
 Check the following terr nector side). Models without automation ECM Harness connector E30 Harness connector M1 Models with automatic of ECM Harness connector E29 Harness connector B10 Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connector 	cable from the negative term minals and connectors for da tic drive positioner drive positioner <u>nal?</u> inal and connector.	amage, bend and loose o	connection (unit side and con
	ECM harness connector		
Connector No.	Termin	al No.	Resistance (Ω)
E10	98	97	Approx. 108 – 132
Check the power supply and Is the inspection result norm	I branch line. Y AND GROUND CIRCUIT d the ground circuit of the Ed <u>nal?</u> lace the ECM. Refer to <u>E</u>	CM. Refer to <u>EC-155, "D</u>	iagnosis Procedure". RVICE WHEN REPLACING

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007252629

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector 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.	Terminal No.		
B203	16 32		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-48</u>, "<u>DRIVER SEAT</u> <u>CONTROL UNIT</u> : <u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-171</u>, "Removal and Installation".

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	; >		[CAN]
BCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000007252630
1. CHECK CONNECTOR			
 Turn the ignition switch OF Disconnect the battery cat Check the terminals and oconnector side). 	ole from the negative tern		e connection (unit side and
Is the inspection result normal	<u>?</u>		
YES >> GO TO 2. NO >> Repair the termina	al and connector.		
2.CHECK HARNESS FOR O	PEN CIRCUIT		
 Disconnect the connector Check the resistance betw 		onnector terminals.	
	BCM harness connector		Desistance (O)
Connector No.	Termin	al No.	Resistance (Ω)
M19	79	78	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the BCM be 3.CHECK POWER SUPPLY A	ranch line. AND GROUND CIRCUIT		
Check the power supply and the	•	CM. Refer to <u>BCS-36, "Dia</u>	<u>gnosis Procedure"</u> .
Is the inspection result normal		2.90 "Domoval and install	ation"
YES (Present error)>>Replac YES (Past error)>>Error was	detected in the BCM bra	nch line.	allon
NO >> Repair the power s	supply and the ground cir	Cuit.	

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
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.

INFOID:000000007252631

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
M&A BRANCH LINE C	VIRCUIT		
Diagnosis Procedure			INFOID:00000007252632
1.CHECK CONNECTOR			
 Turn the ignition switch OFF Disconnect the battery cable Check the terminals and conjunction (unit side and connector side) 	e from the negative terr onnectors of the combi		bend and loose connection
Is the inspection result normal?			
YES >> GO TO 2.			
NO >> Repair the terminal			
2.CHECK HARNESS FOR OP	EN CIRCUIT		
 Disconnect the connector of Check the resistance between 		ter harness connector term	inals.
Combir	nation meter harness connec	tor	Resistance (Ω)
Connector No.	Termir	nal No.	
M24	21	22	Approx. 54 – 66
Is the measurement value within YES >> GO TO 3. NO >> Repair the combina 3. CHECK POWER SUPPLY A Check the power supply and the METER : Diagnosis Procedure" Is the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su	tion meter branch line. ND GROUND CIRCUIT e ground circuit of the the combination meter	combination meter. Refer to . Refer to <u>MWI-121, "Remo</u> tion meter branch line.	

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M156	86 87		Approx. 54 – 66

Models with navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M163	62 46		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Models with BOSE audio with color display: AV-232, "AV CONTROL UNIT : Diagnosis Procedure"
- Models with BOSE audio with color display with navigation system: <u>AV-412</u>, "<u>AV CONTROL UNIT</u>: <u>Diagno-</u> sis <u>Procedure</u>"

Is the inspection result normal?

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

- Models with BOSE audio with color display: <u>AV-322, "Removal and Installation"</u>
 - Models with BOSE audio with color display with navigation system: <u>AV-490</u>, "<u>Removal and</u> <u>Installation</u>"

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

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS			[CAN]
HVAC BRANCH LIN	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000007252634
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the A/C au		d and loose connection (unit
Is the inspection result norm	<u>nal?</u>		
YES >> GO TO 2.			
NO >> Repair the term			
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of A/C auto amp. etween the A/C auto amp. ha	arness connector terminal	ls.
	A/C auto amp. harness connector		Resistance (Ω)
Connector No.	Termina	al No.	
M37	1	2	Approx. 54 – 66
<u>Is the measurement value w</u> YES >> GO TO 3.	vithin the specification?		
	auto amp. branch line.		
^	•		
	Y AND GROUND CIRCUIT		
	Y AND GROUND CIRCUIT		following
Check the power supply and • Models with color display:	d the ground circuit of the A/ HAC-60, "A/C AUTO AMP.	/C auto amp. Refer to the : Diagnosis Procedure"	-
Check the power supply andModels with color display:Models with monochrome	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u>	/C auto amp. Refer to the : Diagnosis Procedure"	-
Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u> <u>nal?</u>	C auto amp. Refer to the <u>Diagnosis Procedure</u> TO AMP. : Diagnosis Proc	-
Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm YES (Present error)>>Rep	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u> <u>nal?</u> lace the A/C auto amp. Refe	C auto amp. Refer to the <u>Diagnosis Procedure</u> <u>TO AMP. : Diagnosis Proc</u> edure	-
Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm YES (Present error)>>Rep • Models with c	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u> <u>hal?</u> lace the A/C auto amp. Refe olor display: <u>HAC-104, "Rer</u>	C auto amp. Refer to the <u>Diagnosis Procedure</u> <u>TO AMP. Diagnosis Proc</u> er to the following. <u>moval and Installation</u>	cedure"
Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm YES (Present error)>>Rep • Models with c • Models mono YES (Past error)>>Error w	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u> <u>nal?</u> lace the A/C auto amp. Refe olor display: <u>HAC-104, "Rer</u> chrome display: <u>HAC-211, "</u> as detected in the A/C auto	/C auto amp. Refer to the : Diagnosis Procedure" TO AMP. : Diagnosis Proc er to the following. moval and Installation" Removal and Installation" amp. branch line.	cedure"
Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm YES (Present error)>>Rep • Models with c • Models mono YES (Past error)>>Error w	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u> <u>hal?</u> lace the A/C auto amp. Refe olor display: <u>HAC-104, "Rer</u> chrome display: <u>HAC-211, "</u>	/C auto amp. Refer to the : Diagnosis Procedure" TO AMP. : Diagnosis Proc er to the following. moval and Installation" Removal and Installation" amp. branch line.	cedure"
Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm YES (Present error)>>Rep • Models with c • Models mono YES (Past error)>>Error w	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u> <u>nal?</u> lace the A/C auto amp. Refe olor display: <u>HAC-104, "Rer</u> chrome display: <u>HAC-211, "</u> as detected in the A/C auto	/C auto amp. Refer to the : Diagnosis Procedure" TO AMP. : Diagnosis Proc er to the following. moval and Installation" Removal and Installation" amp. branch line.	cedure"
Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm YES (Present error)>>Rep • Models with c • Models mono YES (Past error)>>Error w	d the ground circuit of the A/ <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AU</u> <u>nal?</u> lace the A/C auto amp. Refe olor display: <u>HAC-104, "Rer</u> chrome display: <u>HAC-211, "</u> as detected in the A/C auto	/C auto amp. Refer to the : Diagnosis Procedure" TO AMP. : Diagnosis Proc er to the following. moval and Installation" Removal and Installation" amp. branch line.	cedure"

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Termi		
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-85, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-109, "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.

INFOID:000000007252635

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	r 0000000007252636
 WARNING: Always observe the following items for preventing accidental activation. Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 or more. (To discharge backup capacitor.) Never use unspecified tester or other measuring device. CHECK CONNECTOR 	i minutes
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and lo nection (unit side and connector side). 	Dose con-
Is the inspection result normal? YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	F
Check the air bag diagnosis sensor unit. Refer to <u>SRC-3</u> , "Work Flow". <u>Is the inspection result normal?</u> YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	C ł

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (Ω)
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-85, "Wiring Diagram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-106</u>, "Exploded <u>View"</u>.

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

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
TCM BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000007252638
1.CHECK CONNECTOR			
 Check the following term nector side). TCM 	able from the negative te		connection (unit side and con-
Harness connector F1 Harness connector E3			
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the term			
2.CHECK HARNESS FOR			
1. Disconnect the connect	or of TCM. etween the TCM harness of	connector terminals.	
1. Disconnect the connect	or of TCM. etween the TCM harness of TCM harness connector	connector terminals.	Resistance (Ω)
 Disconnect the connect Check the resistance be 	or of TCM. etween the TCM harness of TCM harness connector		
Disconnect the connect Check the resistance be Connector No.	or of TCM. etween the TCM harness of TCM harness connector Term 32	ninal No.	

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 <u>PCS-18, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35. "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGN					
					[CAN]
CAN COMMUNIC	CATION CI	RCUIT			
Diagnosis Procedu	re				INFOID:0000000725264
1.CONNECTOR INSPE	ECTION				
1. Turn the ignition swit	tch OFF.				
2. Disconnect the batte					
 Disconnect all the ur Check terminals and 					
Is the inspection result ne		damage, be		c connection	
YES >> GO TO 2.	<u></u>				
NO >> Repair the te	erminal and con	inector.			
2. CHECK HARNESS C	ONTINUITY (S	HORT CIRC	CUIT)		
Check the continuity betw	ween the data li	ink connecto	or terminals.		
	Data lin	nk connector			Continuity
Connector No.		Ter	rminal No.		
M22		6		14	Not existed
Is the inspection result ne	ormal?				
YES >> GO TO 3. NO >> Check the ha	arness and ren	air the root o	20166		
•	•				
3.CHECK HARNESS C					
Check the continuity betw	ween the data li	ink connecto	r and the gr	ound.	
Data	link connector				Continuity
Connector No.	Tern	ninal No.		Ground	
M22		6			Not existed
		14			Not existed
Is the inspection result ne	<u>ormal?</u>				
YES >> GO TO 4. NO >> Check the ha	arness and ren:	air the root c	ause		
4.CHECK ECM AND IP	-				
1. Remove the ECM ar					
2. Check the resistance			ıls.	[
					ECM and IPDM E/R
ECM		Resistance	<u>م (</u> 0)		ECM and IPDM E/R
ECM Terminal No.		Resistance	e (Ω)		
	97	Resistance Approx. 108			
Terminal No.	-	Approx. 108	3 – 132	ć	
Terminal No. 98	-	Approx. 108 PDM E/R ter	3 – 132 rminals.	Ć	
Terminal No. 98 3. Check the resistance	-	Approx. 108	3 – 132 rminals.	ć	LKIA0037E
Terminal No. 98 3. Check the resistance IPDM E/R	-	Approx. 108 PDM E/R ter	3 – 132 rminals. e (Ω)	(
Terminal No. 98 3. Otheck the resistance IPDM E/R Terminal No. 40 40	e between the I	Approx. 108 PDM E/R ter Resistance Approx. 108	3 – 132 rminals. e (Ω)	ć	
Terminal No. 98 3. Check the resistance IPDM E/R Terminal No. 40 40 Is the measurement value YES >> GO TO 5.	e between the I	Approx. 108 PDM E/R ter Resistance Approx. 108 ecification?	3 – 132 rminals. e (Ω) 3 – 132	(*	
Terminal No. 98 3. Check the resistance IPDM E/R Terminal No. 40 1 Is the measurement value	e between the I	Approx. 108 PDM E/R ter Resistance Approx. 108 ecification?	3 – 132 rminals. e (Ω) 3 – 132	4	

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

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< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 1)] DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT Diagnosis Procedure INFOLD:0000007800531

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 data link connector and the A/C auto amp. harness connector.

Data link c	onnector	A/C auto amp. ha	arness connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M22	6	M37	1	Existed	_
IVIZZ	14	WIS7	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 data link connector and the A/C auto amp.

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

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000007800533

[CAN SYSTEM (TYPE 1)]

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.
- A/C auto amp.
- Harness connectors M1 and E30
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
WOT	2		8G	Existed

Is the inspection result normal?

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

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

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

	CUIT	AND ABS CIRC	WEEN A-BAG	MAIN LINE BET		
INFOID:000000007800534				Diagnosis Proced		
			OR	1. CHECK CONNECT		
ection (connector side	end and loose conne		ttery cable from the non- ng terminals and conn r M1			
			normal?	s the inspection result		
		or	terminal and connect	YES >> GO TO 2. NO >> Repair the		
				2.CHECK HARNESS		
ss connector.	nector and the harnes	uto amp. harness conr		A/C auto amp. Harness connecto		
Continuity	connector	Harness c	arness connector	A/C auto amp. h		
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.		
Existed	15G	M1	1	M37		
Existed	8G		2	s the inspection result		
ness connector M1.	ontrol unit).	or and electric unit (co	CONTINUITY (OPEN nnector of ABS actual ity between the harne	3. CHECK HARNESS 1. Disconnect the co		
ectric unit (control unit)			Harness connector ABS actuator and electric unit (control unit) harness connector			
ectric unit (control unit)			connector			
ectric unit (control unit) Continuity			Terminal No.			
, <i>,</i>	connector	harness co		Harness		
			connector			

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800535

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- 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-155. "Diagnosis Procedure"</u>. Is the inspection result normal?

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN SYSTEM (TYPE 1)]
BCM BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:00000007800537
1.CHECK CONNECTOR			
 Turn the ignition switch OFI Disconnect the battery cabl Check the terminals and connector side). 	e from the negative teri		e connection (unit side and
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal	and connector.		
2.CHECK HARNESS FOR OF	'EN CIRCUIT		
 Disconnect the connector of Check the resistance between 	-	onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.		nal No.	
M19	79	78	Approx. 54 – 66
Is the measurement value within YES >> GO TO 3. NO >> Repair the BCM bra 3.CHECK POWER SUPPLY A	anch line. ND GROUND CIRCUI		
Check the power supply and the	-	BCM. Refer to <u>BCS-36, "Dia</u>	<u>ignosis Procedure"</u> .
Is the inspection result normal? YES (Present error)>>Replace		S 90 "Domoval and Install	ation"
YES (Past error)>>Error was o		anch line.	<u>allon</u> .

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800538

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Resistance (Ω)	
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.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			
			INFOID:00000007800539
1.CHECK CONNECTOR			
	able from the negative termin d connectors of the combina side). <u>al?</u> nal and connector.		bend and loose connection
	tween the combination mete		ninals.
	mbination meter harness connector		Resistance (Ω)
Connector No. M24	Terminal 21	22	Approx. 54 – 66
s the measurement value with	ithin the specification?		
YES >> GO TO 3. NO >> Repair the comb	ination meter branch line.		
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPLY	ination meter branch line.	mbination meter. Refer	o <u>MWI-37, "COMBINATION</u>
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPLY Check the power supply and METER : Diagnosis Procedu	ination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the co re".	mbination meter. Refer	o <u>MWI-37, "COMBINATION</u>
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPLY Check the power supply and METER : Diagnosis Procedu Is the inspection result normative YES (Present error)>>Reply YES (Past error)>>Error was	ination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the co re".	Refer to <u>MWI-121, "Rem</u> In meter branch line.	
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPLY Check the power supply and METER : Diagnosis Procedu Is the inspection result normative YES (Present error)>>Reply YES (Past error)>>Error was	A AND GROUND CIRCUIT A AND GROUND CIRCUIT A the ground circuit of the co are". al? ace the combination meter. F as detected in the combination	Refer to <u>MWI-121, "Rem</u> In meter branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800541

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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-60, "A/C AUTO AMP. : Diagnosis Procedure"</u>
- Models with monochrome display: <u>HAC-168</u>, "A/C AUTO AMP. : Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to the following.

- Models with color display: HAC-104, "Removal and Installation"
- Models monochrome display: <u>HAC-211, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the A/C auto amp. branch line.

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure I.CHECK CONNECTOR I. 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,	INFOID:00000007800542
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 	
2. Disconnect the battery cable from the negative terminal.	
(unit side and connector side).	bend and loose connection
s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector.	
CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect the connector of steering angle sensor. Check the resistance between the steering angle sensor harness connector te 	erminals.
Steering angle sensor harness connector	Resistance (Ω)
Connector No. Terminal No.	
M53 5 2	Approx. 54 – 66
s 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. Re ram ["] .	fer to <u>BRC-85, "Wiring Dia-</u>
<u>s the inspection result normal?</u> YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-109, "Re</u> YES (Past error)>>Error was detected in the steering angle sensor branch line. NO >> Repair the power supply and the ground circuit.	moval and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

WARNING:

Always observe the following items for preventing accidental activation.

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

YES >> Replace the main harness.

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

INFOID:000000007800543

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure			INFOID:00000007800544
L.CHECK CONNECTOR			
B. Check the terminals and	able from the negative term	tuator and electric unit (co	ntrol unit) for damage, bend
s the inspection result norma	<u>11?</u>		
YES >> GO TO 2. NO >> Repair the termin	al and connector		
2.CHECK HARNESS FOR (
	r of ABS actuator and elec		
nals.			it) harness connector termi-
	and electric unit (control unit) harness connector		Resistance (Ω)
Connector No	Termin	al No	
E26	Termin 26	al No. 15	Approx. 54 – 66
E26	26		
	26		
E26 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the ABS a	26 thin the specification? actuator and electric unit (c	15 ontrol unit) branch line.	
E26 s the measurement value wit YES >> GO TO 3.	26 thin the specification? actuator and electric unit (c	15 ontrol unit) branch line.	
E26 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ABS a 3. CHECK POWER SUPPLY Check the power supply and	26 thin the specification? actuator and electric unit (c YAND GROUND CIRCUIT	¹⁵ ontrol unit) branch line.	Approx. 54 – 66
E26 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the ABS a 3 .CHECK POWER SUPPLY Check the power supply and <u>3RC-85. "Wiring Diagram"</u> .	26 thin the specification? actuator and electric unit (c YAND GROUND CIRCUIT the ground circuit of the	¹⁵ ontrol unit) branch line.	Approx. 54 – 66
E26 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the ABS a 3 .CHECK POWER SUPPLY Check the power supply and <u>BRC-85. "Wiring Diagram"</u> . <u>s the inspection result norma</u>	26 thin the specification? actuator and electric unit (c Y AND GROUND CIRCUIT the ground circuit of the al?	15 ontrol unit) branch line. ABS actuator and electric	Approx. 54 – 66
E26 <u>s the measurement value with</u> YES >> GO TO 3. NO >> Repair the ABS and CHECK POWER SUPPLY Check the power supply and <u>SRC-85. "Wiring Diagram"</u> . <u>s the inspection result norman</u> YES (Present error)>>Repla	26 thin the specification? actuator and electric unit (c Y AND GROUND CIRCUIT the ground circuit of the al?	15 ontrol unit) branch line. ABS actuator and electric	Approx. 54 – 66
E26 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the ABS a 3 .CHECK POWER SUPPLY Check the power supply and <u>3RC-85. "Wiring Diagram"</u> . <u>s the inspection result norma</u> YES (Present error)>>Repla <u>View"</u> . YES (Past error)>>Error was	26 thin the specification? actuator and electric unit (c Y AND GROUND CIRCUIT the ground circuit of the ace the ABS actuator and e	15 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). F ator and electric unit (con	Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-106, "Exploded</u>
E26 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the ABS a 3 .CHECK POWER SUPPLY Check the power supply and <u>3RC-85. "Wiring Diagram"</u> . <u>s the inspection result norma</u> YES (Present error)>>Repla <u>View"</u> . YES (Past error)>>Error was	26 thin the specification? actuator and electric unit (c AND GROUND CIRCUIT the ground circuit of the ace the ABS actuator and e s detected in the ABS actu	15 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). F ator and electric unit (con	Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-106, "Exploded</u>
E26 <u>s the measurement value wit</u> YES >> GO TO 3. NO >> Repair the ABS a 3 .CHECK POWER SUPPLY Check the power supply and <u>3RC-85. "Wiring Diagram"</u> . <u>s the inspection result norma</u> YES (Present error)>>Repla <u>View"</u> . YES (Past error)>>Error was	26 thin the specification? actuator and electric unit (c AND GROUND CIRCUIT the ground circuit of the ace the ABS actuator and e s detected in the ABS actu	15 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). F ator and electric unit (con	Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-106, "Exploded</u>

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< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800545

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-120, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to TM-162, "Exploded View".

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

 CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 	< DTC/CIRCUIT DIAGNOSIS >		[CAN SYSTEM (TYPE 1)]
1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. Image: the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-18. "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35. "Removal and Installation". YES (Present error)>>Replace the IPDM E/R. Refer to PCS-18. "Diagnosis Procedure".	IPDM-E BRANCH L	INE CIRCUIT		
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side). 1s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) Connector No. 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-18, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Removal and Installation". YES (Present error)>>Replace the IPDM E/R branch line.	Diagnosis Procedure			INFOID:0000000780054
 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). (a) is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) Connector No. IPDM E/R harness connector Resistance (Ω) Resistance (Ω) Connector No. IPDM E/R harness connector Resistance (Ω) Resistance (Ω	1.CHECK CONNECTOR			
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Resistance (Ω) Connector No. E17 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-18, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line.	 Disconnect the battery Check the terminals an 	cable from the negative tern		loose connection (unit side
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 S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-18, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line.	YES >> GO TO 2. NO >> Repair the term	inal and connector.		
Connector No. Terminal No. Resistance (Ω) E17 40 39 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-18, "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line. PCS-35, "Removal and Installation".			ss connector terminals.	
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 Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-18, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line.		IPDM E/R harness connector		Resistance (Ω)
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-18, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line.		-		
YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u> . <u>s the inspection result normal?</u> YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-35, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the IPDM E/R branch line.			39	Approx. 108 – 132
	NO >> Repair the IPDI 3.CHECK POWER SUPPL Check the power supply and s the inspection result norm YES (Present error)>>Rep	Y AND GROUND CIRCUIT d the ground circuit of the IP nal? lace the IPDM E/R. Refer to	DM E/R. Refer to PCS-18, PCS-35, "Removal and In	

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity	
Connector No.	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.

${\it 3.}$ 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	Ground	Not existed
IVIZZ	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.

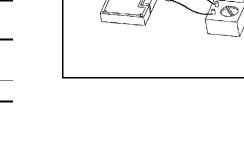
IPDM E/R Terminal No.		- Resistance (Ω)	

Is the measurement value within the specification?

YES >> GO TO 5.

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

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



ECM and IPDM E/R

INFOID:000000007800547

[CAN SYSTEM (TYPE 1)]

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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ADP AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000007800549

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		lector Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
B32	9	D1	15J	Existed		
B32	10	B1	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)

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

Harness	connector	Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M6 -	15J	M22	6	Existed
	16J	M22	14	Existed

Is the inspection result normal?

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

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

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

iagnosis Procec	lure			INFOID:000000007800550
.CHECK HARNESS		N CIRCUIT)		
. Disconnect the for ECM A/C auto amp.	ittery cable from the ne lowing harness conne ity between the data l		A/C auto amp. harnes	ss connector.
	connector Terminal No	A/C auto amp. ha		Continuity
Connector No.	connector Terminal No. 6	Connector No.	arness connector Terminal No. 1	Continuity
	Terminal No. 6 14		Terminal No.	· · · · · · · · · · · · · · · · · · ·

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000007800552

[CAN SYSTEM (TYPE 2)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- A/C auto amp.
- Harness connectors M1 and E30
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.

A/C auto amp. h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
WOT	2		8G	Existed

Is the inspection result normal?

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

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

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

	GNOSIS >		-	N SYSTEM (TYPE 2)]
MAIN LINE BET	WEEN A-BAG	AND ABS CIR	CUIT	
Diagnosis Proced	lure			INFOID:0000000780055
1.CHECK CONNECT	OR			
	ittery cable from the n ng terminals and con or M1		pend and loose conn	ection (connector side
s the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	e terminal and connec	tor.		
2.CHECK HARNESS				
 A/C auto amp. Harness connector 	lowing harness conne ors M1 and E30 ity between the A/C a		nector and the harne	ss connector.
A/C auto amp. h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1 2	M1	15G 8G	Existed
s the inspection result	_		86	LAISteu
3.CHECK HARNESS	nnector of ABS actua	N CIRCUIT)	ontrol unit).	ness connector M1.
Harness	connector		ctric unit (control unit)	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	15G		26	Existed
	8G	E26	15	Existed
E30				

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800554

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Models 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.	Terminal No.		Resistance (32)
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-155</u>, "Diagnosis Procedure". Is the inspection result normal?

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

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

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

ADP BRANCH LINE				А
Diagnosis Procedure			INFOID:00000007800555	
1.CHECK CONNECTOR				В
3. Check the following tern	able from the negative terr		nnection (unit side and con-	С
 nector side). Driver seat control unit Harness connector B203 Harness connector B32 Is the inspection result norm 				D
YES >> GO TO 2. NO >> Repair the termi 2. CHECK HARNESS FOR	nal and connector.			E
1. Disconnect the connect	or of driver seat control unit	t. rol unit harness connector t	erminals.	F
Drive	er seat control unit harness conne	ector	Desistance (O)	G
Connector No.	Termir	nal No.	Resistance (Ω)	
B203	16	32	Approx. 54 – 66	Н
Is the measurement value wYES>> GO TO 3.NO>> Repair the drive3.CHECK POWER SUPPL	r seat control unit branch li			
Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm	s Procedure".	iver seat control unit. Refer	to ADP-48, "DRIVER SEAT	J
YES (Present error)>>Repl YES (Past error)>>Error wants NO >> Repair the power	lace the driver seat control as detected in the driver se er supply and the ground ci	at control unit branch line.	emoval and Installation".	K
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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800556

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.		Resistance (12)
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 <u>BCS-36, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the BCM. Refer to BCS-80, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

< DTC/CIRCUIT DIAGNOS			[CAN SYSTEM (TYPE 2)]
DLC BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000007800557
1.CHECK CONNECTOR			
 Check the terminals and (connector side and harr s the inspection result normation YES >> GO TO 2. NO >> Repair the termination 	able from the negative terr d connectors of the data li ness side). <u>al?</u> nal and connector.		e, bend and loose connection
2. CHECK HARNESS FOR	OPEN CIRCUIT		
Check the resistance betwee	en the data link connector t	terminals.	
	Data link connector		Resistance (Ω)
Connector No.	Termir	nal No.	
M22	6	14	Approx. 54 – 66
	ck CAN system type decisi as detected in the data link link connector branch line.	connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line ci	rcuit.
YES (Past error)>>Error wa	as detected in the data link	connector branch line ci	rcuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800558

[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 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	ombination meter harness connect	ctor	Resistance (Ω)
Connector No.	Termi	Terminal No.	
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the combination meter branch line.

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-121, "Removal and Installation".

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

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 2)]
HVAC BRANCH LIN	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000007800560
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the A/C au		and loose connection (unit
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR 1. Disconnect the connect 2. Check the resistance be	inal and connector. OPEN CIRCUIT	namess connector terminal	s
	A/C auto amp. harness connecto		
Connector No.	-	nal No.	Resistance (Ω)
M37	1	2	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and • Models with color display: • Models with monochrome Is the inspection result norm YES (Present error)>>Rep • Models with c	d the ground circuit of the A <u>HAC-60, "A/C AUTO AMP</u> display: <u>HAC-168, "A/C AU</u> <u>hal?</u> lace the A/C auto amp. Ref olor display: <u>HAC-104, "Re</u>	/C auto amp. Refer to the t <u>: Diagnosis Procedure"</u> JTO AMP. : Diagnosis Proc fer to the following. <u>moval and Installation"</u>	-
• Models mono YES (Past error)>>Error wants NO >> Repair the powe		amp. branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800561

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.

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

Ste	ering angle sensor harness conne	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-85, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-109</u>, "Removal and Installation".

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

< DTC/CIRCUIT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000007800562 WARNING: В Always observe the following items for preventing accidental activation. Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) С Never use unspecified tester or other measuring device. 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. D 2. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Е Is the inspection result normal? YES >> GO TO 2. NO >> Replace the main harness. F 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-3, "Work Flow". Is the inspection result normal? YES >> Replace the main harness.

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

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator a	and electric unit (control unit) har	ness connector	Resistance (Ω)
Connector No.	Termi	nal No.	
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.

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-85, "Wiring Diagram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-106</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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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	IS >		[CAN SYSTEM (TYPE 2)]
TCM BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000007800564
1. CHECK CONNECTOR			
 Check the following term nector side). TCM Harness connector F1 Harness connector E3 	able from the negative termi ninals and connectors for dar		onnection (unit side and con-
I <u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi			
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of TCM. tween the TCM harness con	nector terminals.	
Connector No.	Terminal	l No.	- Resistance (Ω)
F15	32	31	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the TCM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the TC	M. Refer to <u>TM-120, "Wi</u> 62, "Exploded View". ch line.	

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800565

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
Connector No.	Terminal No.		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.

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

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

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

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 2)]

	FION CIRCUIT		
iagnosis Procedure			INFOID:00000007800566
.CONNECTOR INSPECT	ON		
 Disconnect all the unit c Check terminals and correct 	able from the negative ter onnectors on CAN commu nnectors for damage, ben	unication system.	
the inspection result norm YES >> GO TO 2.	<u>al?</u>		
NO >> Repair the termi			
CHECK HARNESS CON			
heck the continuity betwee	n the data link connector t	terminals.	
	Data link connector		Continuity
Connector No.	Term	inal No.	- Continuity
M22	6	14	Not existed
NO >> Check the harne CHECK HARNESS CON heck the continuity betwee		IT)	
Data link o	connector		Continuity
Connector No.	Terminal No.	Ground	
M22	6	_	Not existed Not existed
the inspection result norm			NOT EXISTED
YES >> GO TO 4.	ess and repair the root cau E/R TERMINATION CIRC		
. Check the resistance be	tween the ECM terminals.		ECM and IPDM E/R
ECM Terminal No.	Resistance (Ω)	
98 9	7 Approx. 108 –	132	
. Check the resistance be	tween the IPDM E/R term	inals.	
IPDM E/R	Resistance (Ω)	
Terminal No.			LKIA0037E
40 3		132	
<u>s the measurement value w</u> YES >> GO TO 5. NO >> Replace the EC	M and/or the IPDM E/R.		

< DTC/CIRCUIT DIAGNOSIS >

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Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 3)] DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT Diagnosis Procedure INFOID CONCOURDED 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 data link connector and the A/C auto amp. harness connector.

Data link (connector	A/C auto amp. ha	arness connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity	
MOO	6	1407	1	Existed	-
M22	14	M37	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 data link connector and the A/C auto amp.

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

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000007800570

[CAN SYSTEM (TYPE 3)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- A/C auto amp.
- Harness connectors M1 and E30
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
WOT	2		8G	Existed

Is the inspection result normal?

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

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

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

	GNOSIS >		-	N SYSTEM (TYPE 3)]
MAIN LINE BET	WEEN A-BAG	AND ABS CIR	CUII	
Diagnosis Proced	ure			INFOID:000000007800571
1.CHECK CONNECT	OR			
	ttery cable from the ne ng terminals and coni r M1		pend and loose conr	ection (connector side
s the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	e terminal and connect	or		
2.CHECK HARNESS				
 A/C auto amp. Harness connector 	lowing harness conne rs M1 and E30 ity between the A/C a		nector and the harne	ss connector.
A/C auto amp. h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
Is the inspection result	2		8G	Existed
3.CHECK HARNESS 1. Disconnect the co	nnector of ABS actual ity between the harne	N CIRCUIT) for and electric unit (co	ontrol unit).	mess connector M1.
Harness	connector		ctric unit (control unit)	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F 20	15G	F26	26	Existed
E30	8G	E26	15	Existed
1	normal?	type decision again.		

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800572

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Models 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-155. "Diagnosis Procedure"</u>. Is the inspection result normal?

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN SYSTEM (TYPE 3)]
BCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000007800574
1.CHECK CONNECTOR			
 Turn the ignition switch OF Disconnect the battery cab Check the terminals and c connector side). 	le from the negative terr		e connection (unit side and
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal	-		
2. CHECK HARNESS FOR OF	PEN CIRCUIT		
 Disconnect the connector of Check the resistance between 		onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.		nal No.	A
M19 Is the measurement value with	79	78	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the BCM br 3. CHECK POWER SUPPLY A	anch line. AND GROUND CIRCUIT		
Check the power supply and th		BCM. Refer to <u>BCS-36, "Dia</u>	gnosis Procedure".
Is the inspection result normal?			
YES (Present error)>>Replace YES (Past error)>>Error was NO >> Repair the power s		anch line.	ation".

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800575

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Resistance (Ω)	
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.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

	E CIRCUIT		
Diagnosis Procedure			INFOID:00000007800576
1.CHECK CONNECTOR			
 Check the terminals an (unit side and connector is the inspection result norm) 	cable from the negative terr d connectors of the combi r side).		, bend and loose connection
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of combination meter. Stween the combination me	ter harness connector ter	minals.
	ombination meter harness connect		Resistance (Ω)
Connector No.		nal No.	
M24	21	22	Approx. 54 – 66
<u>o ano medodrement value w</u>			
YES >> GO TO 3. NO >> Repair the comb CHECK POWER SUPPL Check the power supply an METER : Diagnosis Procedu	d the ground circuit of the ure".		to <u>MWI-37, "COMBINATION</u>
YES >> GO TO 3. NO >> Repair the comb CHECK POWER SUPPL Check the power supply an <u>AETER : Diagnosis Procedu</u> s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	Dination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . lal? lace the combination meter	combination meter. Refer . Refer to <u>MWI-121, "Ren</u> tion meter branch line.	
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . lal? lace the combination meter as detected in the combina	combination meter. Refer . Refer to <u>MWI-121, "Ren</u> tion meter branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

Models without navigation system

	AV control unit harness connector		
Connector No.	Termi	Resistance (Ω)	
M156	86 87		Approx. 54 – 66

Models with navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M163	62	46	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Models with BOSE audio with color display: AV-232, "AV CONTROL UNIT : Diagnosis Procedure"
- Models with BOSE audio with color display with navigation system: <u>AV-412</u>, "<u>AV CONTROL UNIT</u>: <u>Diagno-sis Procedure</u>"

Is the inspection result normal?

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

- Models with BOSE audio with color display: <u>AV-322, "Removal and Installation"</u>
 - Models with BOSE audio with color display with navigation system: <u>AV-490</u>, "<u>Removal and</u> <u>Installation</u>"

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

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 3)]
HVAC BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000007800578
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the A/C au		nd and loose connection (unit
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect		arness connector termina	als.
	A/C auto amp. harness connector	-	Resistance (Ω)
Connector No. M37	Termir 1	al No.	Approx. 54 – 66
Is the measurement value v YES $>>$ GO TO 3.			
NO >> Repair the A/C 3.CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUIT.		
Check the power supply and Models with color display: Models with monochrome Is the inspection result norm	HAC-60, "A/C AUTO AMP. display: <u>HAC-168</u> , "A/C AL	: Diagnosis Procedure"	-
YES (Present error)>>Rep • Models with o	lace the A/C auto amp. Ref olor display: <u>HAC-104, "Re</u> chrome display: <u>HAC-211, '</u>	moval and Installation"	
YES (Past error)>>Error w	as detected in the A/C auto er supply and the ground ci	amp. branch line.	-

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< DTC/CIRCUIT DIAGNOSIS >

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800579

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Resistance (Ω)		
Connector No.	Termi		
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-85, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-109</u>, "Removal and Installation".

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

< DTC/CIRCUIT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000007800580 WARNING: В Always observe the following items for preventing accidental activation. Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) С Never use unspecified tester or other measuring device. 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. D 2. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Е Is the inspection result normal? YES >> GO TO 2. NO >> Replace the main harness. F 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-3, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi	nal No.	
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.

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-85, "Wiring Diagram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-106</u>, "Exploded <u>View"</u>.

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

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

Revision: August 2012

TCM BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000007800582
1.CHECK CONNECTOR			
	able from the negative terr		nnection (unit side and con-
Is the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of TCM. tween the TCM harness co	onnector terminals.	
	TCM harness connector		Resistance (Ω)
Connector No.	Termiı	nal No.	
F15	32	31	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	Y AND GROUND CIRCUIT I the ground circuit of the T al? ace the TCM. Refer to <u>TM</u>	CM. Refer to <u>TM-120, "Wiring -162, "Exploded View"</u> . nch line.	ng Diagram".

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800583

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 <u>PCS-18, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35. "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOS			
CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:0000000780058
.connector inspect	ION		
I. Turn the ignition switch	OFF.		
	cable from the negative terr connectors on CAN commu		
	nnectors for damage, bend		
s the inspection result norm	-		
YES >> GO TO 2.			
NO >> Repair the term		- \	
2.CHECK HARNESS CON			
Check the continuity betwee	en the data link connector te	erminals.	
	Data link connector		
Connector No.	Termir	nal No.	Continuity
M22	6	14	Not existed
s the inspection result norm	nal?		
YES >> GO TO 3.	and remain the meating	~	
	ess and repair the root cause		
3. CHECK HARNESS CON			
Check the continuity betwee	en the data link connector a	nd the ground.	
Data link	connector		Opertionity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Ground	Not existed
	14		Not existed
s the inspection result norm	nal?		
YES >> GO TO 4. NO >> Check the harne	ess and repair the root cau	se	
CHECK ECM AND IPDM	·		
I. Remove the ECM and t			
	etween the ECM terminals.	· · · · · ·	
ECM	Resistance (Ω	2)	ECM and IPDM E/R
Terminal No.			
	97 Approx. 108 – 1		Re D
3. Check the resistance be	etween the IPDM E/R termi	nals.	
IPDM E/R Terminal No	Resistance (2)	
Terminal No.			LKIA0037E
Terminal No.	39 Approx. 108 – 1		LKIA0037E
Terminal No. 40 3 s the measurement value w	39 Approx. 108 – 1		LKIA0037E
Terminal No. 40 3 s the measurement value w YES >> GO TO 5.	39 Approx. 108 – 1		LKIA0037E

< DTC/CIRCUIT DIAGNOSIS >

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< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

DTC/CIRCUIT DIAG			ICAN	SYSTEM (TYPE 4)]
	T DIAGNO	SIS	-	
			іт	
Diagnosis Procedu				INFQID:000000007800592
				NN 012.00000007000392
1. CHECK CONNECT				
 Check the followin and harness side). Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the follow Harness connector 	• B1 • M6 normal? terminal and connect CONTINUITY (OPEN owing harness conne •s B208 and B32 •s B1 and M6	nectors for damage, be tor. N CIRCUIT) ectors.	end and loose conne	ection (connector side
 Check the continuit 	ty between the harne	ss connectors.		
Harness c		Harness co		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
B32	9	B1	15J	Existed
s the inspection result	10		16J	Existed
CHECK HARNESS	CONTINUITY (OPEN	e harness connectors E N CIRCUIT) onnector and the data li Data link co	ink connector.	Continuitu
	Terminal No.		T : 111	Continuity
Connector No.		Connector No.	Terminal No.	
	15J	Connector No.	ferminal No.	Existed

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000007800593

[CAN SYSTEM (TYPE 4)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Data link	connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	M22 6	M37	1	Existed
IVIZZ	14		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 data link connector and the A/C auto amp.

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

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- A/C auto amp.
- Harness connectors M1 and E30
- 4. Check the continuity between the harness connector and the A/C auto amp. harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity	F
1	N41	15G	Existed		
M37	2	M1	8G	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 air bag diagnosis sensor unit.

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

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[CAN SYSTEM (TYPE 4)]

INFOID:000000007800595

MAIN LINE BETWEEN A-BAG AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000007800596

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

- A/C auto amp.
- Harness connectors M1 and E30
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	narness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M37	1	M1	15G	Existed	
10137	2		8G	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the air bag diagnosis sensor unit 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 air bag diagnosis sensor unit 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).

ECM BRANCH LIN	E CIRCUIT			^
Diagnosis Procedure			INFOID:00000007800597	A
1. CHECK CONNECTOR				В
 Check the following term nector side). Models without automat 	cable from the negative term ninals and connectors for da		nnection (unit side and con-	С
 ECM Harness connector E30 Harness connector M1 Models with automatic of ECM Harness connector E29 Harness connector B10 	trive positioner			D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termination of termination o	inal and connector.			F
 Disconnect the connect Check the resistance be 				
	ECM harness connector	nnector terminals.		Η
Connector No.			Resistance (Ω)	H
Connector No. E10	ECM harness connector Termina 98		Resistance (Ω) Approx. 108 – 132	H
Connector No. E10 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL	ECM harness connector Termina 98 within the specification? I branch line. Y AND GROUND CIRCUIT	al No. 97	Approx. 108 – 132	H J K
Connector No. E10 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep CONTROL UNI YES (Past error)>>Error w	ECM harness connector Termina 98 ithin the specification? I branch line. Y AND GROUND CIRCUIT I the ground circuit of the EC al? lace the ECM. Refer to E <u>i : Description"</u> . as detected in the ECM bran	al No. 97 CM. Refer to <u>EC-155, "Dia</u> <u>C-17, "ADDITIONAL SER</u> nch line.	Approx. 108 – 132	J
Connector No. E10 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep CONTROL UNI YES (Past error)>>Error w	ECM harness connector Termina 98 ithin the specification? I branch line. Y AND GROUND CIRCUIT I the ground circuit of the EC al? lace the ECM. Refer to E T : Description".	al No. 97 CM. Refer to <u>EC-155, "Dia</u> <u>C-17, "ADDITIONAL SER</u> nch line.	Approx. 108 – 132 gnosis Procedure".	J
Connector No. E10 Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep CONTROL UNI YES (Past error)>>Error w	ECM harness connector Termina 98 ithin the specification? I branch line. Y AND GROUND CIRCUIT I the ground circuit of the EC al? lace the ECM. Refer to E <u>i : Description"</u> . as detected in the ECM bran	al No. 97 CM. Refer to <u>EC-155, "Dia</u> <u>C-17, "ADDITIONAL SER</u> nch line.	Approx. 108 – 132 gnosis Procedure".	I J K L

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800598

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector 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.	Terminal No.		
B203	16	32	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-48, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-171</u>, "Removal and Installation".

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN SYSTEM (TYPE 4)]
BCM BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:00000007800599
1.CHECK CONNECTOR			
 Turn the ignition switch OFF Disconnect the battery cable Check the terminals and co connector side). 	e from the negative ter		e connection (unit side and
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal			
2.CHECK HARNESS FOR OP	EN CIRCUIT		
 Disconnect the connector o Check the resistance betwee 	en the BCM harness c	onnector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No. M19	79	nal No. 78	Approx. 54 – 66
Is the measurement value within			
YES >> GO TO 3.			
NO >> Repair the BCM bra			
3. CHECK POWER SUPPLY A	ND GROUND CIRCUI	Т	
Check the power supply and the	ground circuit of the E	3CM. Refer to <u>BCS-36, "Dia</u>	ignosis Procedure".
Is the inspection result normal?		· · · · · · · · · ·	
YES (Present error)>>Replace YES (Past error)>>Error was d			ation".
NO >> Repair the power su			

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800600

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Resistance (Ω)	
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.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

	ECIRCUIT		
Diagnosis Procedure			INFOID:000000007800601
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the combi side).		bend and loose connection
YES >> GO TO 2.			
NO >> Repair the termi 2.CHECK HARNESS FOR			
	tween the combination me		ninals.
	Combination meter harness connector Resistance (Ω)		Resistance (Ω)
Connector No. M24	21	22	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the comb CHECK POWER SUPPL	bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the		to <u>MWI-37, "COMBINATION</u>
NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Reply YES (Past error)>>Error was	bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the <u>al?</u> ace the combination meter	combination meter. Refer . Refer to <u>MWI-121, "Rem</u> tion meter branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

Models without navigation system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M156	86 87		Approx. 54 – 66

Models with navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M163	62 46		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Models with BOSE audio with color display: AV-232, "AV CONTROL UNIT : Diagnosis Procedure"
- Models with BOSE audio with color display with navigation system: <u>AV-412</u>, "<u>AV CONTROL UNIT</u>: <u>Diagno-sis Procedure</u>"

Is the inspection result normal?

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

- Models with BOSE audio with color display: <u>AV-322, "Removal and Installation"</u>
 - Models with BOSE audio with color display with navigation system: <u>AV-490</u>, "<u>Removal and</u> <u>Installation</u>"

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

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 4)]
HVAC BRANCH LIN	VE CIRCUIT		
Diagnosis Procedure			INFOID:00000007800603
1.CHECK CONNECTOR			
 Check the terminals an side and connector side Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR 	cable from the negative terr d connectors of the A/C au e). <u>nal?</u> inal and connector.		and loose connection (unit
	or of A/C auto amp. etween the A/C auto amp. h		S.
Connector No.		hal No.	Resistance (Ω)
M37	1	2	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and Models with color display: Models with monochrome s the inspection result norm YES (Present error)>>Rep	d the ground circuit of the A <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AL</u>	/C auto amp. Refer to the f <u>: Diagnosis Procedure"</u> JTO AMP. : Diagnosis Proc	-
	olor display: HAC-104 "Re		
YES (Past error)>>Error w	olor display: <u>HAC-104, "Re</u> chrome display: <u>HAC-211, '</u> as detected in the A/C auto er supply and the ground ci	"Removal and Installation" amp. branch line.	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800604

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.

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

Ste	Steering angle sensor harness connector		
Connector No.	Termi	Resistance (Ω)	
M53	5	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-85, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-109</u>, "Removal and Installation".

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

< DTC/CIRCUIT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000007800605 WARNING: В Always observe the following items for preventing accidental activation. Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) С Never use unspecified tester or other measuring device. 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. D 2. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Е Is the inspection result normal? YES >> GO TO 2. NO >> Replace the main harness. F 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-3, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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.

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-85, "Wiring Diagram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-106</u>, "Exploded <u>View"</u>.

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

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

Revision: August 2012

TCM BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000007800607
1.CHECK CONNECTOR			
	able from the negative terr ninals and connectors for d al?		nnection (unit side and con-
2. CHECK HARNESS FOR			
 Disconnect the connector Check the resistance be 	tween the TCM harness co	onnector terminals.	
Connector No.	TCM harness connector	nal No.	Resistance (Ω)
F15	32	31	Approx. 54 – 66
Is the measurement value wi	-		
YES >> GO TO 3. NO >> Repair the TCM 3. CHECK POWER SUPPLY Check the power supply and Is the inspection result normation YES (Present error)>>Replay YES (Past error)>>Error wat	branch line. Y AND GROUND CIRCUIT the ground circuit of the T al? ace the TCM. Refer to <u>TM</u>	CM. Refer to <u>TM-120, "Wiri</u> - <u>162, "Exploded View"</u> . Inch line.	ng Diagram".

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800608

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
Connector No.	Termi	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

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-35. "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOS			
CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:0000000780060
.connector inspect	ION		
. Turn the ignition switch	OFF.		
2. Disconnect the battery of	cable from the negative terr		
	onnectors on CAN commu nnectors for damage, bend		
s the inspection result norm	-		
YES >> GO TO 2.			
NO >> Repair the termi			
CHECK HARNESS CON			
Check the continuity betwee	n the data link connector te	erminals.	
	Data link connector		C
Connector No.	Termir	nal No.	Continuity
M22	6	14	Not existed
s the inspection result norm	al?		
YES >> GO TO 3.	and an extension of the second se		
•	ess and repair the root caus		
CHECK HARNESS CON			
Check the continuity betwee	n the data link connector a	nd the ground.	
Data link	connector		Continuitu
Connector No.	Terminal No.	Ground	Continuity
M22	6	Ground	Not existed
	14		Not existed
s the inspection result norm	al?		
YES >> GO TO 4. NO >> Check the harne	ess and repair the root cau	se	
1. CHECK ECM AND IPDM	•		
I. Remove the ECM and the			
	etween the ECM terminals.		
ECM	Resistance (Ω	2)	ECM and IPDM E/R
Terminal No.			
	Approx. 108 – 1		A D
Check the resistance be	etween the IPDM E/R termi	nals. 🏻 🍐 🏀 🛌	
IPDM F/R			LV
IPDM E/R	Resistance (G	2)	
Terminal No.			LKIA0037E
Terminal No. 40 3	9 Approx. 108 – 1		LLLL LKIA0037E
Terminal No.	9 Approx. 108 – 1		LKIA0037E
Terminal No. 40 3 s the measurement value w YES >> GO TO 5.	9 Approx. 108 – 1		LKIA0037E

< DTC/CIRCUIT DIAGNOSIS >

LAN-121

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

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

Inspection result

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

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 5)] DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT Diagnosis Procedure INFOLO000007812844 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 data link connector and the A/C auto amp. harness connector.

Data link con	nector	A/C auto amp. ha	arness connector	Continuity	_
ctor No.	Terminal No.	Connector No.	Terminal No.	Continuity	
22	6	M37	1	Existed	
	14	WI37	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 data link connector and the A/C auto amp.

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

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MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000007812845

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

- A/C auto amp.
- Harness connectors M1 and E30
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
10137	2		8G	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the A/C auto amp. 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 A/C auto amp. 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).

ECM BRANCH LIN	ECIRCUIT		
Diagnosis Procedure			INFOID:00000007812848
1.CHECK CONNECTOR			
 3. Check the following terr nector side). Models without automate ECM Harness connector E30 Harness connector M1 Models with automatic of ECM Harness connector E29 Harness connector B10 Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR 1. Disconnect the connect 	cable from the negative tern ninals and connectors for d ic drive positioner drive positioner <u>nal and connector.</u> OPEN CIRCUIT or of ECM.	amage, bend and loose co	nnection (unit side and con-
2. Check the resistance be	etween the ECM harness co	nnector terminals.	
Connector No.	ECM harness connector Termin		Resistance (Ω)
E10	98	97	Approx. 108 – 132
Is the measurement value w YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm	I branch line. Y AND GROUND CIRCUIT I the ground circuit of the Et al?		-
CONTROL UNI YES (Past error)>>Error w		nch line.	RVICE WHEN REPLACING

· ...**_**

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007812850

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.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-36, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the BCM. Refer to BCS-80, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNO			[CAN SYSTEM (TYPE 5)]
DLC BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000007812851
1.CHECK CONNECTOR			
 Check the terminals ar (connector side and har s the inspection result norn YES >> GO TO 2. 	cable from the negative tend connectors of the data rness side). nal?	erminal. I link connector for damag	e, bend and loose connection
	ninal and connector.		
2. CHECK HARNESS FOR		· · · ·	
Check the resistance betwe	en the data link connecto	r terminals.	
	Data link connector		Resistance (Ω)
Connector No. M22	Terr 6	minal No.	Approx. 54 – 66
s the measurement value v		••	
	as detected in the data lir	nk connector branch line ci	rcuit.
			rcuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007812852

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

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-121, "Removal and Installation".

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

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNO	SIS >		[CAN SYSTEM (TYPE 5)]
HVAC BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000007812854
1.CHECK CONNECTOR			
 Check the terminals an side and connector side the inspection result norn YES >> GO TO 2. 	cable from the negative terr id connectors of the A/C au e). nal?		and loose connection (unit
NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect		narness connector terminals	S.
	A/C auto amp. harness connecto		Resistance (Ω)
Connector No. M37	Termir 1	nal No. 2	Approx. 54 – 66
3.CHECK POWER SUPPL Check the power supply and Models with color display:	auto amp. branch line. Y AND GROUND CIRCUIT d the ground circuit of the A <u>HAC-60, "A/C AUTO AMP.</u> display: <u>HAC-168, "A/C AL</u>	/C auto amp. Refer to the f	-
Models with c Models mono YES (Past error)>>Error w	place the A/C auto amp. Ref color display: <u>HAC-104. "Re</u> chrome display: <u>HAC-211.</u> vas detected in the A/C auto	moval and Installation" "Removal and Installation" amp. branch line.	
NU >> Kepair the pow	er supply and the ground ci	rcuit.	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007812855

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector		
Connector No.	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-85, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-109</u>, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:000000007812857
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals and 	able from the negative termina I connectors of the ABS actua nit side and connector side).		ntrol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
	or of ABS actuator and electric etween the ABS actuator and		it) harness connector termi-
ABS actuator a	and electric unit (control unit) harness	connector	Resistance (Ω)
Connector No.	Terminal N	0.	
E26 s the measurement value w	26 ithin the specification?	15	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an SRC-85, "Wiring Diagram". Is the inspection result norm	ithin the specification? actuator and electric unit (cont Y AND GROUND CIRCUIT d the ground circuit of the AB <u>al?</u>	rol unit) branch line. S actuator and electric	unit (control unit). Refer to
s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an <u>BRC-85. "Wiring Diagram"</u> . s the inspection result norm YES (Present error)>>Repl <u>View"</u> . YES (Past error)>>Error wa	ithin the specification? actuator and electric unit (cont Y AND GROUND CIRCUIT d the ground circuit of the AB	rol unit) branch line. S actuator and electric tric unit (control unit). R r and electric unit (cont	unit (control unit). Refer to efer to <u>BRC-106, "Exploded</u>

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< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007812858

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-120, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to TM-162, "Exploded View".

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

	SIS >		[CAN SYSTEM (TYPE 5)
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:0000000078128
1.CHECK CONNECTOR			
 Check the terminals and and connector side). 	cable from the negative term d connectors of the IPDM E		nd loose connection (unit sid
s the inspection result norm YES >> GO TO 2.	<u>al?</u>		
NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
1. Disconnect the connect			
2. Check the resistance be	tween the IPDM E/R harne	ss connector terminals.	
	IPDM E/R harness connector		Resistance (Ω)
Connector No.	Termina	al No.	
E17	40	39	Approx. 108 – 132
E17 Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3. CHECK POWER SUPPL	ithin the specification?		Approx. 108 – 132
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IP	39	
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IP al?	39 DM E/R. Refer to <u>PCS-</u>	18, "Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IP	39 DM E/R. Refer to <u>PCS-</u> <u>PCS-35. "Removal and</u> branch line.	18, "Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IP al? lace the IPDM E/R. Refer to as detected in the IPDM E/F	39 DM E/R. Refer to <u>PCS-</u> <u>PCS-35. "Removal and</u> branch line.	18, "Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IP al? lace the IPDM E/R. Refer to as detected in the IPDM E/F	39 DM E/R. Refer to <u>PCS-</u> <u>PCS-35. "Removal and</u> branch line.	18, "Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IP al? lace the IPDM E/R. Refer to as detected in the IPDM E/F	39 DM E/R. Refer to <u>PCS-</u> <u>PCS-35. "Removal and</u> branch line.	18, "Diagnosis Procedure".
Is the measurement value w YES >> GO TO 3. NO >> Repair the IPDM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? I E/R branch line. Y AND GROUND CIRCUIT I the ground circuit of the IP al? lace the IPDM E/R. Refer to as detected in the IPDM E/F	39 DM E/R. Refer to <u>PCS-</u> <u>PCS-35. "Removal and</u> branch line.	18, "Diagnosis Procedure".

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector			
Connector No.	Termi	Continuity		
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	Ground	Not existed	
1012.2	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	98 97		

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

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

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

LAN-134

ECM and IPDM E/R
LKIA0037E

INFOID:000000007812860

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN ADP AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000007800611

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	Harness connector Harness connector		Continuity	
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)

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

Harness	arness connector Data link connecto		Harness connector Data link connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M6	15J	M22	6	Existed	
MO	16J	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 driver seat control unit and the data link connector.

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

iagnosis Proced	lure			INFOID:000000007800612
.CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
ECM A/C auto amp.	lowing harness conne ity between the data li		A/C auto amp. harnes	s connector.
		A/C auto amp. harness connector		
	connector			Continuity
Data link Connector No.	Terminal No.	A/C auto amp. ha Connector No.	Terminal No.	
				Continuity Existed Existed

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MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000007800613

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

- A/C auto amp.
- Harness connectors M1 and E30
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	A/C auto amp. harness connector		Harness connector		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M37	1	M1	15G	Existed	
10137	2		8G	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the A/C auto amp. 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	Harness connector		ABS actuator and electric unit (control unit) harness connector		
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 A/C auto amp. 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).

ECM BRANCH LIN	ECIRCUIT		<u> </u>
Diagnosis Procedure			INFOID:00000007800616
1.CHECK CONNECTOR			
 Check the following terr nector side). Models without automate ECM Harness connector E30 Harness connector M1 Models with automatic of ECM Harness connector E29 Harness connector B10 	cable from the negative termin ninals and connectors for dar ic drive positioner drive positioner		onnection (unit side and con-
Is the inspection result normYES>> GO TO 2.NO>> Repair the term			
2.CHECK HARNESS FOR			
2. Check the resistance be	Etween the ECM harness con ECM harness connector	nector terminals.	Resistance (Ω)
Connector No.	Terminal		
E10 Is the measurement value w	98	97	Approx. 108 – 132
YES >> GO TO 3. NO >> Repair the ECM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep <u>CONTROL UNI</u> YES (Past error)>>Error w	I branch line. Y AND GROUND CIRCUIT I the ground circuit of the ECI al? lace the ECM. Refer to <u>EC</u> <u>T : Description"</u> . as detected in the ECM branc	-17, "ADDITIONAL SEF	-
NO >> Repair the powe	er supply and the ground circ	uit.	L

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800617

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector 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		
B203	16	32	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-48, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-171</u>, "Removal and Installation".

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 6)]
BCM BRANCH LINI	E CIRCUIT		
Diagnosis Procedure			INFOID:00000007800618
1. CHECK CONNECTOR			
	able from the negative ter		se connection (unit side and
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of BCM. etween the BCM harness c	connector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termi	nal No.	
M19	79	78	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and	branch line. Y AND GROUND CIRCUI I the ground circuit of the E		ignosis Procedure".
YES (Past error)>>Error wa	ace the BCM. Refer to BC		<u>ation"</u> .

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800619

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Resistance (Ω)	
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.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

M&A BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000007800620
1. CHECK CONNECTOR			
 Check the terminals and (unit side and connector s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR 	able from the negative terr d connectors of the combi side). al? nal and connector. OPEN CIRCUIT		, bend and loose connection
	or of combination meter. tween the combination me		minals.
Connector No.	Termir		Resistance (Ω)
M24	21	22	Approx. 54 – 66
CHECK POWER SUPPLY	ination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the		to <u>MWI-37, "COMBINATION</u>
s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the combination meter	tion meter branch line.	ioval and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.

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

Models without navigation system

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M156	86 87		Approx. 54 – 66

Models with navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M163	62	46	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

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

- Models with BOSE audio with color display: AV-232, "AV CONTROL UNIT : Diagnosis Procedure"
- Models with BOSE audio with color display with navigation system: <u>AV-412</u>, "<u>AV CONTROL UNIT</u>: <u>Diagno-sis Procedure</u>"

Is the inspection result normal?

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

- Models with BOSE audio with color display: <u>AV-322, "Removal and Installation"</u>
 - Models with BOSE audio with color display with navigation system: <u>AV-490</u>, "<u>Removal and</u> <u>Installation</u>"

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

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

COTC/CIRCUIT DIAGNO	SIS >		[CAN SYSTEM (TYPE 6)]
HVAC BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000007800622
1.CHECK CONNECTOR			
 Check the terminals and side and connector side 	cable from the negative terr nd connectors of the A/C au e).		d and loose connection (unit
<u>s the inspection result norn</u> YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOF	ninal and connector.		
I. Disconnect the connect		arness connector termina	ils.
	A/C auto amp. harness connector		Resistance (Ω)
Connector No. M37	Termir 1	nal No. 2	Approx. 54 – 66
Check the power supply an Models with color display: Models with monochrome s the inspection result norm YES (Present error)>>Rep • Models with o • Models mono	blace the A/C auto amp. Ref color display: <u>HAC-104, "Re</u> ochrome display: <u>HAC-211, '</u>	/C auto amp. Refer to the <u>: Diagnosis Procedure</u> JTO AMP. : Diagnosis Proc fer to the following. <u>moval and Installation</u> "Removal and Installation"	cedure"
YES (Past error)>>Error w	vas detected in the A/C auto er supply and the ground ci	amp. branch line.	- -

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800623

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Termi		
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-85, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-109, "Removal and Installation"</u>.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure			INFOID:00000007800625
.CHECK CONNECTOR			
 Check the terminals and 	able from the negative terr connectors of the ABS ac nit side and connector side	ctuator and electric unit (c	ontrol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
. Check the resistance be	or of ABS actuator and electron tween the ABS actuator a		nit) harness connector termi-
nals.			
	nd electric unit (control unit) har	ness connector	– Resistance (Ω)
ABS actuator a Connector No.	Termiı	nal No.	Resistance (Ω)
ABS actuator a Connector No. E26 s the measurement value w	Termir 26		– Resistance (Ω) Approx. 54 – 66
ABS actuator a Connector No. E26 S the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPLY Check the power supply and RC-85. "Wiring Diagram". S the inspection result norm	Termin 26 thin the specification? actuator and electric unit (Y AND GROUND CIRCUIT d the ground circuit of the al? ace the ABS actuator and elector and electric	15 control unit) branch line. - ABS actuator and electri electric unit (control unit).	Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-106, "Exploded</u>

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< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000007800626

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-120, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to TM-162, "Exploded View".

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

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 6)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:0000000780062
1.CHECK CONNECTOR			
 Check the terminals and and connector side). Is the inspection result norm 	cable from the negative term d connectors of the IPDM E		loose connection (unit side
YES >> GO TO 2. NO >> Repair the termi	inal and connector		
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	IPDM E/R harness connector	ss connector terminals.	
Connector No.			Resistance (Ω)
E17	40	39	Approx. 108 – 132
s the measurement value w YES >> GO TO 3. NO >> Repair the IPDN	/I E/R branch line.		
Check the power supply and Is the inspection result norm	d the ground circuit of the IP nal?	DM E/R. Refer to <u>PCS-18</u>	
Check the power supply and <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error wa	the ground circuit of the IP	DM E/R. Refer to <u>PCS-18</u> <u>PCS-35, "Removal and Ir</u> R branch line.	
YES (Past error)>>Error wa	d the ground circuit of the IP <u>aal?</u> lace the IPDM E/R. Refer to as detected in the IPDM E/F	DM E/R. Refer to <u>PCS-18</u> <u>PCS-35, "Removal and Ir</u> R branch line.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	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 connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

ECM		Resistance (Ω)
Terminal No.		
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?

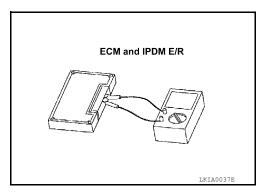
YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

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INFOID:000000007800628

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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