SECTION LAN SYSTEM

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CAN COMMUNICATION CIRCUIT

< PRECAUTION > PRECAUTION А PRECAUTIONS Precautions for Trouble Diagnosis INFOID:000000005512919 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:000000005512920 • 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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FUNCTION DIAGNOSIS CAN COMMUNICATION SYSTEM

System Description

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

System Diagram



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

Component	Description
Main line	CAN communication line between splices
Branch line	CAN communication line between splice and a control unit
Splice	A point connecting a branch line with a main line
Termination circuit	Refer to LAN-7, "CAN Communication Control Circuit".

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

CAN Communication Control Circuit



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

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

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< FUNCTION DIAGNOSIS >

DIAG ON CAN

Description

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[CAN FUNDAMENTAL]

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

System Diagram



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

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TROUBLE DIAGNOSIS

Condition of Error Detection

DTC of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT-III if a CAN communication signal is not transmitted or received between units for 2 seconds or more.	В
 DTCs of CAN communication are as follows: U0101 U0140 U0164 	С
• U1000 • U1001	D
 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 	E
WHEN DTC OF CAN COMMUNICATION IS INDICATED EVEN THOUGH CAN COMMUNICATION SYSTEM IS NORMAL	F
• Removal/installation of parts: Error may be detected when removing and installing CAN communication unit and related parts while turning the ignition switch ON. (A DTC except for CAN communication may be detected.)	G
 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, 	Н
 The malfunctions (Depending on the control unit which carries out CAN communication). Error may be detected if reprogramming is not completed normally. 	
CAN communication system is normal if DTC of CAN communication is indicated on SELF-DIAG RESULTS of CONSULT-III under the above conditions. Erase the memory of the self-diagnosis of each unit.	J
Symptom When Error Occurs in CAN Communication System	K
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.	K
	L
 Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring. Refer to <u>LAN-21, "Abbreviation List"</u> for the unit abbreviation. 	LA
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	0
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< FUNCTION DIAGNOSIS >

Example: TCM branch line open circuit



Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning chime does not sound.
EPS control unit	Normal operation.
Combination meter	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



< FUNCTION DIAGNOSIS >

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

NOTE:

• When data link connector branch line is open, transmission and reception of CAN communication signals are not affected. Therefore, no symptoms occur. However, be sure to repair malfunctioning circuit.

• The model (all units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with CONSULT-III if the following error occurs. The error is judged by the symptom.

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

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



Unit name	Symptom	
ECM	Engine torque limiting is affected, and shift harshness increases.	
BCM	 Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. 	N
EPS control unit	The steering effort increases.	0
Combination meter	 The shift position indicator and OD OFF indicator turn OFF. The speedometer is inoperative. The odo/trip meter stops. 	Р
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. 	

< FUNCTION DIAGNOSIS >

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



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

CAN Diagnosis with CONSULT-III

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

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

< FUNCTION DIAGNOSIS >

Self-Diagnosis

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[CAN FUNDAMENTAL]

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DTC	Self-diagnosis item (CONSULT-III indication)		DTC detection condition	Inspection/Action
U0101	LOST COMM (TCM)	When EC cation sig TCM for 2	M is not transmitting or receiving CAN communi- nal of OBD (emission-related diagnosis) from 2 seconds or more.	
U0140	LOST COMM (BCM)	When EC cation sig BCM for 2	M is not transmitting or receiving CAN communi- nal of OBD (emission-related diagnosis) from 2 seconds or more.	
U0164	LOST COMM (HVAC)	When EC cation sig C auto ar or more.	M is not transmitting or receiving CAN communi- nal of OBD (emission-related diagnosis) from A/ np. or unified meter and A/C amp. for 2 seconds	Start the inspection. Re-
111000		ECM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.	fer to the applicable sec- tion of the indicated control unit.
01000		Except for ECM When a control unit (except for E transmitting or receiving CAN co signal for 2 seconds or more.		
U1001	CAN COMM CIRCUIT	When EC cation sig for 2 seco	M is not transmitting or receiving CAN communi- nal other than OBD (emission-related diagnosis) onds or more.	
U1002	SYSTEM COMM	When a c communi	control unit is not transmitting or receiving CAN cation signal for 2 seconds or less.	
U1010	CONTROL UNIT(CAN)	When an	error is detected during the initial diagnosis for	Replace the control unit
P0607	ECM	CAN con	troller of each control unit.	indicating "U1010" or "P0607".

CAN Diagnostic Support Monitor

MONITOR ITEM (CONSULT-III)

Example: CAN DIAG SUPPORT MNTR indication

Withou	t PAST		With	With PAST		
EC	M		EC	М		
	PRSNT	PAST		PRSNT	PAST	
INITIAL DIAG	OK		TRANSMIT DIAG	OK	OK	
TRANSMIT DIAG	l OK		VDC/TCS/ABS	-]-	
ТСМ	OK	11	METER/M&A	OK	OK	
VDC/TCS/ABS	UNKWN		BCM/SEC	OK	ОК	
METER/M&A	¦ OK		ICC	¦-	-	
ICC	UNKWN]]	HVAC		-	
BCM/SEC	¦ OK	11	ТСМ	OK	OK	
IPDM E/R	OK		EPS		-	
			IPDM E/R	OK	OK	
			e4WD		-	
			AWD/4WD	OK	lок	

Without PAST

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

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< FUNCTION DIAGNOSIS >

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

With PAST

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

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

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

Example: Vehicle Display

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

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

How to Use CAN Communication Signal Chart

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



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BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

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Trouble Diagnosis Procedure

INFOID:000000005512933

INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

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

LAN-16

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

NOTE:

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

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

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< BASIC INSPECTION >

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

Example:

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

CAN System Specification Chart

Determine CAN system type from the following specification chart.



CAN System Type Specification Chart (Style B) NOTE:

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



CREATE INTERVIEW SHEET

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

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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

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

DETECT THE ROOT CAUSE

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

HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

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

• For trouble diagnosis procedure, refer to LAN-16. "Trouble Diagnosis Procedure".

Abbreviation List

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

Abbreviation	Unit name	
A-BAG	Air bag diagnosis sensor unit	F
ABS	ABS actuator and electric unit (control unit)	
ADP	Driver seat control unit	
AV	AV control unit	F
BCM	BCM	
DLC	Data link connector	
ECM	ECM	
HVAC	A/C auto amp.	
IPDM-E	IPDM E/R	F
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:000000005513073

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

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

Precautions Necessary for Steering Wheel Rotation after Battery Disconnect (Early Production, With Electronic Steering Column Lock)

INFOID:000000005885964

NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.
- This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

- 1. Connect both battery cables. NOTE: Supply power using jumper cables if battery is discharged.
- 2. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
- 3 Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
- Perform the necessary repair operation.

PRECAUTIONS

- 5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
- Perform self-diagnosis check of all control units using CONSULT-III.

Precautions for Trouble Diagnosis

CAUTION:

< PRECAUTION >

- 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).

- OK: Soldered and taped
- Bypass connection is never allowed at the repaired area. NOTE:

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

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

LAN-23

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[CAN]

INFOID:000000005460464

SKIB8766E

SKIB8767E

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< BASIC INSPECTION >

[CAN]

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

iew Sneet	INFOID:00000000546046
CAN Communication System Diagnosis Interview Sheet	
Date received:	
Type: VIN No.:	
Model:	
First registration: Mileage:	
CAN system type:	
Symptom (Results from interview with customer)	
Condition at inspection	
Error symptom : Present / Past	
	SKIB8898E

FUNCTION DIAGNOSIS

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

Determine CAN system type from the following specification chart.

NOTE: Refer to LAN-16, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

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

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Α.

Check CAN system type from the vehicle shape and equipment.



- Seat memory switches 1
- 2. Color display
- With color display Β.

CAN Communication Signal Chart

With automatic drive positioner

Refer to LAN-15. "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart. NOTE:

Refer to LAN-21, "Abbreviation List" for the abbreviations of the connecting units.

T: Transmit R: Receiv										
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	



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< FUNCTION DIAGNOSIS >

[CAN]

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						
Closed throttle position signal	Т								R	
Cooling fan speed request signal	Т									R
Engine and CVT integrated control signal	Т								R	
	R								Т	
Engine coolant temperature signal	Т		R	R	R	R		R	R	
Engine speed signal	Т			R	R	R		R	R	
Engine status signal	Т		R							
Fuel consumption monitor signal	Т			R						
				Т	R					
Malfunction indicator lamp signal	Т			R						
Power generation command value signal	Т									R
System setting signal		Т	Т		R					
		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
Ignition switch signal		R	Т							R
			R							Т
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
Oil pressure switch signal			Т	R						
			R	R						Т
Position light request signal			Т	R		R		R		R
Rear window defogger control signal			Т			R				R
	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	
Theft warning horn request signal			Т							R

< FUNCTION DIAGNOSIS >

Signal name/Connecting unit	ECM	ADP	BCM	M&A	AV	HVAC	STRG	ABS	TCM	IPDM-E	А
Trunk switch signal			Т	R	R						_
Turn indicator signal			Т	R		R		R			В
Distance to empty signal				Т	R						
Fuel level low warning signal				Т	R						С
Fuel level sensor signal	R			Т							0
Manual mode shift down signal				Т					R		
Manual mode shift up signal				Т					R		D
Manual mode signal				Т					R		
Market information signal				Т	R						F
Not manual mode signal				Т					R		
Paddle shifter shift down signal ^{*2}				Т					R		
Paddle shifter shift up signal ^{*2}				Т					R		F
Parking brake switch signal			R	Т	R			R			
Seat belt buckle switch signal			R	Т							G
			R	Т							0
Sleep-ready signal			R							Т	
	R	R	R	Т	R					R	Н
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			J
Brake warning lamp signal				R				Т			
SLIP indicator lamp signal				R				Т			
VDC OFF indicator lamp signal				R				Т			K
VDC operation signal								Т	R		
CVT indicator lamp signal				R					Т		L
CVT self-diagnosis signal	R								Т		
Input shaft revolution signal	R							R	Т		
Manual mode indicator signal				R				R	Т		LAN
Output shaft revolution signal	R							R	Т		
P range signal		R	R	R	R			R	Т		N
R range signal		R	R	R	R			R	Т		
Shift position signal				R					Т		
A/C compressor feedback signal						R				Т	0
Cooling fan speed signal	R									Т	
Detention switch signal		R	R							Т	Þ
Front wiper stop position signal			R							Т	Г
High beam status signal	R				R					Т	
Hood switch signal			R		R					Т	
Low beam status signal	R				R					Т	

[CAN]

< FUNCTION DIAGNOSIS >

[CAN]

Signal name/Connecting unit	ECM	ADP	BCM	M&A	AV	HVAC	STRG	ABS	TCM	IPDM-E
Push-button ignition switch status signal			R							Т
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.

COMPONENT DIAGNOSIS CAN COMMUNICATION SYSTEM

Component Parts Location



- ABS actuator and electric unit (con- 2. 1. trol unit) E26
- IPDM E/R E17 4.
- Data link connector M22 7.
- 10. Air bag diagnosis sensor unit M35
- TCM F15
- 5. BCM M19
- Steering angle sensor M53 8.
- 11. A/C auto amp. M37
- ECM E10 3.
- 6. Combination meter M24
- 9. Driver seat control unit B203
- 12. AV control unit M46: Without navigation system and with rear controls M137: With navigation system and rear controls M156: Without navigation system and rear controls M163: With navigation system and Κ without rear controls

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[CAN]

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 AD>: WITH AUTOMATIC DRIVE

 POSITIONER

 XA>: WITHOUT AUTOMATIC DRIVE

 POSITIONER

Wiring Diagram - CAN SYSTEM -

INFOID:000000005460469





< COMPONENT DIAGNOSIS >

 END:: WITHOUT NAVI

 NHD:: WITH NAVI AND REAR CONTROLS

 NID:: WITHOUT NAVI AND WITHOUT REAR CONTROLS

 NID:: WITHOUT NAVI AND WITH REAR CONTROLS

 NID:: WITHOUT NAVI AND WITH REAR CONTROLS

 NID:: WITH NAVI

 NID:: EXCEPT MEXICO

 PAD:: WITH PREMIUM AUDIO SYSTEM

 А IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E17) ဓ္က *****2 1: (EN) : 87 2: (NV) : 46 В 4 С **★**1 1: (EN) : 86 2 : (NV) : 62 D JOINT CONNECTOR-E04 (E22) Ε 2 F JOINT CONNECTOR-E03 (E21) TCM (TRANSMISSION CONTROL MODULE) (F15) ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (E26) G 32 Н **15G** 8G FM) AIR BAG DIAGNOSIS SENSOR UNIT (M35) : (NX) 46 ž ž J STEERING ANGLE SENSOR (M53) A/C AUTO AMP. M37 ٦. Κ ð AV CONTROL UNIT M465 : (NU) M1373 : (NU) M1356 : (NU) M1356 : (NU) M1356 : (NU) L LAN DATA LINE Ν Ο ABMWA0487GI Ρ

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ABMIA0002GB

< COMPONENT DIAGNOSIS >



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< COMPONENT DIAGNOSIS >

[CAN]



< COMPONENT DIAGNOSIS >

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ABMIA1315GB

Р

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[CAN]

< COMPONENT DIAGNOSIS >







5 6 7 8 9 10 41		Signal Name	CAN-L	CAN-H	
2 3 4		Color of Wire	٩	Γ	
-	IJ	Ferminal No.	31	32	

Torminal		15J	16J						
r No. B1	r Name WIRE TO WIRE	r Color WHITE		31 41 51 61 77 81 91	1. 2.1 10.1 11.1 12.1 13.1 14.1 15.1 16.1 17.1	22J 23J 24J 25J	18J 19J 20J 21J 26J 27J 28J 29J 30J	311 32J 33J 34J 35J 36J 37J 38J 33J 40J 41J 42J 43J 44J 45J 46J	47.] 48.] 58.] 57.] 52.] 53.] 54.] 55.] 47.] 48.] 55.1 57.1 58.1 50.1 61.1 62.1 62.1



ABMIA1316GB

Signal Name Т

Color of Wire _ ٩

No.


ABMIA1389GB

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< COMPONENT DIAGNOSIS >

[CAN]

MALFUNCTION AREA CHART

< COMPONENT DIAGNOSIS >

MALFUNCTION AREA CHART

Main Line

INFOID:000000005460470

[CAN]

Malfunction area	Reference
Main line between driver seat control unit and data link connector	LAN-39, "Diagnosis Procedure"
Main line between data link connector and A/C auto amp.	LAN-40, "Diagnosis Procedure"
Main line between A/C auto amp. and ABS actuator and electric unit (control unit)	LAN-41, "Diagnosis Procedure"
Main line between A/C auto amp. and air bag diagnosis sensor unit	LAN-42, "Diagnosis Procedure"
Main line between air bag diagnosis sensor unit and ABS actuator and electric unit (control unit)	LAN-43, "Diagnosis Procedure"

Branch Line

INFOID:000000005460471

Malfunction area	Reference
ECM branch line circuit	LAN-44, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-45. "Diagnosis Procedure"
BCM branch line circuit	LAN-46. "Diagnosis Procedure"
Data link connector branch line circuit	LAN-47, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-48. "Diagnosis Procedure"
AV control unit branch line circuit	LAN-49. "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-51, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-52, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-53. "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-54, "Diagnosis Procedure"
TCM branch line circuit	LAN-55, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-56, "Diagnosis Procedure"

Short Circuit

INFOID:000000005460472

Malfunction area	Reference	
CAN communication circuit	LAN-57. "Diagnosis Procedure"	

COMPONENT DIAC	GNOSIS >			
IAIN LINE BE I				[CAN]
	WEEN ADP A	ND DLC CIRCU		
iagnosis Proced	ure			INFOID:000000005460473
Regarding Wiring Diag	ram information, refer	to <u>LAN-30, "Wiring Di</u>	agram - CAN SYSTE	<u>M -"</u> .
.CHECK CONNECT	OR			
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	vitch OFF. tery cable from the ne g terminals and conr B1 M6 <u>normal?</u> terminal and connect CONTINUITY (OPEN	egative terminal. hectors for damage, b or. I CIRCUIT)	end and loose conne	ction (connector side
 Disconnect the follo Harness connector Harness connector Check the continui 	owing harness conner rs B208 and B32 rs B1 and M6 ty between the harnes	ctors. ss connectors.		
	oppostor	Harness connector		
Harness	connector	Hamessic	erineeter	Continuity
Harness of Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Harness of Connector No.	Terminal No.	Connector No.	Terminal No. 15J	Continuity Existed
Harness of Connector No. B32	Terminal No. 9 10	Connector No.	Terminal No. 15J 16J	Continuity Existed Existed
Harness Connector No. B32 the inspection result YES YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be	Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN etween the harness co	e harness connectors I CIRCUIT)	Terminal No. 15J 16J B32 and B1. link connector.	Continuity Existed Existed
Harness Connector No. B32 the inspection result YES YES > GO TO 3. NO > Repair the CHECK HARNESS heck the continuity be Harness of	Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN etween the harness co	e harness connectors I CIRCUIT) onnector and the data	Terminal No. 15J 16J B32 and B1. link connector.	Continuity Existed Existed
Harness Connector No. B32 the inspection result YES YES > GO TO 3. NO > Repair the CHECK HARNESS heck the continuity be Harness of Connector No.	Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN etween the harness co connector Terminal No.	Connector No. B1 e harness connectors I CIRCUIT) connector and the data Data link c Connector No.	Terminal No. 15J 16J B32 and B1. link connector. onnector Terminal No.	Continuity Existed Existed Continuity
Harness of Connector No. B32 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be Harness of Connector No. M6	Terminal No. 9 10 normal? main line between the CONTINUITY (OPEN etween the harness co connector Terminal No. 15J	Connector No. B1 e harness connectors I CIRCUIT) connector and the data Data link c Connector No. M22	Terminal No. 15J 16J B32 and B1. link connector. onnector Terminal No. 6	Continuity Existed Existed Continuity Existed

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000005460474

[CAN]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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	6	M27	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.

Ν	AIN LINE BET	VEEN HVAC AN	D ABS CIRCUIT	
< COMPONENT DIAC	GNOSIS >			[CAN]
MAIN LINE BET	WEEN HVAC	AND ABS CIRC	UIT	
Diagnosis Proced	ure			INFOID:000000005460475
Regarding Wiring Diag	ram information, refer	to <u>LAN-30, "Wiring D</u>	iagram - CAN SYSTE	<u>-"</u> .
1				
I.CHECK CONNECT	OR			
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Harness connector 	vitch OFF. tery cable from the ne ig terminals and conr M1	egative terminal. nectors for damage, b	end and loose conne	ection (connector side
- Harness connector	r E30			
Is the inspection result	normal?			
NO >> Repair the	terminal and connect	or.		
2.CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
 A/C auto amp. Harness connector Check the continui 	rs M1 and E30 ty between the A/C a	uto amp. harness coni	nector and the harnes	ss connector.
A/C auto amp. ha	arness connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M1	15G	Existed
	2		8G	Existed
YES >> GO TO 3. NO >> Repair the 3. CHECK HARNESS 1. Disconnect the cor 2. Check the continui harness connector	main line between th CONTINUITY (OPEN nector of ABS actuat ty between the harne	e A/C auto amp. and t I CIRCUIT) or and electric unit (co ss connector and the	he harness connecto ontrol unit). ABS actuator and ele	r M1.
Harness	connector	ABS actuator and elect	ctric unit (control unit)	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	15G	500	26	Existed
E30	8G	E20	15	Existed
Is the inspection result YES (Present error)>> YES (Past error)>>Er electric uni NO >> Repair the (control un	normal? Check CAN system ror was detected in th t (control unit). main line between th it).	type decision again. e main line between th ne harness connector	ne A/C auto amp. and E30 and the ABS act	the ABS actuator and tuator and electric unit

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000005460476

[CAN]

Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

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.			
M37	1	M1	15G	Existed	
WIG7	2	IVI I	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.

N	IAIN LINE BETW	EEN A-BAG AN	ID ABS CIRCUIT	
COMPONENT DIAC	GNOSIS >			[CAN]
1AIN LINE BET	WEEN A-BAG	AND ABS CIR	CUIT	
iagnosis Proced	ure			INFOID:000000005460477
egarding Wiring Diag	ram information, refer	to LAN-30, "Wiring D	iagram - CAN SYSTEI	<u>VI -"</u> .
.CHECK CONNECT	OR			
 Turn the ignition sy Disconnect the bat Check the followin and harness side). Harness connector Harness connector 	vitch OFF. tery cable from the ne ig terminals and conr M1 530	egative terminal. nectors for damage, t	end and loose conne	ction (connector side
the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	terminal and connect	or		
CHECK HARNESS	CONTINUITY (OPEN			
 Disconnect the foll A/C auto amp. Harness connector Check the continuit 	owing harness conne rs M1 and E30 ty between the A/C a	ctors. uto amp. harness con	nector and the harness	s connector.
A/C auto amp. ha	arness connector	Harness		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Eviated
M37	2	M1	86	Existed
YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the cor Check the continui harness connector	main line between the CONTINUITY (OPEN nector of ABS actuat ty between the harne	e air bag diagnosis se I CIRCUIT) or and electric unit (co ss connector and the ABS actuator and ele	nsor unit and the harn ontrol unit). ABS actuator and elec ctric unit (control unit)	ess connector M1.
Connector No	Torminal No.	harness of	connector	Continuity
Connector No.	15G	Connector No.	26	Existed
E30	8G	E26	15	Existed
the inspection result YES (Present error)>> YES (Past error)>>Er ABS actua NO >> Repair the (control un	normal? Check CAN system for ror was detected in t tor and electric unit (of main line between th it).	type decision again. he main line betweer control unit). le harness connector	the air bag diagnosis E30 and the ABS actu	s sensor unit and the uator and electric unit

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005460478

[CAN]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

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

Is the inspection result normal?

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

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

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

ADP BRANCH LINE CIRCUIT

COMPONENT DIAGNOSIS	>			[CAN]
ADP BRANCH LINE C	IRCUIT			
)iagnosis Procedure				INFCID:00000005460479
			-	
Regarding Wiring Diagram inform	nation, refer to <u>LA</u>	<u> N-30, "Wiring</u>	<u>g Diagram - CAN</u>	<u>SYSTEM -"</u> .
.CHECK CONNECTOR				
 Turn the ignition switch OFF Disconnect the battery cable Check the following termina nector side). Driver seat control unit Harness connector B208 	from the negative s and connectors	e terminal. for damage,	bend and loose c	connection (unit side and con-
Harness connector B32				
 the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal 	and connector.			
CHECK HARNESS FOR OP	EN CIRCUIT			
. Disconnect the connector of	driver seat contro	ol unit.		torminala
	en the unver seat		arriess connector	
Driver se	at control unit harness	s connector		Resistance (Ω)
Connector No.		Terminal No.		
B203	16		32	Approx. 54 – 66
the measurement value within	the specification?	<u>?</u>		
YES >> GO I O 3.	at control unit brar	nch line		
ONTROL UNIT : Diagnosis Pr	ground circuit of the ocedure".	ne driver sea	control unit. Refe	er to <u>ADP-46, "DRIVER SEAT</u>
the inspection result normal?				
YES (Present error)>>Replace YES (Past error)>>Error was d	the driver seat co etected in the driv	ontrol unit. Re ver seat contro	fer to <u>ADP-195. "I</u> ol unit branch line	Removal and Installation".
YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su	the driver seat co etected in the driv pply and the grou	ontrol unit. Re ver seat contro und circuit.	fer to <u>ADP-195. "I</u> bl unit branch line	Removal and Installation"
YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su	the driver seat co etected in the driv pply and the grou	ontrol unit. Re rer seat contro ind circuit.	fer to <u>ADP-195, "I</u> bl unit branch line	Removal and Installation".

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005460484

[CAN]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			
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-40, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOS	SIS >		[CAN]
DLC BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000005460485
Regarding Wiring Diagram i	nformation, refer to <u>LAN-3(</u>), "Wiring Diagram - CA	<u>N SYSTEM -"</u> .
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an (connector side and har 	OFF. cable from the negative ten d connectors of the data li ness side).	minal. ink connector for dama	ge, bend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	nal? inal and connector. OPEN CIRCUIT		
Check the resistance betwe	en the data link connector	terminals.	
	Data link connector		
Connector No.	Termi	nal No.	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.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005460486

[CAN]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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.

Combination meter harness connector			Resistance (O)
Connector No.	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-140, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

AV BRANCH LINE CIRCUIT

< COMPONENT DIAGNO	SIS >		[CAN]
AV BRANCH LINE	CIRCUIT		
)iagnosis Procedure			INECID-00000005460481
Regarding Wiring Diagram	information, refer to L	AN-30, "Wiring Diagram - CAN	SYSTEM -".
.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the terminals ar side and connector side 	 OFF. cable from the negative nd connectors of the A e). 	e terminal. V control unit for damage, ber	nd and loose connection (unit
s the inspection result norr	<u>nal?</u>		
YES >> GO TO 2.	ninal and connector		
2. CHECK HARNESS FOR	R OPEN CIRCUIT		
 Disconnect the connect Check the resistance be Models without navigat 	tor of AV control unit. etween the AV control ion system and with re	unit harness connector termina ar controls	als.
	AV control unit harness cor	nnector	Peristance (O)
Connector No.	Terminal No.		
M46	86	87	Approx. 54 – 66
Models with navigation	system and rear contr	ols	
	AV control unit harness cor	nnector	
Connector No.		Terminal No.	- Resistance (12)
M137	62	46	Approx. 54 – 66
Models without navigat	ion system and rear co	ontrols	
	AV control unit harness cor	nnector	
Connector No.		Terminal No.	- Resistance (Ω)
M156	86	87	Approx. 54 – 66
Models with navigation	system and without re	ar controls	
	AV control unit harness cor	nnector	
Connector No.		Terminal No.	Resistance (Ω)
M163	62	46	Approx. 54 – 66
M163 Is the measurement value	62 within the specification	<u>46</u>	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the AV (control unit branch line		
CHECK POWER SLIPP		RCUIT	
Check the power supply an Models with BOSE audio Models with BOSE audio sis Procedure"	d the ground circuit of with color display: <u>AV-</u> with color display with	the AV control unit. Refer to the 234, "AV CONTROL UNIT : Dia navigation system: <u>AV-411, "A</u>	e following. agnosis Procedure" V CONTROL UNIT : Diagno-
Models with BOSE audio <u>cedure"</u> Models with BOSE audio	with color display with with color display with	rear controls: <u>AV-565, "AV CON</u> h navigation system with rear	TROL UNIT : Diagnosis Pro- controls: <u>AV-746, "AV CON-</u>

Is the inspection result normal?

AV BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

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

- Models with BOSE audio with color display: AV-322, "Removal and Installation"
- Models with BOSE audio with color display with navigation system: <u>AV-487</u>, "<u>Removal and</u> <u>Installation</u>"
- Models with BOSE audio with color display with rear controls: <u>AV-654</u>, "<u>Removal and Installa-</u> tion"
- Models with BOSE audio with color display with navigation system with rear controls: <u>AV-824.</u> <u>"Removal and Installation"</u>

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

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

HVAC BRANCH LINE CIRCUIT

HVAC BRANCH LINE CIRCUIT Diagnosis Procedure Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 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. Mathematical Action amp. harness connector terminals. Mathematical Action amp. harness connector terminals. Mathematical Action amp. harness connector terminals. Mathematical Action amp. harness connector terminals. Mathematical Action amp. harness connector terminals. Mathematical Action amp. harness connector terminals. Mathematical Action amp. harness connector terminals. Mathematical Action amp. harness con
Diagnosis Procedure wrone excesses and the procedure of the proce
Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 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. harness connector terminals. More the resistance between the A/C auto amp. harness connector terminals. More the resistance between the A/C auto amp. harness connector terminals. More the resistance between the A/C auto amp. harness connector terminals. More the A/C auto amp. harness connector More the A/C auto amp. branch line. Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. Models with monochrome display: <u>HAC-64.</u> "A/C AUTO AMP.: Diagnosis Procedure" Models with monochrome display: <u>HAC-190.</u> "A/C AUTO AMP.: Diagnosis Procedure"
Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -". 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 terminals.
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 terminals. A/C auto amp. harness connector terminals. M37 1 2 Approx.54 - 66 Is the measurement value within the specification? YES YES > GO TO 3. NO >> Repair the A/C auto amp. branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. • Models with color display: <u>HAC-190</u> , "A/C AUTO AMP. : Diagnosis Procedure" • Models with monochrome display: <u>HAC-190</u> , "A/C AUTO AMP. : Diagnosis Procedure"
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the A/C auto amp. for damage, bend and loose connection (unit side and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of A/C auto amp. 2. Check the resistance between the A/C auto amp. harness connector terminals. A/C auto amp. harness connector Resistance (Ω) M37 1 2 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. • Models with color display: <u>HAC-64. "A/C AUTO AMP. : Diagnosis Procedure"</u> • Models with monochrome display: <u>HAC-190. "A/C AUTO AMP. : Diagnosis Procedure"</u>
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of A/C auto amp. 2. Check the resistance between the A/C auto amp. harness connector terminals. A/C auto amp. harness connector Resistance (Ω) M37 1 2 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. • Models with color display: <u>HAC-64. "A/C AUTO AMP. : Diagnosis Procedure"</u> • Models with monochrome display: <u>HAC-190, "A/C AUTO AMP. : Diagnosis Procedure"</u> Is the inspection result normal?
NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of A/C auto amp. 2. Check the resistance between the A/C auto amp. harness connector terminals. A/C auto amp. harness connector Resistance (Ω) M37 1 2 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. • Models with color display: HAC-64, "A/C AUTO AMP. : Diagnosis Procedure" • Models with monochrome display: HAC-190, "A/C AUTO AMP. : Diagnosis Procedure" Is the inspection result normal?
1. Disconnect the connector of A/C auto amp. 2. Check the resistance between the A/C auto amp. harness connector terminals. A/C auto amp. harness connector Resistance (Ω) M37 1 2 Approx. 54 – 66 Is the measurement value within the specification? YES > GO TO 3. NO >> Repair the A/C auto amp. branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. • Models with color display: HAC-64, "A/C AUTO AMP. : Diagnosis Procedure" • Models with monochrome display: HAC-190, "A/C AUTO AMP. : Diagnosis Procedure" Is the inspection result normal?
A/C auto amp. harness connector Resistance (Ω) Connector No. Terminal No. M37 1 2 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. S.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: HAC-64, "A/C AUTO AMP. : Diagnosis Procedure" • Models with monochrome display: HAC-190, "A/C AUTO AMP. : Diagnosis Procedure" Is the inspection result normal?
Connector No. Terminal No. Resistance (S2) M37 1 2 Approx. 54 – 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. • Models with color display: HAC-64, "A/C AUTO AMP. : Diagnosis Procedure" • Models with monochrome display: HAC-190, "A/C AUTO AMP. : Diagnosis Procedure" Is the inspection result normal? Normal?
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. NO >> Repair the A/C auto amp. branch line. S.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: HAC-64, "A/C AUTO AMP. : Diagnosis Procedure" • Models with monochrome display: HAC-190, "A/C AUTO AMP. : Diagnosis Procedure" Is the inspection result normal?
Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. • Models with color display: HAC-64, "A/C AUTO AMP. : Diagnosis Procedure" • Models with monochrome display: HAC-190, "A/C AUTO AMP. : Diagnosis Procedure" Is the inspection result normal?
 Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. Models with color display: <u>HAC-64, "A/C AUTO AMP. : Diagnosis Procedure"</u> Models with monochrome display: <u>HAC-190, "A/C AUTO AMP. : Diagnosis Procedure"</u> Is the inspection result normal?
Is the inspection result normal?
YES (Present error)>>Replace the A/C auto amp. Refer to the following
 Models with color display: <u>HAC-125</u>, "<u>Removal and Installation</u>" Models monochrome display: <u>HAC-235</u>, "<u>Removal and Installation</u>" YES (Past error)>>Error was detected in the A/C auto amp. branch line. NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005460483

[CAN]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CHECK CONNECTOR

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Ste	Steering angle sensor harness connector		
Connector No.	Terminal No.		
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-81, "Wiring Dia-gram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-107, "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >	CAN]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	P 0005460480
 WARNING: Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 mi or more. (To discharge backup capacitor.) Never use unspecified tester or other measuring device. CHECK CONNECTOR 	nutes
Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose control (unit side and connector side). Is the inspection result normal?	nnec-
YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	E
Check the air bag diagnosis sensor unit. Refer to <u>SRC-3. "Work Flow"</u> . <u>Is the inspection result normal?</u> XES >> Replace the main barness	F
NO >> Replace parts whose air bag system has a malfunction.	G
	F
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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005460487

[CAN]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Pesistance (O)
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-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

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.

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-104</u>, "Exploded <u>View</u>".

TCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOS	IS >		[CAN]
TCM BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000005460488
Regarding Wiring Diagram ir	formation, refer to <u>LAN-30. "</u>	<u> Wiring Diagram - CAN S`</u>	<u>YSTEM -"</u> .
1. CHECK CONNECTOR			
 Turn the ignition switch (2) Disconnect the battery c Check the following term nector side). TCM Harness connector F1 Harness connector E3 Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR 	DFF. able from the negative termir inals and connectors for dan al? nal and connector. OPEN CIRCUIT	nal. nage, bend and loose cor	nection (unit side and con-
 Disconnect the connector Check the resistance be 	r of TCM. tween the TCM harness con	nector terminals.	
Connector No.	Terminal	No.	Resistance (Ω)
F15	32	31	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the TCM CHECK POWER SUPPLY Check the power supply and ROL SYSTEM -".	branch line. (AND GROUND CIRCUIT I the ground circuit of the T(CM. Refer to <u>TM-121, "W</u>	/iring Diagram - CVT CON-
s the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	<u>al?</u> ace the TCM. Refer to <u>TM-16</u> is detected in the TCM branc r supply and the ground circu	<u>3. "Exploded View"</u> . h line. ıit.	

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[CAN]

Regarding Wiring Diagram information, refer to <u>LAN-30</u>, "Wiring Diagram - CAN SYSTEM -".

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.		
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.

 ${\it 3.}$ check power supply and ground circuit

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-22, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-41, "Removal and Installation".

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

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

CAN COMMUNICATION CIRCUIT

COMPONENT DIAGNOSIS > [CAN] CAN COMMUNICATION CIRCUIT Diagnosis Procedure Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 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	F

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 linl	connector		Continuity	
Connector No.	Terminal No.	Cround	Continuity	1
MOO	6	Ground	Not existed	- I
IVIZZ	14	1	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 (O)	
Terminal No.			
98	97	Approx. 108 – 132	

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

IPDM E/R		Resistance (O)
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.



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< COMPONENT DIAGNOSIS >

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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:

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

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

COMPONENT DIA				
	GNOSIS >		[CAN	I SYSTEM (TYPE 1)]
COMPONE	NT DIAGNO	SIS		
AIN LINE BE	FWEEN DLC A	ND HVAC CIRC	CUIT	
iagnosis Proced	lure			INFQID:000000005519265
Regarding Wiring Diac	aram information, refer	r to LAN-30. "Wiring D	iagram - CAN SYSTE	EM -".
	y ,		····	
.CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
. Turn the ignition s	witch OFF.			
 Disconnect the ba Disconnect the fol 	ittery cable from the ne llowing harness conne	egative terminal. ctors.		
ECM				
A/C auto amp. Check the continu	ity between the data li	ink connector and the	A/C auto amp. harne	ss connector.
Data link	connector	A/C auto amp h	arness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M27	1	Existed
IVIZZ	14	10137	2	Existed
amp.	rror was detected in t	he main line betweer	the data link conne	ctor and the A/C auto
amp. NO >> Repair the	rror was detected in t	he main line betweer e data link connector	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. IO >> Repair the	rror was detected in t	he main line betweer e data link connector	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. IO >> Repair the	rror was detected in t	he main line betweer e data link connector	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	ctor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	octor and the A/C auto
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	o.
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	o.
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	o.
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	o.
amp. O >> Repair the	rror was detected in t	he main line betweer	n the data link conne and the A/C auto amp	o.

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000005519267

[CAN SYSTEM (TYPE 1)]

Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

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
WIG7	2	IVI I	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.

	IAIN LINE BETW	/EEN A-BAG AN	ID ABS CIRCUIT	- SYSTEM (TYPE 1)]
MAIN LINE BET	WEEN A-BAG	AND ABS CIR	CUIT	
				/
Diagnosis Proced	ure			INFOID:000000005519268
Regarding Wiring Diag	ram information, refer	to LAN-30. "Wiring D	iagram - CAN SYSTE	<u>M -"</u> .
1. CHECK CONNECT	OR			(
 Turn the ignition sw Disconnect the bat Check the followin and harness side). Harness connector Harness connector Is the inspection result 	vitch OFF. tery cable from the ne g terminals and conr ⁻ M1 ⁻ E30 normal?	egative terminal. nectors for damage, b	end and loose conne	ection (connector side
YES >> GO TO 2.				
NO >> Repair the	terminal and connect	or.		I
Z.CHECK HARNESS				
 A/C auto amp. Harness connector Check the continui 	rs M1 and E30 ty between the A/C at	uto amp. harness con	nector and the harnes	s connector.
A/C auto amp. ha	arness connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M1 -	15G 8G	Existed
Is the inspection result YES >> GO TO 3. NO >> Repair the 3. CHECK HARNESS 1. Disconnect the cor 2. Check the continuit	normal? main line between the CONTINUITY (OPEN nector of ABS actuat	e air bag diagnosis se I CIRCUIT) or and electric unit (co	nsor unit and the harr ontrol unit). ABS actuator and ele	ness connector M1.
harness connector				
Harness	connector	ABS actuator and ele harness o	ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
	8G		15	Existed
YES (Present error)>> YES (Past error)>>Er ABS actua NO >> Repair the (control un	<u>normal?</u> Check CAN system to ror was detected in the tor and electric unit (content of the main line between the it).	type decision again. he main line between ontrol unit). e harness connector	the air bag diagnosi E30 and the ABS act	s sensor unit and the uator and electric unit

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519269

[CAN SYSTEM (TYPE 1)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Pesistance (O)
Connector No.	Terminal No.		
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 EC-144, "Diagnosis Procedure".

Is the inspection result normal?

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

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

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

< COMPONENT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 1)]
BCM BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:000000005519271
5			
Regarding Wiring Diagram in	nformation, refer to <u>LAN-30</u>	<u>. "Wiring Diagram - CAN S</u>	<u>YSTEM -"</u> .
1.CHECK CONNECTOR			
1. Turn the ignition switch	OFF.		
 Disconnect the battery of Check the terminals and 	able from the negative tern d connectors of the BCM f	ninal. or damage, bend and loos	e connection (unit side and
connector side).		U	Υ.
Is the inspection result norm	<u>al?</u>		
NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
1. Disconnect the connect	or of BCM.		
2. Check the resistance be	tween the BCM harness co	onnector terminals.	
	BCM harness connector		Resistance (O)
Connector No.	Termin	al No.	
M19	79	78	Approx. 54 – 66
Is the measurement value w	ithin the specification?		
NO >> Repair the BCM	branch line.		
3. CHECK POWER SUPPL	Y AND GROUND CIRCUIT		
Check the power supply and	I the ground circuit of the B	CM. Refer to <u>BCS-40, "Dia</u>	gnosis Procedure".
Is the inspection result norm	al?		
YES (Present error)>>Repl	ace the BCM. Refer to BCS	S-87, "Removal and Installa	ation".
NO >> Repair the powe	er supply and the ground cir	cuit.	

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DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure

INFOID:000000005519272

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Posistance (O)
Connector No.	Terminal No.		Resistance (12)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

- YES (Past error)>>Error was detected in the data link connector branch line circuit.
- NO >> Repair the data link connector branch line.

< COMPONENT DIAGNOSIS > **M&A BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000005519273 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 1 Disconnect the connector of combination meter. 2. Check the resistance between the combination meter harness connector terminals. Combination meter harness connector Resistance (Ω) Connector No. Terminal No. Н M24 21 22 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the combination meter branch line. ${\it 3.}$ check power supply and ground circuit Check the power supply and the ground circuit of the combination meter. Refer to MWI-37, "COMBINATION METER : Diagnosis Procedure". Is the inspection result normal? Κ YES (Present error)>>Replace the combination meter. Refer to MWI-140, "Removal and Installation". YES (Past error)>>Error was detected in the combination meter branch line. >> Repair the power supply and the ground circuit. NO L LAN Ν

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519275

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			$Pesistance\left(\mathbf{O}\right)$
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

- Models with color display: <u>HAC-64, "A/C AUTO AMP. : Diagnosis Procedure"</u>
- Models with monochrome display: <u>HAC-190</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

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

- Models with color display: <u>HAC-125</u>, "Removal and Installation"
- Models monochrome display: <u>HAC-235, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > STRG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519276 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection 3. (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1 Disconnect the connector of steering angle sensor. 2. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. Н 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. ${\it 3.}$ check power supply and ground circuit Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? Κ YES (Present error)>>Replace the steering angle sensor. Refer to BRC-107, "Removal and Installation". YES (Past error)>>Error was detected in the steering angle sensor branch line. >> Repair the power supply and the ground circuit. NO L LAN Ν

Revision: November 2009

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< COMPONENT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519277

[CAN SYSTEM (TYPE 1)]

WARNING:

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

Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the terminal and connector.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

< COMPONENT DIAGNOSIS > ABS BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000005519278 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend 3. and loose connection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 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) Н 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 BRC-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? Κ YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-104, "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. L >> Repair the power supply and the ground circuit. NO LAN Ν

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519279

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Pesistance (O)
Connector No.	Terminal No.		
F15	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-121, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to <u>TM-163</u>, "Exploded View".

- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

INFOID:000000005519280

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В

< COMPONENT DIAGNOSIS > [CAN SYS IPDM-E BRANCH LINE CIRCUIT Diagnosis Procedure Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

1.CHECK CONNECTOR			
 Turn the ignition switch (Disconnect the battery of Check the terminals and and connector side). 	OFF. able from the negative term I connectors of the IPDM E	inal. /R for damage, bend and	loose connection (unit side
Is the inspection result norm	al?		
YES >> GO TO 2.			
2 ALEOK LADAEOO FOD	nal and connector.		
Z .CHECK HARNESS FOR	OPEN CIRCUIT		
1. Disconnect the connecto	or of IPDM E/R.	a connector terminale	
2. Check the resistance be			
	IPDM E/R harness connector		Desistance (O)
Connector No.	Termina	al No.	Resistance (12)
E17	40	39	Approx. 108 – 132
Is the measurement value w	ithin the specification?		
YES >> GO TO 3.			
NO >> Repair the IPDN	I E/R branch line.		
J. CHECK POWER SUPPLY	Y AND GROUND CIRCUIT		
Check the power supply and	the ground circuit of the IP	DM E/R. Refer to <u>PCS-22,</u>	"Diagnosis Procedure".
Is the inspection result norm			
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the IPDM E/R. Refer to as detected in the IPDM E/R	<u>PCS-41, "Removal and In</u> branch line	istallation".
NO >> Repair the powe	r supply and the ground circ	cuit.	

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000005519281

[CAN SYSTEM (TYPE 1)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CONNECTOR INSPECTION

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data lin	Data link connector		Continuity
Connector No.	Terminal No.	Cround	Continuity
MOO	6	Giouna	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.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



ECM and IPDM E/R		
LKIA0037E		
CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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

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MAIN LINE BETWEEN ADP AND DLC CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN ADP AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005519282

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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.	Connector No. Terminal No.	
P22	9	D1	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	connector	Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
Me	15J	MOO	6	Existed	
IVIO	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.

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT AGNOSIS > [CAN SYSTEM (TYPE 2)]

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure					А
Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".					
1.CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)			С
 Turn the ignition sv Disconnect the bat Disconnect the foll ECM A/C auto amp. Check the continuit 	witch OFF. Itery cable from the ne owing harness conne ity between the data li	egative terminal. ctors. nk connector and the	A/C auto amp. harnes	ss connector.	E
Data link	connector	A/C auto amp. ha	arness connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	F
M22	6	M37	1	Existed	
WIZZ	14		2	Existed	G
YES (Present error)> YES (Past error)>>Er amp. NO >> Repair the	Check CAN system fror was detected in t main line between the	type decision again. he main line betweer e data link connector	n the data link connectand the A/C auto amp	ctor and the A/C auto	H
					k
					L

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000005519285

[CAN SYSTEM (TYPE 2)]

Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

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	N/1	15G	Existed
WIG7	2	IVI I	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.

Μ	IAIN LINE BETW	/EEN A-BAG AN	ID ABS CIRCUIT	-
COMPONENT DIAC	SNOSIS >		[CAN	SYSTEM (TYPE 2)]
MAIN LINE BET	WEEN A-BAG	AND ABS CIR	CUIT	
Diagnosis Proced	ure			INFOID:000000005519286
Regarding Wiring Diag	ram information, refer	to <u>LAN-30, "Wiring D</u>	iagram - CAN SYSTE	<u>M -"</u> .
1.CHECK CONNECT	OR			
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Harness connector Harness connector 	vitch OFF. tery cable from the ne g terminals and conr ⁻ M1 ⁻ E30	egative terminal. nectors for damage, b	end and loose conne	ection (connector side
s the inspection result YES >> GO TO 2. NO >> Repair the	normal? terminal and connect	or.		
CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
A/C auto amp. Harness connector Check the continui	rs M1 and E30 ty between the A/C at	uto amp. harness con	nector and the harnes	s connector.
A/C auto amp. na	Torminal No.	Harness of	Torminal No	Continuity
Connector No.	1	Connector No.	15G	Existed
M37	2	M1	8G	Existed
 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the cort Check the continuit harness connector 	normal? main line between the CONTINUITY (OPEN nector of ABS actuat ty between the harne	e air bag diagnosis se I CIRCUIT) or and electric unit (co ss connector and the	nsor unit and the harr ontrol unit). ABS actuator and ele	ness connector M1.
Harness	connector	ABS actuator and ele harness of	ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
F30	15G	F26	26	Existed
200	8G		15	Existed
s the inspection result YES (Present error)>> YES (Past error)>>En ABS actua NO >> Repair the (control un	Check CAN system for was detected in tor and electric unit (compared to the main line between the main line be	type decision again. he main line between control unit). le harness connector	the air bag diagnosi E30 and the ABS act	s sensor unit and the uator and electric unit

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519287

[CAN SYSTEM (TYPE 2)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Pesistance (O)
Connector No.	Termi		
E10	98	97	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

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

Is the inspection result normal?

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

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

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

ADP BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519288 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). Driver seat control unit Е 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. Н Driver seat control unit harness connector Resistance (Ω) Connector No. Terminal No. B203 32 16 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to ADP-46, "DRIVER SEAT K CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-195, "Removal and Installation"</u>. L YES (Past error)>>Error was detected in the driver seat control unit branch line. >> Repair the power supply and the ground circuit. NO LAN Ν

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< COMPONENT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519289

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 (O)
Connector No.	Termi		
M19	79	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-40, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

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

< COMPONENT DIAGNOSIS > **DLC BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000005519290 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT F Check the resistance between the data link connector terminals. Data link connector Resistance (Ω) Connector No. Terminal No. M22 6 14 Approx. 54 - 66 Н 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.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519291

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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	Resistance (O)		
Connector No.	Termi		
M24	M24 21 22		

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-140, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > HVAC BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000005519293 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the A/C auto amp. for damage, bend and loose connection (unit 3. side and connector side). Is the inspection result normal? Е 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. Check the resistance between the A/C auto amp. harness connector terminals. 2. A/C auto amp. harness connector Resistance (Ω) Terminal No. Connector No. Н M37 1 2 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. Models with color display: <u>HAC-64, "A/C AUTO AMP. : Diagnosis Procedure"</u> Models with monochrome display: <u>HAC-190</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>" Is the inspection result normal? Κ YES (Present error)>>Replace the A/C auto amp. Refer to the following. • Models with color display: HAC-125, "Removal and Installation" • Models monochrome display: HAC-235, "Removal and Installation" YES (Past error)>>Error was detected in the A/C auto amp. branch line. >> Repair the power supply and the ground circuit. NO LAN Ν

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519294

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 (O)	
Connector No.	Termi	
M53	5	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-81</u>, "Wiring Diagram - <u>BRAKE CONTROL SYSTEM -</u>".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-107. "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 2)]
A-BAG BRANCH LINE CIRCUIT	٨
Diagnosis Procedure	INFOID:00000005519295
 WARNING: Before servicing, turn ignition switch OFF, disconnect battery negat or more. (To discharge backup capacitor.) Never use unspecified tester or other measuring device. 1.CHECK CONNECTOR 	ive terminal, and wait 3 minutes
Check the terminals and connectors of the air bag diagnosis sensor unit for tion (unit side and connector side).	damage, bend and loose connec-
Is the inspection result normal?	
YES >> GO TO 2. NO >> Replace the terminal and connector. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	E
Check the air bag diagnosis sensor unit Refer to SRC-3 "Work Flow"	
Is the inspection result normal?	F
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	G
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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519296

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 (O)
Connector No.	Termi		
E26	26	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.

 ${\it 3.}$ 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-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

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.

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-104</u>, "Exploded <u>View"</u>.

< COMPONENT DIAGNO	SIS >		[CAN SYSTEM (TYPE 2)]
TCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000005519297
Regarding Wiring Diagram i	nformation, refer to <u>LAN-30</u>	<u>, "Wiring Diagram - CAN S</u>	<u>YSTEM -"</u> .
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). TCM Harness connector F1 	OFF. cable from the negative tern ninals and connectors for da	ninal. amage, bend and loose co	nnection (unit side and con-
- Harness connector E3			
Is the inspection result norm YES >> GO TO 2.	<u>al?</u>		
$2_{\text{CHECK HARNESS FOR}}$	OPEN CIRCUIT		
 Disconnect the connect 	or of TCM.		
		onnector terminals.	
	TCM harness connector		Resistance (Ω)
Connector No.	Termin	al No.	
F15	32	31	Approx. 54 – 66
YES >> GO TO 3.	<u>tunin the specification?</u>		
NO >> Repair the TCM	branch line.		
3.CHECK POWER SUPPL	Y AND GROUND CIRCUIT		
Check the power supply an TROL SYSTEM -".	d the ground circuit of the	TCM. Refer to <u>TM-121, "W</u>	Viring Diagram - CVT CON-
Is the inspection result norm			
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the TCM. Refer to <u>TM-</u> as detected in the TCM bra er supply and the ground cit	<u>163, "Exploded View"</u> . nch line. rcuit	
	i cappij and the ground on		

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519298

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			
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.

 ${\it 3.}$ check power supply and ground circuit

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-22, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-41, "Removal and Installation".

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

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

INFOID:000000005519299

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

< COMPONENT DIAGNOSIS >

Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

1.CONNECTOR INSPECTION	С
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. Check terminals and connectors for damage, bend and loose connection. 	D
<u>Is the inspection result normal?</u> YES >> GO TO 2.	E
NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)	F

Check the continuity between the data link connector terminals.

	Continuity	(
Connector No.	Term	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 linl	Data link connector		Continuity	-
Connector No.	Terminal No.	Ground	Continuity	
MOO	6	Giouna	Not existed	- K
WIZZ	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.

EC	Resistance (O)	
Terminal No.		
98	97	Approx. 108 – 132

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

IPDM E/R		Resistance (O)	
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.

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ECM and IPDM E/R

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< COMPONENT DIAGNOSIS >

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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:

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 BET	NEEN DLC AND	HVAC CIRCUIT	
COMPONENT DIA	GNOSIS >		[CAN	SYSTEM (TYPE 3)]
COMPONE	NT DIAGNO	SIS		
AIN LINE BE	FWEEN DLC A	ND HVAC CIRC	CUIT	
Diagnosis Proced	lure			INFOID:00000000551930
C				
egarding Wiring Dia	gram information, refer	r to <u>LAN-30, "Wiring D</u>	iagram - CAN SYSTE	<u>EM -"</u> .
.CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
. Turn the ignition s	witch OFF.	egative terminal		
Disconnect the fol	llowing harness conne	ectors.		
ECM A/C auto amp.				
Check the continu	ity between the data li	ink connector and the	A/C auto amp. harne	ss connector.
Data link	connector	A/C auto amp. ha	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M37	1	Existed
YES (Past error)>>E	rror was detected in t	the main line betweer	n the data link conne	ctor and the A/C aut
amp. NO >> Repair the	e main line between th	e data link connector	and the A/C auto amr).

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000005519303

[CAN SYSTEM (TYPE 3)]

Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

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	A/C auto amp. harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M1	15G	Existed
WIG7	2	IVI I	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.

NOSIS > WEEN A-BAG are am information, refer OR itch OFF. ery cable from the ne g terminals and connect M1 E30 hormal? erminal and connecter CONTINUITY (OPEN	AND ABS CIRC to LAN-30, "Wiring Di egative terminal. tectors for damage, b	CUIT agram - CAN SYSTE	M -".
VEEN A-BAG ire am information, refer DR itch OFF. ery cable from the ne g terminals and connect M1 E30 hormal? erminal and connecter CONTINUITY (OPEN	to <u>LAN-30. "Wiring Di</u> gative terminal. lectors for damage, b	agram - CAN SYSTE	M -".
am information, refer DR itch OFF. ery cable from the ne g terminals and conn M1 E30 <u>normal?</u> erminal and connecte CONTINUITY (OPEN	to <u>LAN-30, "Wiring Di</u> egative terminal. nectors for damage, b	agram - CAN SYSTE	M -".
am information, refer DR itch OFF. ery cable from the ne g terminals and conn M1 E30 <u>normal?</u> erminal and connecte CONTINUITY (OPEN	to <u>LAN-30, "Wiring Di</u> egative terminal. hectors for damage, b	agram - CAN SYSTE	<u>M -"</u> .
am information, refer DR itch OFF. ery cable from the ne g terminals and conn M1 E30 normal? erminal and connecte CONTINUITY (OPEN	to <u>LAN-30, "Wiring Di</u> egative terminal. lectors for damage, b	agram - CAN SYSTE	M -".
OR itch OFF. ery cable from the ne terminals and conn M1 E30 normal? erminal and connecte CONTINUITY (OPEN	egative terminal. lectors for damage, b or.	end and loose conne	ection (connector side
DR itch OFF. ery cable from the ne terminals and conn M1 E30 hormal? erminal and connecte CONTINUITY (OPEN	egative terminal. lectors for damage, b or.	end and loose conne	ection (connector side
itch OFF. ery cable from the ne g terminals and conn M1 E30 <u>normal?</u> erminal and connecto CONTINUITY (OPEN	egative terminal. lectors for damage, b or.	end and loose conne	ection (connector side
ormal? erminal and connect CONTINUITY (OPEN	or.		
erminal and connect CONTINUITY (OPEN	or.		
CONTINUITY (OPEN			
	I CIRCUIT)		
wing harness connects M1 and E30 y between the A/C au	ctors. uto amp. harness conr	ector and the harnes	s connector.
	·		
Terminal No	Harness c	Torminal No	Continuity
1	Connector No.	15G	Existed
2	M1	8G	Existed
normal? main line between the CONTINUITY (OPEN	e air bag diagnosis sei I CIRCUIT)	nsor unit and the harn	ess connector M1.
y between the harnes	ss connector and the	ABS actuator and ele	ctric unit (control unit)
onnector	ABS actuator and elec harness co	tric unit (control unit)	Continuity
Terminal No.	Connector No.	Terminal No.	
15G	E26	26	Existed
8G		15	Existed
<u>normal?</u> Check CAN system t or was detected in th or and electric unit (c main line between th t).	ype decision again. ne main line between ontrol unit). e harness connector l	the air bag diagnosis	s sensor unit and the uator and electric unit
	ONTINUITY (OPEN wing harness connect M1 and E30 between the A/C au ness connector Terminal No. 1 2 ormal? nain line between the CONTINUITY (OPEN nector of ABS actuate between the harnes performed by the second to press detected in the ormal? Check CAN system to and electric unit (contain line between the).	CONTINUITY (OPEN CIRCUIT) wing harness connectors. M1 and E30 between the A/C auto amp. harness connector ness connector Harness connector No. 1 M1 2 M1 0rmal? nain line between the air bag diagnosis ser CONTINUITY (OPEN CIRCUIT) nector of ABS actuator and electric unit (co y between the harness connector No. 15G 26 0rmal? Connector No. 15G 26 0rmal? Connector No. 15G 26 0rmal? Connector No. 15G 26 00rmal? Check CAN system type decision again. or was detected in the main line between or and electric unit (control unit). nain line between the harness connector I	annual and connector. CONTINUITY (OPEN CIRCUIT) wing harness connectors. M1 and E30 / between the A/C auto amp. harness connector and the harness ness connector Harness connector 1 M1 2 M1 3G ormal? nain line between the air bag diagnosis sensor unit and the harnescontrector of ABS actuator and electric unit (control unit). / between the harness connector and the ABS actuator and electric unit (control unit). / between the harness connector No. Terminal No. CONTINUITY (OPEN CIRCUIT) rector of ABS actuator and electric unit (control unit). / between the harness connector and the ABS actuator and electric unit (control unit). / between the harness connector No. Terminal No. Connector No. 15G 26 8G 15 ormal? Check CAN system type decision again. or was detected in the main line between the air bag diagnosis or and electric unit (control unit). main line between the harness connector E30 and the ABS actuator).

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure

INFOID:000000005519305

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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.

	Pesistance (O)		
Connector No.	Termi		
E10	98	97	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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

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

Is the inspection result normal?

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

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

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

< COMPONENT DIAGNOS	SIS >		[CAN SYSTEM (TYPE 3)]
BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INECID:00000005519307
Regarding Wiring Diagram i	nformation, refer to <u>LAN-30</u>), "Wiring Diagram - CAN S	<u>YSTEM -"</u> .
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an connector side). 	OFF. cable from the negative terr d connectors of the BCM f	ninal. or damage, bend and loos	e connection (unit side and
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	ial? inal and connector.		
2.CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of BCM. Stween the BCM harness co	onnector terminals.	
	BCM harness connector		Desistance (O)
Connector No.	Termir	nal No.	Resistance (12)
M19	79	78	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and	I branch line. Y AND GROUND CIRCUIT	CM. Refer to <u>BCS-40, "Dia</u>	gnosis Procedure".
Is the inspection result norm	<u>ial?</u>		
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the BCM. Refer to <u>BC</u> as detected in the BCM bra er supply and the ground ci	<u>S-87, "Removal and Installa</u> inch line. rcuit.	ation".
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DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure

INFOID:000000005519308

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Posistance (O)
Connector No.	Terminal No.		Resistance (22)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

- YES (Past error)>>Error was detected in the data link connector branch line circuit.
- NO >> Repair the data link connector branch line.

< COMPONENT DIAGNOSIS > **M&A BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000005519309 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 1 Disconnect the connector of combination meter. 2. Check the resistance between the combination meter harness connector terminals. Combination meter harness connector Resistance (Ω) Connector No. Terminal No. Н M24 21 22 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the combination meter branch line. ${\it 3.}$ check power supply and ground circuit Check the power supply and the ground circuit of the combination meter. Refer to MWI-37, "COMBINATION METER : Diagnosis Procedure". Is the inspection result normal? Κ YES (Present error)>>Replace the combination meter. Refer to MWI-140, "Removal and Installation". YES (Past error)>>Error was detected in the combination meter branch line. >> Repair the power supply and the ground circuit. NO L LAN Ν

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519310

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 and with rear controls

AV control unit harness connector			$Resistance\left(\Omega\right)$
Connector No.	Terminal No.		
M46	86	87	Approx. 54 – 66

Models with navigation system and rear controls

AV control unit harness connector			Resistance (O)
Connector No.	Terminal No.		
M137	62	46	Approx. 54 – 66

Models without navigation system and rear controls

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

Models with navigation system and without rear controls

AV control unit harness connector			$Resistance\left(\Omega\right)$
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: <u>AV-234, "AV CONTROL UNIT : Diagnosis Procedure"</u>

- Models with BOSE audio with color display with navigation system: <u>AV-411, "AV CONTROL UNIT : Diagno-</u> sis Procedure"
- Models with BOSE audio with color display with rear controls: <u>AV-565</u>, "<u>AV CONTROL UNIT</u>: <u>Diagnosis Pro-</u> cedure"
- Models with BOSE audio with color display with navigation system with rear controls: <u>AV-746</u>, "<u>AV CON-</u><u>TROL UNIT : Diagnosis Procedure</u>"

Is the inspection result normal?

AV BRANCH LINE CIRCUIT

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< COMPONENT DIAGNOSIS >	[CAN STSTEW (TTPE 3)]	
 YES (Present error)>>Replace the AV control unit. Refer to the following. Models with BOSE audio with color display: <u>AV-322</u>, "<u>Removal a</u> Models with BOSE audio with color display with navigation s 	nd Installation" ystem: <u>AV-487, "Removal and</u>	А
 Models with BOSE audio with color display with rear controls: <u>A</u> tion" 	AV-654, "Removal and Installa-	В
 Models with BOSE audio with color display with navigation syst "Removal and Installation" 	em with rear controls: <u>AV-824.</u>	
YES (Past error)>>Error was detected in the AV control unit branch line. NO >> Repair the power supply and the ground circuit.		С
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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519311

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CHECK CONNECTOR

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

- Models with color display: <u>HAC-64, "A/C AUTO AMP. : Diagnosis Procedure"</u>
- Models with monochrome display: <u>HAC-190</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

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

- Models with color display: <u>HAC-125</u>, "Removal and Installation"
- Models monochrome display: <u>HAC-235, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > STRG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519312 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection 3. (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 1 Disconnect the connector of steering angle sensor. Check the resistance between the steering angle sensor harness connector terminals. 2. Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. Н 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. ${\it 3.}$ check power supply and ground circuit Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? Κ YES (Present error)>>Replace the steering angle sensor. Refer to BRC-107, "Removal and Installation". YES (Past error)>>Error was detected in the steering angle sensor branch line. >> Repair the power supply and the ground circuit. NO L LAN Ν

Revision: November 2009

< COMPONENT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519313

[CAN SYSTEM (TYPE 3)]

WARNING:

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

Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the terminal and connector.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

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

< COMPONENT DIAGNOSIS > ABS BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519314 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend 3. and loose connection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 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) Н 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 BRC-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? Κ YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-104, "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. L >> Repair the power supply and the ground circuit. NO LAN Ν Ρ

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519315

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

	TCM harness connector		
Connector No.	Terminal No.		
F15	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-121, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to <u>TM-163</u>, "Exploded View".

- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > **IPDM-E BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000005519316 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 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) Terminal No. Connector No. Н E17 40 39 Approx. 108 - 132 Is the measurement value within the specification? >> GO TO 3. YES NO >> Repair the IPDM E/R branch line. ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-22, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-41, "Removal and Installation". Κ YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit. L LAN

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000005519317

[CAN SYSTEM (TYPE 3)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CONNECTOR INSPECTION

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector			Continuity
Connector No.	Terminal No.	Cround	Continuity
MOO	6	Giouna	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.

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

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

IPDM E/R		Resistance (O)
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.



CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview w customer)" are reproduced.	ίh
Inspection result	
Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error detected.	is
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. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. 	m
NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms.	
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	

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MAIN LINE BETWEEN ADP AND DLC CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN ADP AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005519318

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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	
P22	9	D1	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 connector		Data link connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
MG	15J	Maa	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.
MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000005519319

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[CAN SYSTEM (TYPE 4)]

Existed

Existed

Regarding Wiring Dia	gram information, refe	er to <u>LAN-30, "Wiring D</u>	liagram - CAN SYST	<u>EM -"</u> .	В
1.CHECK HARNESS		N CIRCUIT)			С
 Turn the ignition s Disconnect the bat Disconnect the for ECM 	witch OFF. Ittery cable from the n llowing harness conne	egative terminal. ectors.			D
A/C auto amp.Check the continu	ity between the data	link connector and the	A/C auto amp. harne	ess connector.	E
Data link	connector	A/C auto amp. h	arness connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	F

Is the inspection result normal?

M22

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

6

14

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

M37

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2

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

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000005519321

[CAN SYSTEM (TYPE 4)]

Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

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	N/1	15G	Existed
WIG7	2	IVI I	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.

Μ	IAIN LINE BETW	/EEN A-BAG AN	ID ABS CIRCUIT	Г
< COMPONENT DIAC	SNOSIS >		[CAN	SYSTEM (TYPE 4)]
MAIN LINE BET	WEEN A-BAG	AND ABS CIR	CUIT	
Diagnosis Proced	ure			INFOID:000000005519322
Regarding Wiring Diag	ram information, refer	to <u>LAN-30, "Wiring D</u>	iagram - CAN SYSTE	<u>M -"</u> .
1.снеск соллест	OR			
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Harness connector Harness connector 	vitch OFF. tery cable from the ne g terminals and conr ⁻ M1 ⁻ E30	egative terminal. nectors for damage, b	end and loose conne	ection (connector side
s the inspection result YES >> GO TO 2. NO >> Repair the	normal? terminal and connect	or.		
2. CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
 A/C auto amp. Harness connector Check the continui 	rs M1 and E30 ty between the A/C at	uto amp. harness con	nector and the harnes	s connector.
A/C auto amp. na	Terminal No	Connector No		Continuity
	1	Connector No.	15G	Existed
M37	2	M1	8G	Existed
s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the cor Check the continui harness connector	normal? main line between the CONTINUITY (OPEN nector of ABS actuat ty between the harne	e air bag diagnosis se I CIRCUIT) or and electric unit (co ss connector and the	nsor unit and the harr ontrol unit). ABS actuator and ele	ness connector M1.
Harness	connector	ABS actuator and electric harness of the second sec	ctric unit (control unit) onnector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	j
E30	15G	E26	26	Existed
	8G		15	Existed
YES (Present error)>> YES (Past error)>>En ABS actua NO >> Repair the (control un	<u>Normar?</u> Check CAN system to ror was detected in the tor and electric unit (compared main line between the tot).	type decision again. he main line between control unit). he harness connector	the air bag diagnosi E30 and the ABS act	is sensor unit and the tuator and electric unit

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519323

[CAN SYSTEM (TYPE 4)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Pesistance (O)
Connector No.	Terminal No.		
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 EC-144, "Diagnosis Procedure".

Is the inspection result normal?

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

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

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

ADP BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519324 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). Driver seat control unit Е 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. Н Driver seat control unit harness connector Resistance (Ω) Connector No. Terminal No. B203 32 16 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the driver seat control unit branch line. **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to ADP-46, "DRIVER SEAT K CONTROL UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-195, "Removal and Installation"</u>. L YES (Past error)>>Error was detected in the driver seat control unit branch line. >> Repair the power supply and the ground circuit. NO LAN Ν

< COMPONENT DIAGNOSIS >

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519325

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	Resistance (O)		
Connector No.	Terminal No.		
M19	79	78	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-40, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

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

< COMPONENT DIAGNOSIS > **DLC BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000005519326 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT F Check the resistance between the data link connector terminals. Data link connector Resistance (Ω) Connector No. Terminal No. M22 6 14 Approx. 54 - 66 Н 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.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519327

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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	Resistance (O)		
Connector No.	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-140, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > AV BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000005519328 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". C 1.CHECK CONNECTOR Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е 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 and with rear controls AV control unit harness connector Resistance (Ω) Н Connector No. Terminal No. M46 86 87 Approx. 54 - 66 Models with navigation system and rear controls AV control unit harness connector Resistance (Ω) Connector No. Terminal No. M137 62 46 Approx. 54 - 66 Models without navigation system and rear controls Κ AV control unit harness connector Resistance (Ω) Connector No. Terminal No. M156 87 86 Approx. 54 - 66 Models with navigation system and without rear controls LAN AV control unit harness connector Resistance (Ω) Connector No. Terminal No. M163 46 62 Approx. 54 - 66 Ν Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the AV control unit branch line. ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the AV control unit. Refer to the following. Ρ · Models with BOSE audio with color display: AV-234, "AV CONTROL UNIT : Diagnosis Procedure" Models with BOSE audio with color display with navigation system: AV-411, "AV CONTROL UNIT : Diagnosis Procedure" Models with BOSE audio with color display with rear controls: AV-565, "AV CONTROL UNIT : Diagnosis Procedure" Models with BOSE audio with color display with navigation system with rear controls: AV-746, "AV CON-TROL UNIT : Diagnosis Procedure"

Is the inspection result normal?

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AV BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

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

- Models with BOSE audio with color display: AV-322, "Removal and Installation"
- Models with BOSE audio with color display with navigation system: <u>AV-487</u>, "<u>Removal and</u> <u>Installation</u>"
- Models with BOSE audio with color display with rear controls: <u>AV-654</u>, "<u>Removal and Installa-</u> tion"
- Models with BOSE audio with color display with navigation system with rear controls: <u>AV-824</u>. <u>"Removal and Installation"</u>

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

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

< COMPONENT DIAGNOSIS > HVAC BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519329 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the A/C auto amp. for damage, bend and loose connection (unit 3. side and connector side). Is the inspection result normal? Е 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. Check the resistance between the A/C auto amp. harness connector terminals. 2. A/C auto amp. harness connector Resistance (Ω) Terminal No. Connector No. Н M37 1 2 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. Models with color display: <u>HAC-64, "A/C AUTO AMP. : Diagnosis Procedure"</u> Models with monochrome display: <u>HAC-190</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>" Is the inspection result normal? Κ YES (Present error)>>Replace the A/C auto amp. Refer to the following. • Models with color display: HAC-125, "Removal and Installation" • Models monochrome display: HAC-235, "Removal and Installation" YES (Past error)>>Error was detected in the A/C auto amp. branch line. >> Repair the power supply and the ground circuit. NO LAN Ν

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519330

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 (O)		
Connector No.	Terminal 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-81</u>, "Wiring Diagram - <u>BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-107, "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 4)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:00000005519331
 WARNING: Before servicing, turn ignition switch OFF, disconnect battery nega or more. (To discharge backup capacitor.) Never use unspecified tester or other measuring device. 1.CHECK CONNECTOR 	tive terminal, and wait 3 minutes
Check the terminals and connectors of the air bag diagnosis sensor unit for tion (unit side and connector side).	or damage, bend and loose connec-
Is the inspection result normal?	
YES >> GO TO 2. NO >> Replace the terminal and connector. 2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	E
Check the air bag diagnosis sensor unit. Refer to <u>SRC-3</u> , "Work Flow".	
Is the inspection result normal?	F
YES >> Replace the main harness.NO >> Replace parts whose air bag system has a malfunction.	G
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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519332

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 (O)
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-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

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.

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-104</u>, "Exploded <u>View"</u>.

[CAN 5151EWI (11PE 4)]
INFOID:00000005519333
<u>N SYSTEM -"</u> .
connection (unit side and con-
Resistance (Ω)
Approx. 54 – 66
"Wiring Diagram - CVT CON-
- - -

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519334

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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.			
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.

 ${\it 3.}$ check power supply and ground circuit

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-22, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-41, "Removal and Installation".

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

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

INFOID:000000005519335

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

< COMPONENT DIAGNOSIS >

Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -".

1.CONNECTOR INSPECTION	С
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. Check terminals and connectors for damage, bend and loose connection. 	D
Is the inspection result normal? YES >> GO TO 2.	Ε
NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)	F

Check the continuity between the data link connector terminals.

Data link connector			Continuity	
Connector No.	Termi	Continuity		
M22	6 14		Not existed	-

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector			Continuity	-	
Connector No.	Terminal No.	Ground	Crowned	Continuity	LZ.
MOO	6		Not existed	- K	
WIZZ	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.

IPDI	- 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.



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< COMPONENT DIAGNOSIS >

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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:

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.

I	MAIN LINE BET	WEEN DLC AND	HVAC CIRCUIT	
COMPONENT DIA	GNOSIS >			SYSTEM (TYPE 5)]
JOMPONEI	NI DIAGNO	515		
IAIN LINE BE	FWEEN DLC A	ND HVAC CIRC	CUIT	
iagnosis Procec	lure			INFOID:000000005519337
egarding Wiring Dia	gram information, refer	r to <u>LAN-30, "Wiring D</u>	<u>iagram - CAN SYSTE</u>	<u>EM -"</u> .
Turn the ignition s				
Disconnect the ba	attery cable from the ne	egative terminal.		
ECM	lowing namess conne	clors.		
A/C auto amp. Check the continu	uity between the data li	ink connector and the	A/C auto amp. harne	ss connector.
Data link	connector	A/C auto amp h	arness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M37	1	Existed
	14	mor	2	Existed

MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005519338

[CAN SYSTEM (TYPE 5)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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?

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
M27	1	M1 -	15G	Existed
	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.

${f 3}.$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	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	E26	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 LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000005519341
Regarding Wiring Diagram information, refer to <u>LAN-30. "Wiring Diagram</u>	<u>- CAN SYSTEM -"</u> .
1.CHECK CONNECTOR	
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and nector side). Models without automatic drive positioner ECM Harness connector E30 Harness connector M1 Models with automatic drive positioner ECM Harness connector E30 Harness connector B10 s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of ECM. 	loose connection (unit side and con-
Check the resistance between the ECM harness connector terminals.	•
Connector No. Terminal No.	Resistance (Ω)
E10 98 97	Approx. 108 – 132
<u>s the measurement value within the specification?</u> YES >> GO TO 3. NO >> Repair the ECM branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT	
Check the power supply and the ground circuit of the ECM. Refer to $EC-1$	44, "Diagnosis Procedure".
s the inspection result normal? YES (Present error)>>Replace the ECM. Refer to <u>EC-17, "ADDITION</u> <u>CONTROL UNIT : Description"</u> . YES (Past error)>>Error was detected in the ECM branch line	AL SERVICE WHEN REPLACING
NO >> Repair the power supply and the ground circuit.	

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519343

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 (O)
Connector No.	Termi		
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-40, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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

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

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

< COMPONENT DIAGNOSIS > **DLC BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000005519344 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT F Check the resistance between the data link connector terminals. Data link connector Resistance (Ω) Connector No. Terminal No. M22 6 14 Approx. 54 - 66 Н 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. Κ L LAN

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519345

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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	Resistance (O)		
Connector No.	Termi		
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-140, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > HVAC BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519347 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the A/C auto amp. for damage, bend and loose connection (unit 3. side and connector side). Is the inspection result normal? Е 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. Check the resistance between the A/C auto amp. harness connector terminals. 2. A/C auto amp. harness connector Resistance (Ω) Terminal No. Connector No. Н M37 1 2 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the A/C auto amp. branch line. **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the A/C auto amp. Refer to the following. Models with color display: <u>HAC-64, "A/C AUTO AMP. : Diagnosis Procedure"</u> Models with monochrome display: <u>HAC-190</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>" Is the inspection result normal? Κ YES (Present error)>>Replace the A/C auto amp. Refer to the following. • Models with color display: HAC-125, "Removal and Installation" • Models monochrome display: HAC-235, "Removal and Installation" YES (Past error)>>Error was detected in the A/C auto amp. branch line. >> Repair the power supply and the ground circuit. NO LAN Ν

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519348

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-81</u>, "Wiring Diagram - <u>BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-107, "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > ABS BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519350 В Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend 3. and loose connection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 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) Н 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 BRC-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? Κ YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-104, "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. L >> Repair the power supply and the ground circuit. NO LAN Ν

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519351

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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 (O)
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 <u>TM-121, "Wiring Diagram - CVT CON-</u> <u>TROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to <u>TM-163</u>, "Exploded View".

- YES (Past error)>>Error was detected in the TCM branch line.
- NO >> Repair the power supply and the ground circuit.

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< COMPONENT DIAGNOSIS > **IPDM-E BRANCH LINE CIRCUIT Diagnosis** Procedure INFOID:000000005519352 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side 3. 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) Terminal No. 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.

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

Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-22, "Diagnosis Procedure".	
Is the inspection result normal?	

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-41, "Removal and Installation".

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

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

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000005519353

[CAN SYSTEM (TYPE 5)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CONNECTOR INSPECTION

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector			Continuity
Connector No.	Terminal No.	Cround	Continuity
M22	6	Giouna	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	CM	Resistance (O)	
Termi	nal No.		
98	97	Approx. 108 – 132	

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

IPDN	IPDM E/R		
Termi	nal No.		
40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

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MAIN LINE BETWEEN ADP AND DLC CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

COMPONENT DIAGNOSIS MAIN LINE BETWEEN ADP AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000005519359

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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
D30	9	D1	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
MG	15J	MOO	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.

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT AGNOSIS > [CAN SYSTEM (TYPE 6)]

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Proced	lure			INFOID:000000005519360	A
Regarding Wiring Diag	gram information, refer	to <u>LAN-30, "Wiring E</u>)iagram - CAN SYSTE	<u>M -"</u> .	В
1.CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)			С
 Turn the ignition s Disconnect the ba Disconnect the fol ECM 	witch OFF. ttery cable from the ne lowing harness conne	egative terminal. ctors.			D
A/C auto amp.Check the continu	ity between the data li	nk connector and the	A/C auto amp. harnes	s connector.	Ε
Data link	connector	A/C auto amp. h	arness connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	F
M22	6	M37	1	Existed	
	14	Mor	2	Existed	G
YES (Present error)> YES (Past error)>>Er amp. NO >> Repair the	Check CAN system for a syste	type decision again. he main line betwee e data link connector	n the data link connec and the A/C auto amp	tor and the A/C auto	H
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MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

< COMPONENT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000005519361

[CAN SYSTEM (TYPE 6)]

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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?

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
M27	1	N/1	15G	Existed
10137	2	IVI I	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.

${f 3}.$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E20	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 LINE CIRCUIT Diagnosis Procedure Regarding Wiring Diagram information, refer to <u>LAN-30, "Wiring Diagram - CAN</u>	INFOID:00000005519364
Diagnosis Procedure Regarding Wiring Diagram information, refer to <u>LAN-30, "Wiring Diagram - CAN</u>	INFOID:000000005519364
Regarding Wiring Diagram information, refer to <u>LAN-30, "Wiring Diagram - CAI</u>	<u>I SYSTEM -"</u> .
1	
I.CHECK CONNECTOR	
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose nector side). Models without automatic drive positioner 	connection (unit side and con-
ECM Harness connector E30 Harness connector M1 Models with automatic drive positioner ECM	
Harness connector E29 Harness connector B10	
<u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect the connector of ECM. Check the resistance between the ECM harness connector terminals. 	
ECM harness connector	Popietanes (O)
Connector No. Terminal No.	
E10 98 97	Approx. 108 – 132
<u>s the measurement value within the specification?</u> YES >> GO TO 3. NO >> Repair the ECM branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT	
Check the power supply and the ground circuit of the ECM. Refer to <u>EC-144, "I</u>	Diagnosis Procedure".
s the inspection result normal?	
YES (Present error)>>Replace the ECM. Refer to EC-17, "ADDITIONAL S	ERVICE WHEN REPLACING
CONTROL UNIT Description.	
YES (Past error)>>Error was detected in the ECM branch line. NO >> Repair the power supply and the ground circuit.	

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519365

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			$Resistance\left(\mathbf{O} \right)$
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-46, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to ADP-195, "Removal and Installation".
- YES (Past error)>>Error was detected in the driver seat control unit branch line.
- NO >> Repair the power supply and the ground circuit.
| < COMPONENT DIAGNOS | SIS > | | [CAN SYSTEM (TYPE 6)] |
|--|---|---|-----------------------------|
| BCM BRANCH LIN | E CIRCUIT | | |
| Diagnosis Procedure | | | INFOID:00000005519366 |
| | | | |
| Regarding Wiring Diagram in | nformation, refer to LAN-30 |). "Wiring Diagram - CAN S | <u>YSTEM -"</u> . |
| | | | |
| 1.CHECK CONNECTOR | | | |
| Turn the ignition switch Disconnect the battery of Check the terminals and connector side) | OFF.
cable from the negative terr
d connectors of the BCM f | ninal.
or damage, bend and loos | e connection (unit side and |
| Is the inspection result norm | al? | | |
| YES >> GO TO 2. | <u></u> | | |
| NO >> Repair the term | nal and connector. | | |
| Z .CHECK HARNESS FOR | OPEN CIRCUIT | | |
| Disconnect the connect Check the resistance be | or of BCM.
stween the BCM harness co | onnector terminals. | |
| | BCM harness connector | | Desistance (0) |
| Connector No. | Termir | nal No. | Resistance (12) |
| M19 | 79 | 78 | Approx. 54 – 66 |
| Is the measurement value w | ithin the specification? | | |
| NO >> Repair the BCM | branch line. | | |
| 3. CHECK POWER SUPPL | Y AND GROUND CIRCUIT | Г | |
| Check the power supply and | I the ground circuit of the B | CM. Refer to <u>BCS-40, "Dia</u> | gnosis Procedure". |
| Is the inspection result norm | al? | | |
| YES (Present error)>>Rep
YES (Past error)>>Error w | ace the BCM. Refer to <u>BC</u>
as detected in the BCM bra | <u>S-87, "Removal and Installa</u>
unch line | <u>ation"</u> . |
| NO >> Repair the powe | er supply and the ground ci | rcuit. | |
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DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure

INFOID:000000005519367

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Posistance (O)
Connector No.	Terminal No.		Resistance (22)
M22	6 14		Approx. 54 – 66

Is the measurement value within the specification?

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

- YES (Past error)>>Error was detected in the data link connector branch line circuit.
- NO >> Repair the data link connector branch line.

< COMPONENT DIAGNOSIS > **M&A BRANCH LINE CIRCUIT** А **Diagnosis** Procedure INFOID:000000005519368 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D 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? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F 1 Disconnect the connector of combination meter. 2. Check the resistance between the combination meter harness connector terminals. Combination meter harness connector Resistance (Ω) Connector No. Terminal No. Н M24 21 22 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the combination meter branch line. ${\it 3.}$ check power supply and ground circuit Check the power supply and the ground circuit of the combination meter. Refer to MWI-37, "COMBINATION METER : Diagnosis Procedure". Is the inspection result normal? Κ YES (Present error)>>Replace the combination meter. Refer to MWI-140, "Removal and Installation". YES (Past error)>>Error was detected in the combination meter branch line. >> Repair the power supply and the ground circuit. NO L LAN Ν

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519370

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CHECK CONNECTOR

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

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

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

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

- Models with color display: <u>HAC-64, "A/C AUTO AMP. : Diagnosis Procedure"</u>
- Models with monochrome display: <u>HAC-190</u>, "A/C AUTO AMP. : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

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

- Models with color display: <u>HAC-125</u>, "Removal and Installation"
- Models monochrome display: <u>HAC-235, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

< COMPONENT DIAGNOSIS > STRG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000005519371 Regarding Wiring Diagram information, refer to LAN-30, "Wiring Diagram - CAN SYSTEM -". 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. D Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection 3. (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1 Disconnect the connector of steering angle sensor. 2. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. Н 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. ${\it 3.}$ check power supply and ground circuit Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -". Is the inspection result normal? Κ YES (Present error)>>Replace the steering angle sensor. Refer to BRC-107, "Removal and Installation". YES (Past error)>>Error was detected in the steering angle sensor branch line. >> Repair the power supply and the ground circuit. NO L LAN Ν

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519373

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Pesistance (O)
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-81, "Wiring Diagram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

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.

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-104</u>, "Exploded <u>View"</u>.

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ram - CAN SYSTEM -".
and loose connection (unit side and con
nals.
Pesistance (0)
1 Approx. 54 – 66
o <u>TM-121, "Wiring Diagram - CVT CON</u>
o <u>TM-121, "Wiring Diagram - CVT CON</u>
o <u>TM-121. "Wiring Diagram - CVT CON</u> ed View".
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o <u>TM-121. "Wiring Diagram - CVT CON</u> ed View".

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000005519375

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

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			Pesistance (O)
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.

 ${\it 3.}$ check power supply and ground circuit

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-22, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-41, "Removal and Installation".

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

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

INFOID:000000005519376

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

< COMPONENT DIAGNOSIS >

Regarding Wiring Diagram information, refer to LAN-30. "Wiring Diagram - CAN SYSTEM -".

1.CONNECTOR INSPECTION	С
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. Check terminals and connectors for damage, bend and loose connection. 	D
Is the inspection result normal? YES >> GO TO 2.	E
2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)	F

Check the continuity between the data link connector terminals.

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

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector			Continuity	
Connector No.	Terminal No.	Ground	Continuity	
MOO	6		Not existed	- P
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.

EC	CM	Pesistance (O)	
Terminal No.			
98	97	Approx. 108 – 132	

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

IPDM E/R		Resistance (O)
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.

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ECM and IPDM E/R

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< COMPONENT DIAGNOSIS >

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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:

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.