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HVAC BRANCH LINE CIRCUIT
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< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL А HOW TO USE THIS SECTION Information INFOID:000000009755444 В • "CAN FUNDAMENTAL" of LAN Section describes the basic knowledge of the CAN communication system and the method of trouble diagnosis. С • For information peculiar to a vehicle and inspection procedure, refer to "CAN". D Е F Н J Κ

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< PRECAUTION > PRECAUTION PRECAUTIONS

Precautions for Trouble Diagnosis

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CAUTION:

Follow the instructions listed below. Failure to do this may cause damage to parts:

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

Precautions for Harness Repair

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

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



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

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



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

INFOID:000000009755445

INFOID:000000009755446

SYSTEM DESCRIPTION

< SYSTEM DESCRIPTION >

SYSTEM

CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DIAG ON CAN : System Description

SYSTEM DIAGRAM



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SYSTEM

< SYSTEM DESCRIPTION >

Name	Harness	Description
DDL1	Tx Rx	For communications with the diagnostic tool. (CAN-H and CAN-L are used for control- ling)
DDL2	K-LINE	For communications with the diagnostic tool. (CAN-H and CAN-L are used for control- ling)
Diag on CAN	CAN-H CAN-L	For communications with the diagnostic tool. (CAN-H and CAN-L are also used for con- trol and diagnoses.)

DESCRIPTION

"Diag on CAN" is a diagnosis method which uses the CAN communication line for the communication between the control unit and the diagnostic tool.

[CAN FUNDAMENTAL]

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TROUBLE DIAGNOSIS

Component Description

< SYSTEM DESCRIPTION >



Component	Description	
Main line	CAN communication line between splices	_
Branch line	CAN communication line between splice and a control unit	_ J
Splice	A point connecting a branch line with a main line	-
Termination circuit	Circuit connected across the CAN communication system. (Resistor)	K

Condition of Error Detection

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

CAN COMMUNICATION SYSTEM ERROR

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

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

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

NOTE:

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

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Symptom When Error Occurs in CAN Communication System

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

ERROR EXAMPLE

NOTE:

Each vehicle differs in symptom of each control unit under fail-safe mode and CAN communication line wiring.

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



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

< SYSTEM DESCRIPTION >

Example: TCM Branch Line Open Circuit



Unit name	Major symptom	
ECM	Engine torque limiting is affected, and shift harshness increases.	G
BCM	Reverse warning buzzer does not sound.	
EPS control unit	Normal operation.	
Combination meter	Shift position indicator and O/D OFF indicator turn OFF.Warning lamps turn ON.	— н
ABS actuator and electric unit (control unit)	Normal operation.	
ТСМ	No impact on operation.	
IPDM E/R	Normal operation.	

NOTE:

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

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

Example: Data Link Connector Branch Line Open Circuit



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< SYSTEM DESCRIPTION >

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

NOTE:

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

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



Unit name	Major symptom
ECM	Engine torque limiting is affected, and shift harshness increases.Engine speed drops.
BCM	 Reverse warning buzzer 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

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

< SYSTEM DESCRIPTION >

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

Self-Diagnosis

INFOID:000000009755451 B

If communication signals cannot be transmitted or received among control units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT "Self Diagnostic Result" C

NOTE:

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

DTC	Self-diagnosis item (CONSULT indication)	DTC detection condition		Inspection/Action	
U1000		ECM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.		
		Except for ECM When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.		Start the inspection. Re- fer to the applicable sec-	
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.	control unit.	(
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 CAN controller of each control unit.		Replace the control unit indicating "U1010".	

CAN Diagnostic Support Monitor

MONITOR ITEM (CONSULT)

Example: CAN DIAG SUPPORT MNTR indication

With PAST

ENGINE

Not diagnosed

Not diagnosed

Not diagnosed

Not diagnosed

Not diagnosed

PAST

OK

OK

OK

OK

MONITOR ITEM PRESENT

OK

|OK

ΟK

OK

OK

TRANSMIT DIAG OK

VDC/TCS/ABS

METER/M&A

BCM/SEC

IPDM E/R

AWD/4WD

ICC

HVAC

тсм

EPS

e4WD

Without PAST

всм

OK

OK

OK

ΟK

OK

lок

PRESENT

PAST

MONITOR ITEM

TRANSMIT DIAG OK

INITIAL DIAG

METER/M&A

IPDM E/R

ECM

TCM

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Without PAST

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

[CAN FUNDAMENTAL]

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< SYSTEM DESCRIPTION >

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

With PAST

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

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

How to Use CAN Communication Signal Chart

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The CAN communication signal chart lists the signals transmitted/received among control units. 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

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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

Notes for checking error symptoms:

- 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-26

< 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 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.

Body type Wagon						Chack the vehicle		
Axle	2WD			Hadle	(A)	wD>	equipment with the	
Engine	QR2	5DE		(VQ3	5DE		vehicle identification	
Transmission	A/	т		<u> </u>	ντ		number plate.	
Brake control		A	BS		(VI		Check the vehicle	
Intelligent Key system		×		×		TCXD	equipment.	
CAN system type	1	2	3	4	5	6 -	The number indicates the	
	CAN	communica	tion control u	nit		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	CAN system type of the	
ECM	Х	×	X	X	×	×	vehicle.	
AWD control unit					X	×		
Air bag diagnosis sensor unit	×	×	×	×	×	×		
BCM	Х	×	×	X	×	×		
Intelligent Key unit		X		X		×		
Steering angle sensor					X	×		
EPS control unit	X	×	×	×	×	×		
Combination meter	Х	×	×	X	×	×		
ABS actuator and electric unit (control unit)	×	×	×	×	×	×		
ТСМ	Х	×	X	×	×	×		
IPDM E/R	×	×	×	×	X	×		
NOTE: Check CAN system type fro	m the vehicle	e shape an	d equipment.					
A		 	B					
							In the above example, • Checking VDC OFF switch leads to judge whether or not VDC is equipped. • Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped	
1. VDC OFF switch 2.	. Ignition kno	b	2					
1. VDC OFF switch 2 A. With VDC B	. Ignition kno . With Intellig	b gent Key sy	stem					
1. VDC OFF switch 2. A. With VDC B	. Ignition kno . With Intellig	b jent Key sy	stem he above cas	se, CAN syst	em type is "	6". J		

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

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



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

< BASIC INSPECTION >

Interview Sheet (Example)

CAN Communication System Diagnosis I	nterview Sheet
Date received:	3, Feb. 2006
Type: DBA-KG11 VIN No.:	KG11-005040
Model: BDRARGZG11EDA-E-J-	
First registration: 10, Jan. 2001 Mileage:	62,140
CAN system type: Type 19	
•Headlamps suddenly turn ON while driving the vehicle. •The engine does not restart after stopping the vehicle and turn switch OFF. •The cooling fan continues rotating while turning the ignition swi	ing the ignition itch 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 ro • The interior lamp does not turn ON.	tating.
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DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Information

- "CAN" of LAN Section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to <u>LAN-26</u>, "<u>Trouble Diagnosis Flow Chart</u>" of "CAN FUNDAMEN-TAL".

Abbreviation List

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

Abbreviation	Unit name		
4WD	AWD control unit		
A-BAG	Air bag diagnosis sensor unit		
ABS	ABS actuator and electric unit (control unit)	F	
ADP	Driver seat control unit		
AFS	AFS control unit		
APA	Accelerator pedal actuator	G	
AV	Display control unit		
AVM	Around view monitor control unit	Н	
BCM	BCM		
BSW/BUZZER	Driver assistance buzzer control module		
CCM	Chassis control module		
CGW	CAN gateway		
DAST1	Steering angle main control module		
DLC	Data link connector	J	
ECM	ECM		
EPS/DAST3	Steering force control module	K	
HBA	High beam assist control module		
HVAC	A/C auto amp.		
ICC	ADAS control unit	L	
IPDM-E	IPDM E/R		
LANE	Lane camera unit	LAN	
LASER	ICC sensor		
M&A	Combination meter		
PSB	Pre-crash seat belt control unit (driver side)	N	
RDR-L	Side radar LH		
RDR-R	Side radar RH	0	
SONAR	Sonar control unit		
STRG	Steering angle sensor		
ТСМ	ТСМ	Р	
TCU	TCU		

[CAN]

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PRECAUTION PRECAUTIONS

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Trouble Diagnosis

CAUTION:

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

Precautions for Harness Repair

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• 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).



PRECAUTIONS

< PRECAUTION >

[CAN]

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

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



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

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< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CAN]

(1) Lane camera unit	2	High beam assist control module	3	IPDM E/R	А
(4) ICC sensor	5	ТСМ	6	Steering angle main control module	
Ċ	ABS actuator and electric unit (con- trol unit)	8	BCM	9	Chassis control module	В
1) AWD control unit	11	Driver seat control unit	12	Pre-crash seat belt control unit (driv- er side)	
1) Side radar LH	(14)	ADAS control unit	(15)	Side radar RH	С
1	Around view monitor control unit	17	AFS control unit	18	Steering force control module	
1) ECM	20	Driver assistance buzzer control module	21)	Display control unit	D
e	Combination meter	23	CAN gateway	24)	Data link connector	
é	Accelerator pedal actuator	26	Steering angle sensor	27	TCU	_
e	Air bag diagnosis sensor unit	29	A/C auto amp.	30	Sonar control unit	
						F
						G
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						I
						J

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CAN COMMUNICATION SYSTEM : System Description

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SYSTEM DIAGRAM

Without Around View Monitor




< SYSTEM DESCRIPTION >

With Around View Monitor, Without ICC



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< SYSTEM DESCRIPTION >





DESCRIPTION

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Generation

< SYSTEM DESCRIPTION >

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 Termination circuits (resistors) are connected across the CAN communication system. When transmitting a CAN communication signal, each control unit passes a current to the CAN-H line and the current returns to the CAN-L line.



• The current flows separately into the termination circuits connected across the CAN communication system and the termination circuits drop voltage to generate a potential difference between the CAN-H line and the CAN-L line.

NOTE:

A signal with no current passage is called "Recessive" and one with current passage is called "Dominant".



 The system produces digital signals for signal communications, by using the potential difference.



The Construction of CAN Communication Signal (Message)



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< SYSTEM DESCRIPTION >

No.	Message name	Description
1	Start of frame (1 bit)	Start of message.
2	Arbitration of field (11 bit)	Priorities of message-sending are shown when there is a pos- sibility that multiple messages are sent at the same time.
3	Control field (6 bit)	Signal quantity in data field is shown.
4	Data field (0-64 bit)	Actual signal is shown.
5	CRC field (16 bit)	 The transmitting control unit calculates sending data in advance and writes the calculated value in a message. The receiving control unit calculates received data and judges that the data reception is normal when the calculated value is the same as the value written in the sent data.
6	ACK field (2 bit)	The completion of normal reception is sent to the transmitting unit.
7	End of frame (7 bit)	End of message.

CAN Communication Line

The CAN communication line is a twisted pair wire consisting of strands of CAN-H (1) and CAN-L (2) and has noise immunity.



NOTE:

The CAN communication system has the characteristics of noise-resistant because this system produces digital signals by using the potential difference between the CAN-H line and the CAN-L line and has the twisted pair wire structure.

Since the CAN-H line and the CAN-L line are always adjacent to each other, the same degree of noise occurs, respectively, when a noise ① occurs. Although the noise changes the voltage, the potential difference ② between the CAN-H line and the CAN-L line is insensitive to noise. Therefore, noise-resistant signals can be obtained.



CAN Signal Communications

Each control unit of the CAN communication system transmits signals through the CAN communication control circuit included in the control unit and receives only necessary signals from each control unit to perform various kinds of control.



< SYSTEM DESCRIPTION >





NOTE:

The above signal names and signal communications are provided for reference purposes. For CAN communications signals of this vehicle, refer to <u>LAN-44</u>, <u>"CAN COMMUNICATION SYSTEM : CAN Communication</u> Signal Chart".

< SYSTEM DESCRIPTION >

CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit

CAN communication control circuit is incorporated into the control unit and transmits/receives CAN communication signals.



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

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

CAN COMMUNICATION SYSTEM : CAN System Specification Chart

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

Refer to <u>LAN-26</u>, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type							Se	dan						
Axle				2\	ND						A١	ND		
Engine							VQ3	7VHR						
Transmission							A	/T						
Brake control							V	DC						
Telematics system		×		×		×		×		×		×	×	×
Direct adaptive steering			×	×	×	×	×	×			×	×	×	×
Automatic drive positioner					×	×	×	×					×	×
ICC system							×	×						×
CAN system type	1	2	3	4	13	5	14	6	7	8	9	10	11	12
		С	AN coi	nmuni	cation	unit								
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ТСМ	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN gateway					×	×	×	×					×	×

< SYSTEM DESCRIPTION >

Body type							Se	dan							Λ
Axle				21	VD						A۱	ND			A
Engine							VQ3	7VHR							
Transmission							A	/T							В
Brake control							V	DC							
Telematics system		×		×		×		×		×		×	×	×	
Direct adaptive steering			×	×	×	×	×	×			×	×	×	×	С
Automatic drive positioner					×	×	×	×					×	×	
ICC system							×	×						×	D
CAN system type	1	2	3	4	13	5	14	6	7	8	9	10	11	12	
A/C auto amp.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
Combination meter	×	×	×	×	×	×	×	×	×	×	×	×	×	×	E
Air bag diagnosis sensor unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
AFS control unit							×	×						×	F
Display control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×	1
High beam assist control module							×	×						×	
TCU		×		×		×		×		×		×	×	×	G
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	ш
Driver seat control unit					×	×	×	×					×	×	
Pre-crash seat belt control unit							×	×						×	
ADAS control unit							×	×						×	
Steering force control module			×	×	×	×	×	×			×	×	×	×	
AWD control unit									×	×	×	×	×	×	
Chassis control module	×	×	×	×	×	×	×	×	×	×	×	×	×	×	J
Steering angle sensor	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
Side radar LH							×	×						×	K
Side radar RH							×	×						×	
Around view monitor control unit					×	×	×	×					×	×	
Accelerator pedal actuator							×	×						×	L
Driver assistance buzzer control module							×	×						×	
Sonar control unit					×	×	×	×					×	×	ΙA
ICC sensor							×	×						×	
Steering angle main control module			×	×	×	×	×	×			×	×	×	×	
Lane camera unit							×	×						×	Ν
		ľ	TS con	nmunic	ation ι	unit									
ADAS control unit							×	×						×	0
Side radar LH							×	×						×	0
Side radar RH							×	×						×	
Around view monitor control unit						×	×	×					×	×	Ρ
Accelerator pedal actuator							×	×						×	
Driver assistance buzzer control module							×	×						×	
Sonar control unit						×	×	×					×	×	
ICC sensor							×	×						×	
												1		·	

Chassis communication unit

[CAN]

< SYSTEM DESCRIPTION >

Body type							Se	dan						
Axle	Sedan 2WD AWD VQ37VHR VQ37VHR X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X													
Engine							VQ3	7VHR						
Transmission							А	/T						
Brake control							V	DC						
Telematics system		×		×		×		×		×		×	×	×
Direct adaptive steering			×	×	×	×	×	×			×	×	×	×
Automatic drive positioner					×	×	×	×					×	×
ICC system							×	×						×
CAN system type	1	2	3	4	13	5	14	6	7	8	9	10	11	12
Steering angle main control module			×	×	×	×	×	×			×	×	×	×
Lane camera unit							×	×						×

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



With ICC system D

Α

CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

INFOID:000000009239065

Refer to LAN-25, "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart. NOTE:

Refer to LAN-31, "Abbreviation List" for the abbreviations of the connecting units.

LAN-44

< SYSTEM DESCRIPTION >

																		T: T	ransr	nit l	R: Re	ceive	
Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST 3	CC	CCM	SONAR	AVM	A
A/C compressor request signal	т			R																			
Accelerator pedal malfunc- tion signal	т																			R			С
Accelerator pedal position signal	Т	R												R	R				R	R			D
ASCD OD cancel request signal	т	R																					
ASCD operation signal	Т	R																					E
ASCD status signal	Т		R																				
Closed throttle position sig- nal	т	R																	R				F
Cooling fan speed request signal	т			R																			
ECM malfunction signal	Т																			R			G
ECO drive indicator control signal	т		R																				Ц
ECO pedal reaction force control signal	т																		R				
ECO pedal reaction force	Т								R														
setting signal	R								Т														1
Engine and A/T integrated control signal	T R	R T																					J
Engine coolant temperature signal	Т		R								R												
Engine speed signal	Т	R	R			R								R	R			R	R	R			K
Engine status signal	Т		R		R				R	R								R					
Engine torque signal	Т																			R			
Fuel consumption monitor signal	т		R						R														
Fuel filler cap warning dis- play signal	т		R						R														LA
Brake pedal position switch	Т																		R				
ICC prohibition signal	Т																		R				Ν
ICC steering switch signal	Т																		R				
Malfunctioning indicator lamp signal	т		R							R													0
Power generation com- mand value signal	Т			R																			
	Т																		R				Ρ
Stop lamp switch signal		R			Т									R	т				R				
Wide open throttle position signal	т	R																					
A/T CHECK indicator lamp signal		т	R			R																	

[CAN]

Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST 3	ICC	CCM	SONAR	AVM
A/T self-diagnosis signal	R	Т																				
Current gear position signal	R	Т													R				R	R		
Input speed signal		Т																	R			
Manual mode shift refusal signal		т	R																			
N range signal		Т			R																	
NAVI shift control indication request signal	R T	Т							R													
NAVI shift control status sig- nal		т							R													
Next gear position signal	R	Т																				
Output shaft revolution sig- nal	R	т																	R			
P range signal		Т			R																	
Shift position signal		Т	R		R	R			R						R		R	R	R	R		
Shift schedule signal	R	Т																				
TCM malfunction signal		Т																		R		
Brake fluid level switch sig- nal			т												R							
Combination meter mal- function signal			Т																	R		
Distance to empty signal			Т						R													
Fuel filler cap warning reset signal	R		Т																			
Fuel level low warning sig- nal			Т						R													
Fuel level sensor signal	R		Т																			
Manual mode downshift sig- nal		R	т																			
Manual mode signal		R	Т																			
Manual mode upshift signal		R	Т																			
Market information signal			Т																	R		
Non-manual mode signal		R	Т																			
Odometer signal			Т		R	R	R											R				
Paddle shifter downshift sig- nal ^{*2}		R	т																			
Paddle shifter upshift sig- nal ^{*2}		R	т																			
Parking brake switch signal			Т		R				R					R	R				R	R		
Seat belt buckle switch sig- nal (driver side)			т		R																	
Vahiala apaad aigaal	R	R	Т	R	R	R	R		R		R					R	R					
venicie speed signal			R		R										Т		R		R	R		R
A/C compressor feedback signal	R			т							R											

SYSTEM DESCRIPT	ION	>																			[C/	AN]
Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST 3	ICC	CCM	SONAR	AVM
Detention switch signal				Т	R												R					
Front wiper stop position signal				Т	R																	
High beam status signal	R			Т			R															
Hood switch signal				Т	R																	
ow beam status signal	R			Т		R	R															
Push-button ignition switch status signal				Т	R																	
3CM malfunction signal					Т															R		
Blower fan motor switch sig- nal	R				т																	
Buzzer output signal			R		Т																	
			R														Т					<u> </u>
Daytime running light re- quest signal				R	Т																	
Dimmer signal			R		Т														R			
Door lock status signal					Т					R												
oor switch signal			R	R	Т											R	R					R
oor unlock signal					Т												R					
ront fog light request sig- al			R	R	Т																	
ront wiper request signal				R	т														R	R [*] 3		
landle position signal					Т												R					
ligh beam assist indicator amp signal			R		т																	
ligh beam request signal			R	R	Т																	
lorn reminder signal				R	Т																	
				R	Т											R						
				Т	R																	
nition switch signal					Т											R	R					
terlock/PNP switch signal				R	Т																	
Noncolver in Switch Signal				Т	R																	
ow beam request signal				R	Т																	
ow tire pressure warning amp signal			R		Т				R													
ey ID signal			R		Т				R		R						R		R	R		
leter display signal			R R		Т														Т			
leter ring illumination re- uest signal			R		т																	
			R		Т					R												<u> </u>
)il pressure switch signal				т	R					-												
Position light request signal	-		R	R	Т		-				-	-			-	-						-
	1	1 C			· ·	i.	1. C.	i.	i.	i.	1	1	i.	i.	1	1				i.	i.	÷

Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST 3	ICC	CCM	SONAR	AVM
Rear window defogger con-				R	Т																	
trol signal	R			Т					R													
Shipping mode status signal			R		Т																	
Sleep wake up signal			R	R	Т					R		R				R	R					
Starter control relay signal				R	Т																	
Starter relay status signal			R	R	Т																	<u> </u>
Starting mode signal				I	к т												Р					<u> </u>
					1												ĸ					<u> </u>
signal				R	Т																	
Tire pressure data signal			R		Т				R													
TPMS malfunction warning lamp signal			R		т				R													
Trunk switch signal			R		Т																	R
Turn indicator signal			R		т														R	R [*] 3		
Turn signal switch signal ^{*3}					Т														R	R	R	
AFS warning signal			R			Т																
High beam assist request signal					R		Т															
High beam assist system status signal					R		т															
Car crash information signal								Т		R												
A/C switch operation signal									Т		R											
AV system malfunction sig- nal									т											R		
Camera switch signal									Т													R
Curve signal		R							Т													
Drive mode characteristics customizing signal									т											R		
Heated seat switch opera- tion signal									т		R											
NAVI shift control switch sig- nal		R							т													
Rear window defogger switch signal					R				т													
Road data signal		R							Т													
System selection signal									т										R	R [*] 3		
					R				Т								R					
System setting signal					Т				R													
									R								Т					
User information signal			R						Т		R						R		R	R		
Voice recognition signal									Т		R											_

SYSTEM DESCRIPT	ION	>																			[C/	AN]
Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST 3	ICC	CCM	SONAR	AVM
Door lock/unlock request					R					Т												
Sleep-ready signal				т	R R					Т												
					R					Т												
Vake up signal			Т	т	R																	
/C display signal				1	ĸ				R		Т											
/C evaporator temperature gnal	R										т											
/C ON signal	R										Т											
mbient sensor signal			R								Т											
mbient temperature sig- al ^{*3}											т								R	R	R	
lower fan ON signal	R										т											
eated seat switch indicator gnal									R		т											
arget A/C evaporator tem- erature signal	R										т											
eering angle sensor mal- nction signal						R							т		R	R		R	R			
eering angle sensor sig-						R			R				Т		R T	R		R	R	R		R
eering angle speed signal													Т			R			R			
teering calibration signal						R							Т			R						
ND warning lamp signal			R											Т								
T shift schedule change emand signal		R													т							
BS malfunction signal															Т				R	R		
BS operation signal		R													Т	R			R	R		
3S warning lamp signal			R							R					Т				R			
ake fluid pressure signal															Т					R		
rake switch signal															Т					R		
rake warning lamp signal			R T							R					Т							
ecel G signal			-												Т					R		
BD operation signal															т					R		
ngine torque request sig- al	R														т							
ront LH wheel speed sig- al														R	т			R		R		
ront RH wheel speed sig- al														R	т			R		R		
ear LH wheel speed signal									-					R	т					R		R

Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST 3	ICC	CCM	SONAR	AVM
Rear RH wheel speed sig-														R	Т					R		R
Side G signal		R													Т			R	R	R		
Stop lamp switch signal															Т					R		
TCS gear keep request sig- nal		R													Т							
TCS malfunction signal															Т				R	R		
TCS operation signal															Т				R	R		
VDC malfunction signal															Т				R	R		
VDC OFF indicator lamp signal			R												Т							
VDC OFF switch signal															Т				R	R		
VDC operation signal															Т				R	R		
VDC warning lamp signal			R							R					Т							
Yaw rate signal															Т			R	R	R		
Direct Adaptive Steering malfunction signal						R									R [*] 3			т	R [*] 3	R [*] 3	R [*] 3	
Power steering warning lamp signal			R															т				
Steering pinion angle signal						R									R			т	R [*] 3	R [*] 3	R [*] 3	
Steering torque signal	R																	Т				
FEB warning lamp signal			R																Т			
FEB operation signal																R			Т			
ICC operation signal	R																		т	R [*] 1		
ICC sensor signal ^{*3}																			Т	R	R	
ICC warning lamp signal			R																Т			
Active Lane Control display signal*3			R																	Т		
Active Trace Control display signal			R																	Т		
Active Trace Control signal															R					Т		
Brake fold status signal															R					Т		
Brake fluid pressure control signal															R					Т		
Brake hold request signal															R					Т		
Chassis control malfunction signal			R																	т		
Drive mode display signal									R											Т		
		R							R						R			R	R	Т		
	R	Т																	R			
Driver assistance buzzer signal																			R	т		

< SYSTEM DESCRIPTION >

Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST 3	ICC	CCM	SONAR	AVM	A
Interrupt display signal			R																	Т			
Key link signal			R						R		R						R		R	Т			
Log-in permit signal			R						R		R						R		R	Т			C
Steering angle value com- mand signal*3																		R		т			
Tire display signal			R																	Т			E
Turn display signal			R																	Т			
Vehicle display signal			R																	Т			E
Sonar status signal																					Т	R	
MOD beep sound output re- quest signal																					R	т	·
View change signal									R													Т	

*2: Models with paddle shifter

*3: With Direct Adaptive Steering and Active Lane Control

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CAN SYSTEM (WITHOUT AROUND VIEW MONITOR SYSTEM)

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WIRING DIAGRAM CAN SYSTEM (WITHOUT AROUND VIEW MONITOR SYSTEM) Wiring Diagram INFOID:000000009239066 COMBINATION METER (M58) CHASSIS CONTRO MODULE (E22) (WT): With telematics (WD): With direct adaptive steering AWD: ANUD models (M39 E47 AWD CONTROL UNIT M42): (AW) Å DATA LINE DATA LINE 22C 40 TCM (TRANSMISSION CONTROL MODULE) A/T ASSEMBLY OINT CONNECTOR DATA LINK CONNECTOR (M25) 18 8 50 ЧG F100 *: This connector is not shown in "Harness Layout". Beoo B12 IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E121) FRONT SEAT (DRIVER SIDE) CAN SYSTEM (WITHOUT AROUND VIEW MONITOR) DRIVER SEAT CONTROL UNIT (B601) Я СРU Щ FUSE BLOCK (J/B) (M133), E64), E65, (B39) ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E35 监 ŝ ECM M37 2013/05/17 JRMWD9949GB

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< WIRING	DIAGRAM >			

Terminal Color Of Mon Signal Name [Specification] 20 GY 20 20 GY 20 all Color Of Signal Name [Specification] Signal Name [Specification] 23 0 0
Code of Signal Nume (Specification) Signal Nume (Specification) Bit Specification W Code of Specification Code of Specification <th< td=""></th<>
Color Of Signal Name (Specification) 81 B - - - 22 0 23 00 - 2 - - 23 0
Color of Signal Name (Specification) 83 BG - 23 M

JRMWD9951GB

B B W	BY Control P P P P SB P S P P P	UP TUMOLE SENSUM MINOT Y STEPRIO MINOT LLG TOROLE SENSOR MINOT G STEPRIO MINOT LL STEPRIO MILLANDI MILLANDI MINOT LL STEPRIO MILLANDI MILLANDI MINOT LL STEPRIO MILLANDI MILLANDI MILLANDI MINOT LL STEPRIO MILLANDI
57 58 59 61 64 65 65 67 67 71 72	73 73 78 78 78 88 88 88 88 88 88 88 88 88 88	
Connector Nu. E25 Connector Nume WRE TO WRE Connector Type HIS Connector Type Connector	Terminal Color Of Mice Signal Name Signal Name No. Wice Signal Name Signal Name No. Wice - - 1 L - - 1 L - - 11 L - - 12 CR - - 13 W - - 14 L - - 15 P - - 16 Y - - 17 L - - 18 P - - 19 Y - - 23 CR - - 23 L - - 23 K - - 24 W - - 25 CR - - 26 W - - 26 M <	3:32 3:4 -
34 BG - 35 LG - 36 W - 37 SHELD - 39 NELD - 30 SHELD - 31 SHELD - 38 V - 39 P - 40 R - 41 W - 42 LG - 44 V -	48 SHELD - 47 W - 49 B - 49 B - 51 B - 51 S - 52 R - 54 B - 55 S - 56 Connector Nume DHASSIS CONTROL MODULE Connector Nume DHASSIS CONTROL MODULE - Connector Nume DHASSIS CONTROL MODULE - 7 No CAN-L (Withthart Gaeway) 3 R CAN-L (Withthart Gaeway) 6 V DHAT MONOR 7 N CAN-L (Witht Gaeway) 10 CAN-L (Witht Gaeway) - 10 CAN-L (Witht Gaeway)	1 L 0.45820.0000-14 19 L 0.45535.0000-14 19 L 0.45535.0000-14
γ SET SW lob E10 low Write TO Write low Mree TO Write standard 1 i 1 i 1 i 1 i 1 i 1 i 1 i 1 i 1 i 1 i 1	P P	 x > ¹/₂ ¹/₂ ¹/₂ ¹/₂ ¹/₂ ¹/₂ ¹/₂
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JRMWD9957GB

Revision: 2013 October

[CAN]



CAN SYSTEM (WITH AROUND VIEW MONITOR, WITHOUT ICC)



[CAN]



[CAN]



Revision: 2013 October



JRMWD9962GB

Bio0 Mrrer To Mine. Image: To Mine. Image: To Mine. <
BE00 VWE TO WRE NS RMM-05 NS RMM-05 Signal Name (Specification) -
Commettor Main Commettor Main Commettor Type Commettor Main Commettor Type Commettor Main Commettor Type Commettor Main Commettor Main Olor Taminal Olor Commettor Main Olor
Image: Second condition Second condition 31 10 10 32 10 10 33 10 10 34 10 10 35 10 10 36 10 10 36 10 10 36 10 10 37 10 10 43 10 10 43 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
EM (WITH AROUND VIEW M - (Writed BOSE system) - (Writed BOSE system
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CAN SYSTEM (WITH AROUND VIEW MONITOR, WITHOUT ICC)

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JRMWD9964GB

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ALL VIEW M Correct, Lam Correct, Lam Corr	L
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CAN SYSTEM Connector Name ESS Connector Name Ass Arrow Connector Name Arrow C	Ν

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	70 B IGN RLYAY (IPDM E/R) CONT	71 G DR DOOR REQ SW	72 SB PASS DOOR REQ SW	75 BR COMBI SW INPUT 5	76 BG COMBI SW INPUT 4	77 V COMBI SW INPUT 3	78 Y COMBI SW INPUT 2	79 LG COMBI SW INPUT 1	80 L TRLID OPNR SW			onnector No. M19	MIDE TO MIDE		onnector Type TH80MW-CS16-TM4			1 6 12 25 25 24 25 24 25 24 25 25 25 25 25 25 25 25 25 25 25 25 25					arminal Color Of	No. Wire Signal Name [Specification]	1 Y -	2 G -	3 SB -	4 BR –	6 R -	7 W -		- Ek		10 IG	13 GR -	24 Y -	25 W -	31 BR -	32 B -	33 B -	34 V -	35 P -	36 W -	37 SB -	38 LG –	40 P -	41 G –	42 BR –
	5 Y DR2 (+)	6 Y/R AS1 (+)	7 Y/B AS1 (-)	8 Y/G AS2 (+)	9 Y AS2 (-)	18 Y ECZS+	19 BR ECZS-	20 Y/R ACT_VENT+	21 Y/B ACT_VENT-	22 SHIELD GND	23 V AIRBAG W/L	24 G – Co	25 GR A/B_OFF_IND C2	51 G SATELLITE RH2 (+)	52 R SIDE_SENS_RH2- Co	53 V SIDE SENS LH2+	54 L SIDE SENS LH2-	57 LG IVCS	59 L CAN-H	60 P CAN-L		0N		Connector Name BCM (BODY CONTROL MODULE)	Connector Type TH40FB-NH					0 12 12 12 12 12 12 12 12 12 12 12 12 12		1	T1 C-1 Of	No. Wire Signal Name [Specification]	48 R PUSH-BTN IGN SW ILL PWR	52 G DONGLE LINK	54 V COMMILINE	55 R RAIN SENSOR	59 P CAN-L	60 L CAN-H	61 G REAR WINDOW DEF RLY CONT	62 R STARTER RLY CONT	64 V I-KEY WARN BUZZER	65 B OUTS HD LAMP CONT	66 B BLOWER FAN RLY CONT	67 W/B IGN RLYAY (F/B) CONT	68 R DIMMER	69 GR A/T SHIFT SELECT PWR SPLY
IONITOR, WITHOUT ICC)	49 L –	50 R -	51 SB -	52 G –			Connector No. F100		Connector Name TCMU RANSMISSION CONTROL MODULE/	Connector Type SP10FG				H.S.		6 7 8 9 10			Terminal Color Of Signal Name [Specification]	No. Wire	1 - IGNITION POWER SUPPLY	2 - BATTERT POWER SUPPLET (MEMORT BAON-UP)		5 - GROUND	6 - IGNITION POWER SUPPLY	7 - BACK-UP LAMP RELAY	8 - CAN-L	9 - STARTER RELAY	10 - GROUND			Connector No. M3	Connector Name AIR BAG DIAGNOSIS SENSOR UNIT	Gomector Type NH28EY-EX				H.S.		19 52 21 56 23 56 22	18 51 20 53 50 59 25 57 1		Terminal Color Of Simul Nama [Sanaification]	No. Wire Ognammanine Lopecinication	1 LG IGN	2 B GND	3 Y/R DR1 (+)	4 Y/B DR1 (-)
SYSTEM (WITH AROUND VIEW M	Color Of Signal Name [Snecification]	Wire Opening the Province of Contraction of Contrac	L/Y	SHIELD -	L/B -		BR -	GR -	1	M		- 0	R -	-	- 1	D1	۰ ٩		-	-	-		 -	-	DT	N	- w		BR -	TG								- M	- -	- 5		- 1	R -	BG -	۲ -	SHIELD -	- M	P1
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Connector Name WIRE TO WIRE	Convector Name WIRE TO WIRE		Connector Type TH16MW-NH	Connector Type I H16MW-NH				HS.	234567		10 11 12 13 14 15			Terminal Color Of	No. Wire Signal Name [Specification]				4 SHELD -			7 GR –	10 B -	11 B -	12 SB -	13 SHIELD -	14 P -	15 L –			Connector No. BIZ	Connector Name WIRE TO WIRE	Connector Type NS16EW-CS				HS. 28 21 5 2 43 1 17	20 7 20 10 15 2 10 40				Terminal Color Of	No Wire Signal Name [Specification]		-	2 LG –	5 P -	- A 9	-
		=					R		7 6 5 2 1		1/				ame [Specification]		CAN-H	CAN-L	GROUND	ITS COMM-H	ITS COMM-L	CHASSIS COMM-H	CHASSIS COMM-L	IGNITION	HOLD RLY DRIVE SIGNAL				RE]-	014 9 8			: : :	al Name [Specification]	1	1			I	-	1	1	

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jector No. B52	tector Name WIRE TO WIRE tector Type NS16MW-CS		8 9 1 14 15 16	ninal Color Of Signal Name [Specification]		- CHIELD		5 W		lector No. B62	hector Name WIRE TO WIRE	ector Type TH80FW-CS16-TM4						ninal Color Of Signal Name [Specification]	o. Wire .		R - [With BOSE system]	SHIELD - [Without BUSE system]	5		- With BOSE system]	1 B - [With BOSE system]	S Y - [Without BOSE system]		
Conne	Conne	Ĕ		Termi No.		- 80	9	15		Conne	Conne	Conne	_	Ľ				Termi	ź -	2	e	ν 4	ŝ	φı	-	80	ωc	10	
Connector No. 839	Connector Name FUSE BLOCK (J/B) Connector Type TH10FB-NH	HS I I I I I I I I I I I I I I I I I I I	10H 8H 7H 8H	Terminal Color Of Signal Name [Specification] No. Wire	10H P	4H R -	8H L 7H LG -	8H P -	Convertion No. R50	Connector Name AROUND VIEW MONITOR CONTROL UNIT	Connector Type TH40FW-NH			2 4 28 30 32	1 3 19 23 25 27		Terminal Color Of	No. Wire Signal Name [Specification]	1 B GND	3 LG IGN	4 P ACC	19 LG AV COMM (H) 20 P AV COMM (L)	23 SHIELD AV COMM GND	25 BG REVERSE SIGNAL	2/ L CAN-L With ADAS	28 R CAN-L [With ASCD]	30 W RETRACT MOTOR OPERATION SIGNAL (OPEN) 20 O DETRACT MOTOR OPERATION SIGNAL (CLOSE)		
CAN SYSTEM (WITH ICC) Connector No. B19	Connector Name PRE-CRAMS SEAT BELT CONTROL LMIT (DRIVER SIDE) Connector Type TH18FW-CS2	41S	19 10 12 14 161718 20	Terminal Color Of Signal Name [Specification] No. Wire	1 W SIGBAT	4 R CANLO	6 W BACKLE_SW_LH_NO 8 BR LOCAL COMM 2	9 SHIELD GND 10 R SENS POWER 1	12 B 0UT 2 14 I CAN HI	16 Y LOCAL COMM 1	1/ W SENS GNU 1 18 B SIG GND	19 Y MOTOR_BAT		C			Connector Type TH08MW-NH		HS	2 3 4	5 7		Terminal Color Of Signal Name [Specification]	No. Wire Obran Mile Leptonication	2 SMILLU	4 L –			

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5 V PULSE (TELESCOPIC) 6 GY ADDRESS 2	7 G IND 2	8 V SLIDE SW (BACKWARD)	9 W RECLINER SW (BACKWARD)	10 0 TILT SW (DOWNWARD)	11 G LIFTER SW (DOWNWARD)	12 SB POWER SUPPLY (ENCODER)	17 P CAN-L	18 LG PULSE (SLIDE SENSOR)	19 W PULSE (LIFTER FRONT)	20 GY PULSE (LIFTER REAR)	21 SB PULSE (TILT SENSOR)	22 0 ADDRESS 1	23 W IND 1	24 P SLIDE SW (FORWARD)	25 Y RECLINER SW (FORWARD)	26 GY TILT SW (UPWARD)	27 L LIFTER SW (UPWARD)	28 Y SET SW			connector No. E10	Manual To Manual	onnector Name WIKE 10 WIKE	ionnector Type SAA36MB-RS8-SHZ8		1 2 9 10 11 12	3 13 14 15 16	1.5. 4 17144223233425	5 6 28227282830331223333	7 8 (8) 33 (8) 44 (4) 42 45 44 45 80 77 (8) 49 (4) 42 42		erminal Color Of Simul Name [Construction]	No. Wire Signal Name Lopecimication]	1 L/Y = -	2 SHIELD -	3 L/B -	4 SHIELD -	5 BR -	6 SB	7 G –	8 W -		10 Y –	11 P -	12 SB -	13 L –	14 G –
ctor No. B600 ctor Name WIRE TO WIRE		ctor Type NS16MW-CS				17 1 43 2 2 2 21 28	AG AD AT G AE DO 20 7 00	C7 / CC 77 C5 C /5 06 06			nal Color Of Simul Name [Sanation]	Wire oignar name Lopecincauorij	1			1	1	,		,	-	-	-		-	1	-			ctor No B601	PDN/ED SEAT CONTDOL 11NIT		ctor Type TH32FW-NH			K						nal Color Of Signal Name [Snecification]	Wire Uppering trains to position of the	L CAN-H	BR UART (TX/RX)	R START SW	P PULSE (RECLINER)
10 B - Conne 11 B - Conne	12 SB –	13 SHIELD - Conne	14 P -	15 L – 1		HS	Connector No. B92		Connector Name SIDE KAUAK LH	Connector Type AAC06FB-WP-5P	Termi	No.	-		(2) 2 1 4 F R		2	17	Terminal Color Of Contract 21	No. Wire Signal Name [Specification] 22	2 B GROUND 23	3 R ITS COMM-L 28	4 L ITS COMM-H 33	5 GR IGNITION 43	6 BR BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR 45	46	47	Connector No. B93 48	Connector Name SIDE RADAR RH	Connector Type AAC06FB-WP		Come	Conne	13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Terminal Color Of Signal Name [Specification]	No. Wire Opposition Exponention	1 B RIGHT/LEFT SWITCHING SIGNAL	2 B GROUND Termi	3 P ITS COMM-L No.	4 L ITS COMM-H	5 GR IGNITION 2	6 SB BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDIGATOR 3	4
93 R – – – – – – – – – – – – – – – – – –	95 Y =	96 W -	97 L –	99 BR –	100 BR –			nnector No. B72		nnector Name WIRE TO WIRE	nnector Type TH08FW-NH			K		4 3 2	7 5			rminal Color Of	No. Wire Signal Name [Specification]	2 SHIELD -	3 E	4 L –	5 R -	7 P -		-	nector No. B87	mector Name WIRE TO WIRE	nnector Type TH16FW-NH			ľ		7 6 5 4 3 2	15 14 13 12 11 10			rminal Color Of Signal Name [Snacification]	No. Wire Osmania Laponia	2 B –	3 BR –	4 SHIELD -	5 R -	- T 9	7 GR -

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	ţ	16	17	31	32	S %	37	38	68	40	41	44	45	46	47	48	49	50	51	52	53	54	22	56) î	8	80	5	64	65	99	67	68	11	72	73	74	75	01	2	8	28	86	91	92	94	95	96	97	
	Commuter No. E22	Connector Name CHASSIS CONTROL MODULE	Connector Type TH24FW-NH				3 4 5 6 7 8 10 11 12				Terminal Color Of cimeration	No. Wire Sternication	3 P CAN-L [Without Gateway]	3 R CAN-L [With Gateway]	4 L CAN-H	5 V DRIVE MODE SELECT SW (UP)	6 G DRIVE MODE SELECT SW (DOWN)	7 W CHASSIS COMM-L	8 W CHASSIS COMM-L	10 G IGN	11 L CHASSIS COMM-H	12 B GROUND	19 L CHASSIS COMM-H	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Connector No. E25	Connector Name WIRE TO WIRE		Connector Type TH80FW-CS16-TM4				H.O.					Terminal Color Of	No. Wire Signal Name [Specification]			- LG	- BK		7 L -	10 BR -	11 L -	12 GR –	13 W -	14 B –	
AN SYSTEM (WITH ICC) 1 <td>D Annotation May E14</td> <td>Connector Name WIRE TO WIRE</td> <td>Connector Type SAA18MB-RS10-SJZ2</td> <td></td> <td>11112312142</td> <td>H.S.</td> <td>25 27 28 25</td> <td></td> <td></td> <td></td> <td>Terminal Color Of Similar Content of Terminal</td> <td>No. Wire Signal Name Specification</td> <td>4 Y -</td> <td>5 L –</td> <td>6 B -</td> <td>7 BR –</td> <td>8 LG –</td> <td>- M 6</td> <td>11 V -</td> <td>12 R –</td> <td>13 B -</td> <td>14 P</td> <td>15 GR</td> <td>16 V</td> <td></td> <td>а 1</td> <td></td> <td>22 SHIELD -</td> <td>23 P –</td> <td>24 L –</td> <td>25 V -</td> <td>26 B –</td> <td>27 B –</td> <td>28 B -</td> <td></td>	D Annotation May E14	Connector Name WIRE TO WIRE	Connector Type SAA18MB-RS10-SJZ2		11112312142	H.S.	25 27 28 25				Terminal Color Of Similar Content of Terminal	No. Wire Signal Name Specification	4 Y -	5 L –	6 B -	7 BR –	8 LG –	- M 6	11 V -	12 R –	13 B -	14 P	15 GR	16 V		а 1		22 SHIELD -	23 P –	24 L –	25 V -	26 B –	27 B –	28 B -																
	AN SYSTEM (WITH ICC)	16 BR -	17 L - 18 P -	19 GR –	20 G	21 V =	23 L -	24 GR -	25 V –	26 BR –	27 W -	28 V -	29 BR –	30 R -	31 P -	32 G -	33 B -	34 BG -	35 LG -	36 W -	37 SHIELD -	38 L –	39 P	40 R	-	42 LG		++	45 Y =	46 SHIELD -	47 W -	48 BR –	49 G – –	50 B -	51 SB -	52 R -														

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98			Connec	tor No.	E35	Connector P	40. E4/		Connector No. E00	Τ
100	SHIELD	-	Connec	tor Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)	Connector N	lame WIR	E TO WIRE	Connector Name FUSE BLOCK (J/B)	
			Conneci	tor Type	SAZ30FB-SJZ4-U	Connector 7	ype TH3	HN-MW2	Connector Type TH12FW-NH	Π
Connecto	AN W	E36		-						
	- Manua	CTEEPOND AND E MANN CONTROL MODULE								
			S.H.S.		5 15 17 18 19 20 1 1 · ·	H.S.	12	13 4 7 8 1 13 15		
Connect	or Type	RH24FB-RZ8-L-LH					17 18	27 28 29 30 31 32	6F 5F 3F 2F 1F	
-]		12F11F10F9F 8F 7F	
		[[1 2 3 4 5 6 25]								
H.S.		7 8 10 11	Termina	I Color Of	c Simal Name [Snarification]	Terminal Co	alor Of	Sinnel Neme [Snerification]	Terminal Color Of Simul Name [Snecification]	
		14 15 17 18 30	No.	Wire		öN	Wire		No. Wire	,
		[[19]20] [22]23]24 [32]]	-		GROUND	-	σ	1	10F W -	
			2	8	GROUND	2	>		11F G -	
]	9	σ	VALVE BATTERY	3		T	12F W –	
Terminal	Color C	Of Simal Name [Snarification]	4	~	MOTOR BATTERY	4	۵.	-[Without Gateway]	1F V -	
No.	Wire		5	LG	STOP LAMP SW SIGNAL [With ICC]	4	α	-[With Gateway]	2F BR -	
-	BR	TORQUE SENSOR MAIN SIGNAL	5	>	STOP LAMP SW SIGNAL [With ASCD]	7	L	1	3F P -	
2	≻	STEERING ANGLE MAIN MOTOR RESOLVER SIGNAL (S1-S3)	7	GR	RR LH WHEEL SENSOR SIGNAL	8	W	I	5F P -	
3	LG	TORQUE SENSOR SUB SIGNAL	8	σ	RR LH WHEEL SENSOR POWER SUPPLY	13	σ	-	6F L – –	
4	σ	STEERING ANGLE MAIN MOTOR RESOLVER SIGNAL (S1-S3)	6	BR	FR RH WHEEL SENSOR SIGNAL	15	BR	1	7F R -	
5	M	STEERING ANGLE MAIN MOTOR RESOLVER SIGNAL (S2-S4)	10	GR	FR RH WHEEL SENSOR POWER SUPPLY	17	W	1	8F L –	
9	-	STEERING ANGLE MAIN MOTOR RESOLVER SIGNAL (S2-S4)	13	æ	VACUUM SENSOR SIGNAL	18	BG	1	9F L –	
7	ß	TORQUE SENSOR GROUND	15	٩.	CAN-L [Without Gateway]	27	LG	1		
8	٩.	TORQUE SENSOR POWER SUPPLY	15	æ	CAN-L [With Gateway]	28	BR	T		
10	٣	STEERING ANGLE MAIN MOTOR RESOLVER SIGNAL (R1-F2)	17	Y	RR RH WHEEL SENSOR SIGNAL	29	W	1	Connector No. E76	
11	BR	STEERING ANGLE MAIN MOTOR RESOLVER SIGNAL (R1-F2)	18	>	RR RH WHEEL SENSOR POWER SUPPLY	30	7	1	Connector Name MIDE TO MIDE	
14	_	CHASSIS COMMUNICATION-H	19	SB	FR LH WHEEL SENSOR SIGNAL	31	5	-		
15	M	CHASSIS COMMUNICATION-L	20	BG	FR LH WHEEL SENSOR POWER SUPPLY	32	LG	I	Connector Type SAA18FB-RS10-SJZ2	
17	BG	BACK UP SONAL (FROM STEERING ANGLE SUB CONTROL MODULE)	25	-	CAN-H					
18	SB	BACK UP SIGNAL (FROM STEERING FORCE CONTROL MODULE)	28	J	VACUUM SENSOR POWER SUPPLY	Connector N	Vo. E64		987654	
19	≻	FLEXRAY COMMUNICATION-H	ß	2	VDC_OFF_SW SIGNAL	Connector N	lame FUS	E BLOCK (J/B)		
20	Я	FLEXRAY COMMUNICATION-L	32	SHIELD	VACUUM SENSOR GROUND				25 24 20 22 21	
22	ß	BACK UP SIGNAL (TO STEERING ANGLE SUB CONTROL MODULE)	34	σ	IGN	Connector 1	Type NS0	08FW-CS		
23	BR	CAN WAKE UP								
24	٩.	BACK UP SIGNAL (TO STEERING FORCE CONTROL MODULE)				-				
25	σ	XXXTTON POWER SUPPLY (FROM STEERING ANGLE 5UB CONTROL MODULE)								
30	ш	GROUND				ΗS		34 7 24	Terminal Color Of Cincel Name [Secretarian]	
32	GR	GROUND							No. Wire Signal Name (Specification)	
								6H 4H	4 Y –	
									5 L -	
									- B 9	
						Terminal Co	olor Of	C [Canal and and	7 V -	
						No.	Wire	olgrial Name Lopecification	8 LG -	
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37 SHELD -	38 W -	39 ×	41 E	42 GR -	43 R -	44 BG -	AF V -	46 SHIELU -	47 W -	48 LG -	- 1 57				- 6 -			Connector No. F100	Connector Name TCM/TRANSMISSION CONTROL MODULE)		Connector Type SP10FG	~			HS.		M6171819110/			Terminal Color Of Signal Name [Specification]	No. Wire Olgran wante Lopectification j	1 - IGNITION POWER SUPPLY	2 – BATTERY POWER SUPPLY (MEMORY BACK-UP)	3 - CAN-H	4 - K-IIVE		5 - GHOUND	6 – IGNITION POWER SUPPLY	7 - BACK-UP LAMP RELAY	8 - CAN-I	9 - STARTER RELAY	10 - GROUND								
Connector No. F12	Connector Name WIRE TO WIRE	Connection Trans CAA 26ED -DC9-CU70					25 (13) (2) (3) (4) (4) (4) 24 (13) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	2010 101 101 2010 1010 10000 1000 1000 1000 1000 1000 10000 1000 1000 1000 1000 1000 1			Terminal Color Of	No Wire Signal Name [Specification]	· · · ·		2 SHIELD -	3 L/B -	4 SHIELD -	5 BR –	6 GR –	7 G -	8 W -	6	10 G –	11 R -	12 P –	13 L –	14 LG -	- -	 -	17 L –	18 P -	19 GR –	20 BG -	21 LG -	22 W -	: >	23 Y =	24 LG –	25 V -	26 W -	 	28 BR -	29 LG –			 	33 B	34 BG -	35 LG -	36 SB -
Terminal Color Of	No. Wire Signal Ivante Lopecinication	19 G	22 Bu	27 GR -	28 P	29		 33 35 -	34 Y -	35 G -	36 SB			- Dr	41 GK -	43 V I -			Connector No. F2	Connector Name A/T ASSEMBLY		Connector Type RK10FG-DGY	V					M 40 0 7 8 1)		Terminal Color Of Simal Name [Snarification]	No. Wire Optimization	1 GR IGNITION POWER SUPPLY	2 P BATTERY POWER SUPPLY (MEMORY BACK-UP)	3 I CAN-H		4 LG K-LINE	5 B GROUND	6 GR IGNITION POWER SUPPLY	7 BG BACK-UP LAMP RFLAY	8 P CAN-L	9 GR STARTER RELAY	10 B GROUND							
CAN SYSTEM (WITH ICC)	15 G –	16 V	1	21 B -	22 SHIELD -	23 P		= A 62	26 B –	27 B -	28 B	5			Connector No. E80	Connector Name ICC SENSOR		Connector Type AAZ08FB				HS. [1] 3] [1] [5]	a a				Terminal Color Of	No. Wire Signal Name [Specification]	NOTINIT	3 L ITS COMM-H	6 Y ITS COMM-L	8 B GROUND			Connector No E121		Connector Name IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE	HOOM)	Connector Type TH32FW-NH					19 22 23 27 28 29 31 33 34	35 38 37 38 41 43					

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CAN SYSTEM (WITH ICC)			
	87 LG -	Connector No. M25	105 L REFRIGERANT PRESSURE SENSOR
5 OTHER	06	Connector Name DATA LINK CONNECTOR	100 F FUELIAW LEWERATORE SEVENCE SEVEN
11 GR -	92 W -	Connector Type BD16FW	108 Y SENSOR GROUND (ASCD/ICC STEERING SWITCH)
12 V –	93 R -		109 BR TRANSMISSION RANGE SWITCH
13 LG	94 R – – – – – – – – – – – – – – – – – –	11 11 12 12 12	110 V ENGINE SPEED SIGNAL OUTPUT
15 P -		H.S.	113 P CAN COMMUNICATION LINE
16 SB – [With DCM]	97 L –	3 4 5 6 7 8	114 L CAN COMMUNICATION LINE
16 V – [Without DCM]	99 BR –		117 V DATA LINK CONNECTOR
17 Y –	100 BR –		121 LG EVAP CANISTER VENT CONTROL VALVE
; 18 			122 SB STOP LAMP SWITCH
- - -		I erminal Golor OT Signal Name [Specification]	
- ²⁰	Connector No. M24		124 B ECM GROUND
	Connector Name CAN GATEWAY	A SB AV CUMMI(L)	123 K POWEK SUPPLY FOR ECM
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1 1 1 1 1 1 1			Connector No. M30
20 S.B		11 I.G AV COMM (H)	
30 LG -	1 3 4 5 6	12 R CAN-L	Connector Name WIRE TO WIRE
36 R -	7 9 10 11 12	13 L CAN-H	Connector Type TH32FW-NH
37 R -		14 P CAN-L	
38 W -		16 W POWER	
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45 G	No. Wire Signal Name [Specification]		HS 13 13 13 13 13 13 13 13
A6 SHELD		Connector No M37	
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н н г г г г	CAN-L		INO. WILE
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57 R =	10 R CAN2-L	127 123 107 103 99	2 SB -
58 SB -	11 B GND	126 122 114 110 106 102 89	3 L – –
59 LG -	12 R CAN3-L	125 121 H7 H3 H0 H05 H01 97	4 P – [Without Gateway]
62 V -			4 R –[With Gateway]
63 L –			7 L –
64 W -		Terminal Color Of Signal Name [Specification]	8 W =
66 R -		No. Wire Operation Copromotion	13 G -
68 L –		97 Y ACCELERATOR PEDAL POSITION SENSOR 1	15 R -
- d 69		98 BR ACCELERATOR PEDAL POSITION SENSOR 2	17 BR -
71 R -		99 W SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)	18 BG -
72 G -		100 G SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR ()	27 LG -
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		101 CE ICO CTEEDING CWITCH	
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1 1 Notation Euzzets Storki. 5 0 1 <td>Image Y - - - - 100 SHELD - - - - - - - - - - - <td< td=""><td>8 R W/ 11 Y W/ 13 B MARN</td><td>GROUND</td><td>4 W -</td></td<></td>	Image Y - - - - 100 SHELD - - - - - - - - - - - <td< td=""><td>8 R W/ 11 Y W/ 13 B MARN</td><td>GROUND</td><td>4 W -</td></td<>	8 R W/ 11 Y W/ 13 B MARN	GROUND	4 W -
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- Terminal Color OF Wre Signal Name [Specification] Terminal Color OF Wre Terminal				H.S. 10 11 27 28
- No. Wre agent name laperination J Terminal Gole Of Signal Name [Specification] Image: Signal Name [Specification] - - 1 BR AMD SOL(-) 41 L CAN+H [Specification] [Specification] - - 2 Y AMD SOL(-) 41 L CAN+H Final Name [Specification] - - 3 W/B FUUD TEMP(-) 43 P LLUMMANTON CONTROL SGMAL No Signal Name [Specification] - - 0 AMH Y FULL LEVEL, SEASH GROUND No No No No - <t< td=""><td>- Terminal Color Of Similar Ferrita</td><td>[</td><td></td><td>14 15 17 18 29 30</td></t<>	- Terminal Color Of Similar Ferrita	[14 15 17 18 29 30
- 1 BR AMD SOL (-) No. More aginal mere parentation - 2 Y AMD SOL (-) 10. Ver aginal mere parentation - 3 W/B FLUID TEMP(-) 42 P CMH-1 - 7 G TLM AMH AMH AMH AMH - 7 G TLM AH FLLUERELEVEL AMH	- No, Wire Opecilicau	Terminal Color Of C:	[19 20 22 23 24 31 32
2 Y AMD SOL(-) 41 L CMH-H - 3 W/B FLUD TEMP(-) 42 P CAN-H - 1 6 M/B FLUD TEMP(-) 42 P ILLUMINATION NOTIFICUSIGNAL No. - 2 V CAN-H 43 P ILLUMINATION NOTIFICUS GIGNAL No. Wree Signal Name (Specification - 3 L CAN-H 43 Y FUEL LEVEL SENSOR GROUND 2 P Intramacroscons senses - 0 BG AMD SOL BAT 45 W BATTION SOLTINOL SGINAL 4 Y FUEL LEVEL SENSOR GROUND 2 P Intramacroscons senses - 0 BG AMD SOL BAT 45 W BATTION SGINAL 4 Y TEREMOLETION SOLUCE MORE MORE MORE MORE MORE MORE MORE MOR	- 1 BR AWD SOL (+)	No. Wire ou	gnai Name [Specification]	
- 3 W/B FLUID TEMP(-) 42 P No. Terminal Outro Of Signal Name [Specification - 7 6 IGM A4 9 1LLIAMMYTOL CONTROL SCINTOL No. No. No. No. Signal Name [Specification - 6 IGM 44 Y FLLEVEL. EVER. SERSIC RADOUND 2 P Streams roots resource store - 9 B0 AMN SOL BAT 45 W BATTEN POWERS SIPPLY 4 TETEMBOLOGE WORD RESOURCE STORE RESOURCE RESOURCE STORE RESOURCE STORE RESOURCE RESOURCE STO	- 2 Y AWD SOL (-)	41 L	CAN-H	
7 G IGN 43 B ILLIMINATION CONTROL SIGNAL. No. Wre Signal Mane Ispandingene (states) s	- 3 W/B FLUID TEMP (-)	-) 42 P	CAN-L	Terminal Color Of
- - CANH 44 Y FULL.EVEL.ESEGGG GROUND 2 P Streams resolution resoluti resolution resoluti resolution reso	- 1 C ICN	43 B	INATION CONTROL SIGNAL	No. Wire Signal Name [Specification]
				9 D STREPHIC EXPORTAD RESULTED SIGNAL (S1-60)
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- CINTERING FORCE MOTOR RESOLVER SIGNAL - GND - GND - A6 R - IGNITTON SIGNAL - 5 G STEERING FORCE MOTOR RESOLVER SIGN	- a BG AWD SOL BAI	40 W BF	VI LERY POWER SUPPLY	4 W STEEPING FORCE MOTOR RESOLVER SIGNAL (ST-53)
	- 10 B GND	46 R	IGNITION SIGNAL	5 G STEERING FORCE MOTOR RESOLVER SIGNAL (S2=S4)

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5 L CAN+H Connector No. M61 Connector Name M61 Connector Name TCU Connector Name Connector Name Ear Connector Name Connector Connector Name Connector Connector Name Connector Connector Name Connector Connector Connector Connector<	
Connector Num Mr6 Connector Nume SOMAR CONTFICU UNT Connector Nume Connector Nume Connector Nume Connector Nume Connector Nume Connector Nume Nume Connector StavAL FRONT Field	Terminal Color Signal Name [Specification] No. No. Signal Name [Specification] 1 B CAN+L [With Out Catewoor] 2 R CAN+L [With Out Catewoor] 4 Q CAN+L [With Out catewoor]
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CAN SYSTEM (WITH ICC)

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CAN	SYS.	TEM (WITH ICC)										
Connect	or No.	M88	Connec	tor No.	M95	28	LG	AV COMM (H)	4	٦	- [With ASCD]	
Connect	or Name	A/C AUTO AMP.	Connec	tor Name	WIRE TO WIRE	29	L	CAN-H	4	M	- [With ADAS]	
						30	œ	IGN	ŝ	σ	- [With ADAS]	
Connect	or Type	TH40FW-NH	Connec	tor Type	TH16MW-NH	31	R	(HICLE SPEED SIGNAL (8-PULSE)	°.	>	- [With ASCD]	
			-			33	ß	ACC	9	œ	 [With ASCD] 	
						34	×	BAT	9	~	 [With ADAS] 	
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2		1 2 3 7 9 13 16 17 18 20	212			Connector	No. M124		б	×	1	
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Termina	Color O		Termin	al Color Ot				k	12	н	- [With ADAS]	
No.	Wire	Signal Name [Specification]	No.	Wire	Signal Name [Specification]			ے کر	12	۵.	- [With ASCD]	
۰	-	CAN-H	-	æ	-	H.S.						
2	œ	GND	8	BR	1							
3	M	BAT	2	œ	- [With Gateway]				Connec	tor No.	M133	
-	σ	AMBIENT SENS	ۍ	٩	 [Without Gateway] 							
6	œ	SUNLOAD SENS	9	7	1				Collico	tor Name		
13	>	IGN SW ACC	2	4	 [Without Gateway] 	Terminal C	tolor Of	: ; ; ;	Connec	tor Type	TH40FW-NH	
16	٩	LIN	2	œ	- [With Gateway]	No.	Wire	Signal Name [Specification]				
17	œ	DOOR MOTOR PWR SPLY	6	R/W	1	-	BR	BATTERY	_	_		
18	٩	BLOWER MOTOR CONT	10	œ		2	J	IGNITION			R	
20	-	HEAT STRG WHL RLY CONT	ŧ	SHIELD	,	e	_	ITS COMM-H	SH			
21	٩	CAN-L	13	-		4	N				0/ 15/ 15/ 11/ 11/ 11/ 12/ 13/ 13/ 11/ 11/ 11/ 12/ 20/ 12/ 12/ 12/ 12/ 12/ 12/ 12/ 12/ 12/ 12	
22	•	GND	14	-		9	5	1		÷.	না হলে জন আন আন আৰু মন্দ্ৰ হলে হল। আৰু তেলা আৰু তেলা আন আন আন আৰু নিজন আৰু	
23	M	IGN SW ON	15	-	1	9	Y	I				
26	m	SENS GND				7	8	GROUND				
27	ΓC	IN-VEHICLE SENS				6	~	ITS COMM-L	Termin	al Color Of	2	
28	BR	INTAKE SENS	Connec	tor No.	M100	10			No.	Wire	Signal Name [Specification]	
908	, Ca	FXH GAS/OUT ODOR DTCT SENS			**	2	, a	1	9	>	,	
37	-	GND	Connec	tor Name	DISPLAY CONTROL UNIT	12	aa	1	110	>	1	
38	BG	IONIZER CONT	Connec	tor Type	TH24FW-NH	1	ň		130	·	1	
40	BG	ECV CONT				Connector	No. M125		14C	>	,	
			•	_					150	~	1	
					[Connector	Name WIRE 1	O WIRE	16C	æ	1	
			S.H.			Connector	Tvpe RH12N		17C	_		
					16 17 19 20 22				18C	BG	- [Without DRPO]	
					25 26 28 29 30 31 33 34				180	٩	- [With DRPO]	
									190	"		
						HS			200	M	1	
			Termine	al Color Of				1 2 3 4 5 6	210	-	,	
			No.	Wire	Signal Name [Specification]			1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	220	- 1	1	
			4	9	AV COMM (1)				011			
			2 Ç	<u>д</u> с						-	1	
				1	CAINTL				767	3	1	
			19	۳¦	DIMMER SIGNAL	lerminal	olor Of	Signal Name [Specification]	260	8	1	
			2	BR	REVERSE SIGNAL	NO.	Wire	-	2/0	а. ;		
			22	m	GND	-	BR	1	28C	2	'	
			G Z	9S	1	2	5	1	29C	×		
			26	BR	CAMERA SWITCH SIGNAL	3	L	-	2C	æ	-	

CAN SYSTEM (WITH ICC)

[CAN]

Corrector Na. R13 Connector Name JMR CANERA JUIT Connector Name JMR CANERA JUIT Connector Name JMR CANERA JUIT And Time Triminal Original	
11 28 - - 12 20 - <td></td>	
Connector Nu. R2 Connector Num WRE TO WRE Connector Num WRE TO WRE Connector Num WRE TO WRE Connector Num MRE TO WRE Connector Num MRE TO WRE Terminal Color Terminal Color 1 2 2 2 <t< td=""><td></td></t<>	
CAN SYSTEM (WITH ICC) $\frac{300}{210}$ R R R $\frac{300}{210}$ R R R R $\frac{300}{210}$ R R R R R $\frac{300}{210}$ R R R R R $\frac{300}{200}$ R R R R R $\frac{1}{200}$ R <td></td>	

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

iew Sheet		INFOID:00000000923906
CAN Communication	System Diagnosis Interview Sheet	
	Date received:	
Туре:	VIN No.:	
Model:		
First registration:	Mileage:	
CAN system type:		
Symptom (Results from interview	with customer)	
Condition at inspection		
Error symptom : Present / P	ast	
		SKIB8898E

DTC/CIRCUIT DIAGNOSIS MALFUNCTION AREA CHART

CAN Communication Circuit

MAIN LINE

Malfunction area	Reference
Main line between data link connector and A/C auto amp.	LAN-93, "Diagnosis Procedure"
Main line between A/C auto amp. and display control unit	LAN-94, "Diagnosis Procedure"
Main line between ABS actuator and electric unit (control unit) and driver seat control unit	LAN-97, "Diagnosis Procedure"
Main line between driver seat control unit and around view monitor control unit	LAN-98, "Diagnosis Procedure"
Main line between around view monitor control unit and sonar control unit	LAN-99, "Diagnosis Procedure"
Main line between sonar control unit and data link connector	LAN-93, "Diagnosis Procedure"
Main line between driver seat control unit and ADAS control unit	LAN-102, "Diagnosis Procedure"
Main line between ADAS control unit and steering force control module	LAN-103, "Diagnosis Procedure"
Main line between steering force control module and data link connector	LAN-105, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	LAN-110, "Diagnosis Procedure"
Data link connector	LAN-111, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 1)	LAN-112, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 2)	LAN-113, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-114, "Diagnosis Procedure"
TCM branch line circuit	LAN-115, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-117, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-118, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-119, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-120, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-121, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-122, "Diagnosis Procedure"
Display control unit branch line circuit	LAN-123, "Diagnosis Procedure"
High beam assist control module branch line circuit	LAN-124, "Diagnosis Procedure"
TCU branch line circuit	LAN-125, "Diagnosis Procedure"
BCM branch line circuit	LAN-126, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-127, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-129, "Diagnosis Procedure"
Pre-crash seat belt control unit (driver side) branch line circuit	LAN-131, "Diagnosis Procedure"
ADAS control unit branch line circuit (CAN communication circuit 2)	LAN-132, "Diagnosis Procedure"
Steering force control module branch line circuit	LAN-134, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-135, "Diagnosis Procedure"
Chassis control module branch line circuit	LAN-136, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-137, "Diagnosis Procedure"

SHORT CIRCUIT

[CAN]

INFOID:000000009239070 В

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MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
CAN communication circuit	LAN-147, "Diagnosis Procedure"
CAN communication circuit 1	LAN-149, "Diagnosis Procedure"
CAN communication circuit 2	LAN-151, "Diagnosis Procedure"

ITS Communication Circuit

INFOID:000000009239071

[CAN]

MAIN LINE

Malfunction area	Reference
Main line between side radar LH and around view monitor control unit	LAN-106, "Diagnosis Procedure"
Main line between around view monitor control unit and sonar control unit	LAN-99, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
Side radar LH branch line circuit	LAN-138, "Diagnosis Procedure"
Side radar RH branch line circuit	LAN-139, "Diagnosis Procedure"
Around view monitor control unit branch line circuit	LAN-140, "Diagnosis Procedure"
Accelerator pedal actuator branch line circuit	LAN-141, "Diagnosis Procedure"
Driver assistance buzzer control module	LAN-142, "Diagnosis Procedure"
Sonar control unit	LAN-144, "Diagnosis Procedure"
ICC sensor branch line circuit	LAN-143, "Diagnosis Procedure"

SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference	
ITS communication circuit	LAN-155, "Diagnosis Procedure"	

Chassis Communication Circuit

INFOID:000000009755663

MAIN LINE

Malfunction area	Reference
Main line between steering angle main control module and lane camera unit	LAN-95, "Diagnosis Procedure"
Main line between steering angle main control module and ADAS control unit	LAN-107, "Diagnosis Procedure"
Main line between ADAS control unit and lane camera unit	LAN-109, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
Steering angle main control module branch line circuit	LAN-145, "Diagnosis Procedure"
ADAS control unit branch line circuit (Chassis communication circuit)	LAN-133, "Diagnosis Procedure"
Lane camera unit branch line circuit	LAN-117, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference	
Chassis communication circuit	LAN-153, "Diagnosis Procedure"	

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT [CAN] < DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN DLC AND HVAC CIRCUIT А **Diagnosis** Procedure INFOID:000000009239078 **1.**CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (connector side 3. С and harness side). Harness connector M133 and fuse block (J/B) side connector Is the inspection result normal? D YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Ε Disconnect the fuse block (J/B) harness connector M65. 1. Check the continuity between the fuse block (J/B) terminals. 2. F Fuse block (J/B) Continuity Terminal No. Terminal No. 23C 22C Existed 5C 4C Existed Is the inspection result normal? Н YES >> GO TO 3. NO >> Replace the fuse block (J/B). ${f 3.}$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of A/C auto amp. Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness con-2. nector. Fuse block (J/B) harness connector A/C auto amp. harness connector Continuity Κ Connector No. Terminal No. Connector No. Terminal No. 22C 1 Existed M133 M88 4C 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 LAN amp.

>> Repair the main line between the fuse block (J/B) harness connector M133 and the A/C auto amp. NO

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MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

[CAN]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. harness connector		Display control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M88	1	M100	29	Existed	
1000	21		17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT < DTC/CIRCUIT DIAGNOSIS > I MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
 Harness connector M19
 Harness connector B18
 Harness connector M40
- Harness connector M40
- 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.

- Steering angle main control module
- Harness connectors E25 and M40
- 2. Check the continuity between the harness connectors.

Steering angle ma harness o	ain control module Harness connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.		
14		E 25	51	Existed	
E26	15	E23	52	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the steering angle main control module and the harness connector E25.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M19 and B18.
- 2. Check the continuity between the harness connectors M40 and M19.

Side radar LH harness connector Harness connector		Side radar LH harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
M40	51	M10	74	Existed			
M40	52	10119	75	Existed			

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M40 and M19.

4.CHECK CONNECTOR

Check the continuity between the harness connector terminals.

Connector No.	Termiı	Continuity	
B18 -	74	84	Existed
	75	85	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the main line between the harness connector B18.

LAN-95

INFOID:000000009719311

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< DTC/CIRCUIT DIAGNOSIS >

${\bf 5.} {\sf CHECK} {\sf HARNESS} {\sf CONTINUITY} {\sf (OPEN CIRCUIT)}$

1. Disconnect the harness connector M75 and R3.

2. Check the continuity between the harness connectors.

Harness connector		Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M10	84	N75	32	Existed
10119	85	- IVI <i>1</i> 5	31	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 steering angle main control module and the lane camera unit.

NO >> Repair the main line between the harness connectors M19 and the lane camera unit.

	MAIN LINE BE	TWEEN	I ABS AN	D ADP CIRCU	JIT
< DTC/CIRCUIT DIA MAIN LINE BE	GNOSIS > TWFEN ABS			UIT	
				011	
Diagnosis Proce	dure				INFOID:000000009755672
1.CHECK CONNEC	TOR				
 Turn the ignition Disconnect the b Check the follow and harness side Harness connect Is the inspection resurve YES >> GO TO 2 	switch OFF. attery cable from the ing terminals and co). or B39 and fuse bloc It normal?	negative to connectors f ck (J/B) side	erminal. for damage, e connector	bend and loose c	onnection (connector side
2.CHECK HARNES	S CONTINUITY (OP	EN CIRCU	IT)		
 Disconnect the for Fuse block (J/B) ABS actuator and Check the contin 	ollowing harness con harness connector E d electric unit (contro uity between the har	nectors. 339 I unit) ness conne	ector termina	ls.	
ABS actuator a har	nd electric unit (control ur ness connector	nit)	Fuse bloc	ck (J/B) terminals	Continuity
Connector No.	Terminal I	No.	Te	rminal No.	
E35	25			6H	Existed
	15			4H	Existed
YES >> GO TO 3 NO >> Replace 3.CHECK HARNES 1. Disconnect the c 2. Check the contin	it normal? the fuse block (J/B). S CONTINUITY (OP onnector of driver se uity between the har	EN CIRCU at control u ness conne	IT) Init. ector and the	e driver seat contro	I unit harness connector.
Fuse block (J/B) ł	narness connector	Drive	r seat control u	nit harness connector	
Connector No.	Terminal No.	Conne	ector No.	Terminal No.	Continuity
B30	6H	В	8601	1	Existed
	4H			17	Existed
Is the inspection result YES (Present error) YES (Past error)>>E unit) and NO >> Repair th	It normal? >>Check CAN syste Error was detected in the driver seat contr e main line between	m type dec n the main ol unit. the harnes	ision again. line betweer ss connector	n the ABS actuato B39 and the drive	r and electric unit (control

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MAIN LINE BETWEEN ADP AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND AVM CIRCUIT

Diagnosis Procedure

INFOID:000000009719612

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B37
- Harness connector B72

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 B600 and B12
- Harness connectors B37 and B72
- 2. Check the continuity between the harness connector terminals.

Harness	connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B 12	1	P27	4	Existed
B12	17	- 537	3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of around view monitor control unit.
- 2. Check the continuity between the harness connector and the around view monitor control unit.

Harness connector		Around view monitor control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
P70	4	DEO	27	Existed	
B72	3	000	28	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 around view monitor control unit.
- NO >> Replace the body harness.

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

AIN LINE BET				
		ND SONAR CII	RCUIT	
iagnosis Proced	lure			INFOID:000000009719613
.CHECK CONNECT	TOR			
 Turn the ignition s Disconnect the ba Check the followin and harness side) Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	witch OFF. Ittery cable from the ne ng terminals and coni ors B62 ors M22 <u>t normal?</u> e terminal and connect S CONTINUITY (OPEN	egative terminal. hectors for damage, b for. N CIRCUIT)	bend and loose conn	ection (connector side
Disconnect the fol Around view moni Harness connecto Check the continu connector. With around view	lowing harness conne tor control unit ors B62 and M22 uity between the arou monitor, without ICC	ctors. nd view monitor conti	rol unit harness conn	ector and the harness
Around view mo harness	onitor control unit connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	27	B62	63	Existed
	28		53	Existed
With ICC				
Around view mo harness	onitor control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
P50	27	P62	18	Existed
600	28	D02	17	Existed
the inspection result (ES >> GO TO 3. NO >> Replace the CHECK HARNESS Disconnect the har Check the continu With around view	<u>t normal?</u> he body harness. CONTINUITY (OPEN irness connectors M95 ity between the harne monitor, without ICC	I CIRCUIT) 5 and M155. ss connectors.		
Harness	connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Moo	63	Mor	15	Existed
M22	53	M95	7	Existed
With ICC				
Harness	connector	Harness	connector	Continuity

-		·			
IVIZZ	17	10195	6	Existed	
_	M22	18	M05	14	Existed

Terminal No.

Connector No.

Connector No.

Terminal No.

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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 around view monitor control unit and the sonar control unit.
- NO >> Repair the main line between the harness connectors M22 and sonar control unit.

MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

Diagnosis Procedure

[CAN]

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INFOID:000000009719614

1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 3. Disconnect the following harness connectors. С CAN gateway -Harness connectors M155 and M95 Check the continuity between the harness connector and the data link connector. D Harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Е 15 13 Existed M95 M25 7 12 Existed F Is the inspection result normal?

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

- YES (Past error)>>Error was detected in the main line between the sonar control unit and the data link connector.
- NO >> Repair the main line between the sonar control unit and data link connector.

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MAIN LINE BETWEEN ADP AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ICC CIRCUIT

Diagnosis Procedure

INFOID:000000009719615

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- CAN gateway
- Harness connectors B600 and B12
- ADAS control unit
- 4. Check the continuity between the harness connector and the ADAS control unit harness connector.

Harness	Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
P12	1	P1	1	Existed
DIZ	17		2	Existed

Is the inspection result normal?

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

- YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ADAS control unit.
- NO >> Replace the body harness.

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT	DIAGNOSIS >

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

[CAN]

Diagnosis Procedure					
1.CHECK CONNECT	OR			B	
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Harness connector Harness connector	vitch OFF. tery cable from the neig g terminals and conr r B37 r B72 r B62 r M22 normal? terminal and connect CONTINUITY (OPEN	egative terminal. hectors for damage, b or. I CIRCUIT)	pend and loose conne	ection (connector side C	
 Disconnect the foll ADAS control unit Harness connector Check the continuit 	owing harness conne rs B37 and B72 ty between the ADAS	ctors.	connector and the har	ness connector.	
ADAS control unit	harness connector	Harness	connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity H	
	1	D 07	4	Existed	
В1 -	2	B37	3	Existed	
Is the inspection resultYES>> GO TO 3.NO>> Replace th3.CHECK HARNESS1.Disconnect the har2.Check the continuit	normal? e body harness. CONTINUITY (OPEN mess connectors B62 ty between the harnes	I CIRCUIT) and M22. ss connectors.		J	
Harness	connector	Harness	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B72	4	B62	63	Existed	
012	3	002	53	Existed LA	
Is the inspection resultYES>> GO TO 4.NO>> Replace th4.CHECK HARNESS1.Disconnect the cor2.Check the continuit	normal? e body harness. CONTINUITY (OPEN nector of steering for ty between the harnes	I CIRCUIT) ce control module. ss connector and the	steering force control	N module.	

Harness	connector	Steering force control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
Maa	63	M71	14	Existed	-
IVIZZ	53		15	Existed	-

Is the inspection result normal?

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

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

YES (Past error)>>Error was detected in the main line between the ADAS control unit and the steering force control module.

NO >> Repair the main line between the harness connector M22 and the steering force control module.

MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

Diagnosis Procedure

INFOID:000000009719795

[CAN]

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1.	CHECK CONNECTOR	E
1.	Turn the ignition switch OFF.	
2.	Disconnect the battery cable from the negative terminal.	
3.	Check the following harness connectors.	C
-	CAN gateway	

- Steering force control module
- 4. Check the continuity between the steering force control module harness connector and the data link connector.

Steering force control m	e control module harness connector Data link connector		Continuity	-	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	14	13 Ex	Existed		
1017 1	15	IWI25	12	Existed	F

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the steering force control module and the G data link connector.

NO >> Repair the main line between the steering force control module and the data link connector.

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MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

Diagnosis Procedure

INFOID:000000009719796

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B3
- Harness connector B52

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 B87 and B8
- Harness connectors B3 and B52
- 2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
R97	6	B3	1	Existed	
Dor	5	D3	9	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of around view monitor control unit.
- 2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	1	B 50	27	Existed
B32	9	. 530	28	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 side radar LH and the around view monitor control unit control unit.

NO >> Replace the body harness.

Ν	AIN LINE BETV	VEEN DAST 1 A	ND ICC CIRCUIT	ſ
< DTC/CIRCUIT DIAC	GNOSIS >			[CAN]
MAIN LINE BET	WEEN DAST	1 AND ICC CIR	CUIT	
Diagnosis Proced	ure			INFOID:000000009720262
1.CHECK CONNECT	OR			
 Turn the ignition s Disconnect the ba Check the followin and harness side) Chassis control m Harness connecto Harness connecto Harness connecto Harness connecto 	witch OFF. ttery cable from the ne ng terminals and coni odule rs E25 rs M40 r M19 rs B18	egative terminal. nectors for damage, b	pend and loose conne	ection (connector side
 Chassis control m 	odule			
Is the inspection result YES >> GO TO 2. NO >> Repair the 2. CHECK HARNESS	terminal and connect CONTINUITY (OPEN	tor. N CIRCUIT)		
 Disconnect the fol Steering angle ma Harness connecto Check the continu connector. 	lowing harness conne in control module rs E25 and M40 uity between the stee	ctors. ring angle main contr	ol module harness c	onnector and harness
Steering angle m harness	ain control module connector	Harness o	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E26	14	E25	51	Existed
LZO	15	LZJ	52	Existed
YES >> GO TO 3. NO >> Repair the ness conn 3 CHECK HARNESS	normal? main line between th ector E25. CONTINUITY (OPEN	e steering angle main	control module harne	ess connector and har-

1. Disconnect the harness connector M19 and B18.

2. Check the continuity between the harness connectors.

	Harness connector		Harness connector		Harness connector	
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.		
Existed	74	M10	51	M40		
Existed	75	WIT9	52			

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between harness connectors M40 and M19.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ADAS control unit.

2. Check the continuity between the harness connector B18 and ADAS control unit harness connector.

Harness connector		ADAS control unit	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

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MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

B18 74 B1 8 Existed Existed 9 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 steering angle main control module and the ADAS control unit.

NO >> Replace the body harness.

[CAN]
		WEEN ICC AND	LANE CIRCUIT	[CAN]
AIN LINE BET		ID LANE CIRC	UIT	[0/]
iagnosis Proced	ure			INFOID:000000009720263
CHECK CONNECT	OR			
 Turn the ignition synamics Disconnect the basis Check the following and harness side) Chassis control me Harness connector Harness connector Harness connector Source the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the foll ADAS control unit Harness connector Check the continue 	witch OFF. ttery cable from the ne ig terminals and conr odule r B18 r M19 <u>normal?</u> terminal and connect CONTINUITY (OPEN owing harness conne rs B18 and M19 ity between the harne	egative terminal. hectors for damage, l or. I CIRCUIT) ctors.	s.	ection (connector side
			S.	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	8		84	Existed
B1	9	B18	85	Existed
 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu 	normal? ne body harness. CONTINUITY (OPEN rness connectors M75 ity between the harne	I CIRCUIT) and R3. ss connectors.		
Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M19	84	M75	32	Existed
	85		31	Existed
YES (Present error)> YES (Past error)>>Er unit. NO >> Repair the	Check CAN system ror was detected in th main line between th	type decision again. le main line between e harness connectors	the ADAS control united M19 and lane camera	t and the lane camera a unit.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009239089

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).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No. Ierminal No.	Terminal No.	
M37 114	114 113	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

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

Check the power supply and the ground circuit of the ECM. Refer to EC-188. "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M133.
- 2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ss connector	Fuse block (J/B) harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M37	114	M122	21C	Existed	
10137	113	M133 –	3C	Existed	

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT

[CAN] < DTC/CIRCUIT DIAGNOSIS > DLC BRANCH LINE CIRCUIT А **Diagnosis Procedure** INFOID:000000009720267 **1.**CHECK CONNECTOR В 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 С and harness side). Data link connector Harness connector M133 and fuse block (J/B) side connector D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS FOR OPEN CIRCUIT Check the resistance between the data link connector terminals. F Data link connector Resistance (Ω) Connector No. Terminal No. M25 6 14 Approx. 54 - 66 Is the measurement value within the specification? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the data link connector branch line circuit. NO >> GO TO 3. **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1 Disconnect the harness connector M133. Check the continuity between the data link connector and the harness connector. Data link connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No.

6 23C M25 M133 14 5C

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

>> Repair the harness between the data link connector M25 and the harness connector M133. NO

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Existed

Existed

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000009720268

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (0)
Connector No.	Terminal No.		
M25	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 (CAN communication circuit 1 side).

NO >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

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

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M25	6	M133	23C	Existed
WZ3	14		5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009720269

[CAN]

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1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector branch line.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			F
Connector No.	Termi	Terminal No.		
M24	4	6	Existed	G
WI24	10	12	Existed	_ 0

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.

2. Check the resistance between the data link connector terminals.

Data link connector			Posistanco (O)	
Connector No.	Terminal No.			
M25	13	12	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 (CAN communication circuit 2 side).

NO >> Repair the data link connector branch line.

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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 conne	IPDM E/R harness connector Terminal No.	
Connector No.		
E121 29	29 28	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the harness connector E64.

2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R har	ness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F121	29	E64	6E	Existed
LIZI	28	L04	2E	Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

INFOID:000000009239108

TCM BRANCH LINE CIRCUIT

[CAN]

FCM BRANCH LINE CIRC	UIT			
Diagnosis Procedure			INF01D:000000009720264	
.CHECK CONNECTOR				
 Turn the ignition switch OFF. Disconnect the battery cable from Check the following terminals and nector side). A/T assembly Harness connector F12 Harness connector E10 Harness connector E65 and fuse to s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and co CHECK HARNESS FOR OPEN CIF 	the negative terminal. connectors for damag block (J/B) side conne onnector. RCUIT	ge, bend and loose connec ector	ction (unit side and con-	
. Disconnect the connector of A/T a Check the resistance between the	ssembly. A/T assembly harnes	ss connector terminals.		
A/T assembl	y harness connector		Resistance (Ω)	
Connector No.	Terminal No.		. ,	
 Remove the joint connector. Refer Check the continuity between the side of the joint connector. 	to <u>TM-218, "Exploded</u> A/T assembly harnes	<u>d View"</u> s connector side and the T	CM harness connector	
A/T assembly harness connector side	TCM harness con	nector	Continuity	
3	3		Existed	
8	8		Existed	
s the inspection result normal? YES >> GO TO 4. NO >> Replace the joint connector 1 .CHECK POWER SUPPLY AND GR Check the power supply and the ground s the inspection result normal? YES (Present error)>>Replace the corrying of the power supply and YES (Past error)>>Error was detected on the power supply and the powe	or. OUND CIRCUIT Id circuit of the TCM. If ontrol valve & TCM. Re d in the TCM branch I and the ground circuit. OPEN CIRCUIT)	Refer to <u>TM-181, "Diagnos</u> efer to <u>TM-218, "Exploded</u> ine.	<u>sis Procedure"</u> . <u>View"</u> .	
2. Check the continuity between the	A/T assembly harness	s connector and the harnes	ss connector.	
			Continuity	

Terminal No.

Connector No.

< DTC/CIRCUIT DIAGNOSIS >

Connector No.

Terminal No.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

E2	3	F65	9F	Existed
12	8	200	5F	Existed

Is the inspection result normal?

YES

>> Replace the fuse block (J/B). >> Repair the harness between the A/T assembly harness connector F2 and the harness connector NO E65.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

			,	A
Diagnosis Procedure			INFOID:00000009239091	
1.снеск отс			I	В
Check DTC of the CAN gate	eway with CONSULT.			
Is U1010 or B2600 indicated	<u>1?</u>			\sim
YES >> Perform a diagr NO >> GO TO 2.	nosis of the indicated DTC.			5
2.CHECK CONNECTOR			1	
1. Turn the ignition switch	OFF.			
 Disconnect the battery of Check the following ter (unit side and connecto) 	cable from the negative term minals and connectors of (r side).	minal. CAN gateway for damage, b	end and loose connection	E
Is the inspection result norm YES >> GO TO 3.	ial?		I	F
3.CHECK HARNESS FOR	OPEN CIRCUIT			
 Disconnect the connect Check the resistance be 	or of CAN gateway. etween the CAN gateway h	arness connector terminals.	(G
	CAN gateway harness connecto	r		Н
Connector No.	Termi	nal No.	Resistance (Ω)	
M24	1	7	Approx. 54 – 66	
Is the measurement value w	vithin the specification?			I
YES >> GO TO 4.	aateway branch line			
	V AND COOLIND CIDCUIT	г	,	J
	IT AND GROUND CIRCUI		N 474 "Disenseis Dress	
dure".	ia the ground circuit of the	e CAN gateway. Refer to \underline{L}	IN-171, Diagnosis Proce-	K
Is the inspection result norm	al?			
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the CAN gateway. Rei as detected in the CAN gat er supply and the ground c	fer to <u>LAN-172, "Removal ar</u> teway branch line (CAN com ircuit.	d Installation". munication circuit 1 side).	L
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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009239092

[CAN]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. 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).
- CAN gateway
- Harness connector M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Terminal No.		Continuity	
M24	4	6	Existed	
10124	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-171</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-172, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

CAN gateway h	CAN gateway harness connector		Harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	4	M122	13C	Existed
17124	10	10133	2C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the CAN gateway harness connector M24 and the harness connector M133.

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	IS >		[CAN]
HVAC BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000009239093
1.CHECK CONNECTOR			
 Turn the ignition switch Q Disconnect the battery ca Check the terminals and side and connector side) Is the inspection result normal 	DFF. able from the negative term connectors of the A/C au al?	ninal. to amp. for damage, bend	and loose connection (unit
YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR	nal and connector. OPEN CIRCUIT		
 Disconnect the connector Check the resistance bet 	r of A/C auto amp. ween the A/C auto amp. h	arness connector terminals	5.
Connector No	JC auto amp. narness connector		Resistance (Ω)
M88	1	21	Approx 54 – 66
Is the measurement value wi YES >> GO TO 3. NO >> Repair the A/C a 3. CHECK POWER SUPPLY	thin the specification? uto amp. branch line. AND GROUND CIRCUIT		
Check the power supply and Diagnosis Procedure".	the ground circuit of the	A/C auto amp. Refer to \underline{H}	AC-92, "A/C AUTO AMP. :
YES (Present error)>>Repla YES (Past error)>>Error wa NO >> Repair the powe	ace the A/C auto amp. Refe s detected in the A/C auto r supply and the ground cir	er to <u>HAC-113, "Removal a</u> amp. branch line. cuit.	nd Installation".

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

C	Combination meter harness connector		
Connector No.	Terminal No.		
M58	41	42	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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-126, "Removal and Installation".

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

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

INFOID:000000009239098

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > [CAN]	
A-BAG BRANCH LINE CIRCUIT	Λ
Diagnosis Procedure	\cap
 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. CHECK CONNECTOR 	B C
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side). 	D
Is the inspection result normal? YES >> GO TO 2. NO >> Replace the main harness.	Ε
2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	F
Check the air bag diagnosis sensor unit. Refer to <u>SRC-36, "Work Flow"</u> .	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	G
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Revision: 2013 October

AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

AFS control unit harness connector			Posistanco (O)
Connector No.	Terminal No.		
M4	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-128, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-181, "Removal and Installation".

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

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

INFOID:000000009239107

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSI	S >		[CAN]
AV BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INF0ID:00000009239097
1.CHECK CONNECTOR			E
 Turn the ignition switch C Disconnect the battery ca Check the terminals and (unit side and connector) 	FF. ble from the negative terr connectors of the display side).	ninal. y control unit for damag	e, bend and loose connection
Is the inspection result normal YES >> GO TO 2. NO >> Repair the termin 2. CHECK HARNESS FOR (I? al and connector. DPEN CIRCUIT		E
 Disconnect the connecto Check the resistance bet 	r of display control unit. ween the display control u	unit harness connector te	erminals.
Disp	olay control unit harness connec	tor	F
Connector No.	Termir	nal No.	Resistance (Ω)
M100	29	17	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3. NO >> Repair the displa 3. CHECK POWER SUPPLY Check the power supply and	hin the specification? y control unit. AND GROUND CIRCUIT	display control unit. Pefe	
TROL UNIT : Diagnosis Proce Is the inspection result norma	<u>edure"</u> . <u>I?</u>	display control unit. Refe	B 10 AV-239, DISPLAT CON-

YES (Present error)>>Replace the display control unit. Refer to <u>AV-277, "Removal and Installation"</u>.

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

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

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HBA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009720270

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Auto anti- dazzling inside mirror (High beam assist control module)
- Harness connector R2
- Harness connector M74
- 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 auto anti dazzling inside mirror (High beam assist control module).
- 2. Check the resistance between the auto anti dazzling inside mirror (High beam assist control module) harness connector terminals.

Auto anti - dazzli	Auto anti - dazzling inside mirror (High beam assist control module) harness connector		
Connector No.	Termi		
R9	12 11		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the anti - dazzling inside mirror (High beam assist control module) branch line.

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

Check the power supply and the ground circuit of the anti - dazzling inside mirror (High beam assist control module). Refer to <u>EXL-128</u>, "HIGH BEAM ASSIST CONTROL MODULE : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror. Refer to <u>MIR-45, "Removal and Installation"</u> (With automatic drive positioner system) or <u>MIR-80, "Removal and Installation"</u> (Without automatic drive positioner system).
- YES (Past error)>>Error was detected in the anti dazzling inside mirror (High beam assist control module) branch line.
- NO >> Repair the power supply and the ground circuit.

TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSI	S>		[CAN]
TCU BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INF0/D:00000009239096
1.CHECK CONNECTOR			I
 Turn the ignition switch C Disconnect the battery ca Check the terminals and connector side). 	FF. ble from the negative termin connectors of the TCU for	al. damage, bend and lo	ose connection (unit side and
Is the inspection result normaYES>> GO TO 2.NO>> Repair the termin	<u>l?</u> al and connector.		Ι
2. CHECK HARNESS FOR (PEN CIRCUIT		
 Disconnect the connector Check the resistance bet 	of TCU. ween the TCU harness conn	ector terminals.	
Connector No	Terminal	No	
	9	10	 Approx. 54 – 66
Is the measurement value wit	hin the specification?		
YES >> GO TO 3. NO >> Repair the TCU b 3. CHECK POWER SUPPLY	ranch line. AND GROUND CIRCUIT		ł
Check the power supply and	he ground circuit of the TCL	. Refer to <u>AV-589, "T</u>	<u>CU : Diagnosis Procedure"</u> .
Is the inspection result norma	<u>l?</u>		
YES (Present error)>>Repla YES (Past error)>>Error was NO >> Repair the power	ce the TCU. Refer to <u>AV-597</u> detected in the TCU brancl supply and the ground circu	7 <u>, "Removal and Insta</u> h line. it.	<u>llation"</u> .

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

BCM harness connector			Posistanco (O)
Connector No.	Terminal No.		
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-98, "Removal and Installation".

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

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

INFOID:000000009239102

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000009239106
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the following ternector side). ABS actuator and election the inspection result norr YES-1 >> Models with an YES-2 >> Models without NO >> Repair the tern 	OFF. cable from the negative terr minals and connectors for d tric unit (control unit) 5 and fuse block (J/B) side o <u>nal?</u> ound view monitor system: (t around view monitor system ninal and connector.	minal. lamage, bend and loose co connector GO TO 2. m: GO TO 3.	nnection (unit side and con-
Disconnect the connect	tor of CAN gateway)	
2. Check the continuity be	etween the CAN gateway ha	arness connector terminals	
	CAN gateway harness connector	r	Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
 Connect the connector Disconnect the connect Check the resistance binals. 	of CAN gateway (Models w tor of ABS actuator and elec- between the ABS actuator a	vith around view monitor sy ctric unit (control unit). and electric unit (control un	stem). .it) harness connector termi-
ABS actuator	and electric unit (control unit) harr	ness connector	Resistance (Ω)
Connector No.	Iermir	nal No.	
s the measurement values	23	15	Approx. 54 - 66
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPP	LY AND GROUND CIRCUIT	r	
Check the power supply a BRC-154, "Diagnosis Proce	nd the ground circuit of the <u>adure"</u> .	ABS actuator and electric	unit (control unit). Refer to
s the inspection result norr YES (Present error)>>Rep and Installation YES (Past error)>>Error v	<u>nal?</u> place the ABS actuator and <u>u"</u> . vas detected in the ABS actu	electric unit (control unit). F uator and electric unit (cont	Refer to <u>BRC-178, "Removal</u> trol unit) branch line.
NO >> Repair the pow 5.CHECK HARNESS COI	er supply and the ground ci	rcuit.	, -
 Disconnect the connect Check the resistance to nals. 	tor of harness connector E6 between the ABS actuator a	55. and electric unit (control un	it) harness connector termi-

- With around view monitor system

LAN-127

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and electric harness conr	unit (control unit) ector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Connector No. Terminal No.		
E25	25	Ecc	6F	Existed	
E35	15	E05	7F	Existed	
/ithout around view mor	15		7F		

Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	8F	Existed
E35	15	- L03	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADP BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000009239105
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the follow terminator side). Driver seat control unit Harness connectors B6 Harness connectors B3 	OFF. cable from the negative terr als and connectors for dam 00 and B12 9 and fuse block (J/B) side	ninal. age, bend and loose conne e connector (Models withou	ction (unit side and connec-
tem)	10	Υ.	,
YES - 1>> Models with aro YES - 2>> Models without NO >> Repair the term 2.CHECK HARNESS CON	air ound view monitor system: (around view monitor syster inal and connector. ITINUITY (OPEN CIRCUIT)	GO TO 2. n: GO TO 3.)	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.	
Connector No	CAN gateway harness connector	nal No	Continuity
	4	6	Existed
M24	10	12	Existed
 CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be 	OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit etween the driver seat contro	vith around view monitor sy t. rol unit harness connector t	stem) erminals.
Driv	er seat control unit harness conne	ector	Resistance (Q)
Connector No.	Termir	nal No.	
B601	1	17	Approx. 54 – 66
YES >> GO TO 4. NO - 1 >> Models without NO - 2 >> Models with aro 1 .CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosi Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the power	around view monitor system ound view monitor system: F Y AND GROUND CIRCUIT If the ground circuit of the dr <u>s Procedure"</u> . hal? lace the driver seat control as detected in the driver se er supply and the ground ci	n: GO TO 5. Repair the driver seat contr - iver seat control unit. Refer unit. Refer to <u>ADP-145, "R</u> at control unit branch line. rcuit.	ol unit branch line. to <u>ADP-75, "DRIVER SEAT</u> emoval and Installation".
5. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT))	
1. Disconnect the harness	connector B39.	rol unit harnoss connector	B601 and the harness con

nector.

LAN-129

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Driver seat control u	Driver seat control unit harness connector Harness connector			Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B601	1	B30	3H	Existed
6001	17	639	8H	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the driver seat control unit harness connector B601 and the harness connector B39.

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
PSB BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000009239111
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following term nector side). CAN gateway Pre-crash seat belt cont Is the inspection result norm YES >> GO TO 2. NO >> Repair the termination CHECK HARNESS CON Disconnect the connect 	OFF. able from the negative term ninals and connectors for d rol unit (driver side) <u>al?</u> inal and connector. TINUITY (OPEN CIRCUIT) or of CAN gateway.	ninal. amage, bend and loose col	nnection (unit side and con-
 Check the continuity be 	ween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.		al No.	Evisted
M24	10	12	Existed
 YES >> GO TO 3. NO >> Check the harmation circuit 2 side 3.CHECK HARNESS FOR 1. Connect the connector of 2. Disconnect the connector 3. Check the resistance boundary 	ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt con etween the pre-crash seat	f shield line is open) the roo ntrol unit (driver side). belt control unit (driver side	e) harness connector termi-
Pre-crash seat	belt control unit (driver side) harr	ness connector	Bosistance (O)
Connector No. B19	Terminal No. Resistance (Ω)		 Approx. 54 – 66
Is the measurement value w	ithin the specification?		I
YES >> GO TO 4. NO >> Repair the pre-c	rash seat belt control unit (driver side) branch line.	
4.CHECK POWER SUPPL	Y AND GROUND CIRCUIT	-	
Check the power supply an SBC-62 "Diagnosis Procedu	d the ground circuit of the	pre-crash seat belt contro	l unit (driver side). Refer to
Is the inspection result norm YES (Present error)>>Rep	al? al? lace the seat belt pre-tensio	oner retractor (driver side).	Refer to SBC-76. "Removal
<u>and Installation</u> YES (Past error)>>Error wa	as detected in the pre-crash	n seat belt control unit (drive	er side) branch line.

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009239110

[CAN]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	6	Existed	
10124	10	12	Existed	

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Posistanco (O)
Connector No.	Terminal No.		
B1	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-160. "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation".

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

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

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
 Chassis control module
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of chassis control module.
- 2. Check the continuity between the chassis control module harness connector terminals.

Chass	sis control module harness conn	ector	Continuity	
Connector No.	Termi	nal No.	Continuity	C
F 22	19	11	Existed	
	7	8	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side).

$\mathbf{3}$. Check harness for open circuit

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

AD	ADAS control unit harness connector			k
Connector No.	Term	Terminal No.		
B1	8 9		Approx. 54 – 66	-

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-160, "Diagnosis Proce-dure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation".

- YES (Past error)>>Error was detected in the ADAS control unit branch line circuit (chassis communication circuit side).
- NO >> Repair the power supply and the ground circuit.

[CAN]

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EPS/DAST 3 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009720466

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering force control module
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector				
Connector No.	Termi	Continuity			
M24	4	6	Existed		
1/124	10	12	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of steering force control module.
- 3. Check the resistance between the steering force control module harness connector terminals.

Steerin	Steering force control module harness connector			
Connector No.	Termi			
M71	14 15		Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering force control module. Refer to <u>STC-407, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427, "Removal and Installa-</u> tion".

YES (Past error)>>Error was detected in the steering control module branch line.

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
4WD BRANCH LINI	E CIRCUIT		
Diagnosis Procedure			INFOID:00000009239104
CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following tern nector side). AWD control unit CAN gateway the inspection result norm 	OFF. cable from the negative terr ninals and connectors for d al?	ninal. amage, bend and loose col	nnection (unit side and con-
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the termi	und view monitor system: (around view monitor syster nal and connector. TINUITY (OPEN CIRCUIT)	GO TO 2. n: GO TO 3.)	
Disconnect the connect Check the continuity bet	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	
M24	4	6	Existed
CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	OPEN CIRCUIT of CAN gateway (Models w or of AWD control unit. etween the AWD control un	ith around view monitor sys	stem). als.
A	WD control unit harness connected	or	Resistance (O)
Connector No.	Termir	nal No.	
M42 <u>the measurement value w</u> YES >> GO TO 4. NO >> Repair the AWD • CHECK POWER SUPPL	8 ithin the specification? control unit branch line. Y AND GROUND CIRCUIT	16	Approx. 54 – 66
heck the power supply and <u>ure"</u> .	d the ground circuit of the	AWD control unit. Refer to	DLN-46, "Diagnosis Proce-
The inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wat NO >> Repair the powe	are the AWD control unit. Tas detected in the AWD core or supply and the ground ci	Refer to <u>DLN-55, "Removal</u> ntrol unit branch line. rcuit.	and Installation".
-1 F			

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:000000009797489

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Chassis control module
- Harness connectors E47
- Harness connectors M39
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M24	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 $\mathbf{3}$.check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of chassis control module.
- 3. Check the resistance between the chassis control module harness connector terminals.

Cha	$Resistance\left(\mathbf{O}\right)$		
Connector No.	Termi		
E22	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the chassis control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-541</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-542, "Removal and Installation".

YES (Past error)>>Error was detected in the chassis control module branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNO	SIS >		[CAN]
STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000009239103
1.CHECK CONNECTOR			
1 Turn the ignition switch	OFF		
 Disconnect the battery Check the following ten nector side). Steering angle sensor 	cable from the negative terr minals and connectors for d	ninal. lamage, bend and loose cor	nnection (unit side and con-
CAN gateway (Models	with around view monitor sy	ystem)	
s the inspection result norn	<u>nal?</u> Nund view meniter eveternu (
YES-2 >> Models with arc	around view monitor system: o	m: GO TO 3.	
2.CHECK HARNESS CON	Inal and connector. ITINUITY (OPEN CIRCUIT)	
Disconnect the connect the connect the connect the continuity be	tor of CAN gateway. Hween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termiı	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR	ess and repair the root caus	se (CAN communication cire	cuit).
 Connect the connector Disconnect the connect Check the resistance be 	of CAN gateway (Models w tor of steering angle sensor etween the steering angle s	rith around view monitor sys sensor harness connector te	tem). rminals.
Ste	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termiı	nal No.	
M77	5	2	Approx. 54 – 66
s the measurement value v YES >> GO TO 4. NO >> Repair the stee 1. CHECK POWER SUPPI	vithin the specification? ring angle sensor branch lir _Y AND GROUND CIRCUI	ne F	
Check the power supply an Procedure".	nd the ground circuit of the	steering angle sensor. Ref	er to <u>BRC-123, "Diagnosis</u>
s the inspection result norn	nal?	sor Refer to BRC-180 "Po	moval and Installation"
YES (Past error)>>Error w NO >> Repair the pow	as detected in the steering er supply and the ground ci	angle sensor branch line. rcuit.	<u>movai anu installalluti</u> .
	-		

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Side radar LH
- Harness connector B87
- Harness connector B8

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 side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

	Posistanco (O)		
Connector No.	Terminal No.		
B92	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-359, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-386, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

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

INFOID:000000009239112

RDR-R BRANCH LINE CIRCUIT

RDR-R BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000009239113
1.CHECK CONNECTOR			
 Turn the ignition switch C Disconnect the battery ca Check the following terminector side). Side radar RH Harness connector B87 Harness connector B8 	FF. Ible from the negative ten nals and connectors for c	minal. Jamage, bend and loose o	connection (unit side and con-
Is the inspection result norma YES >> GO TO 2. NO >> Repair the termin 2.CHECK HARNESS FOR (<u>I?</u> al and connector. DPEN CIRCUIT		
 Disconnect the connecto Check the resistance bet 	r of side radar RH. ween the side radar RH h	arness connector termina	ıls.
Connector No.	Termi	nal No.	Resistance (Ω)
B93	4	3	Approx. 54 – 66
Is the measurement value wit YES >> GO TO 3. NO >> Repair the side ra 3.CHECK POWER SUPPLY	hin the specification? adar RH branch line. AND GROUND CIRCUI ⁻	г	
Check the power supply and Diagnosis Procedure ["] .	the ground circuit of the	side radar RH. Refer to D	DAS-360, "SIDE RADAR RH :
Is the inspection result norma YES (Present error)>>Repla YES (Past error)>>Error was NO >> Repair the power	<u>I?</u> ce the side radar RH. Re s detected in the side rad supply and the ground c	fer to <u>DAS-386, "Remova</u> ar RH branch line. ircuit.	l and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009720502

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Around view monitor control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Terminal No.		Continuity	
M24	4	6	Existed	
10124	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models without ICC).

- 2. Disconnect the connector of around view monitor control unit.
- 3. Check the resistance between the around view monitor control unit harness connector terminals.

Albunu view m	Resistance (O)		
Connector No. Terminal No.			
B50	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to <u>AV-435.</u> "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to <u>AV-458</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

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

APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >			
APA BRANCH LINE CIRCUIT			

[CAN]

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Diagnosis Procedure			INFOID:000000009239114	1
1.CHECK CONNECTOR				E
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Accelerator pedal actua Harness connector M12 Harness connector M67 Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connect 	OFF. cable from the negative terr ninals and connectors for d tor / accelerator pedal posi 25 <u>nal?</u> inal and connector. OPEN CIRCUIT	ninal. amage, bend and loose cor tion sensor	nection (unit side and con-	
 Check the resistance be 	etween the accelerator pedal	al actuator harness connect	or terminals.	
Accelerator pedal actua	tor / accelerator pedal position se	ensor harness connector	Resistance (Ω)	(
	3	9	Approx $54 - 66$	
YES >> GO TO 3. NO >> Repair the acce 3. CHECK POWER SUPPL	lerator pedal actuator bran Y AND GROUND CIRCUIT	ch line.		I
Check the power supply an sensor. Refer to <u>DAS-359</u> , " Is the inspection result norm	d the ground circuit of the ACCELERATOR PEDAL A nal?	accelerator pedal actuator / CTUATOR : Diagnosis Proc	accelerator pedal position	,
YES (Present error)>>Rep <u>TANCE CONTR</u> YES (Past error)>>Error was NO >> Repair the powe	ACE the accelerator peda <u>COL ASSIST SYSTEM : Re</u> as detected in the accelera er supply and the ground ci	moval and Installation". tor pedal actuator branch lir rcuit.	ne.	þ
				L
				LA
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BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009720553

[CAN]

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 drive assistance buzzer control module 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 drive assistance buzzer control module.

2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Posistanco (O)
Connector No.	Termi		
M56	3	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to <u>DAS-</u> 361, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to <u>DAS-389</u>, "Removal and <u>Installation</u>".

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

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

LASER BRANCH LINE CIRCUIT

LASER BRANCH LINE CIRCUIT Diagnosis Procedure Accelect 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 conector side). • ICC sensor • ICC sensor • Harness connector E16 • Harness connector E17 • Harness connector M40 Is the inspection result normal? YES >S GO TO 2. No >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ICC sensor. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector resistance between the ICC sensor harness connector terminals. ICC sensor harness connector terminal No. E80 3 6 Approx. 108 – 132 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118. "Diagnosis Procedure</u> Is the inspection result normal? <	COTC/CIRCUIT DIAGNOS	IS >		[CAN]
Diagnosis Procedure 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and conector side). 2. ICC sensor 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and conector side). 4. Harness connector E76 4. Harness connector E14 5. Harness connector E14 6. Harness connector E25 8. Harness connector E26 9. Harness connector E27 9. Harness connector E27 9. Harness connector E27 9. Harness connector F14 9. Harness connector E27 9. Harness connector E27 9. Harness connector E27 10 Exconnect the connector of ICC sensor. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ICC sensor harness connector terminals. IcC sensor harness connector terminals. IcC sensor harness connector terminals. Is the measurement value within the specification? YES > S O TO 3. NO > Repair the ICC sensor branch line. 3	ASER BRANCH LI	NE CIRCUIT		
I. CHECK CONNECTOR I. 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 conector side). I. (ICC sensor Harness connector E76 Harness connector E14 Harness connector E25 Harness connector R00 It harness connector M00 It harness connector OF CR OPEN CIRCUIT 1. Disconnect the connector of ICC sensor. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector Connector No. ICC sensor harness connector Resistance (II) Connector No. ICC sensor harness connector Connector No. ICC sensor harness connector Resistance (III) E80 3 6 Approx. 108 – 132 9 > GO TO 3. NO > Repair the ICC sensor branch line. 3 CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-118. "Diagnosis Procedure is the inspection result normal? YES (Present error)>> Re	Diagnosis Procedure			INFOID:00000009239116
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 conector side). 1. CC sensor Harness connector E76 Harness connector E14 Harness connector E25 Harness connector M40 Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ICC sensor. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector ICC sensor harness connector reminal No. E80 3 IS the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-118. "Diagnosis Procedure is the inspection result normal? YES (Present error)>> Replace the ICC sensor. Refer to CCS-118. "Diagnosis Procedure is the inspection result normal? YES (Present error)>> Replace the ICC sensor. Refer to CCS-118. "Diagnosis Procedure is the inspection result normal?	CHECK CONNECTOR			
 Harness connector E76 Harness connector E14 Harness connector M40 Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ICC sensor. 2. Check the resistance between the ICC sensor harness connector terminals. Interview of the connector of ICC sensor. 2. Check the resistance between the ICC sensor harness connector terminals. Interview of the connector No. Interview of the connector No. Interview of the connector No. Interview of the connector of ICC sensor harness connector terminals. Interview of the connector No. Interview of the connector	 Turn the ignition switch (Disconnect the battery c Check the following term nector side). ICC sensor 	OFF. able from the negative terr ninals and connectors for d	ninal. lamage, bend and loose co	nnection (unit side and con-
s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT i. Disconnect the connector of ICC sensor. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector Resistance (Ω) Connector No. ICC sensor harness connector Resistance (Ω) YES > GO TO 3. NO >> Repair the ICC sensor branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118. "Diagnosis Procedure sthe inspection result normal?</u> YES (Present error)>>Replace the ICC sensor. Refer to <u>CCS-135. "Removal and Instal</u>	Harness connector E76 Harness connector E14 Harness connector E25 Harness connector M40			
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT . . Disconnect the connector of ICC sensor. . Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector Resistance (Ω) Connector No. Terminal No. E80 3 6 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor branch line. . 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-118. "Diagnosis Procedure s the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to CCS-135. "Removal and Installation". YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	s the inspection result norm	al?		
Image: Disconnect the connector of ICC sensor. 2. Check the resistance between the ICC sensor harness connector terminals. Image: ICC sensor harness connector Resistance (Ω) Connector No. Terminal No. E80 3 6 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-118. "Diagnosis Procedure is the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to CCS-135. "Removal and Installation". YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector. OPEN CIRCUIT		
ICC sensor harness connector Resistance (Ω) Connector No. Terminal No. E80 3 6 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor branch line. J.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-118. "Diagnosis Procedure is the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to CCS-135. "Removal and Installation". YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	Disconnect the connector. Check the resistance be	or of ICC sensor. tween the ICC sensor harr	ness connector terminals.	
Connector No. Terminal No. E80 3 6 Approx. 108 – 132 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118. "Diagnosis Procedure s the inspection result normal?</u> YES (Present error)>>Replace the ICC sensor. Refer to <u>CCS-135. "Removal and Installation"</u> . YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.		ICC sensor harness connector		Resistance (Ω)
E80 3 6 Approx. 108 – 132 as the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ICC sensor branch line. J.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118. "Diagnosis Procedure s the inspection result normal?</u> YES (Present error)>>Replace the ICC sensor. Refer to <u>CCS-135. "Removal and Installation"</u> . YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	Connector No.	Termir	nal No.	
YES >> GO TO 3. NO >> Repair the ICC sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118</u> , "Diagnosis Procedure the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to <u>CCS-135</u> , "Removal and Installation". YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	E80	3	6	Approx. 108 – 132
CHECK POWER SUPPLY AND GROUND CIRCUIT theck the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118</u> , " <u>Diagnosis Procedure</u> the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to <u>CCS-135</u> , " <u>Removal and Installation</u> ". YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	<u>the measurement value w</u> YES >> GO TO 3. NO >> Repair the ICC €	thin the specification?		
Theck the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118</u> , " <u>Diagnosis Procedure</u> <u>a the inspection result normal?</u> YES (Present error)>>Replace the ICC sensor. Refer to <u>CCS-135</u> , " <u>Removal and Installation</u> ". YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	CHECK POWER SUPPL	AND GROUND CIRCUIT	Г	
<u>the inspection result normal?</u> YES (Present error)>>Replace the ICC sensor. Refer to <u>CCS-135, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit.	heck the power supply and	the ground circuit of the IC	CC sensor. Refer to <u>CCS-1</u>	18, "Diagnosis Procedure".
	the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error was NO	al? ace the ICC sensor. Refer is detected in the ICC sens r supply and the ground ci	to <u>CCS-135, "Removal and</u> sor branch line. rcuit	Installation".
		r supply and the ground of	roun.	

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SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009720554

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Sonar control unit
- Harness connector M95
- Harness connector M155
- CAN gateway

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Terminal No.		Continuity
M24	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector			Resistance (O)
Connector No.	Terminal No.		
M76	5	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-435, "SONAR CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-462, "Removal and Installation".

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

NO >> Repair the power supply and the ground circuit.
DAST 1 BRANCH LINE CIRCUIT

SIS >		[CAN]
INE CIRCUIT		
		INFOID:00000009720555
OFF. cable from the negative term ninals and connectors for de atrol module <u>al?</u> inal and connector. TINUITY (OPEN CIRCUIT) or of chassis control module	ninal. amage, bend and loose co e.	nnection (unit side and con-
ween the chassis control in	loquie namess connector	
ssis control module harness conne	ector	Continuity
19	11	Existed
7	8	Existed
ess and repair or replace (if le). OPEN CIRCUIT of chassis control module. or of steering angle main co etween the steering angle m	shield line is open) the ro ontrol module. nain control module harnes	ot cause (chassis communi-
ngle main control module harness	connector	Resistance (O)
Termin	al No.	
14	15	Approx. 54 – 66
Ting angle main control mod Y AND GROUND CIRCUIT If the ground circuit of the s al? lace the steering angle ma	lule branch line. teering angle main control ain control module. Refer	module. Refer to <u>STC-407.</u> to <u>STC-428. "Removal and</u>
	SIS > INE CIRCUIT OFF. cable from the negative term ninals and connectors for d ntrol module al? inal and connector. TINUITY (OPEN CIRCUIT) or of chassis control module tween the chassis control module Termin 19 7 tal? ess and repair or replace (if of chassis control module. or of steering angle main control module. or of steering angle main control module harness the specification? ring angle main control module harness Termin 14 thin the specification? ring angle main control module harness Termin 14 thin the specification? ring angle main control module harness main control module harness the ground circuit of the s hal? lace the steering angle main	SIS > INE CIRCUIT OFF. table from the negative terminal. ninals and connectors for damage, bend and loose control module tal? inal and connector. TINUITY (OPEN CIRCUIT) or of chassis control module. tween the chassis control module harness connector sis control module harness connector 19 11 7 8 tal? ess and repair or replace (if shield line is open) the role). OPEN CIRCUIT of chassis control module. or of steering angle main control module. tween the steering angle main control module. tween the steering angle main control module harness or of steering angle main control module. tween the steering angle main control module. trig angle main control module branch line. Y AND GROUND CIRCUIT d the ground circuit of the steering angle main control module. Refer

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009239115

[CAN]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R13
- Harness connector M75
- Chassis control module

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of chassis control module.

2. Check the continuity between the chassis control module harness connector terminals.

Chassis control module harness connector			Continuity
Connector No.	Terminal No.		Continuity
Ebb	19	11	Existed
E22	7	8	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side).

$\mathbf{3.}$ CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of chassis control module.
- 2. Disconnect the connector of lane camera unit.
- 3. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (O)
Connector No.	Terminal No.		
R13	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the lane camera unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-610, "LANE CAMERA</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-620, "Removal and Installation".

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

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

CAN COMMUNICATION CIRCUIT

DTC/CIRCUIT DIAGNOS	SIS >		[CAN]	
AN COMMUNICA	TION CIRCUIT			
agnosis Procedure			INFOID:000000009239117	
.CONNECTOR INSPECT	ION			
Turn the ignition switch	OFF.			
Disconnect the battery of	cable from the negative terr	minal.		
Check terminals and co	nnectors on CAN commu	and loose connection.		
the inspection result norm	nal?			
YES >> GO TO 2.	_			
NO >> Repair the term	inal and connector.			
CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)		
heck the continuity betwee	n the data link connector te	erminals.		
	Data link connector		Continuity	
Connector No.	Termir	nal No.		
M25	6	14	Not existed	
the inspection result norm	ial?			
(ES >> GO TO 3.				
NO >> Check the harne	ess and repair or replace [if	f shield line or fuse block (J	//B) is short] the root cause.	
CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)		
heck the continuity betwee	n the data link connector a	ind the around		
neok the continuity betwee				
Data link	connector		Continuity	
Connector No.	Terminal No.	Ground		
M25	6		Not existed	
	14		Not existed	
the inspection result norm	<u>ial?</u>			
(ES >> GO TO 4.				
NO >> Check the harn	ess and repair or replace [if	t shield line or fuse block (J	/B) is short] the root cause.	
.CHECK ECM AND BCM	TERMINATION CIRCUIT			
Remove the ECM and t	he BCM.			
Check the resistance be	etween the ECM terminals.			
	ECM		Resistance (O)	
Terminal No.				
114	114 113		Approx. 108 – 132	
Check the resistance be	etween the BCM terminals.			
	BCM		$P_{\text{optistoneo}}(\Omega)$	
	Terminal No.		76915101106 (22)	
60	59	Ap	oprox. 108 – 132	
the measurement value w	vithin the specification?			
YES >> GO TO 5				
NO >> Replace the EC	M and/or the BCM.			

5. CHECK SYMPTOM

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

LAN-147

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

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

CAN COMMUNICATION CIRCUIT 1 [CAN] < DTC/CIRCUIT DIAGNOSIS > **CAN COMMUNICATION CIRCUIT 1** А **Diagnosis** Procedure INFOID:000000009239118 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication circuit 1. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M25 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M25 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. CHECK ECM AND BCM TERMINATION CIRCUIT Remove the ECM and the BCM. 1. 2. Check the resistance between the ECM terminals. LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 Check the resistance between the BCM terminals. BCM Resistance (Ω) Terminal No. 60 59 Approx. 108 – 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. >> Replace the ECM and/or the BCM. NO 5.CHECK SYMPTOM

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

LAN-149

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

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

CAN COMMUNICATION CIRCUIT 2 [CAN] < DTC/CIRCUIT DIAGNOSIS > **CAN COMMUNICATION CIRCUIT 2** А Diagnosis Procedure INFOID:000000009239119 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect all the unit connectors on CAN communication circuit 2. 3. Check terminals and connectors for damage, bend and loose connection. 4 Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M25 13 12 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 13 Not existed M25 12 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK CAN GATEWAY TERMINATION CIRCUIT Remove the CAN gateway. 1. Check the resistance between the CAN gateway terminals. 2. LAN CAN gateway Resistance (Ω) Terminal No. Ν 4 10 Approx. 108 - 132 6 12 Approx. 108 - 132 Is the measurement value within the specification? YES >> GO TO 5. NO >> Replace the CAN gateway. **5.**CHECK SYMPTOM Ρ 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.

LAN-151

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

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 circuit 2. **NOTE:**

CAN gateway has two termination circuits. 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.

< DTC/CIRCUIT DIAGNOSIS > [CAN]	
CHASSIS COMMUNICATION CIRCUIT	0
Diagnosis Procedure	P
1. CHECK CAN DIAGNOSIS	E
Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.	
Are the CAN communication 1 and/or CAN communication 2 circuits normal?	С
YES $>>$ GO TO 2. NO $>>$ Check and repair CAN communication circuit 1 and/or CAN communication circuit 2. 2.CONNECTOR INSPECTION	
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on chassis communication circuit. Check terminals and connectors for damage, bend and loose connection. 	E
Is the inspection result normal?	F
YES >> GO TO 3. NO >> Repair the terminal and connector.	
3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)	Ģ
Check the continuity between the chassis control module harness connector.	

Connector No. Terminal No. E22 19 7 Not existed	Chassis control module harness connector		Continuity	
E22 19 7 Not existed	Connector No.	Terminal No.		Continuity
	E22	19	7	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

				K
Chassis control module harness connector			Continuity	
Connector No.	Terminal No.	Ground	Continuity	
M22	19	Ground	Not existed	L
IVIZZ	7		Not existed	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

5. CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

1. Remove the chassis control module.

2. Check the resistance between the chassis control module terminals.

	Pacistance (0)	Chassis control module	
D	Resistance (12)	nal No.	Termir
	Approx. 108 – 132	7	19
	Approx. 108 – 132	8	11

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

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CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

Inspection result

Reproduced>>GO TO 7.

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

7. 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 chassis communication circuit. **NOTE:**

Chassis control module has two termination circuits. Check other units first.

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

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

Inspection result

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

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

ITS COMMUNICATION CIRCUIT

DTC/CIRCUIT DIAC	GNOSIS >			[CAN]
TS COMMUNIC	CATION CIRCU	ЛТ		
Diagnosis Proced	ure			INFOID:000000009720810
CHECK CAN DIAG	NOSIS			
Check the CAN diagno nication circuit 2 and I	osis results from CON IS communication circ	SULT to see that the (cuit have no malfunction	CAN communication	i circuit 1, CAN commu-
YES >> GO TO 2. NO >> Check and CONNECTOR INSE	d repair CAN communi	ication circuit 1 and C	AN communication of	circuit 2.
 Turn the ignition state Disconnect the base Check the termination (unit side and consist the inspection result YES >> GO TO 3. NO >> Repair the 	witch OFF. ttery cable from the ne als and connectors of nector side). normal? terminal and connect	egative terminal. the ADAS control un or. NCIRCUIT)	iit for damage, bend	d and loose connection
3. CHECK HARNESS				
 CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. 	lowing harness connector	ctors. 6 control unit harness o	connector and the IC	CC sensor harness con-
CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No.	ity between the ADAS	ctors. 5 control unit harness of ICC sensor harr Connector No.	connector and the IC ness connector Terminal No.	CC sensor harness con-
CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No.	lowing harness connector harness connector Terminal No. 6	Ctors. Control unit harness of ICC sensor har Connector No.	connector and the IC ness connector Terminal No. 3	CC sensor harness con-
CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1	lowing harness connector harness connector Terminal No. 6 7	ctors. 6 control unit harness of ICC sensor har Connector No. E80	connector and the IC ness connector Terminal No. 3 6	CC sensor harness con- Continuity Existed Existed Existed
CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 s the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS	lowing harness connector ity between the ADAS harness connector Terminal No. 6 7 inormal? harness between the CONTINUITY (SHOR	ctors. Control unit harness of ICC sensor harn Connector No. E80 ADAS control unit an RT CIRCUIT)	connector and the IC ness connector Terminal No. 3 6 d the ICC sensor.	CC sensor harness con- Continuity Existed Existed
CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 sthe inspection result YES >> GO TO 4. NO >> Repair the ACHECK HARNESS Disconnect the foll Side radar LH Side radar LH Side radar RH Around view monit Accelerator pedal Driver assistance Sonar control unit 2. Check the continu	ity between the ADAS harness connector Terminal No. 6 7 normal? harness between the CONTINUITY (SHOR lowing harness connector tor control unit actuator / accelerator buzzer control module ity between the ADAS	ctors. Control unit harness of ICC sensor harness of Connector No. E80 ADAS control unit an RT CIRCUIT) ctors. pedal position sensor Control unit harness of Control unit harness of	connector and the IC	C sensor harness con- Continuity Existed Existed
CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 sthe inspection result YES >> GO TO 4. NO >> Repair the ACHECK HARNESS Disconnect the foll Side radar LH Side radar RH Around view monit Accelerator pedal Driver assistance I Sonar control unit Check the continu	ity between the ADAS harness connector Terminal No. 6 7 normal? harness between the CONTINUITY (SHOR lowing harness connector tor control unit actuator / accelerator buzzer control module ity between the ADAS ADAS control unit har	ctors. Control unit harness of ICC sensor harnon Connector No. E80 ADAS control unit an CT CIRCUIT) ctors. pedal position sensor Control unit harness of Control	connector and the IC ness connector Terminal No. 3 6 d the ICC sensor.	Continuity Continuity Existed Existed
CHECK HARNESS Disconnect the foll ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 sthe inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the foll Side radar LH Side radar LH Side radar RH Around view monit Accelerator pedal Driver assistance I Sonar control unit Connector No. Connector No.	ity between the ADAS harness connector Terminal No. 6 7 inormal? harness between the CONTINUITY (SHOR lowing harness connector tor control unit actuator / accelerator buzzer control module ity between the ADAS ADAS control unit har	ctors. Control unit harness of ICC sensor harristic Connector No. E80 ADAS control unit an RT CIRCUIT) ctors. pedal position sensor Control unit harness of Control unit harness of Connector Terminal No.	connector and the IC	C sensor harness con- Continuity Existed Existed Continuity

>> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. NO

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

LAN-155

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
R1	6	Ground	Not existed
DI	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.

2. Check the resistance between the ADAS control unit terminals.

ADAS control unit		Resistance (O)
Terminal No.		
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Posistanco (O)
Terminal No.		
3	6	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ADAS control unit and/or the ICC sensor.

7.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 8.

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

8. 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 ITS communication circuit. **NOTE:**

ADAS control unit and ICC sensor 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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< PRECAUTION > PRECAUTION PRECAUTIONS

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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COMPONENT PARTS

< SYSTEM DESCRIPTION > SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000009755485



- (1) CAN gateway
- A Over the instrument lower panel

SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM



• This system selects and transmits only necessary information.

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[CAN GATEWAY]

DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (CAN GATEWAY)

CONSULT Function

INFOID:000000009755487

[CAN GATEWAY]

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with CAN gateway.

Diagnosis mode	Function Description
Self Diagnostic Result	Displays the diagnosis results judged by CAN gateway.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.
ECU Identification	The CAN gateway part number is displayed.
Configuration	Read and save the vehicle specification.Write the vehicle specification when replacing CAN gateway.

SELF DIAGNOSTIC RESULT

Refer to LAN-162, "DTC Index".

- When "CRNT" is displayed on "Self Diagnostic Result"
- The system is presently malfunctioning.
- When "PAST" is displayed on "Self Diagnostic Result"
- System malfunction in the past is detected, but the system is presently normal.

Freeze Frame Data (FFD)

When DTC is detected, a vehicle state shown below is recorded and displayed on CONSULT.

Item name	Display item
IGN COUNTER (0 – 39)	 The number of times that ignition switch is turned ON after the DTC is detected is displayed. When "0" is displayed: It indicates that the system is presently malfunctioning. When except "0" is displayed: It indicates that system malfunction in the past is detected, but the system is presently normal. NOTE: Each time when ignition switch is turned OFF to ON, numerical number increases in 1 → 2 → 338 → 39. When the operation number of times exceeds 39, the number do not increase and "39" is displayed until self-diagnosis result is erased.

CAN DIAG SUPPORT MONITOR

The results of transmit/receive diagnosis of CAN communication can be read.

ECU IDENTIFICATION

The part number of CAN gateway is displayed.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read / Write Configuration	Before Replace ECU	Reads the vehicle configuration of current CAN gateway.Saves the read vehicle configuration.
	After Replace ECU	Writes the vehicle configuration with saved data.
Manual Configuration		Writes the vehicle configuration with manual selection.

CAUTION:

Follow the instructions listed below. Failure to do this may cause malfunctions to the CAN gateway.

- When replacing CAN gateway, you must perform "Read / Write Configuration" or "Manual Configuration" with CONSULT.
- Complete the procedure of "Read / Write Configuration" or "Manual Configuration" in order.
- If you set incorrect "Read / Write Configuration" or "Manual Configuration", incidents might occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.
- Never perform "Read / Write Configuration" or "Manual Configuration" except for new CAN gateway.

ECU DIAGNOSIS INFORMATION CAN GATEWAY

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

Termiı (Wire	nal No. e color)	Description		Condition	Standard	Reference value	G
+	-	Signal name	Input/ Output	Condition	Standard	Nelefence value	
1 (L)	_	CAN-H (CAN commu- nication circuit 1)	Input/ Output	_	_	_	Н
3 (W)	5 (B) 11 (B)	Battery power supply	Input	Ignition switch OFF	6 – 16 V	Battery voltage	I
4 (L)	_	CAN-H (CAN commu- nication circuit 2)	Input/ Output	_	_	_	J
6 (L)	_	CAN-H (CAN commu- nication circuit 2)	Input/ Output	—	_	—	
7 (P)	_	CAN-L (CAN commu- nication circuit 1)	Input/ Output	_	_	—	K
9 (R)	5 (B) 11 (B)	Ignition power supply	Input	Ignition switch ON	4.5 – 16 V	Battery voltage	L
10 (R)	_	CAN-L (CAN commu- nication circuit 2)	Input/ Output	—	_	—	LAN
12 (R)	_	CAN-L (CAN commu- nication circuit 2)	Input/ Output	_	_	_	Ν

DTC Inspection Priority Chart

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC	F
1	B2600: CONFIG ERRORU1010: CONTROL UNIT(CAN)	
2	U1000: CAN COMM CIRCUIT	

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CAN GATEWAY

< ECU DIAGNOSIS INFORMATION >

DTC Index

INFOID:000000009755490

[CAN GATEWAY]

DTC	CONSULT display		Reference
_	No DTC is detected. Further testing may be required.		_
U1000	CAN COMM CIRCUIT		LAN-167, "DTC Descrip- tion"
U1010	CONTROL UNIT(CAN)		LAN-168, "DTC Descrip- tion"
B2600 CONFIG ERROR		WRONG DATA	LAN-169, "DTC Descrip-
	NOT CONFIGURED	tion"	

WIRING DIAGRAM CAN GATEWAY SYSTEM

Wiring Diagram

[CAN GATEWAY]

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CAN GATEWAY SYSTEM



JRMWD9989GB

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

< BASIC INSPECTION >

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BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

Description INFOID:000000009755492	В
BEFORE REPLACEMENT When replacing CAN gateway, save or print current vehicle specification with CONSULT configuration before replacement.	С
If "Before Replace ECU" of "Read / Write Configuration" can not be used, use the "Manual Configuration" after replacing CAN gateway.	D
AFTER REPLACEMENT	
 CAUTION: Follow the instructions listed below. Failure to do this may cause malfunctions to the CAN gateway.: When replacing CAN gateway, you must perform "Read / Write Configuration" or "Manual Configuration" with CONSULT 	Е
 Complete the procedure of "Read / Write Configuration" or "Manual Configuration" in order. If you set incorrect "Read / Write Configuration" or "Manual Configuration", incidents might occur. Configuration is different for each vehicle model. Configuration of each vehicle model. Never perform "Read / Write Configuration" or "Manual Configuration" each vehicle model. 	F
Work Procedure	G
1.SAVING VEHICLE SPECIFICATION	Н
CONSULT Configuration Perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. NOTE: If "Before Replace ECU" of "Read / Write Configuration" can not be used, use the "Manual Configuration" after replacing CAN gateway.	Ι
	J
>> GO TO 2. 2. REPLACE CAN GATEWAY	
Replace CAN gateway. Refer to <u>LAN-172, "Removal and Installation"</u> .	Κ
>> GO TO 3. 3.WRITING VEHICLE SPECIFICATION	L
CONSULT Configuration Perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" to write vehicle speci- fication. Refer to <u>LAN-166, "Work Procedure"</u> .	LAN
>> WORK END	Ν
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< BASIC INSPECTION >

CONFIGURATION (CAN GATEWAY)

Work Procedure

INFOID:000000009755494

[CAN GATEWAY]

1.WRITING MODE SELECTION

CONSULT Configuration
 Select "Re/programming, Configuration" of CAN gateway.

When writing saved data>>GO TO 2. When writing manually>>GO TO 3.

2. PERFORM "AFTER REPLACE ECU" OF "READ / WRITE CONFIGURATION"

CONSULT Configuration
 Perform "After Replace ECU" of "Read / Write Configuration".

>> GO TO 4.

3.PERFORM "MANUAL CONFIGURATION"

CONSULT Configuration

- 1. Select "Manual Configuration".
- Identify the correct model and configuration list. Refer to <u>LAN-166, "Configuration List"</u> NOTE:

If items are not displayed, go to step 4.

- 3. Confirm and/or change setting value for each item.
- 4. Touch "Next".
- 5. Touch "OK".
 - NOTE:

Make sure to select "OK" even if the indicated configuration of brand new CAN gateway is same as the desirable configuration. If not, configuration which is set automatically by selecting vehicle model can not be memorized.

6. Check that the configuration has been successfully written and touch "End".

>> GO TO 4.

4.CHECK ALL ECU SELF-DIAGNOSIS RESULTS

- 1. Erase all ECU self-diagnosis results using CONSULT.
- 2. Turn the ignition switch OFF.
- 3. Turn the ignition switch ON and wait for 2 seconds or more.
- 4. Check that all ECU self-diagnosis results have no DTC (e.g. U1000 and U1001) of CAN communication.

>> WORK END

Configuration List

CAUTION:

Check vehicle specifications before servicing.

MANUAL SE	TTING ITEM	NOTE	
Items Setting value		NOTE	
ENGINE TYPE	TYPE 1 \Leftrightarrow TYPE 2	TYPE 1: VQ37VHR engine modelsTYPE 2: OM651 engine models	
ADP or PSB	WITHOUT ⇔ WITH	 WITHOUT: Without automatic drive positioner and pre- crash seat belt system WITH: With automatic drive positioner or pre-crash seat belt system 	

⇔: Items which confirm vehicle specifications.

INFOID:000000009790566

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

DTC Description

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[CAN GATEWAY]

DESCRIPTION

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart. Refer to LAN-44. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
U1000	CAN COMM CIRCUIT (CAN communication circuit)	When CAN gateway cannot communicate CAN communication signal continu- ously for 2 seconds or more.
POSSIBLE CAN comm	CAUSE unication system	
FAIL-SAFE Only the CA	N signal transmission of control	unit which cannot communicate cannot be transmitted
DTC CONF 1.PERFOF	FIRMATION PROCEDURE	CEDURE
With CON 1. Turn ign 2. Select ' 3. Check	NSULT hition switch ON and wait at leas Self Diagnostic Result" mode of DTC.	at 2 seconds or more. "CAN GATEWAY" using CONSULT.
YES >> NO-1 >> NO-2 >>	<u>OU detected?</u> Proceed to <u>LAN-167, "Diagnosi</u> To check malfunction symptom Confirmation after repair: INSPE	<u>s Procedure"</u> . before repair: <u>GI-43, "Intermittent Incident"</u> . ECTION END
Diagnosis	s Procedure	INFOID:000000009755496
1.PERFOR	RM DTC CONFIRMATION PROC	CEDURE AGAIN
 Turn igi Erase I Perform Check I 	nition switch ON. DTC. n DTC confirmation procedure ag DTC.	gain. Refer to LAN-167, "DTC Description".
<u>Is DTC U10</u> YES >>	00 displayed? Perform trouble diagnosis proce	edure for CAN communication system. Refer to LAN-26, "Trouble
NO >>	INSPECTION END	

U1010 CONTROL UNIT (CAN)

DTC Description

INFOID:000000009755497

[CAN GATEWAY]

DESCRIPTION

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart. Refer to <u>LAN-44</u>, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

DTC DETECTION LOGIC

DTC	Trouble diagnosis (Trouble diagnosis contents)	Detecting condition
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	When an error is detected during the initial diagnosis for CAN controller of CAN gateway.

POSSIBLE CAUSE

CAN gateway

FAIL-SAFE

Transmission and reception of the signal between CAN communication circuit 1 and CAN communication circuit 2 are stopped

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

- Turn ignition switch ON and wait at least 2 seconds or more.
- 2. Select "Self Diagnostic Result" mode of "CAN GATEWAY" using CONSULT.
- 3. Check DTC.

Is DTC U1010 detected?

- YES >> Proceed to LAN-168, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: <u>GI-43, "Intermittent Incident"</u>.
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000009755498

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- 1. Turn ignition switch ON.
- 2. Erase DTC.
- 3. Perform DTC confirmation procedure again. Refer to <u>LAN-168, "DTC Description"</u>.
- 4. Check DTC.

Is DTC U1010 displayed?

- YES >> Replace CAN gateway. Refer to LAN-172, "Removal and Installation".
- NO >> INSPECTION END

B2600 CONFIG ERROR

< DTC/CIRCUIT DIAGNOSIS >

B2600 CONFIG ERROR

DTC Description

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INFOID:000000009755499

[CAN GATEWAY]

DTC DETECTION LOO

DTC	Trouble d (Trouble diagno	iagnosis osis contents)	Detecting condition	C
		WRONG DATA (Wrong data)	When errors are detected in the configuration data stored in the CAN gateway.	C
B2600	(Configuration error)	NOT CONFIGURED (Not configured)	When no data are stored in the CAN gateway.	
POSSIBLE CAN gatewa	CAUSE			E
FAIL-SAFE Transmissio cuit 2 are sto	n and reception of the s	signal between CAN	communication circuit 1 and CAN communication cir-	F
DTC CONF 1.PERFOR	IRMATION PROCED	URE N PROCEDURE		(
With CON 1. Turn ign 2. Select " 3. Check I	ISULT iition switch ON and wa Self Diagnostic Result" DTC.	it at least 2 seconds mode of "CAN GATE	or more. WAY" using CONSULT.	ŀ
<u>Is DTC B260</u> YES-1 ("CO	<u>00 detected?</u> DNFIG ERROR WRON <u>Procedure"</u> .	G DATA" is detected.)>>Proceed to LAN-169, "WRONG DATA : Diagnosis	
YES-2 ("CO NO-1 >> NO-2 >> WRONG	DNFIG ERROR NOT CO <u>Diagnosis Procedure"</u> . To check malfunction sy Confirmation after repai DATA	ONFIGURED" is dete mptom before repair r: INSPECTION END	ected.)>>Proceed to <u>LAN-169, "NOT CONFIGURED :</u> r: <u>GI-43, "Intermittent Incident"</u> . D	
WRONG	DATA : Diagnosis	Procedure	INFOID:000000009755500	
1.PERFOR	M DTC CONFIRMATIO	N PROCEDURE AG	AIN	
 Turn igr Erase D Perform Check D 	hition switch ON. NTC. DTC confirmation proc DTC.	edure again. Refer to	D LAN-169, "DTC Description".	L
IS DTC B260 YES >> NO >> NOT COI	<u>00 displayed?</u> Replace CAN gateway. INSPECTION END NEIGURED	Refer to <u>LAN-172, "F</u>	Removal and Installation".	ľ
NOT CON	NFIGURED : Diagr	nosis Procedure	INFOID:000000009755501	(
1.PERFOR	M CONFIGURATION C	OF CAN GATEWAY		F
	CO TO 2	n. Keier to <u>LAN-166.</u>	vvoik Procedure.	
>> 2.PERFOR	M DTC CONFIRMATIC	N PROCEDURE AG	SAIN	

Turn ignition switch ON.

1.

< DTC/CIRCUIT DIAGNOSIS >

- 2. Perform DTC confirmation procedure again. Refer to LAN-169, "DTC Description".
- 3. Check DTC.

Is DTC B2600 displayed?

- >> Replace CAN gateway. Refer to <u>LAN-172, "Removal and Installation"</u>. >> INSPECTION END YES
- NO

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

1.CHECK FUSE

Check that the following fuse are not blown.

Signal name	Fuse No.	С
Battery power supply	17	
Ignition power supply	14	D

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connector of CAN gateway.

3. Check voltage between CAN gateway harness connector and ground.

	Terminals		Condition					
(*	+)	(-)	Condition	Voltage	Voltage Voltage			
CAN g	ateway		Ignition	Ignition	Ignition	(Standard)	(Reference value)	
Connector	Terminal		switch					
M24	3	Ground	OFF	6 – 16 V	Battery voltage			
M24	9		ON	4.5 – 16 V	Battery voltage			

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between CAN gateway harness connector and ground.

CAN g	Jateway		Continuity
Connector	Terminal	Ground	
M24	5		Existed
10124	11		

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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REMOVAL AND INSTALLATION CAN GATEWAY

Removal and Installation

INFOID:000000009755503

NOTE:

Before replacing CAN gateway, perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to <u>LAN-165</u>, "Description".

REMOVAL

- 1. Remove instrument lower panel LH. Refer to IP-12, "Removal and Installation".
- 2. Disconnect CAN gateway connector.
- 3. Remove mounting screw to remove CAN gateway.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

To prevent malfunction, be sure to perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" when replacing CAN gateway. Refer to <u>LAN-165, "Description"</u>.

N	IAIN LINE	BETW	EEN DLC AND	O HVA		Г
< DTC/CIRCUIT DIAG	NOSIS >				[CAI	N SYSTEM (TYPE 1)]
DTC/CIRCU	IT DIAG	INOS	SIS			
MAIN LINE BET	WEEN DI	LC AN	D HVAC CIRC	CUIT		
Diagnosis Procedu	ure					INFOID:000000009789037
1. CHECK CONNECT	OR					
 Turn the ignition sw Disconnect the bat Check the followin and harness side). Harness connector Is the inspection result 	vitch OFF. tery cable fror g terminals a M133 and fus normal?	n the neg nd conne se block	gative terminal. ectors for damage, (J/B) side connecto	bend ar r	d loose conr	nection (connector side
YES >> GO TO 2. NO >> Repair the	terminal and	connecto	r.			
 CHECK HARNESS Disconnect the fuse Check the continuit 	CONTINUITY e block (J/B) f ty between the	(OPEN narness o e fuse blo	CIRCUIT) connector M65. ock (J/B) terminals.			
	Fuse blo	ock (J/B)				Continuity
Terminal No			Terminal No.			
23C			22C E		Existed	
5C	10		4C			Existed
YES >> GO TO 3. NO >> Replace th 3. CHECK HARNESS	e fuse block (CONTINUITY	J/B). (OPEN	CIRCUIT)			
 Disconnect the cor Check the continuit nector. 	nector of A/C by between the	auto am e fuse blo	p. ock (J/B) harness co	onnector	and the A/C a	auto amp. harness con-
Fuse block (J/B) h	arness connecto	r	A/C auto amp. h	narness co	nnector	
Connector No.	Terminal N	lo.	Connector No.	Te	rminal No.	- Continuity
M133	22C		M88		1	Existed
MIGO	4C		Moo		2	Existed
YES (Present error)>> YES (Past error)>>Err amp. NO >> Repair the	Check CAN s or was detect	system ty ted in th veen the	pe decision again. e main line betwee fuse block (J/B) har	n the da	ta link conne	Lector and the A/C auto

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000009789040

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	1 M100		29	Existed
1000	21	WITOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

ECM BRANCH LINE CIRCUIT

Diagnosis Proced	Jre			INFOID:000000009789042
	OR			
 Turn the ignition sv Disconnect the bat Check the following nector side). ECM 	vitch OFF. tery cable from the ne g terminals and conne	egative terminal. ectors for damage, ber	nd and loose conn	ection (unit side and con-
Harness connector	M133 and fuse block	k (J/B) side connector		
YES >> GO TO 2.	<u>nomar:</u>			
NO >> Repair the	terminal and connect	tor.		
CHECK HARNESS	FOR OPEN CIRCUI	Γ		
Disconnect the corCheck the resistant	nector of ECM. ce between the ECM	harness connector ter	minals.	
	ECM harness of	connector		
Connector No.		Terminal No.		Resistance (Ω)
M37	114		113	Approx. 108 – 132
YES >> GO TO 3. NO >> GO TO 4.	JPPLY AND GROUN			
heck the power supplet the inspection result YES (Present error)>>Er YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continui	y and the ground circ normal? Replace the ECM. R for was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM	Evit of the ECM. Refer to Refer to <u>EC-578, "Rema</u> ne ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector and	to <u>EC-188. "Diagne</u> oval and Installatio	<u>osis Procedure"</u> . <u>n"</u> . (B) harness connector.
the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the ••CHECK HARNESS Disconnect the fus	y and the ground circ normal? Replace the ECM. R for was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM	D CIRCUIT cuit of the ECM. Refer to Refer to <u>EC-578, "Rema</u> the ECM branch line. e ground circuit. N CIRCUIT) is connector M133. harness connector and	to <u>EC-188. "Diagne</u> <u>oval and Installatio</u> d the fuse block (J/	<u>n"</u> . B) harness connector.
the inspection result TES (Present error)>: YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continui ECM harnes	y and the ground circ normal? Replace the ECM. R for was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM	Evit of the ECM. Refer to Refer to <u>EC-578, "Rema</u> the ECM branch line. the ground circuit. N CIRCUIT) the connector M133. tharness connector and Fuse block (J/B) the Connector No	to <u>EC-188, "Diagna</u> <u>oval and Installatio</u> d the fuse block (J/ arness connector	25 / 25 / 25 / 25 / 25 / 25 / 25 / 25 /
the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continui ECM harnes Connector No.	y and the ground circ normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM s connector Terminal No.	Connector No.	to <u>EC-188, "Diagne</u> <u>oval and Installation</u> d the fuse block (J/ arness connector Terminal No. 21C	28) harness connector.

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789043

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

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.

	Resistance (O)		
Connector No.	Termi	(100) (100)	
M25	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 >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

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

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M25	6	M122	23C	Existed
WIZ5	14	WI135	5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

IPD	M-E BRANCH	I LINE CIRCU	IT			Δ
Diag	nosis Procedur	е			INFOID:00000009789044	A
1. ci	HECK CONNECTOR	R				В
1. T 2. [3. (- -	Turn the ignition swite Disconnect the batter Check the following t nector side). PDM E/R Harness connector E	ch OFF. ry cable from the ne erminals and conne 64 and fuse block (gative terminal. ctors for damage, b J/B) side connector	end and loose cor	nection (unit side and con-	С
Is the YES NO 2. CI	 inspection result no >> GO TO 2. >> Repair the te HECK HARNESS FO 	ormal? rminal and connecto DR OPEN CIRCUIT	Dr.			E
1. [2. (Disconnect the connect the connect the connect the resistance	ector of IPDM E/R. between the IPDM	E/R harness conne	ector terminals.		F
	Connector No	IPDM E/R harness	Torminal No		Resistance (Ω)	G
	E121	29		28	Approx. 54 – 66	0
Is the YES NO 3. CI	 measurement value >> GO TO 3. >> GO TO 4. HECK POWER SUP 	e within the specific	ation? D CIRCUIT			H
Chec Is the YES NO 4.CI	k the power supply a inspection result no (Present error)>>R (Past error)>>Error >> Repair the po HECK HARNESS FO Disconnect the harne	and the ground circu ormal? eplace the IPDM E/ was detected in the ower supply and the DR OPEN CIRCUIT ess connector E64.	uit of the IPDM E/R. R. Refer to <u>PCS-37</u> e IPDM E/R branch ground circuit.	Refer to <u>PCS-36.</u> , <u>"Removal and Ins</u> line.	"Diagnosis Procedure". stallation".	J
2. (Check the continuity	between the IPDM	E/R harness connec	ctor and harness c	onnector.	L
	IPDM E/R har	ness connector	Harness	connector	- Continuity	
	Connector No.	Terminal No.	Connector No.	Terminal No.		LAN
	E121	29	E64	6E	EXISTED	

Is the measurement value within the specification?

28

YES >> Replace the fuse block (J/B).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

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Existed

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789045

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F12
- Harness connector E10
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

	$Resistance\left(\mathbf{O}\right)$		
Connector No.	Termi		
F2	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-218, "Exploded View"

Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector	Continuity
Terminal No.	Terminal No.	Continuity
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-181, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-218, "Exploded View".

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

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

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector E65.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	A/T assembly harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

F2	3	- E65	9F	Existed	A
	8		5F	Existed	

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789046

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	Posistanco (O)		
Connector No.	Termi		
M88	1	21	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 <u>HAC-92, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-113, "Removal and Installation".

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

NO >> Repair the power supply and the ground circuit.
M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000009789047
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the combi side).	ninal. nation meter for damage, t	pend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of combination meter. Stween the combination me	ter harness connector termi	nals.
Co	mbination meter harness connec	tor	Resistance (Ω)
Connector No.	Termir	nal No.	
M58	41	42	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Broad	bination meter branch line. Y AND GROUND CIRCUIT	- ombination meter. Refer to	MWI-104, "COMBINATION
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	al? ace the combination meter as detected in the combina er supply and the ground ci	. Refer to <u>MWI-126, "Remo</u> tion meter branch line. rcuit.	val and Installation".

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A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure

INFOID:000000009789048

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

AV BRANCH LINE (CIRCUIT			Δ
Diagnosis Procedure			INFOID:00000009789049	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative tern d connectors of the display r side).	ninal. y control unit for damage, t	pend and loose connection	С
Is the inspection result norm	al?			
YES >> GO TO 2.	inal and connector			D
2 CHECK HADNESS FOR				
	or of display control unit			Е
 Disconnect the connect Check the resistance be 	etween the display control unit.	init harness connector termi	nals.	
				F
	splay control unit harness connec	tor	Resistance (Ω)	I
	Termin	al No.	Approv 54 - 00	
In the measurement value w	29	17	Αρριοχ. 54 – 66	G
YFS >> GO TO 3				
NO >> Repair the displa	ay control unit.			Н
3. CHECK POWER SUPPL	Y AND GROUND CIRCUIT	-		
Check the power supply and TROL UNIT : Diagnosis Pro	d the ground circuit of the o cedure".	display control unit. Refer to	O AV-239, "DISPLAY CON-	I
Is the inspection result norm	<u>ial?</u> Is as the display control unit		l en el la stelle tien "	
YES (Present error)>>Rep YES (Past error)>>Error wa	ace the display control unit as detected in the display c	ontrol unit branch line.	<u>II and Installation"</u> .	J
NO >> Repair the powe	er supply and the ground cir	rcuit.		
				K
				ΓX
				L

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789051

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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		Posistanco (O)
Connector No.	Termi	nal No.	
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-98, "Removal and Installation"</u>.

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

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

ABS BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000009789052
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative terr ninals and connectors for d	minal. lamage, bend and loose cor	nnection (unit side and con-
Harness connector E65 s the inspection result norm	and fuse block (J/B) side c nal?	connector	
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	und view monitor system: (around view monitor syster inal and connector.	GO TO 2. m: GO TO 3.	
2.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector	r	Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
 Connect the connector Disconnect the connect Check the resistance b nals. 	or of ABS actuator and elected etween the ABS actuator a	ctric unit (control unit). and electric unit (control unit	tem). :) harness connector termi-
ABS actuator	and electric unit (control unit) har		Resistance (Ω)
	25	15	Approx 54 - 66
s the measurement value w YES >> GO TO 4. NO >> GO TO 5. CHECK POWER SUPPL	<u>vithin the specification?</u> Y AND GROUND CIRCUIT	Γ	
Check the power supply an 3RC-154, "Diagnosis Proce	d the ground circuit of the dure".	ABS actuator and electric	unit (control unit). Refer to
s the inspection result norm	<u>al?</u>		
YES (Present error)>>Rep and Installation' YES (Past error)>>Error w	lace the ABS actuator and as detected in the ABS actu	electric unit (control unit). R	efer to <u>BRC-178, "Removal</u> ol unit) branch line.
NU >> Repair the powe 5.CHECK HARNESS CON	F SUPPLY and the ground ci TINUITY (OPEN CIRCUIT)	rcuit.)	
 Disconnect the connect Check the resistance b nals. 	or of harness connector E6 etween the ABS actuator a	, 55. and electric unit (control unit	t) harness connector termi-

- With around view monitor system

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and ele harness	ctric unit (control unit) connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E25	25	EGE	6F	Existed
E33	15		7F	Existed
	nonitor avatom			

- Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	8F	Existed
E35	15	205	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 1)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procoduro

Diagnosis Procedure			INFOID:00000009798677	
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative tern ninals and connectors for d	ninal. amage, bend and loose con	nection (unit side and con-	С
 Chassis control module Harness connectors E4 Harness connectors M3 CAN gateway (Models) 	7 9 with around view monitor sy	rstem)		D
Is the inspection result norm	al?			F
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	und view monitor system: C around view monitor systen inal and connector.	GO TO 2. n: GO TO 3.		
2.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))		F
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.		G
	CAN gateway harness connector		Continuity	
Connector No.	Termin	nal No.		Н
M24	4	6	Existed	
	10	12	Existed	
NO >> Check the harn 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models with or of chassis control module	se (CAN communication circ	em).	J
3. Check the resistance be	tween the chassis control r	module harness connector t	erminals.	
Cha	ssis control module harness conne	ector	Posistance (O)	
Connector No.	Termin	al No.		
E22	4	3	Approx. 54 – 66	
Is the measurement value wYES>> GO TO 4.NO>> Repair the chase4.CHECK POWER SUPPL	<u>rithin the specification?</u> sis control module branch li Y AND GROUND CIRCUIT	ine.		N
Check the power supply an	d the ground circuit of the o	chassis control module. Ref	er to DAS-541, "Diagnosis	
Is the inspection result norm)al?			С
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the chassis control mo as detected in the chassis o er supply and the ground cir	dule. Refer to <u>DAS-542, "Re</u> control module branch line. rcuit.	emoval and Installation".	F

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789056

[CAN SYSTEM (TYPE 1)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		Continuity
Connector No.	Termi	nal No.	Continuity
M24	4	6	Existed
11/24	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	ng angle sensor harness conne	ector	Posistance (O)
Connector No.	Termi	nal No.	
M77	5	2	Approx. 54 – 66
	hin the energification?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "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.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 1)]

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000009790833 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M25 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M25 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 4}$. CHECK ECM AND BCM TERMINATION CIRCUIT Remove the ECM and the BCM. 1. 2. Check the resistance between the ECM terminals. LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 Check the resistance between the BCM terminals. BCM Resistance (Ω) Terminal No. 60 59 Approx. 108 – 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. >> Replace the ECM and/or the BCM. NO 5.CHECK SYMPTOM

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

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< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

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

N	IAIN LINE	BETW	EEN DLC AND) HVA		Г
< DTC/CIRCUIT DIAG	NOSIS >				[CA	N SYSTEM (TYPE 2)]
DTC/CIRCU	T DIAG	INOS	SIS			
MAIN LINE BET	WEEN DI	LC AN	ID HVAC CIRC	CUIT		
Diagnosis Procedu	ure					INFOID:000000009789094
1. CHECK CONNECTO	OR					
 Turn the ignition sw Disconnect the bat Check the followin and harness side). Harness connector 	vitch OFF. tery cable fror g terminals a M133 and fue	n the ne nd conn se block	gative terminal. ectors for damage, (J/B) side connecto	bend an r	d loose coni	nection (connector side
YES >> GO TO 2. NO >> Repair the	terminal and	connecto	Dr.			
 CHECK HARNESS Disconnect the fuse Check the continuit 	CONTINUITY e block (J/B) f y between the	(OPEN narness e fuse bl	CIRCUIT) connector M65. ock (J/B) terminals.			
	Fuse blo	ock (J/B)				Continuity
Terminal No			Terminal No.			
23C			22C			Existed
5C			4C			Existed
YES >> GO TO 3. NO >> Replace the 3. CHECK HARNESS	e fuse block (CONTINUITY	J/B). ′ (OPEN	CIRCUIT)			
 Disconnect the con Check the continuit nector. 	nector of A/C y between the	auto an e fuse bl	ıp. ock (J/B) harness co	onnector	and the A/C	auto amp. harness con-
Fuse block (J/B) h	arness connecto	r	A/C auto amp. h	arness co	nnector	
Connector No.	Terminal N	lo.	Connector No.	Te	minal No.	- Continuity
M133	22C		M88		1	Existed
M135	4C		WOO		2	Existed
YES (Present error)>> YES (Past error)>>Err amp. NO >> Repair the	normar? Check CAN s or was detec main line betv	system ty ted in th veen the	ype decision again. le main line betwee fuse block (J/B) har	n the da	ta link conn	Lector and the A/C auto

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000009789095

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit	harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	1	M100	29	Existed
1000	21	WITOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

ECM BRANCH LINE CIRCUIT

ECM BRANCH	LINE CIRCUIT			
Diagnosis Proced	ure			INF01D:00000009789097
1.снеск соллест	OR			
 Turn the ignition sv Disconnect the bat Check the followin nector side). ECM 	vitch OFF. tery cable from the ne g terminals and conne	egative terminal. ectors for damage, ben	nd and loose conn	ection (unit side and con-
Harness connecto	M133 and fuse block	k (J/B) side connector		
<u>S the inspection result</u>	<u>normal?</u>			
NO >> Repair the	terminal and connect	or.		
2.CHECK HARNESS	FOR OPEN CIRCUIT	Г		
 Disconnect the cor Check the resistant 	nector of ECM. ce between the ECM	harness connector ter	minals.	
		connector		
	ECM harness c			$Resistance\left(\Omega\right)$
Connector No.	ECM harness c	Terminal No.		Resistance (Ω)
Connector No. M37	ECM harness c	Terminal No.	113	Resistance (Ω) Approx. 108 – 132
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. S.CHECK POWER SI	ILLE WITHIN THE SPECIFIC	Terminal No. ation? D CIRCUIT	113	Resistance (Ω) Approx. 108 – 132
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp s the inspection result	IPPLY AND GROUNI y and the ground circu	Terminal No. cation? D CIRCUIT uit of the ECM. Refer to	113 0 <u>EC-188. "Diagn</u>	Resistance (Ω) Approx. 108 – 132 osis Procedure".
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp s the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS	JPPLY AND GROUNI y and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN	Terminal No. <u>cation?</u> D CIRCUIT uit of the ECM. Refer to refer to <u>EC-578, "Remo</u> r- le ECM branch line. e ground circuit. N CIRCUIT)	0 EC-188. "Diagn	Resistance (Ω) Approx. 108 – 132 osis Procedure". on".
Connector No. M37 s the measurement var YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp s the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the fus 2. Check the continuity	JPPLY AND GROUNI y and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM b	Terminal No. Terminal No. Cation? D CIRCUIT uit of the ECM. Refer to the ECM branch line. a ground circuit. N CIRCUIT) connector M133. harness connector and	0 EC-188. "Diagn oval and Installation oval and Installation I the fuse block (J	Resistance (Ω) Approx. 108 – 132 osis Procedure". on". /B) harness connector.
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp s the inspection result YES (Present error)>: YES (Past error)>: YES (Past error)>: YES (Past error)>: YES (Past error)>: Check the power supp s the inspection result YES (Present error)>: YES (Past error)>: YES (Check the continui ECM harnes	JPPLY AND GROUNI y and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM b	Terminal No. Terminal No. Eation? D CIRCUIT uit of the ECM. Refer to the ECM branch line. The ECM branch line. The ground circuit. N CIRCUIT) connector M133. harness connector and Fuse block (J/B) ha	113 o <u>EC-188, "Diagn</u> oval and Installation d the fuse block (J	Resistance (Ω) Approx. 108 – 132 osis Procedure". On". /B) harness connector.
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp s the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS 1. Disconnect the fus 2. Check the continuit ECM harnes Connector No.	JPPLY AND GROUNI y and the ground circl normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM f is connector Terminal No.	Terminal No. Terminal No. Eation? D CIRCUIT uit of the ECM. Refer to the ECM branch line. the ECM branch line. the ground circuit. N CIRCUIT) connector M133. harness connector and Fuse block (J/B) ha Connector No.	113 o EC-188, "Diagn oval and Installation d the fuse block (J arness connector Terminal No.	Resistance (Ω) Approx. 108 – 132 osis Procedure". on". /B) harness connector. Continuity
Connector No. M37 s the measurement var YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp s the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS 1. Disconnect the fus 2. Check the continuit ECM harnes Connector No. M37	JPPLY AND GROUNI y and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM f is connector Terminal No. 114	Terminal No. Terminal No. Cation? D CIRCUIT uit of the ECM. Refer to the ECM branch line. a ground circuit. N CIRCUIT) connector M133. harness connector and Fuse block (J/B) ha Connector No. M133	113 0 EC-188. "Diagn oval and Installation by al and Installation arness connector Terminal No. 21C	Resistance (Ω) Approx. 108 – 132 osis Procedure". Dn". /B) harness connector. Continuity Existed

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789098

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

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.

	Resistance (O)		
Connector No.	Termi		
M25	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 >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

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

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M25	6 M123	M122	23C	Existed
IWI25	14	M133	5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009789099 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). IPDM E/R Harness connector E64 and fuse block (J/B) side connector D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. 1. F Check the resistance between the IPDM E/R harness connector terminals. 2. IPDM E/R harness connector Resistance (Ω) Connector No. Terminal No. E121 Approx. 54 - 66 29 28 Is the measurement value within the specification? Н YES >> GO TO 3. NO >> GO TO 4. ${ m 3.check}$ power supply and ground circuit Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-36, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line. >> Repair the power supply and the ground circuit. NO Κ 4.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the harness connector E64. Check the continuity between the IPDM E/R harness connector and harness connector. 2. L IPDM E/R harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. LAN

Is the measurement value within the specification?

29

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YES >> Replace the fuse block (J/B).

E121

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

E64

6E

2E

Existed

Existed

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789100

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F12
- Harness connector E10
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

	Resistance (O)		
Connector No.	Termi		
F2	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to <u>TM-218</u>, "Exploded View"

Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector	Continuity
Terminal No.	Terminal No.	Continuity
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-181, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-218, "Exploded View".

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

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

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector E65.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

E2	3	F65	9F	Existed	^
12	8		5F	Existed	A

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789101

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	Posistanco (O)		
Connector No.	Termi		
M88	1	21	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 <u>HAC-92, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-113, "Removal and Installation".

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

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

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

h OFF. / cable from the negative term and connectors of the comb for side). minal and connector. R OPEN CIRCUIT ctor of combination meter. Detween the combination meter. Combination meter harness connect Termin 41 within the specification?	minal. ination meter for damage, eter harness connector term ctor nal No. 42	bend and loose connection hinals.
h OFF. / cable from the negative term and connectors of the combi- cor side). <u>mal?</u> minal and connector. R OPEN CIRCUIT ctor of combination meter. Detween the combination meter. Combination meter harness connect Termin 41 within the specification?	minal. ination meter for damage, eter harness connector term ctor nal No. 42	bend and loose connection ninals. Resistance (Ω) Approx. 54 – 66
h OFF. / cable from the negative ter and connectors of the comb or side). <u>mal?</u> minal and connector. R OPEN CIRCUIT ctor of combination meter. between the combination meter. Combination meter harness connect Terming 41 within the specification?	minal. ination meter for damage, eter harness connector term ctor nal No. 42	bend and loose connection ninals. Resistance (Ω) Approx. 54 – 66
minal and connector. R OPEN CIRCUIT ctor of combination meter. between the combination me Combination meter harness connect Termin 41 within the specification?	eter harness connector term ctor inal No. 42	ninals. Resistance (Ω) Approx. 54 – 66
ctor of combination meter. between the combination me Combination meter harness connect Termi 41 within the specification?	eter harness connector term ctor nal No. 42	ninals. Resistance (Ω) Approx. 54 – 66
Combination meter harness conner Termi 41 within the specification?	ctor nal No. 42	Resistance (Ω) Approx. 54 – 66
41 within the specification?	nal No. 42	Approx. 54 – 66
41 within the specification?	42	Approx. 54 – 66
within the specification?		
nbination meter branch line. ² LY AND GROUND CIRCUI	T combination meter. Refer to	MWI-104, "COMBINATION
dure". mal? place the combination meter was detected in the combina wer supply and the ground c	r. Refer to <u>MWI-126, "Remo</u> ation meter branch line. ircuit.	oval and Installation".
⊆ I I V V	<u>Jure"</u> . <u>nal?</u> place the combination mete vas detected in the combina <i>v</i> er supply and the ground c	<u>Jure</u> ". <u>nal?</u> place the combination meter. Refer to <u>MWI-126, "Remo</u> vas detected in the combination meter branch line. ver supply and the ground circuit.

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A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

Diagnosis Procedure

INFOID:000000009789103

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

AV BRANCH LINE (CIRCUIT			Λ
Diagnosis Procedure			INF01D:000000009789104	A
1.CHECK CONNECTOR				В
 Turn the ignition switch 9 Disconnect the battery of 3 Check the terminals and (unit side and connector) 	OFF. cable from the negative term d connectors of the display r side).	ninal. y control unit for damage, l	bend and loose connection	С
Is the inspection result norm	al?			
YES >> GO TO 2.				D
2 OUFOK LADNEGO FOD	nal and connector.			
Z.CHECK HARNESS FOR				Е
 Disconnect the connect Check the resistance be 	or of display control unit. etween the display control u	init harness connector term	inals.	
Dis	splay control unit harness connec	tor		F
Connector No.	Termin	al No.	Resistance (Ω)	
M100	29	17	Approx. 54 – 66	(-
Is the measurement value w	ithin the specification?			
YES >> GO TO 3.	av control unit			
				ŀ
Check the power supply and TROL UNIT : Diagnosis Providence of the inspection result norm	the ground circuit of the c cedure".	display control unit. Refer t	o AV-239, "DISPLAY CON-	
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the display control unit as detected in the display c ar supply and the ground ci	. Refer to <u>AV-277, "Remova</u> ontrol unit branch line. rcuit.	al and Installation".	J
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TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789111

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 TCU 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 TCU.

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

	Posistanco (O)		
Connector No.	Termi		
M81	9	10	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCU branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCU. Refer to <u>AV-589, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation".

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

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

BCM BRANCH LINI	ECIRCUIT					
Diagnosis Procedure						
1.CHECK CONNECTOR	1. CHECK CONNECTOR					
 Turn the ignition switch Disconnect the battery of Check the terminals and connector side). 	OFF. able 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 normYES>> GO TO 2.NO>> Repair the termi2.CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT					
 Disconnect the connect Check the resistance be 	or of BCM. Itween the BCM harness co	onnector terminals.				
	BCM harness connector		Resistance (O)			
Connector No.	Termir	nal No.				
M14	60	59	Approx. 54 – 66			
YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPL	Ithin the specification? branch line. Y AND GROUND CIRCUI7	T				
Check the power supply and	I the ground circuit of the B	CM. Refer to <u>BCS-91, "Dia</u>	gnosis Procedure".			
Is the inspection result normal?						
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the BCM. Refer to <u>BC</u> as detected in the BCM bra ar supply and the ground ci	S-98, "Removal and Installa Inch line. rcuit.	<u>ation"</u> .			

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789113

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ABS actuator and electric unit (control unit)
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
1012-4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. 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	Posistanco (O)		
Connector No.	Termi		
E35	25	15	Approx. 54 - 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

4.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-154, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-178, "Removal</u> and Installation".
- 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.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of harness connector E65.
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.
- With around view monitor system

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and elect harness c	tric unit (control unit) onnector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E25	25	E65	6F	Existed
E35 -	15 E03 7F	7F	Existed	
Without around view m	onitor system			
ABS actuator and elect harness c	tric unit (control unit):	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F25	25	For	8F	Existed
E30	15	E00	3F	Existed
the inspection result nor	mal?			
YES >> Replace the fu NO >> Repair the har E35 and the ha	se block (J/B) ness between the ABS arness connector E65	actuator and electric	unit (control unit) ł	narness connecto

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CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) RCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 2)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:000000009798678

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).
- Chassis control module
- Harness connectors E47
- Harness connectors M39
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	6	Existed	
	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 $\mathbf{3}$. Check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of chassis control module.
- 3. Check the resistance between the chassis control module harness connector terminals.

Cha	Resistance (O)		
Connector No.	Termi		
E22	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the chassis control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-541</u>, "Diagnosis <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-542, "Removal and Installation".

YES (Past error)>>Error was detected in the chassis control module branch line.

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

STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000009789124
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the following ter nector side). 	OFF. cable from the negative terr minals and connectors for d	ninal. lamage, bend and loose cor	nnection (unit side and con-
CAN gateway (Models Is the inspection result norr	with around view monitor sy nal?	/stem)	
YES-1 >> Models with ar YES-2 >> Models without NO >> Repair the term	ound view monitor system: (t around view monitor system ninal and connector.	GO TO 2. n: GO TO 3.	
 CHECK HARNESS COI Disconnect the connect Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha) arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	
M24	4	6	Existed
 CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b 	R OPEN CIRCUIT of CAN gateway (Models w tor of steering angle sensor etween the steering angle s	ith around view monitor sys	tem). rminals.
Ste	eering angle sensor harness conne	ector	
Connector No.	Termir	nal No.	Resistance (Ω)
M77	5	2	Approx. 54 – 66
Is the measurement value YES >> GO TO 4. NO >> Repair the stee 4.CHECK POWER SUPP	within the specification? ering angle sensor branch lir LY AND GROUND CIRCUIT	ne F	
Check the power supply a <u>Procedure"</u> .	nd the ground circuit of the	steering angle sensor. Ref	er to <u>BRC-123, "Diagnosis</u>
YES (Present error)>>Re YES (Past error)>>Error v NO >> Repair the pow	Date the steering angle sen vas detected in the steering ver supply and the ground ci	sor. Refer to <u>BRC-180, "Re</u> angle sensor branch line. rcuit.	moval and Installation".
	-		

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009790834

[CAN SYSTEM (TYPE 2)]

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.

	Continuity		
Connector No.	Termi	Continuity	
M25	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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	
M25	6	Ground	Not existed	
	14	-	Not existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

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

3. Check the resistance between the BCM terminals.

BCM		Resistance (Q)	
Terminal No.			
60 59		Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5.CHECK SYMPTOM

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

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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000009789125

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 M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M65.
- 2. Check the continuity between the fuse block (J/B) terminals.

Fuse block (J/B)		Continuity	
Terminal No.	Terminal No.	Continuity	
23C	22C	Existed	
5C	4C	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

 Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness connector.

Fuse block (J/B) harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133 -	22C	Μοο	1	Existed
	4C	IVIOO	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 fuse block (J/B) harness connector M133 and the A/C auto amp.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 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.
- Display control unit
- Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. harness connector		Display control unit harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M88	1	M100	29	Existed	E
	21	WITOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

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[CAN SYSTEM (TYPE 3)]

INFOID:000000009789126

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789128

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. M37 114 113 Approx. 108 – 132	ECM harness connector			Posistanco (O)
M37 114 113 Approx. 108 – 132	Connector No.	Termi		
	M37	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-188, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the fuse block (J/B) harness connector M133.

2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ess connector	Fuse block (J/B) harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Connector No. Terminal No.		
MOZ	114	M122	21C	Existed	
10137	113	- WI135	3C	Existed	

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT					Δ		
Diagnosis Procedure					A		
1.CHECK CONNECT	OR				В		
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side). Data link connector Harness connector M133 and fuse block (J/B) side connector Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT 				C D E			
Check the resistance b	etween the data link o	connector terminals.			F		
	Data link con	nector		Resistance (Ω)			
Connector No.		Terminal No.			0		
M25	6		14	Approx. 54 – 66	G		
Is the measurement value within the specification? YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the data link connector branch line circuit. NO >> GO TO 3. 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the harness connector M133.					H		
2. Check the continuity between the data link connector and the harness connector.					J		
				Continuity			
	6		230	Existed	K		
M25	14	M133	5C	Existed			
Is the inspection result	Is the inspection result normal?						

YES >> Replace the fuse block (J/B).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789130

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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			Posistanco (O)	
Connector No.	Termi	Terminal No.		
E121	29	Approx. 54 – 66		

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

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

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the harness connector E64.
- 2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R har	IPDM E/R harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
E121	29	E64	6E	Existed
LIZI	28	L04	2E	Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

TCM BRANCH LIN	E CIRCUIT				٨
Diagnosis Procedure					A
1.CHECK CONNECTOR					В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly 	OFF. cable from the n ninals and conn	egative terminal. ectors for damage, l	pend and loose cor	nnection (unit side and con-	С
 Harness connector F12 Harness connector E10 Harness connector E65 	and fuse block	(J/B) side connector	r		D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	nal? inal and connec	tor.			Е
2. CHECK HARNESS FOR	OPEN CIRCUI	Т			F
 Disconnect the connect Check the resistance be 	or of A/T assem etween the A/T a	bly. assembly harness co	onnector terminals.		G
Connector No.	A/T assembly harn	ess connector Terminal No.		Resistance (Ω)	
F2	3		8	Approx. 54 – 66	Н
3.CHECK HARNESS FOR 1. Remove the joint connect 2. Check the continuity be side of the joint connect	OPEN CIRCUI ctor. Refer to \underline{T} tween the A/T a or.	T <u>M-218, "Exploded Vi</u> ssembly harness co	<u>ew"</u> onnector side and t	he TCM harness connector	J
A/T assembly harness connec	tor side	TCM harness connect	or		Κ
Terminal No.		Terminal No.		Continuity	
3		3		Existed	L
8		8		Existed	
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPL	nal? nt connector. Y AND GROUN	D CIRCUIT			LAN
Check the power supply and	d the ground circ	cuit of the TCM. Ref	er to <u>TM-181, "Diac</u>	nosis Procedure".	IN
Is the inspection result normal?					
YES (Present error)>>Replace the control valve & TCM. Refer to <u>TM-218. "Exploded View"</u> . YES (Past error)>>Error was detected in the TCM branch line. NO >> Repair the power supply and the ground circuit.					0
5. CHECK HARNESS CON	ITINUITY (OPEI	N CIRCUIT)			Ρ
 Disconnect the harness Check the continuity be 	connector E65. tween the A/T a	ssembly harness co	nnector and the ha	irness connector.	
A/T assembly harness	connector	Harnes	ss connector		

_	Connector No.	Terminal No.	Connector No.	Terminal No.	

< DTC/CIRCUIT DIAGNOSIS >

Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

F2	3	F65	9F	Existed
	8	205	5F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.
HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

HVAC BRANCH LIN	VE CIRCUIT		
Diagnosis Procedure			INFOID:000000009789132
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an side and connector side 	OFF. cable from the negative tern d connectors of the A/C au e).	ninal. Ito amp. for damage, bend	and loose connection (unit
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2.CHECK HARNESS FOR			
 Check the resistance be 	etween the A/C auto amp. h	arness connector terminals	3.
	A/C auto amp. harness connector	ſ	Resistance (Q)
Connector No.	Termin	nal No.	
		21	Approx. 34 – 66
YES >> GO TO 3. NO >> Repair the A/C 3. CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUIT		
Check the power supply an Diagnosis Procedure".	d the ground circuit of the	A/C auto amp. Refer to <u>h</u>	IAC-92, "A/C AUTO AMP. :
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the A/C auto amp. Ref as detected in the A/C auto er supply and the ground cir	er to <u>HAC-113, "Removal a</u> amp. branch line. rcuit.	<u>ind Installation"</u> .

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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789133

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

C	Posistanco (O)		
Connector No.	Termi		
M58	41 42		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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-126, "Removal and Installation".

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

[CAN SYSTEM (TYPE 3)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009789134 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789138

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the display 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 display control unit.
- 2. Check the resistance between the display control unit harness connector terminals.

Display control unit harness connector			Posistanco (O)
Connector No.	Termi		
M100	29 17		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the display control unit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the display control unit. Refer to <u>AV-239, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-277, "Removal and Installation"</u>.

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

BCM BRANCH LINE CIRCUIT

BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			r INFOID:000000009789139
1. CHECK CONNECTOR			E
 Turn the ignition switch Disconnect the battery of Check the terminals and connector side). Is the inspection result norm 	OFF. cable from the negative terr d connectors of the BCM f al?	ninal. or damage, bend and loose	e connection (unit side and
YES >> GO TO 2. NO >> Repair the termi	inal and connector.		Ε
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of BCM. Stween the BCM harness co	onnector terminals.	E
	BCM harness connector		Resistance (Ω)
Connector No.	Termir	nal No.	
M14	60	59	Approx. 54 – 66
Is the measurement value wYES>> GO TO 3.NO>> Repair the BCM 3. CHECK POWER SUPPL	i <u>thin the specification?</u> I branch line. Y AND GROUND CIRCUIT	-	ŀ
Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the power	the ground circuit of the B al? lace the BCM. Refer to <u>BC</u> as detected in the BCM bra er supply and the ground ci	CM. Refer to <u>BCS-91, "Diac</u> S-98, "Removal and Installa inch line. rcuit.	gnosis Procedure".
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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789140

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ABS actuator and electric unit (control unit)
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	Existed		
1012-4	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. 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			Posistanco (O)
Connector No.	Termi		
E35	25 15		Approx. 54 - 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

4.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-154, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-178, "Removal</u> and Installation".
- 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.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of harness connector E65.
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.
- With around view monitor system

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and ele harness o	ctric unit (control unit) connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E25	25	EG5	6F	Existed	
E30	15	E05	7F	Existed	
Without around view n	nonitor system				
ABS actuator and electron harness of	ctric unit (control unit) connector	Harness	connector	Continuity	
ABS actuator and ele harness c Connector No.	ctric unit (control unit) connector Terminal No.	Harness of Connector No.	connector Terminal No.	Continuity	
ABS actuator and elec harness of Connector No.	ctric unit (control unit) connector Terminal No. 25	Harness of Connector No.	connector Terminal No. 8F	Continuity Existed	

YES >> Replace the fuse block (J/B)
 NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector F
 E35 and the harness connector E65

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EPS/DAST 3 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789142

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering force control module
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
WZ4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of steering force control module.
- 3. Check the resistance between the steering force control module harness connector terminals.

Steerin	Posistance (O)		
Connector No.	Termi		
M71	14 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering force control module. Refer to <u>STC-407, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427</u>, "<u>Removal and Installa-</u> <u>tion</u>".

YES (Past error)>>Error was detected in the steering control module branch line.

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procoduro

Diagnosis Procedure			INFOID:00000009798679	
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative tern ninals and connectors for d	ninal. amage, bend and loose co	onnection (unit side and con-	С
 Chassis control module Harness connectors E4 Harness connectors M3 CAN gateway (Models) 	7 9 with around view monitor sy	vstem)		D
Is the inspection result norm	al?			E
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	und view monitor system: C around view monitor system inal and connector.	GO TO 2. n: GO TO 3.		
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)			F
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals		G
	CAN gateway harness connector		Continuity	
Connector No.	Termin	nal No.	r Fridata d	H
M24	4	6 12	Existed	
 NO >> Check the harn 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be 	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models with or of chassis control module etween the chassis control r	ith around view monitor sy e. module harness connector	stem). terminals.	J
Cha	ssis control module harness conne	ector	Resistance (Ω)	L
Connector No.	Termin	nal No.		
E22	4	3	Approx. 54 – 66	1 ^
YES >> GO TO 4. NO >> Repair the chas 4.CHECK POWER SUPPL	sis control module branch li Y AND GROUND CIRCUIT	ine.	ofor to DAS 541 "Diognasia	N
Procedure".	a the ground circuit of the c	chassis control module. R	eler to <u>DAS-541, Diagnosis</u>	
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	<u>ial?</u> lace the chassis control mo as detected in the chassis c er supply and the ground cil	dule. Refer to <u>DAS-542, "I</u> control module branch line rcuit.	Removal and Installation".	P

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789144

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4 6		Existed	
10124	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	Basistanas (O)		
Connector No.	Termi	- Resistance (12)	
M77	5	Approx. 54 – 66	
	hin the energification?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "Diagnosis <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180, "Removal and Installation".

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

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure			INFOID:00000009789146
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Steering angle main cor Chassis control module Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS CON 	OFF. cable from the negative terr ninals and connectors for d ntrol module <u>nal?</u> inal and connector. ITINUITY (OPEN CIRCUIT	ninal. amage, bend and loose co	nnection (unit side and con-
 Disconnect the connect Check the continuity be 	or of chassis control modul tween the chassis control r	e. nodule harness connector t	erminals.
Connector No.	ssis control module harness conn	ector	Continuity
	19	11	Fxisted
E22	7	8	Existed
YES >> GO TO 3. NO >> Check the harn cation circuit sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	ess and repair or replace (i de). OPEN CIRCUIT of chassis control module. or of steering angle main c etween the steering angle r	f shield line is open) the roo ontrol module. nain control module harnes	ot cause (chassis communi-
Steering a	ngle main control module harness	s connector	Desistance (O)
Connector No.	Termiı	nal No.	Resistance (12)
E26	14	15	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO >> Repair the steer 4.CHECK POWER SUPPL Check the power supply and "Diagnosis Procedure". Is the inspection result norm YES (Present error)>>Rep Installation".	vithin the specification? ring angle main control mod Y AND GROUND CIRCUIT d the ground circuit of the s nal? lace the steering angle ma	dule branch line. Steering angle main control ain control module. Refer t	module. Refer to <u>STC-407.</u> to <u>STC-428, "Removal and</u>
YES (Past error)>>Error w	as detected in the steering	angle main control module	branch line.

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

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009790742

[CAN SYSTEM (TYPE 3)]

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	
M25	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
M25	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

ECM Terminal No.		- Resistance (Ω)	

3. Check the resistance between the BCM terminals.

BCM		- Resistance (Ω)	
Terminal No.			
60	59	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5.CHECK SYMPTOM

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

LAN-228

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009790743

[CAN SYSTEM (TYPE 3)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.

Are the CAN communication 1 and/or CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

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

Check the continuity between the chassis control module harness connector.

Connector No. Terminal No. E22 19 7 Not existed	Chassis control module harness connector			Continuity
E22 19 7 Not existed	Connector No.	Terminal No.		Continuity
	E22	19	7	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control module harness connector			Continuity
Connector No.	Connector No. Terminal No.		Conunuity
M22	19	- Ground	Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

${f 5.}$ CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

1. Remove the chassis control module.

2. Check the resistance between the chassis control module terminals.

Chassis control module Terminal No.		- Resistance (Ω)	
11	8	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 3)]
Connect all the connectors. Check if the symptoms described in the "Symptocustomer)" are reproduced.	m (Results from interview with A
Inspection result	
Reproduced>>GO TO 7. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	procedure when past error is B
7. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit.	C
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of chassis communication circuit. 	D
 Chassis control module has two termination circuits. Check other units first Connect the battery cable to the negative terminal. Check if the symptot (Results from interview with customer)" are reproduced. NOTE: 	t. ms described in the "Symptom $_{ extsf{E}}$
Although unit-related error symptoms occur, do not confuse them with oth	er symptoms.
Inspection result	F
Reproduced>>Connect the connector. Check other units as per the above pr Non-reproduced>>Replace the unit whose connector was disconnected.	G

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000009789147

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 M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M65.
- 2. Check the continuity between the fuse block (J/B) terminals.

Fuse block (J/B)		Continuity	
Terminal No.	Terminal No.		
23C	22C	Existed	
5C	4C	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

 Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness connector.

Fuse block (J/B) harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133	22C	Mgg	1	Existed
	4C	IVIOO	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 fuse block (J/B) harness connector M133 and the A/C auto amp.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 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.
- Display control unit
- Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit	harness connector	Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
Moo	1	M400	29	Existed	E
IVIOO	21	WITOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

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[CAN SYSTEM (TYPE 4)]

INFOID:000000009789148

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789151

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. M37 114 113 Approx. 108 – 132		Resistance (Ω)		
M37 114 113 Approx. 108 – 132	Connector No. Terminal No.			
	M37	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-188, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the fuse block (J/B) harness connector M133.

2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ess connector	Fuse block (J/B) I	narness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M27	114	M122	21C	Existed
10137	113	- WI135	3C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

DLC BRANCH LIN	IE CIRCUIT				Λ
Diagnosis Procedure	Э			INFOID:000000009789152	A
1.CHECK CONNECTOR					В
 Turn the ignition switc Disconnect the batter Check the following tand harness side). Data link connector Harness connector M Is the inspection result no YES >> GO TO 2. NO >> Repair the ter CHECK HARNESS FC Check the resistance betw 	th OFF. y cable from the n erminals and con 133 and fuse bloc <u>rmal?</u> minal and connec PR OPEN CIRCUI veen the data link	egative terminal. nectors for damage, k (J/B) side connector tor. T connector terminals.	bend and loose con	nection (connector side	C D E
	Data link cor				F
Connector No.		Terminal No.		Resistance (Ω)	
M25	6		14	Approx. 54 – 66	G
Is the measurement value YES (Present error)>>CI YES (Past error)>>Error NO >> GO TO 3. 3.CHECK HARNESS CO 1. Disconnect the harne	within the specific neck CAN system was detected in th DNTINUITY (OPEN ss connector M13	cation? type decision again. ne data link connector N CIRCUIT) 3.	branch line circuit.		H
2. Check the continuity b	between the data I	ink connector and the	harness connector.		J
Data link con	Torminal No.	Harness	Torminal No	Continuity	
		Connector NO.		Evisted	k
M25	14	M133	50	Existed	1
Is the inspection result no	rmal?				I

YES >> Replace the fuse block (J/B).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789153

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. E121 29 28 Approx. 54 – 66		Resistance (O)		
E121 29 28 Approx. 54 – 66	Connector No.	Termi	Resistance (12)	
	E121	29	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the harness connector E64.

2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F121	29	E64	6E	Existed
	28	L04	2E	Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

TCM BRANCH LINI	E CIRCUIT				^
Diagnosis Procedure				INFOID:000000009789154	A
1.CHECK CONNECTOR					В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly 	OFF. cable from the n ninals and conn	egative terminal. ectors for damage, be	end and loose con	nection (unit side and con-	С
 Harness connector F12 Harness connector E10 Harness connector E65 	and fuse block	(J/B) side connector			D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	nal? inal and connec	tor.			E
2.CHECK HARNESS FOR	OPEN CIRCUI	Т			F
 Disconnect the connect Check the resistance be 	or of A/T assem etween the A/T a	bly. assembly harness con	nector terminals.		G
Connector No.	A/T assembly harn	ess connector Terminal No.		Resistance (Ω)	
F2	3		8	Approx. 54 – 66	Н
3.CHECK HARNESS FOR 1. Remove the joint conner 2. Check the continuity be side of the joint connect	OPEN CIRCUI ctor. Refer to \underline{T} tween the A/T a or.	T <u>M-218, "Exploded Viev</u> Issembly harness con	<u>v"</u> nector side and th	ne TCM harness connector	J
A/T assembly harness connec	tor side	TCM harness connector			Κ
Terminal No.		Terminal No.		Continuity	
3		3		Existed	L
8		8		Existed	
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPL	nal? nt connector. Y AND GROUN	ID CIRCUIT			LAN
Check the power supply and	d the ground circ	cuit of the TCM. Refer	to TM-181, "Diag	nosis Procedure".	N
Is the inspection result norm	nal?				
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the control as detected in the er supply and the	valve & TCM. Refer to ne TCM branch line. e ground circuit.	o <u>TM-218, "Explo</u> c	ded View".	0
5. CHECK HARNESS CON	ITINUITY (OPEI	N CIRCUIT)			Ρ
 Disconnect the harness Check the continuity be 	connector E65. tween the A/T a	ssembly harness con	nector and the ha	rness connector.	
A/T assembly harness	connector	Harness	connector		

				Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

F2	3	E65	9F	Existed
ΓZ	8	200	5F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

HVAC BRANCH LIN	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:00000009789155	A
1. CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals an side and connector side Is the inspection result norm 	OFF. cable from the negative terr d connectors of the A/C au). hal?	ninal. ito amp. for damage, bend	and loose connection (unit	С
YES $>>$ GO TO 2. NO $>>$ Repair the term 2. CHECK HARNESS FOR	inal and connector.			D
 Disconnect the connect Check the resistance be 	or of A/C auto amp. etween the A/C auto amp. h	narness connector terminals	S.	Ε
	A/C auto amp. harness connecto	r	Resistance (O)	F
Connector No.	Termir	nal No.		
M88	1	21	Approx. 54 – 66	G
YES >> GO TO 3. NO >> Repair the A/C a 3.CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUIT	-		Н
Check the power supply an Diagnosis Procedure".	d the ground circuit of the	A/C auto amp. Refer to \underline{H}	AC-92, "A/C AUTO AMP. :	I
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lar? lace the A/C auto amp. Ref as detected in the A/C auto er supply and the ground ci	er to <u>HAC-113, "Removal a</u> amp. branch line. rcuit.	nd Installation".	J
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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789156

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

C	Resistance (O)		
Connector No.	Termi		
M58	41	42	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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-126, "Removal and Installation".

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

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009789157 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the display 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 display control unit.
- 2. Check the resistance between the display control unit harness connector terminals.

Di	Resistance (O)		
Connector No.	Termi		
M100	29	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the display control unit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the display control unit. Refer to <u>AV-239, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-277, "Removal and Installation"</u>.

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

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

INFOID:000000009789158

TCU BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

TCU BRANCH LINE	CIRCUIT				
Diagnosis Procedure					
1. CHECK CONNECTOR					
 Turn the ignition switch (2. Disconnect the battery of 3. Check the terminals and connector side). 	OFF. able from the negative terr d connectors of the TCU f	minal. or damage, bend and loos	e connection (unit side and		
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi	al? nal and connector.				
 Disconnect the connect Check the resistance be 	or of TCU. tween the TCU harness co	onnector terminals.			
	TCU harness connector		Resistance (0)		
Connector No.	Termiı	nal No.			
M81	9	10	Approx. 54 – 66		
YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm	branch line. Y AND GROUND CIRCUIT the ground circuit of the T al?	Г СU. Refer to <u>AV-589, "TCU</u>	: Diagnosis Procedure".		
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the TCU. Refer to <u>AV-</u> as detected in the TCU bra er supply and the ground ci	597, "Removal and Installat nch line. rcuit.	<u>ion"</u> .		

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789162

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

BCM harness connector			Posistanco (O)
Connector No.	Terminal No.		
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-98, "Removal and Installation"</u>.

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

ABS BRANCH LINE			
Diagnosis Procedure			INFOID:000000009789163
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative terr ninals and connectors for d	ninal. lamage, bend and loose cor	nection (unit side and con-
 ABS actuator and electric Harness connector E65 Is the inspection result norm 	ic unit (control unit) and fuse block (J/B) side c aal?	connector	
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	und view monitor system: (around view monitor syster inal and connector.	GO TO 2. n: GO TO 3.	
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector	-	Continuity
Connector No.	Termir	nal No.	
M24	4	6	Existed
 Connect the connector of Disconnect the connect Check the resistance bounds. 	of CAN gateway (Models w or of ABS actuator and elec etween the ABS actuator a	ith around view monitor sys ctric unit (control unit). Ind electric unit (control unit	tem).) harness connector termi-
ABS actuator	and electric unit (control unit) harr	ness connector	Resistance (Ω)
E25	1ermir 25	15	Approx 54 66
<u>s the measurement value w</u> YES >> GO TO 4. NO >> GO TO 5. 4. CHECK POWER SUPPL	<u>rithin the specification?</u> Y AND GROUND CIRCUIT	·~	
Check the power supply an BRC-154, "Diagnosis Proce	d the ground circuit of the dure".	ABS actuator and electric	unit (control unit). Refer to
s the inspection result norm YES (Present error)>>Rep and Installation	al? lace the ABS actuator and	electric unit (control unit). Re	efer to <u>BRC-178, "Removal</u>
NO >> Repair the power 5	as delected in the ABS actions are actions and the ground ci	rcuit.	or unity pranch line.
) 	
 Disconnect the connect Check the resistance be nals. 	or of harness connector E6 etween the ABS actuator a	5. Ind electric unit (control unit) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-245

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	6F	Existed
E35	15	205	7F	Existed

- Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Harness connector Continuit		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.				
E35	25	E65	8F	Existed		
E35	15	205	3F	Existed		

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

[CAN SYSTEM (TYPE 4)]

EPS/DAST 3 BRAN	ICH LINE CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000009789164	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Steering force control m CAN gateway (Models) 	OFF. cable from the negative terr ninals and connectors for d nodule with around view monitor sy	ninal. amage, bend and loose cor rstem)	nnection (unit side and con-	С
Is the inspection result norm	nal?	,		D
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	und view monitor system: (around view monitor syster inal and connector.	GO TO 2. n: GO TO 3.		E
Z .CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)			
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.		F
	CAN gateway harness connector		Continuity	G
Connector No.	Termir	al No.	Continuity	
M24	4	6	Existed	Ы
	10	12	Existed	
YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid 3. CHECK HARNESS FOR	ess and repair or replace (i e). OPEN CIRCUIT	f shield line is open) the roo	ot cause (CAN communica-	l J
 Connect the connector Disconnect the connect Check the resistance be 	of CAN gateway (Models w or of steering force control i etween the steering force co	ith around view monitor sys module. ontrol module harness conn	stem). nector terminals.	K
Steering	g force control module harness co		Resistance (Ω)	
M71	14	15	Approx 54 - 66	L
Is the measurement value w	vithin the specification?	10	πρριολ. 34 - 00	
YES >> GO TO 4. NO >> Replace the box 4 CHECK POWER SUPPL	dy harness.			LAN
Check the power supply and nosis Procedure".	d the ground circuit of the s	teering force control module	e. Refer to <u>STC-407, "Diag-</u>	Ν
Is the inspection result norm	nal?			\cap
YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427, "Removal and Installa-</u> <u>tion"</u> . YES (Past error)>>Error was detected in the steering control module branch line.				
YES (Past error)>>Error w NO >> Repair the powe	lace the steering force cont as detected in the steering er supply and the ground cir	trol module. Refer to <u>STC-4</u> control module branch line. rcuit.	127, "Removal and Installa-	P

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) RCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:000000009798681

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).
- Chassis control module
- Harness connectors E47
- Harness connectors M39
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector				
Connector No.	Termi	Continuity			
M24	4	6	Existed		
M24	10	12	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 $\mathbf{3}$.check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of chassis control module.
- 3. Check the resistance between the chassis control module harness connector terminals.

Cha	$Resistance\left(\mathbf{O}\right)$		
Connector No.	Termi		
E22	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the chassis control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-541</u>, "Diagnosis <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-542, "Removal and Installation".

YES (Past error)>>Error was detected in the chassis control module branch line.

Diagnosis Procedure 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). 3. Check the following terminal and connector. YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models with around view monitor system: GO TO 3. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. Quart Angless S ON TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). 3.CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of Steering angle sensor. 3. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector ferminals. Steering angle sensor harness connector ferminals. Steering angle sensor harness connector ferminals. Steering angle sensor harness co	STRG BRANCH LI	NE CIRCUIT		
CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). Steering angle sensor CAN gateway (Models with around view monitor system) the inspection result normal? YES-1 >> Models with out around view monitor system: GO TO 2. YES-2 >> Models with around view monitor system: GO TO 3. NO >> Repair the terminal and connector. CAN gateway harness connector terminals. CAN gateway (Models with around view monitor system). Steeting angle sensor. Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of CAN gateway for the ste	Diagnosis Procedure			INFOID:000000009789166
Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). Steering angle sensor CAN gateway (Models with around view monitor system) sthe inspection result normal? YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models with around view monitor system: GO TO 3. NO >> Repair the terminal and connector. .CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. . Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 4 6 M24 10 12 Existed NO >> Check the harness and repair the root cause (CAN communication circuit). Continuity CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the steering angle sensor. Check the harness and repair the root cause (CAN communication circuit). Check the harness connector Resistance (Q) Connect No. Terminal No. Resistance (Q) Resistance (Q) Connect the connector of CAN gateway (Model	.CHECK CONNECTOR			
CAN gateway (Models with around view monitor system) is the inspection result normal? YES-1 >> Models without around view monitor system: GO TO 2. YES-2 >> Models without around view monitor system: GO TO 3. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. CAN gateway hamess connector Connector No. Terminal No. Continuity M24 4 6 Existed M24 10 12 Existed is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of steering angle sensor harness connector terminals. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector terminals. M77 5 2 Approx.54 - 66 is the measurement value within the specification? YES >> GO TO 4. NO >> Repair the steering angle sensor barnes connector terminals. CHECK POWER SUPPLY AND GROUND CIRCUIT Connect repower supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123. "Diagnosis Procedure"</u> . Steering angle sensor barnet ine .CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123. "Diagnosis Procedure"</u> . Steering angle sensor barnet. Ine. NO >> Repair the power supply and the ground circuit.	 Turn the ignition switch Disconnect the battery Check the following tennector side). Steering angle sensor 	OFF. cable from the negative terr minals and connectors for d	ninal. lamage, bend and loose co	nnection (unit side and con-
Ithe inspection result normal? YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models without around view monitor system: GO TO 3. NO >> Repair the terminal and connector. Interpretation result normal? Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 6 Existed M24 10 12 Existed Ithe inspection result normal? YES >> GO TO 3. Continuity O >> Check the namess and repair the root cause (CAN communication circuit). CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of Steering angle sensor. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Resistance (Ω) M77 5 2 Approx.54 – 66 The measurement value within the specification? YES >> GO TO 4. NO >> Repair the steering angle sensor. Refer to BRC-123. "Diagnosis cocedure". CHECK POWER SUPPLY AND GROUND CIRCUIT The che power supply and the ground circuit of the steering angle sensor. Refer to BRC-123. "Diagnosis cocedure". 'the inspection result normal?	CAN gateway (Models	with around view monitor sy	/stem)	
TCS-1 >> Models without around view monitor system: GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 4 6 Existed 12 Existed the inspection result normal? YES > GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). Center the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of Steering angle sensor. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Resistance (Ω) M77 5 2 Approx.54 – 66 athe measurement value within the specification? YES >> GO TO 4. NO >> Repair the steering angle sensor branch line •.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123. "Diagnosis trocedure". Steering >> Cronect terror>>> Repair the steering angle sensor. Refer to BRC-123. "Diagnosis trocedure". Steering angle sensor branch line •.CHECK POWER	s the inspection result norn	<u>nal?</u> pund view meniter system: (
CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Connector No. M24 M25 Sthe inspection result normal? YES YES So OT 03. NO > Check the harness and repair the root cause (CAN communication circuit). CHECK HARNESS FOR OPEN CIRCUIT . Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of Steering angle sensor harness connector terminals. Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. M77 5 Steering angle sensor branch line AcHeck Harness and repair the steering angle sensor. Refer to BRC-123. "Diagnosis procedure". Steering angle sensor branch line	YES-2 >> Models with arc YES-2 >> Models without NO >> Repair the term	around view monitor system. c around view monitor system ninal and connector.	m: GO TO 3.	
Image: Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. Can gateway harness connector Connector No. Terminal No. M24 4 6 M24 10 12 Existed Sthe inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of steering angle sensor. Connect the connector of Steering angle sensor harness connector terminals. Resistance (Ω) Connector No. Terminal No. Resistance (Ω) Connector No. Terminal No. Resistance (Ω) M77 5 2 Approx.54 - 66 s the measurement value within the specification? YES >> Go TO 4. NO >> Repair the steering angle sensor branch line 4. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123. "Diagnosis Procedure". S the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-130. "Removal and Installation". YES (Present	2. CHECK HARNESS COM	ITINUITY (OPEN CIRCUIT))	
CAN gateway harness connector Continuity Connector No. Terminal No. Continuity M24 4 6 Existed M24 10 12 Existed s. the inspection result normal? YES >S GO TO 3. So So Check the harness and repair the root cause (CAN communication circuit). So So Check the harness and repair the root cause (CAN communication circuit). S. CHECK HARNESS FOR OPEN CIRCUIT Iterminal No. Iterminal No. So So Concert the connector of Steering angle sensor. So Connect the connector of steering angle sensor harness connector terminals. Resistance (Ω) Connector No. Terminal No. Resistance (Ω) Maprox. 54 – 66 S the measurement value within the specification? YES >> GO TO 4. Approx. 54 – 66 NO >> Repair the steering angle sensor branch line Approx. 54 – 66 4. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123, "Diagnosis Procedure". S the inspection result normal? YES (Present error)>> Replace the steering angle sensor. Refer to BRC-180, "Removal and Installation". YES (Past error)>>> Repair the power supply and the ground circuit. Sinspection result and Installation".	 Disconnect the connect Check the continuity be 	tor of CAN gateway. ∌tween the CAN gateway ha	arness connector terminals.	
Connector No. Terminal No. M24 4 6 Existed 10 12 Existed sthe inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). CHECK HARNESS FOR OPEN CIRCUIT . Connect the connector of CAN gateway (Models with around view monitor system). . Disconnect the connector of steering angle sensor. . Connector No. Terminal No. Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. M77 5 2 Approx. 54 – 66 . Steering angle sensor branch line . CHECK POWER SUPPLY AND GROUND CIRCUIT . Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123. "Diagnosis procedure". Steering-result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "Removal and Installation". YES (Present error)>>Replace the steering angle sensor branch line. . YES (Present error)>>Replace the steering angle sensor branch line. . YES		CAN gateway harness connector		Continuity
M24 4 6 Existed 10 12 Existed s the inspection result normal? YES > GO TO 3. YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). O >> Check the harness and repair the root cause (CAN communication circuit). Output Connect the connector of CAN gateway (Models with around view monitor system). Output Disconnect the connector of steering angle sensor. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. M77 5 2 Approx. 54 - 66 Steering angle sensor branch line A.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123, "Diagnosis Procedure". Sthe inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180, "Removal and Installation". YES (Present error)>>Replace the steering angle sensor branch line. NO NO >> Repair the power supply and the ground circuit.	Connector No.	Termir	nal No.	
10 12 Existed Sthe inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). 3. CHECK HARNESS FOR OPEN CIRCUIT . Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of steering angle sensor. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Resistance (Ω) Connector No. M77 5 2 Approx. 54 - 66 s the measurement value within the specification? YES >> GO TO 4. NO >> Repair the steering angle sensor branch line 4. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123. "Diagnosis 'rocedure". s the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "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.	M24	4	6	Existed
Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. M77 5 2 Approx. 54 – 66 a the measurement value within the specification? YES >> GO TO 4. Approx. 54 – 66 NO >> Repair the steering angle sensor branch line CHECK POWER SUPPLY AND GROUND CIRCUIT CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123. "Diagnosis trocedure". Bthe inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "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. Steering angle sensor branch line.	Connect the connector Disconnect the connect Check the resistance be	of CAN gateway (Models w tor of steering angle sensor. etween the steering angle s	ith around view monitor sys ensor harness connector te	stem). erminals.
Connector No. Terminal No. Resistance (Ω) M77 5 2 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 4. NO >> Repair the steering angle sensor branch line	Ste	ering angle sensor harness conne	ector	
M77 5 2 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 4. YES >> Repair the steering angle sensor branch line 4.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-123. "Diagnosis Procedure". BRC-123. "Diagnosis S the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "Removal and Installation". YES (Past error)>>Error was detected in the steering angle sensor branch line. NO NO >> Repair the power supply and the ground circuit.	Connector No.	Termir	nal No.	Resistance (Ω)
 <u>s the measurement value within the specification?</u> YES >> GO TO 4. NO >> Repair the steering angle sensor branch line 1.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>. "Diagnosis Procedure". <u>s the inspection result normal?</u> YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-180</u>. "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. 	M77	5	2	Approx. 54 – 66
 YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-180. "Removal and Installation"</u>. YES (Past error)>>Error was detected in the steering angle sensor branch line. NO >> Repair the power supply and the ground circuit. 	s the measurement value v YES >> GO TO 4. NO >> Repair the stee CHECK POWER SUPPL Check the power supply ar <u>Procedure</u> ". s the inspection result norn	vithin the specification? ring angle sensor branch lin _Y AND GROUND CIRCUIT nd the ground circuit of the nal?	ne F steering angle sensor. Re	fer to <u>BRC-123, "Diagnosis</u>
	YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	blace the steering angle sen vas detected in the steering er supply and the ground ci	sor. Refer to <u>BRC-180, "Re</u> angle sensor branch line. rcuit.	emoval and Installation".

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789167

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of chassis control module.
- 2. Check the continuity between the chassis control module harness connector terminals.

Cha	Chassis control module harness connector				
Connector No.	Termi	Continuity			
E22	19	11	Existed		
E22	7	8	Existed		

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of chassis control module.
- 2. Disconnect the connector of steering angle main control module.
- 3. Check the resistance between the steering angle main control module harness connector terminals.

Steering a	Posistance (O)		
Connector No.	Terminal No.		Resistance (52)
E26	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle main control module branch line.

${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle main control module. Refer to <u>STC-407.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-428</u>, "Removal and <u>Installation"</u>.
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000009789168 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M25 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M25 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 4}$. CHECK ECM AND BCM TERMINATION CIRCUIT Remove the ECM and the BCM. 1. 2. Check the resistance between the ECM terminals. LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 Check the resistance between the BCM terminals. BCM Resistance (Ω) Terminal No. 60 59 Approx. 108 – 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. >> Replace the ECM and/or the BCM. NO 5. CHECK SYMPTOM

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

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< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.
INFOID:000000009789169

А

В

С

D

Е

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Diagnosis Procedure	INFOID:000000009789169
1.CHECK CAN DIAGNOSIS	
Check the CAN diagnosis results from CONSULT to see that the CAN communication communication circuit 2 have no malfunction.	i circuit 1 and/or CAN
Are the CAN communication 1 and/or CAN communication 2 circuits normal?	
YES >> GO TO 2. NO >> Check and repair CAN communication circuit 1 and/or CAN communication $2.$ CONNECTOR INSPECTION	circuit 2.
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on chassis communication circuit. Check terminals and connectors for damage, bend and loose connection. 	
Is the inspection result normal?	
YES >> GO TO 3. NO >> Repair the terminal and connector.	

J.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the chassis control module harness connector.

Connector No. Terminal No. E22 19 7 Not existed	Cha	Chassis control module harness connector			F
E22 19 7 Not existed	Connector No.	Termi	Continuity		
	E22	19	7	Not existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control mod	Chassis control module harness connector		Orationity		
Connector No.	Terminal No.	Ground	Continuity		
	19	Ground	Not existed	L	
IVI22	7		Not existed		

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

5.CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

1. Remove the chassis control module.

Check the resistance between the chassis control module terminals. 2.

	Resistance (Q)	Chassis control module					
D		nal No.	Termi				
- F	Approx. 108 – 132	7	19				
	Approx. 108 – 132	8	11				

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

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CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT 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 7.

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

7. 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 chassis communication circuit. **NOTE:**

Chassis control module has two termination circuits. Check other units first.

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

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

Inspection result

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

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

Ν		BETWE	EEN DLC AND	O HVA		
< DTC/CIRCUIT DIAG			<u> </u>		[CA	N STSTEWI (TTPE 5)]
			3			
MAIN LINE BEI	WEEN DI	LC ANL	D HVAC CIR	CUII		
Diagnosis Procedu	ure					INFOID:000000009789171
1.CHECK CONNECTO	OR					
 Turn the ignition sw Disconnect the bat Check the followin and harness side). Harness connector 	vitch OFF. tery cable fror g terminals a M133 and fu	n the nega nd connec se block (J	itive terminal. tors for damage, //B) side connecto	bend ar r	d loose con	nection (connector side
Is the inspection result YES >> GO TO 2. NO >> Repair the	normal? terminal and o	connector.				
 CHECK HARNESS Disconnect the fuse Check the continuit 	CONTINUITY e block (J/B) ł ty between the	OPEN C narness co e fuse bloc	IRCUIT) nnector M65. k (J/B) terminals.			
	Fuse blo	ock (J/B)				Continuity
Terminal No			Terminal No.			Fuinte d
			22C		Existed	
YES >> GO TO 3. NO >> Replace th 3. CHECK HARNESS	<u>normal?</u> e fuse block (CONTINUITY	J/B). (OPEN C	IRCUIT)			
 Disconnect the cor Check the continuit nector. 	nector of A/C by between the	auto amp e fuse bloc	k (J/B) harness co	onnector	and the A/C	auto amp. harness con-
Fuse block (J/B) h	arness connecto	r	A/C auto amp. I	harness co	nnector	Continuity
Connector No.	Terminal N	lo.	Connector No.	Те	rminal No.	Continuity
M133	22C		M88		1	Existed
	40				2	Existed
YES (Present error)>> YES (Past error)>>Err amp. NO >> Repair the	Check CAN sor was detec	system typ ted in the veen the fu	e decision again. main line betwee ıse block (J/B) haı	en the da	ata link conn	ector and the A/C auto 3 and the A/C auto amp.

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000009789172

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	1	M100	29	Existed
1000	21		17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

< DTG/CIKGUIT DIAGNOSIS >	[CA	N SYSTEM (TYPE 5)]
MAIN LINE BETWEEN ABS AND ADP CIRC	UIT	
Diagnosis Procedure		INFOID:000000009789173
1.CHECK CONNECTOR		
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, and harness side). Harness connector B39 and fuse block (J/B) side connector 	bend and loose cor	nnection (connector side
s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)		
 Disconnect the following harness connectors. Fuse block (J/B) harness connector B39 ABS actuator and electric unit (control unit) Check the continuity between the harness connector termination 	als.	
ABS actuator and electric unit (control unit) harness connector	ck (J/B) terminals	Continuity
Connector No. Terminal No. Te	erminal No.	
E35	6H	Existed
15	4H	Existed
s the inspection result normal?		
s the inspection result normal? YES >> GO TO 3. NO >> Replace the fuse block (J/B). 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of driver seat control unit. 2. Check the continuity between the harness connector and the	e driver seat control u	unit harness connector.
s the inspection result normal? YES >> GO TO 3. NO >> Replace the fuse block (J/B). 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of driver seat control unit. 2. Check the continuity between the harness connector and the Fuse block (J/B) harness connector	e driver seat control u	unit harness connector.
s the inspection result normal? YES >> GO TO 3. NO >> Replace the fuse block (J/B). 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of driver seat control unit. 2. Check the continuity between the harness connector and the Fuse block (J/B) harness connector Driver seat control unit. Connector No.	e driver seat control u init harness connector Terminal No.	Init harness connector.
is the inspection result normal? YES >> GO TO 3. NO >> Replace the fuse block (J/B). 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of driver seat control unit. 2. Check the continuity between the harness connector and the Fuse block (J/B) harness connector Driver seat control unit. Connector No. Terminal No. E39 6H	e driver seat control u init harness connector Terminal No. 1	unit harness connector.

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MAIN LINE BETWEEN ADP AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND AVM CIRCUIT

Diagnosis Procedure

INFOID:000000009789174

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B37
- Harness connector B72

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 B600 and B12
- Harness connectors B37 and B72
- 2. Check the continuity between the harness connector terminals.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B12	1	P27	4	Existed
D12	17	- 537	3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of around view monitor control unit.

2. Check the continuity between the harness connector and the around view monitor control unit.

Harness	connector	Around view monitor control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
D7 2	4	DEO	27	Existed	
BIZ	3	630	28	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 around view monitor control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	
NAAINI I INIE DETVA/EENI	

[CAN SYSTEM (TYPE 5)]

iagnosis Proced	ure			INFOID:000000009789175
.CHECK CONNECT	OR			
Turn the ignition sy Disconnect the bat Check the followin and harness side). Harness connector	witch OFF. Itery cable from the ne ig terminals and coni rs B62	egative terminal. nectors for damage, b	end and loose conn	ection (connector side
Harness connector	rs M22			
'ES >> GO TO 2.	<u>normar:</u>			
IO >> Repair the	terminal and connect	tor.		
CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
Disconnect the foll Around view monit Harness connector Check the continu connector	owing harness conne or control unit rs B62 and M22 ity between the arou	ctors. nd view monitor contra	ol unit harness conn	ector and the harness
With around view r	monitor, without ICC			
Around view mo harness o	nitor control unit connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B50	27	B62	63	Existed
B30		D02		
	28		53	Existed
With ICC	28		53	Existed
With ICC Around view mo	28 nitor control unit	Harness c	53 connector	Existed
With ICC Around view mo harness of Connector No.	28 nitor control unit connector Terminal No.	Harness c Connector No.	53 connector Terminal No.	Existed
With ICC Around view mo harness of Connector No.	28 nitor control unit connector Terminal No. 27	Harness c Connector No.	53 connector Terminal No. 18	Existed Continuity Existed
With ICC Around view mo harness of Connector No. B50	28 nitor control unit connector Terminal No. 27 28	Harness c Connector No. B62	53 connector Terminal No. 18 17	Existed Continuity Existed Existed
With ICC Around view mo harness of Connector No. B50 the inspection result YES >> GO TO 3. NO >> Replace the .CHECK HARNESS Disconnect the har Check the continue	28 nitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne	Harness of Connector No. B62 N CIRCUIT) 5 and M155. ss connectors	53 connector Terminal No. 18 17	Existed Continuity Existed Existed
With ICC Around view mo harness of Connector No. B50 the inspection result (ES >> GO TO 3. NO >> Replace th .CHECK HARNESS Disconnect the har Check the continui With around view r	28 nitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne monitor, without ICC	Harness c Connector No. B62 N CIRCUIT) 5 and M155. ss connectors.	53 connector Terminal No. 18 17	Existed Continuity Existed Existed
With ICC Around view mo harness of Connector No. B50 the inspection result 'ES >> GO TO 3. JO >> Replace th .CHECK HARNESS Disconnect the har Check the continui With around view r Harness Connector No.	28 nitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne monitor, without ICC connector Terminal No.	Harness of Connector No. B62 N CIRCUIT) 5 and M155. ss connectors. Harness of Connector No.	53 connector Terminal No. 18 17 17 connector Terminal No.	Existed Continuity Existed Existed Continuity
With ICC Around view mo harness of Connector No. B50 the inspection result (ES >> GO TO 3. O >> Replace th CHECK HARNESS Disconnect the har Check the continui With around view r Harness of Connector No. Noc	28 nitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne monitor, without ICC connector Terminal No. 63	Harness c Connector No. B62 N CIRCUIT) 5 and M155. ss connectors. Harness c Connector No.	53 connector Terminal No. 18 17 17 connector connector Terminal No. 15	Existed Continuity Existed Existed Continuity Existed

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	18	MOE	14	Existed
IVIZZ	17	0000	6	Existed

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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 around view monitor control unit and the sonar control unit.
- NO >> Repair the main line between the harness connectors M22 and sonar control unit.

MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000009789176

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[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect the following harness connectors. С CAN gateway -Harness connectors M155 and M95 Check the continuity between the harness connector and the data link connector. D Harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Ε 15 13 Existed M95 M25 7 12 Existed F Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000009797486

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M19
- Harness connector B18
- Harness connector M40
- Harness connector E25

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.

- Steering angle main control module

- Harness connectors E25 and M40
- 2. Check the continuity between the harness connectors.

Steering angle manager manager steering angle manager steering steering angle manager steering angle manager st	ain control module connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E26	14	E25	51	Existed
L20	E20 E25	52	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the steering angle main control module and the harness connector E25.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M19 and B18.
- 2. Check the continuity between the harness connectors M40 and M19.

Side radar LH h	narness connector	Harness connector		Inness connector Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M40	51	M40	74	Existed		
10140	52	10119	75	Existed		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M40 and M19.

4.CHECK CONNECTOR

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B18	74	84	Existed
	75	85	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the main line between the harness connector B18.

LAN-262

< DTC/CIRCUIT DIAGNOSIS >

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M75 and R3.

2. Check the continuity between the harness connectors.

Continuity	Harness connector		connector Harness connector		Harness
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.	
Existed	32	N475	84	M19 85	
Existed	31	W175	85		

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 steering angle main control module and the lane camera unit.

NO >> Repair the main line between the harness connectors M19 and the lane camera unit.

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789179

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. M37 114 113 Approx. 108 – 132	ECM harness connector			Resistance (O)
M37 114 113 Approx. 108 – 132	Connector No.	Terminal No.		Resistance (22)
	M37	114 113		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-188, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the fuse block (J/B) harness connector M133.

2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ess connector	Fuse block (J/B) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	114	M122	21C	Existed
10137	113	- WI135	3C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procoduro

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bend and loose co r	nnection (connector side
bend and loose co r	nnection (connector side
	Resistance (Ω)
Terminal No.	
14	Approx. 54 – 66
r branch line circuit	(CAN communication cir-
connector	Orationity
Terminal No.	Continuity
23C	Existed
5C	Existed
	14 r branch line circuit e harness connector connector Terminal No. 23C 5C

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009790746

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector branch line.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- Check the continuity between the CAN gateway harness connector terminals. 2.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 ${
m 3.}$ CHECK HARNESS FOR OPEN CIRCUIT

Connect the connector of CAN gateway. 1.

Check the resistance between the data link connector terminals. 2.

Data link connector			$Posistanco\left(\Omega\right)$
Connector No.	Terminal No.		Resistance (32)
M25	13	12	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 (CAN communication circuit 2 side).

NO >> Repair the data link connector branch line.

IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009789182 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). IPDM E/R Harness connector E64 and fuse block (J/B) side connector D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. 1. F Check the resistance between the IPDM E/R harness connector terminals. 2. IPDM E/R harness connector Resistance (Ω) Connector No. Terminal No. E121 Approx. 54 - 66 29 28 Is the measurement value within the specification? Н YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-36, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line. >> Repair the power supply and the ground circuit. NO 4.CHECK HARNESS FOR OPEN CIRCUIT Κ 1. Disconnect the harness connector E64. Check the continuity between the IPDM E/R harness connector and harness connector. 2. L IPDM E/R harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. LAN

Is the measurement value within the specification?

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YES >> Replace the fuse block (J/B).

E121

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

E64

6E

2E

Existed

Existed

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789183

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F12
- Harness connector E10
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

	Resistance (0)		
Connector No.	Termi	(105)3tance (22)	
F2	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to <u>TM-218</u>, "Exploded View"

Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector	Continuity	
Terminal No.	Terminal No.		
3	3	Existed	
8	8	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-181, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-218, "Exploded View".

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

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector E65.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

E2	3	F65	9F	Existed	^
12	8	205	5F	Existed	P

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000009789184

[CAN SYSTEM (TYPE 5)]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

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

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of CAN gateway.

2. Check the resistance between the CAN gateway harness connector terminals.

CAN gateway harness connector			Resistance (O)
Connector No.	Terminal No.		
M24	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-171, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-172, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

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

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

LUGANACIE URACAA	uro			
	ule			INFOID:000000009790748
1. CHECK DTC				
Check DTC of the CA	N gateway with CONS	JULT.		
Is U1010 or B2600 ind	icated?			
NO >> GO TO 2.	diagnosis of the indic	ated DTC.		
2.CHECK CONNECT	OR			
 Turn the ignition s Disconnect the ba Check the followin nector side). CAN gateway Harness connector 	witch OFF. ttery cable from the n g terminals and conn r M133 and fuse bloc	egative terminal. ectors for damage, be k (J/B) side connector	nd and loose connec	tion (unit side and con-
Is the inspection result	normal?			
YES >> GO TO 3.				
NO >> Repair the	terminal and connec	tor.		
J.CHECK HARNESS	CONTINUITY (OPE)			
 Disconnect the co Check the continu 	nnector of CAN gatew ity between the CAN	<i>r</i> ay. gateway harness conr	nector terminals.	
	CAN gateway harn	ess connector		
Connector No.		Terminal No.		Continuity
M24	4		6	Existed
	10		12	Existed
Is the inspection result	normal?			
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S	UPPLY AND GROUN	D CIRCUIT		
$\begin{array}{rl} \text{YES} & >> \text{GO TO 4.} \\ \text{NO} & >> \text{GO TO 5.} \\ \hline \textbf{4.CHECK POWER S} \\ \hline \end{array}$	UPPLY AND GROUN	D CIRCUIT	eway. Refer to <u>LAN</u>	171. "Diagnosis Proce-
YES $>>$ GO TO 4. NO $>>$ GO TO 5. 4.CHECK POWER S Check the power sup dure".	UPPLY AND GROUN	D CIRCUIT ircuit of the CAN gate	eway. Refer to <u>LAN-</u>	171. "Diagnosis Proce-
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S Check the power sup dure". Is the inspection result	UPPLY AND GROUN oly and the ground c normal?	D CIRCUIT	eway. Refer to <u>LAN-</u>	171, "Diagnosis Proce-
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S Check the power supp dure". Is the inspection result YES (Present error)> YES (Past error)>>EI NO >> Repair the	UPPLY AND GROUN oly and the ground c <u>normal?</u> >Replace the CAN ga fror was detected in the power supply and the	D CIRCUIT ircuit of the CAN gate iteway. Refer to <u>LAN-</u> ie CAN gateway branc e ground circuit.	eway. Refer to <u>LAN-</u> 172, "Removal and Ir ch line (CAN commun	171. "Diagnosis Proce- nstallation". nication circuit 2 side).
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S Check the power sup dure". Is the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the 5.CHECK HARNESS	UPPLY AND GROUN oly and the ground c <u>normal?</u> >Replace the CAN ga ror was detected in the power supply and the CONTINUITY (OPEN	D CIRCUIT ircuit of the CAN gate iteway. Refer to <u>LAN-r</u> ie CAN gateway brand e ground circuit. V CIRCUIT)	eway. Refer to <u>LAN-</u> 172, "Removal and Ir ch line (CAN commu	171, "Diagnosis Proce- nstallation". nication circuit 2 side).
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S Check the power supp dure". Is the inspection result YES (Present error)> YES (Past error)>>EI NO >> Repair the 5.CHECK HARNESS 1. Disconnect the ha 2. Check the continu	UPPLY AND GROUN oly and the ground c <u>normal?</u> >Replace the CAN ga ror was detected in the power supply and the CONTINUITY (OPEN rness connector M13 ity between the CAN	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ie CAN gateway brance e ground circuit. V CIRCUIT) 3. gateway harness conr	eway. Refer to <u>LAN-</u> <u>172. "Removal and Ir</u> ch line (CAN commun	171. "Diagnosis Proce- Installation". Inication circuit 2 side). Inication circuit 2 side).
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S Check the power sup dure". Is the inspection result YES (Present error)> YES (Past error)>>En NO >> Repair the 5.CHECK HARNESS 1. Disconnect the ha 2. Check the continu	UPPLY AND GROUN oly and the ground c <u>normal?</u> >Replace the CAN ga ror was detected in the power supply and the CONTINUITY (OPEN rness connector M13 ity between the CAN	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-r</u> be CAN gateway brand be ground circuit. N CIRCUIT) 3. gateway harness conr	eway. Refer to <u>LAN-</u> 172, "Removal and Ir ch line (CAN commun nector and the harnes connector	171. "Diagnosis Proce- Installation". Inication circuit 2 side). Inication circuit 2 side).
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S Check the power support dure". Is the inspection result YES (Present error)> YES (Past error)>>EI NO >> Repair the 5.CHECK HARNESS 1. Disconnect the ha 2. Check the continu CAN gateway h Connector No.	UPPLY AND GROUN oly and the ground c <u>normal?</u> >Replace the CAN gather ror was detected in the power supply and the CONTINUITY (OPEN rness connector M133 ity between the CAN arness connector Terminal No.	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> the CAN gateway brand the ground circuit. N CIRCUIT) 3. gateway harness contr Harness Connector No.	eway. Refer to <u>LAN-</u> <u>172. "Removal and Ir</u> ch line (CAN commun nector and the harnes connector Terminal No.	171. "Diagnosis Proce- Istallation". nication circuit 2 side). ss connector. Continuity
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S Check the power sup dure". Is the inspection result YES (Present error)> YES (Past error)>>EI NO >> Repair the 5.CHECK HARNESS 1. Disconnect the ha 2. Check the continu CAN gateway h Connector No.	UPPLY AND GROUN oly and the ground c <u>normal?</u> >Replace the CAN gate for was detected in the power supply and the CONTINUITY (OPEN rness connector M13: ity between the CAN arness connector Terminal No. 4	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ne CAN gateway brance ground circuit. N CIRCUIT) 3. gateway harness conr Harness Connector No.	eway. Refer to <u>LAN-</u> <u>172. "Removal and Ir</u> ch line (CAN commune nector and the harnes connector Terminal No. 13C	171. "Diagnosis Proce- Installation". Inication circuit 2 side). Inication circuit 2 side).

YES >> Replace the fuse block (J/B).

>> Repair the harness between the CAN gateway harness connector M24 and the harness connec-NO tor M133.

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789186

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

	Posistanaa (O)		
Connector No.	Terminal No.		
M88	1	21	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 <u>HAC-92, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-113, "Removal and Installation".

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

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

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

M&A BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INF01D:000000009789187
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the combi r side).	ninal. nation meter for damage, I	pend and loose connection
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2.CHECK HARNESS FOR	nal? inal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of combination meter. etween the combination me	ter harness connector term	inals.
Co	ombination meter harness connec	tor	Resistance (O)
Connector No.	Termir	Terminal No.	
M58	41	42	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and	pination meter branch line. Y AND GROUND CIRCUIT	- ombination meter. Refer to	MWI-104. "COMBINATION
METER : Diagnosis Procedu	<u>ure"</u> .		
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	al? lace the combination meter as detected in the combina er supply and the ground ci	: Refer to <u>MWI-126, "Remo</u> tion meter branch line. rcuit.	val and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure

INFOID:000000009789188

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

AV BRANCH LINE (CIRCUIT			Λ
Diagnosis Procedure			INFOID:00000009789189	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the display r side).	ninal. y control unit for damage, t	pend and loose connection	С
Is the inspection result norm	<u>al?</u>			
YES >> GO TO 2.	inal and connector			D
2 CHECK HADNESS FOR				
	or of display control unit			Е
 Disconnect the connect Check the resistance be 	etween the display control util.	init harness connector termi	nals.	
				F
	splay control unit harness connec	tor	Resistance (Ω)	1
	Termir	al No.	Approv 54 - 00	
In the measurement value w	29	17	Αρριοχ. 54 – 66	G
YFS >> GO TO 3	<u>Infinitine specification?</u>			
NO >> Repair the displa	ay control unit.			Н
3. CHECK POWER SUPPL	Y AND GROUND CIRCUIT	-		
Check the power supply an TROL UNIT : Diagnosis Pro	d the ground circuit of the c cedure".	display control unit. Refer to	O AV-239, "DISPLAY CON-	I
Is the inspection result norm	<u>al?</u> Is a the display control with		l and Installation"	
YES (Present error)>>Rep YES (Past error)>>Error wa	ace the display control unit as detected in the display c	ontrol unit branch line.	al and installation".	J
NO >> Repair the powe	er supply and the ground ci	rcuit.		
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				ΓX
				L

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< DTC/CIRCUIT DIAGNOSIS >

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789190

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

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

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

	TCU harness connector				
Connector No.	Termi				
M81	9	10	Approx. 54 – 66		

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCU branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCU. Refer to <u>AV-589, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation".

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

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

BCM BRANCH LINE CIRCUIT

BCM BRANCH LINI	E CIRCUIT		
Diagnosis Procedure			INFOID:00000009789191
1.CHECK CONNECTOR			E
 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 loo	se connection (unit side and (
YES >> GO TO 2. NO >> Repair the termination of termination of the termination of t	inal and connector. OPEN CIRCUIT		C
 Disconnect the connect Check the resistance be 	or of BCM. Stween the BCM harness co	onnector terminals.	- E
	BCM harness connector		Resistance (Q)
Connector No.	Termir	al No.	
M14	60	59	Approx. 54 – 66
Is the measurement value wYES>> GO TO 3.NO>> Repair the BCM 3. CHECK POWER SUPPL	rithin the specification? I branch line. Y AND GROUND CIRCUIT		ŀ
Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the power	the ground circuit of the B al? lace the BCM. Refer to <u>BC</u> as detected in the BCM bra er supply and the ground ci	CM. Refer to <u>BCS-91, "Dia</u> <u>S-98, "Removal and Instal</u> nch line. [.] cuit.	agnosis Procedure".
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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789192

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ABS actuator and electric unit (control unit)
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	6	Existed	
17124	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. 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	Posistanco (O)		
Connector No.	Termi		
E35	25	15	Approx. 54 - 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

4.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-154, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-178, "Removal</u> and Installation".
- 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.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of harness connector E65.
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.
- With around view monitor system

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ABS actuator and ele harness of	ctric unit (control unit) connector	Harness connector		Continuity	А
Connector No.	Terminal No.	Connector No. Terminal No.			
E25	25	EG5	6F	Existed	В
E30	15	E03	7F	Existed	-
- Without around view r	nonitor system				С
ABS actuator and ele harness o	ABS actuator and electric unit (control unit) harness connector		connector	Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.		D
F25	25	FOF	8F	Existed	-
E30	15	E00	3F	Existed	- F
Is the inspection result nor	mal?			-	
YES >> Replace the fu NO >> Repair the ha E35 and the h	use block (J/B) rness between the ABS arness connector E65	actuator and electric	unit (control unit)	harness connecto	r F

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789193

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the follow terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connectors B600 and B12
- Harness connectors B39 and fuse block (J/B) side connector (Models without around view monitor system)

Is the inspection result normal?

YES - 1>> Models with around view monitor system: GO TO 2.

- YES 2>> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M24	4	6	Existed
IVI24	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (Models with around view monitor system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Posistanco (O)		
Connector No.	Termi		
B601	1	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO - 1 >> Models without around view monitor system: GO TO 5.

NO - 2 >> Models with around view monitor system: Repair the driver seat control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-75, "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-145, "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.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector B39.

 Check the continuity between the driver seat control unit harness connector B601 and the harness connector.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

Di	iver seat control ur	nit harness connector	Harness connector		Continuity
C	onnector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	DC04	1	3H		Existed
	B00.1	17	B3A	8H	Existed
s the i	nspection resul	t normal?			
ES O	>> Replace t >> Repair the connector	he fuse block (J/B). e harness between the r B39.	e driver seat control un	it harness connector E	3601 and the ha

EPS/DAST 3 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789194

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering force control module
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
M24	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of steering force control module.
- 3. Check the resistance between the steering force control module harness connector terminals.

Steerin	Posistanco (O)		
Connector No.	Termi		
M71	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering force control module. Refer to <u>STC-407, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427</u>, "<u>Removal and Installa-</u> <u>tion</u>".

YES (Past error)>>Error was detected in the steering control module branch line.

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

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

А

Diagnosis Procedure			INFOID:00000009798682		
1. CHECK CONNECTOR					
 Turn the ignition switch Disconnect the battery Check the following ter nector side). Chassis control module Harness connectors E² Harness connectors M CAN gateway (Models 	OFF. cable from the negative terr minals and connectors for d 7 39 with around view monitor sy	ninal. lamage, bend and loose co /stem)	nnection (unit side and con-		
s the inspection result norr	nal?				
YES-1 >> Models with and YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor syster ninal and connector.	GO TO 2. m: GO TO 3.			
2. CHECK HARNESS COM	NTINUITY (OPEN CIRCUIT)			
 Disconnect the connect Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha	arness connector terminals.			
	CAN gateway harness connector	ſ	Continuity		
Connector No.	Terminal No.				
M24	4	6	Existed		
the inspection result por	nal?	12	Existed		
YES >> GO TO 3. NO >> Check the harr CHECK HARNESS FOR Connect the connector	ess and repair the root caus COPEN CIRCUIT of CAN gateway (Models w	se (CAN communication cir	cuit 2).		
B. Check the resistance b	etween the chassis control	module harness connector	terminals.		
Cha	assis control module harness conn	ector	Bacistanaa (O)		
Connector No.	Termir	nal No.			
E22	4	3	Approx. 54 – 66		
<u>s the measurement value value v</u> YES >> GO TO 4. NO >> Repair the chas CHECK POWER SUPP	vithin the specification? ssis control module branch l LY AND GROUND CIRCUIT	line.			
Check the power supply ar Procedure".	nd the ground circuit of the	chassis control module. Re	fer to <u>DAS-541, "Diagnosis</u>		
s the inspection result norr	nal?				
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	place the chassis control mo vas detected in the chassis of er supply and the ground ci	odule. Refer to <u>DAS-542, "R</u> control module branch line. rcuit.	emoval and Installation".		

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789196

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M04	4	6	Existed
11/24	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	Resistance (Ω)		
Connector No. Terminal No.			
M77	5	Approx. 54 – 66	
	hin the energification?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "Diagnosis <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "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.

AVM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000009789197
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the following tern nector side). Around view monitor co CAN gataway (Madala 	OFF. cable from the negative terr minals and connectors for d	ninal. amage, bend and loose con	nection (unit side and con-
Is the inspection result norn	nal?		
YES-1 >> Models without YES-2 >> Models with ICO NO >> Repair the term 2.CHECK HARNESS CON	ICC: GO TO 2. C: GO TO 3. inal and connector.)	
1. Disconnect the connect	tor of CAN gateway.	,	
2. Check the continuity be	tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No. Terminal No.			
M24	4	6	Existed
le the increation regult nerr		IZ	EXISIEU
 YES >> GO TO 3. NO >> Check the harn 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance bit 	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w tor of around view monitor c etween the around view mo	se (CAN communication circ ithout ICC). control unit. nitor control unit harness co	nnector terminals
Around	view monitor control unit harness o		Resistance (Ω)
B50	27	28	Approx, 54 – 66
Is the measurement value v YES >> GO TO 4. NO >> Repair the arou 4.CHECK POWER SUPPL	vithin the specification? Ind view monitor control unit	t branch line.	L
Check the power supply a "AROUND VIEW MONITOR	nd the ground circuit of the CONTROL UNIT : Diagno	e around view monitor con sis Procedure".	trol unit. Refer to <u>AV-435.</u>
Is the inspection result norm	<u>nal?</u> Jacobile and significant magnit		50. "Demoval and installe
r ES (Present error)>>Rep <u>tion"</u> .	nace the around view monito	or control unit. Refer to <u>AV-4</u>	oo, Kemoval and Installa-
YES (Past error)>>Error w NO >> Repair the pow	as detected in the around v er supply and the ground cir	iew monitor control unit brar rcuit.	nch line.

< DTC/CIRCUIT DIAGNOSIS >

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789198

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Sonar control unit
- Harness connector M95
- Harness connector M155
- CAN gateway

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 $\mathbf{3}$.check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	Resistance (O)		
Connector No.	Termi		
M76	5	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-435, "SONAR CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-462, "Removal and Installation".

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

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

[CAN SYSTEM (TYPE 5)]

DAST 1 BRANCH L	INE CIRCUIT			
Diagnosis Procedure			INFOID:00000009789199	
1.CHECK CONNECTOR			В	
 Turn the ignition switch Disconnect the battery of Check the following term nector side). Steering angle main cor Chassis control module 	OFF. cable from the negative terr ninals and connectors for d ntrol module	ninal. amage, bend and loose cor	nnection (unit side and con- C	
Is the inspection result norm	al?		D	
NO >> Repair the term	nal and connector.		F	
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	L	
 Disconnect the connect Check the continuity between the continuit	or of chassis control modul tween the chassis control n	e. nodule harness connector te	erminals. F	
Chas	ssis control module harness conn	ector	Continuity	
Connector No.	Connector No. Terminal No.			
E22	7	8	Existed	
Cation circuit sid 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be	open circle and the part of the place (OPEN CIRCUIT of chassis control module. or of steering angle main co etween the steering angle n	ontrol module. nain control module harness	J s connector terminals.	
Steering a	ngle main control module harness	s connector	K	
Connector No.	Termir	nal No.	Resistance (Ω)	
E26	14	15	Approx. 54 – 66	
Is the measurement value w YES >> GO TO 4. NO >> Repair the steer 4.CHECK POWER SUPPL Check the power supply and "Diagnosis Procedure". Is the inspection result norm YES (Present error)>>Rep Installation".	ithin the specification? ing angle main control mod Y AND GROUND CIRCUIT d the ground circuit of the s <u>al?</u> lace the steering angle ma	dule branch line. Steering angle main control ain control module. Refer to	Module. Refer to <u>STC-407.</u> No o <u>STC-428. "Removal and</u> O	
NO >> Repair the powe	er supply and the ground ci	rcuit.	P	

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
- 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.

	Continuity		
Connector No.	Termi	Continuity	
M25	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
M25	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

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

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)
Terminal No.		
60	59	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5.CHECK SYMPTOM

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

LAN-288

INFOID:000000009790749
CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

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

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CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000009790750

[CAN SYSTEM (TYPE 5)]

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 circuit 2.
- 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
M25	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
M25	13	Ground	Not existed
IW25	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway		Posistance (O)	
Termi	nal No.		
4	10	Approx. 108 – 132	
6	12	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

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.

LAN-290

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

6.0	CHECK UNIT REPRODUCTION	Λ
Per 1.	form the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF.	A
2. 3.	Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication circuit 2. NOTE:	В
4.	CAN gateway has two termination circuits. Check other units first. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. NOTE:	С
Insi	Although unit-related error symptoms occur, do not confuse them with other symptoms.	D
Re No	eproduced>>Connect the connector. Check other units as per the above procedure. on-reproduced>>Replace the unit whose connector was disconnected.	E
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CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009789201

[CAN SYSTEM (TYPE 5)]

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.

Are the CAN communication 1 and/or CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

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

Check the continuity between the chassis control module harness connector.

Connector No. Terminal No. Contractive E22 19 7 Not existed	Cha	Continuity		
E22 19 7 Not existed	Connector No.	Termi	Continuity	
	E22	19	7	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control module harness connector			Continuity	
Connector No.	Terminal No.	- Ground	Continuity	
M22	19		Not existed	
	7		Not existed	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

${f 5.}$ CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

- 1. Remove the chassis control module.
- 2. Check the resistance between the chassis control module terminals.

Chassis control module		Posistance (0)	
Termiı	nal No.		
19	7	Approx. 108 – 132	
11	8	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

2010 1 . .

< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 5)]	
Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.	А
Inspection result	
Reproduced>>GO TO 7. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.	В
7. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit.	С
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of chassis communication circuit. NOTE: 	D
 Chassis control module has two termination circuits. 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. 	E
Although unit-related error symptoms occur, do not confuse them with other symptoms.	F
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	G

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000009789203

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 M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M65.
- 2. Check the continuity between the fuse block (J/B) terminals.

Fuse block (J/B)		Continuity	
Terminal No.	Terminal No.	Continuity	
23C	22C	Existed	
5C	4C	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

 Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness connector.

Fuse block (J/B) harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133	22C	Μοο	1	Existed
	4C	Ινιοο	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 fuse block (J/B) harness connector M133 and the A/C auto amp.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 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.
- Display control unit
- Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. harness connector		Display control unit harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M882	1	M100	29	Existed	E
	21	WITOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

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[CAN SYSTEM (TYPE 6)]

INFOID:000000009789204

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MAIN LINE BETWEEN ABS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ABS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000009789206

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B39 and fuse block (J/B) side connector

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.
- Fuse block (J/B) harness connector B39
- ABS actuator and electric unit (control unit)
- 2. Check the continuity between the harness connector terminals.

ABS actuator and electric unit (control unit) harness connector		Fuse block (J/B) terminals	Continuity
Connector No.	Terminal No.	Terminal No.	
E35	25	6Н	Existed
235	15	4H	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of driver seat control unit.
- 2. Check the continuity between the harness connector and the driver seat control unit harness connector.

Fuse block (J/B)	harness connector	Driver seat control u	Driver seat control unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B30	6H	P601	1	Existed
039	4H	6001	17	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 ABS actuator and electric unit (control unit) and the driver seat control unit.

NO >> Repair the main line between the harness connector B39 and the driver seat control unit.

Revision: 2013 October

MAIN LINE BETWEEN ADP AND ICC CIRCUIT SNOSIS > [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN ADP AND ICC CIRCUIT

Diagnosis Procedure

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- CAN gateway
- Harness connectors B600 and B12
- ADAS control unit
- 4. Check the continuity between the harness connector and the ADAS control unit harness connector.

Harness	connector	Harness	connector	Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
P10	1	P1	1	Existed	
DIZ	17	Ы	2	Existed	F

Is the inspection result normal?

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

- YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ADAS G control unit.
- NO >> Replace the body harness.

INFOID:000000009789210

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MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

Diagnosis Procedure

INFOID:000000009789211

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B37
- Harness connector B72
- Harness connector B62
- Harness connector M22

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.

- ADAS control unit
- Harness connectors B37 and B72
- 2. Check the continuity between the ADAS control unit harness connector and the harness connector.

ADAS control unit	ADAS control unit harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R1	1		4	Existed
ы	2		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B62 and M22.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
P72	4	Peo	63	Existed
072	3	002	53	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of steering force control module.

2. Check the continuity between the harness connector and the steering force control module.

Harness	connector	Steering force control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M22	63	M71	14	Existed	
IWIZZ	53		15	Existed	

Is the inspection result normal?

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

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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YES (Past error)>>Error was detected in the main line between the ADAS control unit and the steering force control module.

NO >> Repair the main line between the harness connector M22 and the steering force control module.

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MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

Diagnosis Procedure

INFOID:000000009789212

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following harness connectors.
- CAN gateway
- Steering force control module
- 4. Check the continuity between the steering force control module harness connector and the data link connector.

Steering force control module harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M71	14	M25	13	Existed
1017 1	15	IVIZ5	12	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 steering force control module and the data link connector.

NO >> Repair the main line between the steering force control module and the data link connector.

				STSTEIVI (TTPE 0)]
AIN LINE BET	WEEN RDR-L	AND AVM CIRC	CUIT	
agnosis Procedı	lre			INFOID:00000000978921
CHECK CONNECT	OR			
Turn the ignition sw Disconnect the batt Check the following and harness side). Harness connector Harness connector the inspection result ES >> GO TO 2. IO >> Repair the CHECK HARNESS Disconnect the follo Harness connector Harness connector	ritch OFF. ery cable from the ne g terminals and conn B3 B52 normal? terminal and connecte CONTINUITY (OPEN owing harness connects s B87 and B8 s B3 and B52 y between the harnes	egative terminal. ectors for damage, be or. CIRCUIT) ctors.	end and loose conne	ection (connector side
	y between the names			
Harness c		Harness co	onnector	Continuity
Connector No.		Connector No.	Ierminal No.	Evisted
B87	5	B3	9	Existed
ES >> GO TO 3. O >> Replace the CHECK HARNESS Disconnect the con Check the continui connector.	e body harness. CONTINUITY (OPEN nector of around view ty between the harne	CIRCUIT) / monitor control unit. ess connector and the	around view monito	r control unit harness
ES >> GO TO 3. O >> Replace the CHECK HARNESS Disconnect the con Check the continui connector.	e body harness. CONTINUITY (OPEN nector of around view ty between the harne	CIRCUIT) / monitor control unit. ess connector and the Around view moni- harness co	around view monito	r control unit harness Continuity
ES >> GO TO 3. O >> Replace the CHECK HARNESS Disconnect the con Check the continui connector. Harness c	e body harness. CONTINUITY (OPEN nector of around view ty between the harne onnector Terminal No.	CIRCUIT) / monitor control unit. ess connector and the Around view moni harness co Connector No.	around view monito itor control unit innector Terminal No.	or control unit harness
ES >> GO TO 3. O >> Replace the CHECK HARNESS Disconnect the con Check the continui connector. Harness c Connector No.	e body harness. CONTINUITY (OPEN nector of around view ty between the harne onnector Terminal No.	CIRCUIT) / monitor control unit. ess connector and the Around view moni harness co Connector No.	around view monito	or control unit harness Continuity Existed

NO >> Replace the body harness.

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MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:000000009789208

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connectors B62
- Harness connectors M22

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.
- Around view monitor control unit
- Harness connectors B62 and M22
- 2. Check the continuity between the around view monitor control unit harness connector and the harness connector.
- With around view monitor, without ICC

Around view mo harness	onitor control unit connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
P50	27	Boo	63	Existed	
630	28	002	53	Existed	

With ICC

Around view mo harness	onitor control unit connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
B50	27	B62	18	Existed	
	28	Boz	17	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M95 and M155.
- 2. Check the continuity between the harness connectors.

- With around view monitor, without ICC

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	63	M05	15	Existed
IVIZZ	53	10195	7	Existed

With ICC

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Maa	18	M05	14	Existed
IVIZZ	17	W95	6	Existed

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

[CAN SYSTEM (TYPE 6)] < DTC/CIRCUIT DIAGNOSIS >

		<u></u>
Is the inspection result normal? VES (Present error)>>Check CAN system type decision again		
YES (Past error)>>Error was detected in the main line between the around sonar control unit	l view monitor control unit and	d the
NO >> Repair the main line between the harness connectors M22 and	sonar control unit.	
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MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

Diagnosis Procedure

INFOID:000000009789214

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Chassis control module
- Harness connectors E25
- Harness connectors M40
- Harness connector M19
- Harness connectors B18
- Chassis control module

Is the inspection result normal?

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Steering angle main control module
- Harness connectors E25 and M40
- 2. Check the continuity between the steering angle main control module harness connector and harness connector.

Steering angle m harness	ain control module connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E26	14	E25	51	Existed
E20	15	LZ5	52	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the steering angle main control module harness connector and harness connector E25.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M19 and B18.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M40	51	M10	74	Existed
W40	52	10119	75	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between harness connectors M40 and M19.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ADAS control unit.

2. Check the continuity between the harness connector B18 and ADAS control unit harness connector.

Harness	connector	ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

D10	74	D1	8	Existed	^
DIO	75	DI	9	Existed	A

Is the inspection result normal?

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

В YES (Past error)>>Error was detected in the main line between the steering angle main control module and the ADAS control unit.

>> Replace the body harness. NO

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MAIN LINE BETWEEN ICC AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ICC AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000009789215

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Chassis control module
- Harness connector B18
- Harness connector M19

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.
- ADAS control unit
- Harness connectors B18 and M19
- 2. Check the continuity between the harness connector terminals.

ADAS control unit	t harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
D1	8	B18	84	Existed
Ы	9		85	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M75 and R3.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M10	84	M75	32	Existed
10119	85	10175	31	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 ADAS control unit and the lane camera unit.

NO >> Repair the main line between the harness connectors M19 and lane camera unit.

ECM BRANCH LINE CIRCUIT

Diagnosis Proced	ure			INFOID:000000009789216
1.CHECK CONNECT	OR			
 Turn the ignition sv Disconnect the bat Check the following nector side). ECM 	vitch OFF. tery cable from the n g terminals and conn	negative terminal. nectors for damage, be	nd and loose conn	ection (unit side and con-
Harness connector s the inspection result	[•] M133 and fuse bloc normal?	ck (J/B) side connector		
YES >> GO TO 2. NO >> Repair the	terminal and connec	ctor.		
Disconnect the cor Check the resistan	nector of ECM. ce between the ECM	I harness connector te	rminals.	
	ECM harness	connector		Resistance (Ω)
		Terminal No.		
Connector No.		Terminal No.	440	
Connector No. M37	114 lue within the specifi	Terminal No.	113	Approx. 108 – 132
Connector No. M37 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. J. CHECK POWER SU	114 lue within the specific	cation?	113	Approx. 108 – 132
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power supple s the inspection result YES (Present error)>> YES (Past error)>>Error) NO >> Repair the A.CHECK HARNESS	114 Iue within the specific JPPLY AND GROUN y and the ground circ normal? •Replace the ECM. F for was detected in th power supply and th CONTINUITY (OPEI	Terminal No. cation? ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-578, "Rem</u> he ECM branch line. he ground circuit. N CIRCUIT)	113 to <u>EC-188, "Diagn</u> oval and Installatio	Approx. 108 – 132
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SU Check the power supple s the inspection result YES (Present error)>> YES (Past error)>>Error)>> NO >> Repair the A.CHECK HARNESS I. Disconnect the fus: 2. Check the continuit	114 JPPLY AND GROUN y and the ground circ normal? Replace the ECM. F or was detected in th power supply and th CONTINUITY (OPEI e block (J/B) harness ty between the ECM	Terminal No. cation? ND CIRCUIT cuit of the ECM. Refer Refer to EC-578, "Rem he ECM branch line. le ground circuit. N CIRCUIT) s connector M133. harness connector and	to <u>EC-188, "Diagn</u> toval and Installation d the fuse block (J	Approx. 108 – 132 Osis Procedure". On".
Connector No. M37 Is the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SL Check the power supples Is the inspection result YES (Present error)>> YES (Present error)>> YES (Past error)>>Error) NO >> Repair the 4.CHECK HARNESS 1. Disconnect the fus: 2. Check the continuit	114 Iue within the specific JPPLY AND GROUN y and the ground circon normal? PReplace the ECM. Fror was detected in the power supply and the CONTINUITY (OPEI) the block (J/B) harness ty between the ECM s connector	ID CIRCUIT cation? ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-578, "Rem</u> he ECM branch line. ie ground circuit. N CIRCUIT) s connector M133. harness connector and Fuse block (J/B) h	113 to <u>EC-188, "Diagn</u> boval and Installation d the fuse block (Junarness connector	Approx. 108 – 132 Osis Procedure". On". (B) harness connector.
Connector No. M37 Is the measurement va YES >> GO TO 3. NO >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power suppled is the inspection result YES (Present error)>> YES (Past error)>>Error)>> NO >> Repair the 4.CHECK HARNESS 1. Disconnect the fus 2. Check the continuit ECM harnes Connector No.	II4 Iue within the specific JPPLY AND GROUN y and the ground circon normal? Replace the ECM. From was detected in the power supply and the CONTINUITY (OPEI the block (J/B) harness ty between the ECM s connector Terminal No.	Terminal No. cation? ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-578, "Rem</u> he ECM branch line. le ground circuit. N CIRCUIT) s connector M133. harness connector and Fuse block (J/B) h Connector No.	113 to EC-188. "Diagn ioval and Installation d the fuse block (J namess connector Terminal No.	Approx. 108 – 132 Osis Procedure". (B) harness connector. Continuity
Connector No. M37 Is the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power suppl Is the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4.CHECK HARNESS 1. Disconnect the fus 2. Check the continuit ECM harnes Connector No. M37	114 IULE WITHIN THE SPECIFIC JPPLY AND GROUN y and the ground circe y Replace the ECM. For was detected in the y OPEL POWER SUPPLY AND GROUN y and the ground circe y operations detected in the y operations detected in the CONTINUITY (OPEL e block (J/B) harnesse ty between the ECM s connector Terminal No. 114	Terminal No. cation? ID CIRCUIT cuit of the ECM. Refer Refer to EC-578, "Rem he ECM branch line. le ground circuit. N CIRCUIT) s connector M133. harness connector and Fuse block (J/B) h Connector No. M133	to <u>EC-188</u> , "Diagn toval and Installation d the fuse block (J harness connector Terminal No. 21C	Approx. 108 – 132 Dosis Procedure". (B) harness connector. Continuity Existed

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000009789220

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal. 2.
- Check the following terminals and connectors for damage, bend and loose connection (connector side 3. and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

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			Posistanco (O)	
Connector No.	Termi	Terminal No.		
M25	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 (CAN communication circuit 1 side).

NO >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connector M133. 1.

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

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M25	6	M122	23C	Existed
IWI25	14	10135	5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

А

 Disconnect the battery of Check the following ter and harness side). 	cable from the negative term minals and connectors for o	inal. Jamage, bend and loos	se connection (connector side
the inspection result norm	al?		
NO >> Repair the term	inal and connector branch lir	ıe.	
CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)		
Disconnect the connectCheck the continuity be	or of CAN gateway. tween the CAN gateway har	ness connector termina	als.
	CAN gateway harness connector		Continuity
Connector No.	Terminal No.		Continuity
M24	4	6	Existed
	10	12	Existed
the inspection result norm	nal?		
s the inspection result norm YES >> GO TO 3. NO >> Check the harm CHECK HARNESS FOR . Connect the connector of . Check the resistance be	aal? ess and repair the root cause OPEN CIRCUIT of CAN gateway. etween the data link connect Data link connector	e (CAN communication or terminals.	circuit 2).
s the inspection result norm YES >> GO TO 3. NO >> Check the harne CHECK HARNESS FOR Connect the connector of Check the resistance be Connector No.	aal? ess and repair the root cause OPEN CIRCUIT of CAN gateway. etween the data link connect Data link connector	e (CAN communication or terminals.	circuit 2)Resistance (Ω)
Sthe inspection result norm YES >> GO TO 3. NO >> Check the harne CHECK HARNESS FOR Connect the connector of Check the resistance be Connector No. M25	aal? ess and repair the root cause OPEN CIRCUIT of CAN gateway. etween the data link connect Data link connector Termina 13	e (CAN communication or terminals.	circuit 2).
s the inspection result norm YES >> GO TO 3. NO >> Check the harne CHECK HARNESS FOR . Connect the connector of . Check the resistance be Connector No. M25 s the measurement value w	aal? ess and repair the root cause OPEN CIRCUIT of CAN gateway. etween the data link connect Data link connector Termina 13	e (CAN communication or terminals.	circuit 2).

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789218

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. E121 29 28 Approx. 54 – 66	IPDM E/R harness connector			Resistance (O)	
E121 29 28 Approx. 54 – 66	Connector No.	Termi	Terminal No.		
	E121	29 28		Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the harness connector E64.

2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R har	ness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E121	29	E64	6E	Existed
LIZI	28	L04	2E	Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

TCM BRANCH LINE (CIRCUIT			٨
Diagnosis Procedure			INF0ID:00000009789219	A
1.CHECK CONNECTOR				В
 Turn the ignition switch OF Disconnect the battery cable Check the following termination nector side). A/T assembly 	F. le from the negative ter als and connectors for o	minal. damage, bend and lo	ose connection (unit side and con-	С
 Harness connector F12 Harness connector E10 Harness connector E65 and 	d fuse block (J/B) side	connector		D
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal	and connector.			Е
2.CHECK HARNESS FOR OF	PEN CIRCUIT			F
 Disconnect the connector of Check the resistance between 	of A/T assembly. een the A/T assembly h	arness connector te	minals.	G
A/T Connector No	assembly harness connecto	r inal No	Resistance (Ω)	
F2	3	8	Approx. 54 – 66	Н
 CHECK HARNESS FOR OF Remove the joint connector Check the continuity betwee side of the joint connector. 	PEN CIRCUIT r. Refer to <u>TM-218, "Ex</u> en the A/T assembly h	<u>ploded View"</u> arness connector sic	le and the TCM harness connector	J
A/T assembly barness connectors	side TCM barne	ass connector		K
Terminal No.	Termi	inal No.	Continuity	
3		3	Existed	L
8		8	Existed	
Is the inspection result normal?YES>> GO TO 4.NO>> Replace the joint colspan="2">NO4.CHECK POWER SUPPLY A	onnector. ND GROUND CIRCUI	T		LAN
Check the power supply and the	e ground circuit of the T	CM. Refer to TM-18	1, "Diagnosis Procedure".	IN
Is the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was on NO >> Repair the power s	e the control valve & TC detected in the TCM bra upply and the ground c	CM. Refer to <u>TM-218</u> anch line. ircuit.	. "Exploded View".	0
5. CHECK HARNESS CONTIN		-)		Ρ
 Disconnect the harness control Check the continuity between 	nnector E65. en the A/T assembly ha	arness connector an	d the harness connector.	

A/T assembly h	A/T assembly harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

F2	3	EG5	9F	Existed
12	8	200	5F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure			INFOID:000000009789221	А
1.снеск отс				В
Check DTC of the CAN gate	way with CONSULT.			
Is U1010 or B2600 indicated	<u>1?</u>			
YES >> Perform a diagn NO >> GO TO 2.	osis of the indicated DTC.			С
2.CHECK CONNECTOR				D
 Turn the ignition switch Disconnect the battery of the context of the battery of the set of the battery of the b	OFF. able from the negative terr	ninal.	and and loops connection	D
(unit side and connector	side).	JAN galeway for damage, b	end and loose connection	Е
Is the inspection result norm	<u>al?</u>			
YES >> GO TO 3. NO >> Repair the termi	nal and connector.			F
3.CHECK HARNESS FOR	OPEN CIRCUIT			
 Disconnect the connect Check the resistance be 	or of CAN gateway. htween the CAN gateway h	arness connector terminals.		G
	CAN gateway harness connector			Н
Connector No.	Termir	nal No.	Resistance (Ω)	
M24	1	7	Approx. 54 – 66	
Is the measurement value w	ithin the specification?			
YES >> GO TO 4.	asteway branch line			
	Y AND GROUND CIRCUIT	-		J
Check the power supply an	d the ground circuit of the	CAN gateway. Refer to LA	N-171, "Diagnosis Proce-	
<u>dure"</u> .	10			Κ
Is the inspection result norm	<u>al?</u>	orto I ANI 172 "Domoval on	d Installation"	
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the CAN gate r supply and the ground ci	eway branch line (CAN com rcuit.	nunication circuit 1 side).	L
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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009790752

[CAN SYSTEM (TYPE 6)]

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. 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).
- CAN gateway
- Harness connector M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M24	4	6	Existed
IVIZ4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-171</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-172, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

CAN gateway h	CAN gateway harness connector		Harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	M24 4	M122	13C	Existed
17124	10	10133	2C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the CAN gateway harness connector M24 and the harness connector M133.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

HVAC BRANCH LI	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000009789222	A
1. CHECK CONNECTOR				B
 Turn the ignition switch Disconnect the battery of Check the terminals an side and connector side 	OFF. cable from the negative terr d connectors of the A/C au e).	ninal. uto amp. for damage, bend	and loose connection (unit	С
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2CHECK HARNESS FOR	inal and connector.			C
 Disconnect the connect Check the resistance be 	or of A/C auto amp. etween the A/C auto amp. h	narness connector terminals		E
	A/C auto amp. harness connecto	r	Resistance (0)	F
Connector No.	Termir	nal No.		
M88	1	21	Approx. 54 – 66	(
YES >> GO TO 3. NO >> Repair the A/C 3.CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUIT	C		ŀ
Diagnosis Procedure".	ia the ground circuit of the	A/C auto amp. Refer to \underline{H}	<u>AC-92, A/C AUTO AMP. :</u>	I
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the A/C auto amp. Ref as detected in the A/C auto er supply and the ground ci	fer to <u>HAC-113, "Removal a</u> amp. branch line. rcuit.	nd Installation".	,
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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789223

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		
M58	41	42	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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-126, "Removal and Installation".

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

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

[CAN SYSTEM (TYPE 6)]

A-BAG BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000009789224 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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< DTC/CIRCUIT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789225

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

AFS control unit harness connector			Posistance (O)
Connector No.	Terminal No.		
M4	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-128</u>, "AFS CONTROL <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-181, "Removal and Installation".

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

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

AV BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000009789226
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the display r side).	ninal. y control unit for damage, l	pend and loose connection
Is the inspection result norm	nal?		
YES >> GO TO 2.	inal and connector		
2 CHECK HARNESS FOR			
1 Disconnect the connect	or of display control unit		
2. Check the resistance be	ween the display control u	unit harness connector term	inals.
Di	splay control unit harness connec	tor	Begisteneg (0)
Connector No.	Termir	nal No.	
M100	29	17	Approx. 54 – 66
Is the measurement value wYES>> GO TO 3.NO>> Repair the displCHECK POWER SUPPL	vithin the specification? ay control unit.	-	
Check the power supply an TROL UNIT : Diagnosis Pro Is the inspection result norm	d the ground circuit of the cedure".	display control unit. Refer t	o <u>AV-239, "DISPLAY CON-</u>
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the display control unit as detected in the display c er supply and the ground ci	t. Refer to <u>AV-277, "Remova</u> control unit branch line. rcuit.	al and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

HBA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789227

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Auto anti- dazzling inside mirror (High beam assist control module)
- Harness connector R2
- Harness connector M74

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 auto anti dazzling inside mirror (High beam assist control module).
- 2. Check the resistance between the auto anti dazzling inside mirror (High beam assist control module) harness connector terminals.

Auto anti - dazzli	Auto anti - dazzling inside mirror (High beam assist control module) harness connector		
Connector No.	Termi		
R9	12	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the anti - dazzling inside mirror (High beam assist control module) branch line.

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

Check the power supply and the ground circuit of the anti - dazzling inside mirror (High beam assist control module). Refer to <u>EXL-128</u>, "<u>HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure</u>".

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror. Refer to <u>MIR-45, "Removal and Installation"</u> (With automatic drive positioner system) or <u>MIR-80, "Removal and Installation"</u> (Without automatic drive positioner system).
- YES (Past error)>>Error was detected in the anti dazzling inside mirror (High beam assist control module) branch line.
- NO >> Repair the power supply and the ground circuit.

TCU BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

TCU BRANCH LINE	E CIRCUIT			
Diagnosis Procedure				
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 TCU f	ninal. or damage, bend and loose	e connection (unit side and	
YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT			
 Disconnect the connect Check the resistance be 	or of TCU. Stween the TCU harness co	onnector terminals.		
TCU harness connector		Resistance (O)		
Connector No.	Termir	nal No.		
M81	9	10	Approx. 54 – 66	
YES >> GO TO 3. NO >> Repair the TCU 3.CHECK POWER SUPPL Check the power supply and	Itnin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the T	CU. Refer to <u>AV-589, "TCU</u>	: Diagnosis Procedure".	
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	<u>al?</u> ace the TCU. Refer to <u>AV-</u> as detected in the TCU bra er supply and the ground ci	597, "Removal and Installati nch line. rcuit.	<u>on"</u> .	

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789229

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

	Posistance (O)		
Connector No.	Terminal No.		
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-98, "Removal and Installation"</u>.

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

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

ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000009789230
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following tern nector side). 	OFF. able from the negative terr ninals and connectors for d	ninal. lamage, bend and loose co	nnection (unit side and con-
Harness connector E65 s the inspection result norm	and fuse block (J/B) side c al?	connector	
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	und view monitor system: (around view monitor syster nal and connector.	GO TO 2. n: GO TO 3.	
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity bet 	or of CAN gateway. ween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
 Disconnect the connector Disconnect the connector Check the resistance be nals. 	or of ABS actuator and electrony actuator a	and electric unit (control unit).	it) harness connector termi-
Connector No		nal No	Resistance (Ω)
E35	25	15	Approx, 54 - 66
<u>s the measurement value w</u> YES >> GO TO 4. NO >> GO TO 5. CHECK POWER SUPPL	ithin the specification? Y AND GROUND CIRCUIT	r	
Check the power supply an 3RC-154, "Diagnosis Proce	d the ground circuit of the dure".	ABS actuator and electric	unit (control unit). Refer to
<u>s the inspection result norm</u> YES (Present error)>>Rep	al? ace the ABS actuator and	electric unit (control unit). F	Refer to <u>BRC-178, "Removal</u>
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the ABS actu r supply and the ground ci	uator and electric unit (cont rcuit.	rol unit) branch line.
$\bar{\mathbf{D}}$.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the resistance be nals. 	or of harness connector E6 etween the ABS actuator a	5. Ind electric unit (control un	it) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E35	25	E65	6F	Existed	
	15		7F	Existed	

- Without around view monitor system

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	8F	Existed
L00 -	15		3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65
ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

ADP BRANCH LINE	ECIRCUIT		Δ.
Diagnosis Procedure			INFOID:000000009789231
1.CHECK CONNECTOR			В
 Turn the ignition switch Disconnect the battery of Check the follow terminator side). Driver seat control unit Harness connectors B6 Harness connectors B3 	OFF. cable from the negative terr als and connectors for dam 00 and B12 9 and fuse block (J/B) side	ninal. age, bend and loose conne e connector (Models withou	ection (unit side and connec- C ut around view monitor sys-
Is the inspection result norm	al?		
YES - 1>> Models with aro YES - 2>> Models without NO >> Repair the term 2.CHECK HARNESS CON 1. Disconnect the connect	und view monitor system: (around view monitor syster inal and connector. TINUITY (OPEN CIRCUIT) or of CAN gateway.	GO TO 2. n: GO TO 3.)	F
2. Check the continuity be	tween the CAN gateway ha	arness connector terminals.	G
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	H
M24	4	6	Existed
ls the inspection result norm	10	12	
YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid 3.CHECK HARNESS FOR	ess and repair or replace (i e). OPEN CIRCUIT	f shield line is open) the ro	ot cause (CAN communica- J
 Connect the connector of Disconnect the connect Check the resistance be 	of CAN gateway. (Models w or of driver seat control unit etween the driver seat contr	vith around view monitor sy t. rol unit harness connector t	stem) K erminals.
Driv	er seat control unit harness conne	ector	Resistance (Ω)
Connector No.	Termir	nal No.	
B601	1	17	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO - 1 >> Models without NO - 2 >> Models with aro 4.CHECK POWER SUPPL	rithin the specification? around view monitor syster und view monitor system: F Y AND GROUND CIRCUIT	n: GO TO 5. Repair the driver seat contr	ol unit branch line.
Check the power supply and	I the ground circuit of the dr	iver seat control unit. Refer	to ADP-75, "DRIVER SEAT
S the inspection result norm	s Procedure". aal?		
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the driver seat control as detected in the driver se er supply and the ground ci	unit. Refer to <u>ADP-145, "R</u> at control unit branch line. rcuit.	emoval and Installation".
J.CHECK HARNESS CON	TINULLY (OPEN CIRCUIT))	
 Disconnect the harness Check the continuity be 	connector B39. tween the driver seat cont	rol unit harness connector	B601 and the harness con-

nector.

< DTC/CIRCUIT DIAGNOSIS >

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Driver seat control u	nit harness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
B601	1	B30	ЗH	Existed	
Boot	17	039	8H	Existed	

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the driver seat control unit harness connector B601 and the harness connector B39.

PSB BRANCH LINE	CIRCUIT		^
Diagnosis Procedure			INFOID:000000009789232
1.CHECK CONNECTOR			E
 Turn the ignition switch Disconnect the battery of Check the following term nector side). CAN gateway Pre-crash seat belt cont Is the inspection result norm YES >> GO TO 2. NO >> Repair the termining CHECK HARNESS CON 	OFF. cable from the negative terr ninals and connectors for d rol unit (driver side) <u>al?</u> nal and connector. TINUITY (OPEN CIRCUIT	minal. lamage, bend and loose cor)	nnection (unit side and con-
 Disconnect the connect Check the continuity bet 	tween the CAN gateway.	arness connector terminals.	F
	CAN gateway harness connector	r	Continuity
Connector No.	Termir	nal No.	Evictod
M24	10	12	Existed
NO >> Check the harm tion circuit 2 side 3.CHECK HARNESS FOR 1. Connect the connector of 2. Disconnect the connector 3. Check the resistance be nals.	ess and repair or replace (i e). OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat	f shield line is open) the roo ntrol unit (driver side). belt control unit (driver side	e) harness connector termi-
Pre-crash seat	belt control unit (driver side) har	ness connector	Decistance (O)
Connector No.	Termir	nal No.	
B19	14	4	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO >> Repair the pre-construction 4.CHECK POWER SUPPL Check the power supply an SBC-62, "Diagnosis Procedure Is the inspection result norm YES (Present error)>>Repland and Installation YES (Past error)>>Error was	Train the specification? Trash seat belt control unit (Y AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . al? lace the seat belt pre-tensity. as detected in the pre-crast	(driver side) branch line. F pre-crash seat belt control oner retractor (driver side). I h seat belt control unit (drive	unit (driver side). Refer to Refer to <u>SBC-76, "Removal</u> er side) branch line.

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009789233

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- Check the continuity between the CAN gateway harness connector terminals. 2.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	Existed		
10124	10	12	Existed	

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- Disconnect the connector of ADAS control unit. 2.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Posistance (O)
Connector No.	Terminal No.		
B1	1	Approx. 54 – 66	

Is the measurement value within the specification?

>> GO TO 4. YES

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-160, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation".

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

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

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

[CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

А Diagnosis Procedure INFOID:000000009790754 **1**.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). ADAS control unit Chassis control module D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. Check the continuity between the chassis control module harness connector terminals. F 2. Chassis control module harness connector Continuity Connector No. Terminal No. 19 11 Existed E22 7 8 Existed Н Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side). **3.**CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of ADAS control unit. 1 Check the resistance between the ADAS control unit harness connector terminals. 2. ADAS control unit harness connector Κ Resistance (Ω) Connector No. Terminal No. B1 8 9 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 4. NO >> Replace the body harness. LAN 4.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-160, "Diagnosis Procedure". Ν Is the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line circuit (chassis communication circuit side). NO >> Repair the power supply and the ground circuit. Ρ

EPS/DAST 3 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789235

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering force control module
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M24	4	Existed	
WZ4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of steering force control module.
- 3. Check the resistance between the steering force control module harness connector terminals.

Steerin	Posistanaa (O)		
Connector No.	Termi		
M71	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering force control module. Refer to <u>STC-407, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427</u>, "<u>Removal and Installa-</u> <u>tion</u>".

YES (Past error)>>Error was detected in the steering control module branch line.

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

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procoduro

.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Chassis control module Harness connectors E4 	OFF. cable from the negative term ninals and connectors for da 7	iinal. amage, bend and loose co	onnection (unit side and con-
Harness connectors M3 CAN gateway (Models v	9 with around view monitor sys	stem)	
the inspection result norm	nal?	,	
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	und view monitor system: G around view monitor system inal and connector.	0 TO 2. h: GO TO 3.	
CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)		
Disconnect the connect Check the continuity be	or of CAN gateway. tween the CAN gateway har	mess connector terminals	i.
	CAN gateway harness connector		Continuity
Connector No.	Termina	al No.	Evisted.
M24	4	6 12	Existed
the inspection result norm (ES >> GO TO 3. IO >> Check the harne	<u>al?</u> ess and repair the root caus	e (CAN communication c	ircuit 2).
the inspection result norm (ES >> GO TO 3. IO >> Check the harnow CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	nal? ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models with or of chassis control module etween the chassis control m	e (CAN communication ci th around view monitor sy a. nodule harness connector	ircuit 2). /stem). / terminals.
the inspection result norm YES >> GO TO 3. NO >> Check the harne CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be Chart	nal? ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models wit or of chassis control module etween the chassis control m ssis control module harness conne	e (CAN communication ci th around view monitor sy nodule harness connector	rcuit 2). /stem). r terminals.
the inspection result norm (ES >> GO TO 3. NO >> Check the harnow CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Chase Connector No.	nal? ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models wit or of chassis control module etween the chassis control m ssis control module harness conne Termina	e (CAN communication ci th around view monitor sy nodule harness connector ctor al No.	rcuit 2). /stem). r terminals. Resistance (Ω)
the inspection result norm YES >> GO TO 3. NO >> Check the harnon CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Chart Connector No. E22 The measurement value w	al? ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models wit or of chassis control module etween the chassis control m ssis control module harness conne Termina 4	e (CAN communication ci th around view monitor sy hodule harness connector ctor al No.	rcuit 2). /stem). r terminals. Resistance (Ω) Approx. 54 – 66

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789237

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	6	Existed	
11/24	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	Steering angle sensor harness connector		
Connector No.	Termi	- Resistance (Ω)	
M77	5	Approx. 54 – 66	
	hin the energification?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "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.

RDR-L BRANCH LI	NE CIRCUIT			Δ
Diagnosis Procedure			INFOID:00000009789238	А
1.CHECK CONNECTOR				В
 Turn the ignition switch (2) Disconnect the battery of 3. Check the following term nector side). Side radar LH Harness connector B87 Harness connector B8 	OFF. able from the negative terr ninals and connectors for d	ninal. amage, bend and loose co	nnection (unit side and con-	C
Is the inspection result normYES>> GO TO 2.NO>> Repair the termi2CHECK HARNESS FOR	al? nal and connector.			E
 Disconnect the connector Check the resistance be 	or of side radar LH. tween the side radar LH ha	arness connector terminals		F
	Side radar LH harness connector		Posistanco (0)	G
Connector No.	Termir	nal No.		
B92	4	3	Approx. 54 – 66	ш
Is the measurement value wYES>> GO TO 3.NO>> Replace the bod 3. CHECK POWER SUPPLY	ithin the specification? ly harness. Y AND GROUND CIRCUIT	-		
Check the power supply and Diagnosis Procedure". Is the inspection result norm	d the ground circuit of the	side radar LH. Refer to <u>DA</u>	<u>NS-359, "SIDE RADAR LH :</u>	J
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the side radar LH. Ref as detected in the side rada or supply and the ground ci	er to <u>DAS-386, "Removal a</u> ar LH branch line. rcuit.	Ind Installation".	K
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RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789239

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Side radar RH
- Harness connector B87
- Harness connector B8

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 side radar RH.

2. Check the resistance between the side radar RH harness connector terminals.

Side radar RH harness connector			Posistanco (O)
Connector No.	Termi		
B93	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar RH branch line.

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

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-360, "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-386, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar RH branch line.

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

AVM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000009789240
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the following tern nector side). Around view monitor co CAN gateway (Models) 	OFF. cable from the negative terr ninals and connectors for d entrol unit	ninal. amage, bend and loose con	nection (unit side and con-
Is the inspection result norm	nal?		
YES-1 >> Models without YES-2 >> Models with ICO NO >> Repair the term 2 CHECK HARNESS CON	ICC: GO TO 2. C: GO TO 3. inal and connector.		
1 Disconnect the connect	or of CAN gateway		
 Check the continuity be 	tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
NO >> Check the harn 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance by	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w or of around view monitor c etween the around view mo	se (CAN communication circ ithout ICC). ontrol unit. nitor control unit harness co	nnector terminals.
Around v	view monitor control unit harness o	connector	Resistance (Ω)
B50	27	28	Approx. 54 – 66
Is the measurement value v YES >> GO TO 4. NO >> Repair the arou 4.CHECK POWER SUPPL	vithin the specification? nd view monitor control unit	t branch line.	L
Check the power supply a "AROUND VIEW MONITOR	nd the ground circuit of the CONTROL UNIT : Diagno	e around view monitor con sis Procedure".	trol unit. Refer to <u>AV-435.</u>
Is the inspection result norm YES (Present error)>>Rep	n <u>al?</u> lace the around view monite	or control unit. Refer to AV-4	58, "Removal and Installa-
YES (Past error)>>Error w NO >> Repair the pow	as detected in the around v er supply and the ground ci	iew monitor control unit brar rcuit.	nch line.

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789241

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Accelerator pedal actuator / accelerator pedal position sensor
- Harness connector M125
- Harness connector M67

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 accelerator pedal actuator / accelerator pedal position sensor.

2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator / accelerator pedal position sensor harness connector			Posistanco (O)
Connector No.	Terminal No.		
M124	3	9	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator / accelerator pedal position sensor. Refer to <u>DAS-359</u>, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4</u>, "MODELS WITH DIS-<u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation"</u>.

YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.

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

BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > **BSW/BUZZER BRANCH LINE CIRCUIT**

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal. 2.
- Check the terminals and connectors of the drive assistance buzzer control module for damage, bend and 3. С 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 drive assistance buzzer control module.

Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Posistanco (O)	F
Connector No.	Terminal No.			
M56	3	11	Approx. 54 – 66	G

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to DAS-361. "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to DAS-389, "Removal and Installation".

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

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

INFOID:000000009789242

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LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789243

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ICC sensor
- Harness connector E76
- Harness connector E14
- Harness connector E25
- Harness connector M40

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

ICC sensor harness connector			Posistanco (O)
Connector No.	Terminal No.		
E80	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the ICC sensor. Refer to CCS-135, "Removal and Installation".

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

SONAR BRANCH L	INE CIRCUIT			Λ
Diagnosis Procedure			INFOID:00000009789244	A
1. CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Sonar control unit Harness connector M95 Harness connector M15 	OFF. cable from the negative terr ninals and connectors for d	ninal. amage, bend and loose cor	nection (unit side and con-	C
- CAN gateway	212			
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor syster inal and connector.	GO TO 2. n: GO TO 3.		E
2. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT))		F
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.		G
	CAN gateway harness connector		Continuity	
Connector No.	Termir	nal No.		Н
M24	4	6	Existed	
Is the inspection result normYES>> GO TO 3.NO>> Check the harn 3. CHECK HARNESS FOR	nal? ess and repair the root caus OPEN CIRCUIT	se (CAN communication circ	cuit 2).	J
 Connect the connector Disconnect the connect Check the resistance be 	of CAN gateway (Models w or of sonar control unit. etween the sonar control un	ith around view monitor sys it harness connector termin	tem). als.	K
S	Conar control unit harness connect	or	Resistance (Ω)	L
Connector No.	Termir 5	nal No.	Approx $54 - 66$	
Is the measurement value w	vithin the specification?	0	Αμριολ. 34 – 00	LA
YES >> GO TO 4. NO >> Repair the sona 4.CHECK POWER SUPPL	ar control unit branch line. Y AND GROUND CIRCUIT	-		Ν
Check the power supply and UNIT : Diagnosis Procedure	d the ground circuit of the so <u>e</u> ".	onar control unit. Refer to <u>AN</u>	<u>/-435, "SONAR CONTROL</u>	0
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	hai? Iace the sonar control unit. as detected in the sonar co er supply and the ground ci	Refer to <u>AV-462, "Removal</u> ntrol unit branch line. rcuit.	and Installation".	Ρ

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789245

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of chassis control module.
- 2. Check the continuity between the chassis control module harness connector terminals.

Cha	Chassis control module harness connector		
Connector No.	Terminal No.		Continuity
E22	19	11	Existed
EZZ	7	8	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of chassis control module.
- 2. Disconnect the connector of steering angle main control module.
- 3. Check the resistance between the steering angle main control module harness connector terminals.

Steering angle main control module harness connector			Posistance (O)
Connector No.	Terminal No.		
E26	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle main control module branch line.

${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle main control module. Refer to <u>STC-407.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-428</u>, "Removal and <u>Installation"</u>.
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

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

LANE BRANCH LIN				Λ
Diagnosis Procedure			INFOID:00000009789246	A
1.CHECK CONNECTOR				В
 Turn the ignition switch (Disconnect the battery c Check the following term nector side). 	OFF. able from the negative tern ninals and connectors for d	ninal. amage, bend and loose cor	nection (unit side and con-	С
 Harness connector R13 Harness connector M75 Chassis control module 				D
Is the inspection result normYES>> GO TO 2.NO>> Repair the termi2OUTOK HADNEDO CONT	al? nal and connector.			Ε
Z.CHECK HARNESS CON				F
 Disconnect the connector Check the continuity bet 	or of chassis control module ween the chassis control m	e. nodule harness connector te	erminals.	G
Chas	sis control module harness conn	ector	Continuity	0
Connector No.	Terminal No.			
E22	19	11	Existed	Н
YES >> GO TO 3. NO >> Check the harne cation circuit sid 3. CHECK HARNESS FOR	e). OPEN CIRCUIT	f shield line is open) the roo	t cause (chassis communi-	J
 Connect the connector of Disconnect the connector Check the resistance be 	of chassis control module. For of lane camera unit. Tween the lane camera uni	t harness connector termina	als.	K
La	ane camera unit harness connect	or	Resistance (Ω)	L
Connector No.	Termin	nal No.		
R13	4	8	Approx. 54 – 66	
YES >> GO TO 4. NO >> Repair the lane of the control of the lane o	train the specification? camera unit branch line. Y AND GROUND CIRCUIT	-		N
Check the power supply and	the ground circuit of the I	ane camera unit. Refer to [DAS-610, "LANE CAMERA	
UNIT: Diagnosis Procedure	 al?			0
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the lane camera unit. F as detected in the lane cam r supply and the ground cir	Refer to <u>DAS-620, "Remova</u> nera unit branch line. rcuit.	l and Installation".	Ρ

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
- 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
M25	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
M25	6	Ground	Not existed
WIZ5	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

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

3. Check the resistance between the BCM terminals.

BCM		- Resistance (Ω)	
Terminal No.			
60	59	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5.CHECK SYMPTOM

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

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< DTC/CIRCUIT DIAGNOSIS >

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

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Diagnosis Procedure

INFOID:000000009789247

[CAN SYSTEM (TYPE 6)]

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 circuit 2.
- 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
M25	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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	Conuntury
M25	13	Giouna	Not existed
IVIZ5	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway Terminal No.		- Resistance (Ω)
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

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.

LAN-344

6.0	CHECK UNIT REPRODUCTION	Λ
Per 1.	form the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF.	A
2. 3.	Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication circuit 2. NOTE:	В
4.	CAN gateway has two termination circuits. Check other units first. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. NOTE:	С
Insi	Although unit-related error symptoms occur, do not confuse them with other symptoms.	D
Re No	eproduced>>Connect the connector. Check other units as per the above procedure. on-reproduced>>Replace the unit whose connector was disconnected.	Е
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CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009789248

[CAN SYSTEM (TYPE 6)]

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.

Are the CAN communication 1 and/or CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

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

Check the continuity between the chassis control module harness connector.

Connector No. Terminal No. Contractive E22 19 7 Not existed	Chassis control module harness connector			Continuity
E22 19 7 Not existed	Connector No.	Terminal No.		Continuity
	E22	19	7	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control module harness connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
Maa	19	Gibunu	Not existed
WIZZ	7		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

${f 5.}$ CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

1. Remove the chassis control module.

2. Check the resistance between the chassis control module terminals.

Chassis control module		Posictance (O)
Termi	nal No.	
19	7	Approx. 108 – 132
11	8	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

CHASSIS COMMUNICATION CIRCUIT

< DT	C/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 6)]
Conn custo	ect all the connectors. Check if the symptoms described in the "Sympton mer)" are reproduced.	(Results from interview with
Inspe	ection result	
Rep Non	roduced>>GO TO 7. -reproduced>>Start the diagnosis again. Follow the trouble diagnosis p detected.	rocedure when past error is
7. Cł	HECK UNIT REPRODUCTION	
Perfo	rm the reproduction test as per the following procedure for each unit.	
1. T	urn the ignition switch OFF.	
2. L 3. E	Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of chassis communication circuit.	
4. C	Chassis control module has two termination circuits. Check other units first. Connect the battery cable to the negative terminal. Check if the symptom Results from interview with customer)" are reproduced.	s described in the "Symptom
A	Although unit-related error symptoms occur, do not confuse them with other	symptoms.
<u>Inspe</u>	reduced a Connect the connector. Check other units as per the cheve proc	adura
Rep Non	-reproduced>>Connect the connector. Check other units as per the above produced>>Replace the unit whose connector was disconnected.	eaure.

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< DTC/CIRCUIT DIAGNOSIS >

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009789249

[CAN SYSTEM (TYPE 6)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1, CAN communication circuit 2 and ITS communication circuit have no malfunction.

Are the CAN communication 1 and CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and CAN communication circuit 2.

2. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

ADAS control un	t harness connector	ICC sensor ha	mess connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	6	F80	3	Existed
ы	7		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harness between the ADAS control unit and the ICC sensor.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Around view monitor control unit
- Accelerator pedal actuator / accelerator pedal position sensor
- Driver assistance buzzer control module
- Sonar control unit
- 2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.		Continuity
B1	6	7	Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

Connector No.			Continuity
	Terminal No.	Ground	Continuity
B1	6	Cround	Not existed
	7	_	Not existed
s the inspection result normal YES >> GO TO 6. NO >> Check the harne CHECK TERMINATION C	<u>al?</u> ss and repair or replace [XIRCUIT	if shield line or fuse block (I/B) is short] the root cause.
 Remove the ADAS contribution Check the resistance be 	ol unit and the ICC senso tween the ADAS control u	or. unit terminals.	
AD/	AS control unit		Resistance (Ω)
Т	erminal No.		. ,
6	7	Ap	oprox. 108 – 132
 Check the resistance be 	tween the ICC sensor terr	minals.	
1	erminal No.		Resistance (Ω)
3	6	Ar	oprox. 108 – 132
Connect all the connectors.	Check if the symptoms c	described in the "Symptom	(Results from interview with
customer)" are reproduced. <u>nspection result</u> Reproduced>>GO TO 8. Non-reproduced>>Start the	e diagnosis again. Follov	v the trouble diagnosis pro	ocedure when past error is
customer)" are reproduced. Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the detected. B.CHECK UNIT REPRODU	e diagnosis again. Follov	v the trouble diagnosis pro	ocedure when past error is
 customer)" are reproduced. <u>inspection result</u> Reproduced>>GO TO 8. Non-reproduced>>Start the detected. 3.CHECK UNIT REPRODU Perform the reproduction tes 1. Turn the ignition switch (2). Disconnect the battery c 3. Disconnect one of the ur 	 diagnosis again. Follov CTION t as per the following proc DFF. able from the negative ter it connectors of ITS com 	w the trouble diagnosis pro cedure for each unit. rminal. munication circuit.	ocedure when past error is
 customer)" are reproduced. Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the detected. CHECK UNIT REPRODU Perform the reproduction tes 1. Turn the ignition switch 0 2. Disconnect the battery c 3. Disconnect one of the ur NOTE: ADAS control unit and I0 4. Connect the battery cab (Results from interview v 	e diagnosis again. Follov CTION t as per the following prod DFF. able from the negative ter nit connectors of ITS com C sensor have a termina le to the negative termin vith customer)" are reprod	w the trouble diagnosis pro- cedure for each unit. rminal. munication circuit. ation circuit. Check other unitial. Check if the symptoms duced.	ts first. described in the "Symptom
customer)" are reproduced. Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the detected. 8.CHECK UNIT REPRODU Perform the reproduction tes 1. Turn the ignition switch (2. Disconnect the battery c 3. Disconnect one of the ur NOTE: ADAS control unit and IC 4. Connect the battery cab (Results from interview v NOTE: Although unit-related err Inspection result	e diagnosis again. Follov CTION t as per the following proc OFF. able from the negative ter nit connectors of ITS com C sensor have a termina ole to the negative termin vith customer)" are reproc or symptoms occur, do no	w the trouble diagnosis pro- cedure for each unit. rminal. munication circuit. ation circuit. Check other unite hal. Check if the symptoms duced. ot confuse them with other s	ts first. described in the "Symptom

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000009789250

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 M133 and fuse block (J/B) side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M65.
- 2. Check the continuity between the fuse block (J/B) terminals.

Fuse block (J/B)		Continuity
Terminal No.	Terminal No.	Continuity
23C	22C	Existed
5C	4C	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of A/C auto amp.
- Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness connector.

Fuse block (J/B)	harness connector	A/C auto amp. harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M122	22C	Μοο	1	Existed	
IVI 135	4C	IVIOO	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 fuse block (J/B) harness connector M133 and the A/C auto amp.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Disconnect the following harness connectors. 3.
- ECM -
- A/C auto amp. -
- Display control unit _
- D 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector Display control unit harness connector		Display control unit harness connector		E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
Moo	1	M100	29	Existed	F
M188 21 M100	IVI TOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

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[CAN SYSTEM (TYPE 7)]

А INFOID:000000009789251

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789252

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. M37 114 113 Approx. 108 – 132	ECM harness connector			Resistance (O)
M37 114 113 Approx. 108 – 132	Connector No.	Termi	Resistance (22)	
	M37	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-188, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the fuse block (J/B) harness connector M133.

2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ess connector	Fuse block (J/B) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Moz	114	M122	21C	Existed
10137	113	M133 –	3C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

DLC BRANCH L	INE CIRCUIT				Λ
Diagnosis Proced	ure			INFOID:00000009789253	A
1. CHECK CONNECT	OR				В
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Data link connector Harness connector Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	vitch OFF. tery cable from the ne g terminals and con r M133 and fuse bloc normal? terminal and connec FOR OPEN CIRCUI	egative terminal. nectors for damage, I k (J/B) side connector tor. T	bend and loose cor	nnection (connector side	C
Check the resistance b	etween the data link	connector terminals.			F
	Data link cor	nnector		Pasistanas (0)	1
Connector No.	Connector No. Terminal No. Resistance (Ω)				
M25	6		14	Approx. 54 – 66	G
YES (Present error)>> YES (Past error)>>Er NO >> GO TO 3. 3.CHECK HARNESS 1. Disconnect the har 2. Check the continui	Check CAN system ror was detected in th CONTINUITY (OPEN mess connector M13 ty between the data I	type decision again. te data link connector N CIRCUIT) 3. ink connector and the	branch line circuit.		F
Data link	connector	Harness	connector		U.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
MOE	6		23C	Existed	k
M25	14	M133	5C	Existed	
Is the inspection result	normal?				l

YES >> Replace the fuse block (J/B).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789254

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. E121 29 28 Approx. 54 – 66	IPDM E/R harness connector			Resistance (O)
E121 29 28 Approx. 54 – 66	Connector No.	Termi		
	E121	29	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the harness connector E64.

2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R har	ness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F121	29	E64	6E	Existed
LIZI	28	L04	2E	Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

TCM BRANCH LINI	E CIRCU	IT			
Diagnosis Procedure					A INFOID:000000009789255
1.CHECK CONNECTOR					В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly 	OFF. cable from th ninals and co	e negative termin onnectors for dar	nal. nage, bend and loc	ose connection (un	it side and con- C
 Harness connector F12 Harness connector E10 Harness connector E65 	and fuse blo	ock (J/B) side cor	nnector		D
Is the inspection result norm	al?				E
YES >> GO TO 2. NO >> Repair the term	inal and conr	nector			
2. CHECK HARNESS FOR	OPEN CIRC	CUIT			_
1. Disconnect the connect	or of A/T ass	embly.			F
2. Check the resistance be	etween the A	/T assembly har	ness connector terr	ninals.	
	A/T assembly h	arness connector			G
Connector No. Terminal No. Resistance (Ω)					ance (Ω)
F2		3	8	Approx	√. 54 − 66 H
Is the measurement value w	vithin the spe	cification?			
 CHECK HARNESS FOR Remove the joint conner Check the continuity be side of the joint connect 	OPEN CIRC ctor. Refer to tween the A/ or.	CUIT 0 <u>TM-218, "Explo</u> T assembly harr	ded View" less connector side	e and the TCM har	ness connector
A/T assembly harness connec	tor side	TCM harness	connector		K
Terminal No.		Terminal	No.	Continui	iΥ
3		3		Existed	L
8		8		Existed	
Is the inspection result normYES>> GO TO 4.NO>> Replace the join 4. CHECK POWER SUPPL	<u>nal?</u> nt connector. Y AND GRO	UND CIRCUIT			LAN
Check the power supply and	the ground	circuit of the TCI	M. Refer to TM-181	, "Diagnosis Proce	<u>dure"</u> .
Is the inspection result norm	al?				
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the cont as detected i er supply and	rol valve & TCM n the TCM brand I the ground circl	. Refer to <u>TM-218.</u> h line. uit.	"Exploded View".	0
5. CHECK HARNESS CON	TINUITY (OI	PEN CIRCUIT)			Р
 Disconnect the harness Check the continuity be 	connector E tween the A/	65. T assembly harn	ess connector and	the harness conne	ector.

A/T assembly harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

F2	3	F65	9F	Existed
12	8	E03 -	5F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

HVAC BRANCH LIN	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000009789256	A
1.CHECK CONNECTOR				В
 1. Furn the ignition switch 2. Disconnect the battery of 3. Check the terminals an side and connector side 	OFF. cable from the negative ter d connectors of the A/C a e).	minal. uto amp. for damage, bend	and loose connection (unit	С
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2CHECK HARNESS FOR	inal and connector.			D
 Disconnect the connect Check the resistance be 	or of A/C auto amp. etween the A/C auto amp.	harness connector terminals	5.	Ε
	A/C auto amp. harness connecto	pr	Resistance (O)	F
Connector No.	Termi	nal No.		
M88	1	21	Approx. 54 – 66	G
YES >> GO TO 3. NO >> Repair the A/C a 3. CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUI	г		Н
Check the power supply an Diagnosis Procedure".	nd the ground circuit of the	A/C auto amp. Refer to \underline{H}	AC-92, "A/C AUTO AMP. :	
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the A/C auto amp. Re as detected in the A/C auto er supply and the ground c	fer to <u>HAC-113, "Removal a</u> o amp. branch line. ircuit.	nd Installation".	J
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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789257

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

C	Resistance (O)		
Connector No.	Termi		
M58	41	42	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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to <u>MWI-126, "Removal and Installation"</u>.

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

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

[CAN SYSTEM (TYPE 7)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009789258 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

INFOID:000000009789259

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the display 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 display control unit.
- 2. Check the resistance between the display control unit harness connector terminals.

Display control unit harness connector			Posistance (O)
Connector No.	Terminal No.		
M100	29	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the display control unit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the display control unit. Refer to <u>AV-239, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-277, "Removal and Installation"</u>.

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

NO >> Repair the power supply and the ground circuit.
BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000009789260
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
s the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	nal? inal and connector. OPEN CIRCUIT		
Disconnect the connect Check the resistance be	or of BCM. Stween the BCM harness co	onnector terminals.	
	BCM harness connector		Resistance (O)
Connector No.	Termir	nal No.	
M14	60	59	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPL Check the power supply and s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	I branch line. Y AND GROUND CIRCUIT I the ground circuit of the B hal? lace the BCM. Refer to <u>BC</u> as detected in the BCM bra	CM. Refer to <u>BCS-91, "Dia</u> S-98, "Removal and Installa unch line.	gnosis Procedure". ation".
NO >> Repair the power	er supply and the ground ci	rcuit.	

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789261

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ABS actuator and electric unit (control unit)
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connecto	r	Continuity
Connector No.	Termi	nal No.	Continuity
M24	4	6	Existed
17124	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. 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) har	ness connector	Resistance (O)
Connector No.	Termi	nal No.	
E35	25	15	Approx. 54 - 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

4.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-154, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-178, "Removal</u> and Installation".
- 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.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of harness connector E65.
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.
- With around view monitor system

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ABS actuator and ele harness o	ctric unit (control unit) connector	Harness	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E25	25	FGE	6F	Existed	-
E30	15	E00	7F	Existed	-
Without around view n	nonitor system	· · · ·			-
ABS actuator and electric harness of the second sec	ctric unit (control unit) connector	Harness	connector	Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.		
F25	25	Ecc	8F	Existed	-
E30	15	E05	3F	Existed	-
the inspection result nor	mal?				-
YES >> Replace the fu NO >> Repair the ha E35 and the h	use block (J/B) rness between the ABS arness connector E65	actuator and electric	unit (control unit) h	narness connecto	r

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789262

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

YES-2 >> Models without around view monitor system: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector	r	Continuity
Connector No.	Termi	nal No.	Continuity
M24	4	6	Existed
11/24	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. Disconnect the connector of AWD control unit.
- 3. Check the resistance between the AWD control unit harness connector terminals.

AWI	D control unit harness connect	or	Pagistanga (O)
Connector No.	Termi	nal No.	
M42	8	16	Approx. 54 – 66
the measurement value with	in the enertiention?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AWD control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-46, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-55, "Removal and Installation".

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

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procoduro

А

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 conector side). - Chassis control module - Harness connectors E47 - Harness connectors M39 - CAN gateway (Models with around view monitor system) Is the inspection result normal? YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models without around view monitor system: GO TO 3. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. M24 4 6 Existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). 3.CHECK HARNESS FOR OPEN CIRCUIT 1 1. Connect the connector of CAN gateway (Models with around view monitor system). 2. Disconnect the connector of CAN gateway (Models with around view monitor system). <	00009798767
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). - Chassis control module - Harness connectors E47 - Harness connectors M39 - CAN gateway (Models with around view monitor system) Is the inspection result normal? YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models with out around view monitor system: GO TO 3. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. M24 4 6 Existed 10 12 Existed YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). 3.CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of CAN gateway (Models with around view monitor system). 3.CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of CAN gateway (Models with around view monitor system). 3.CHECK HARNESS FOR OPEN CIRCUI	
CAN gateway (Models with around view monitor system) s the inspection result normal? YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models without around view monitor system: GO TO 3. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Connector No. CAN gateway harness connector Connector No. Continuity 4 6 Existed 10 12 Existed s the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway (Models with around view monitor system). Connect the connector of CAN gateway (Models with around view monitor system). Connect the connector of CAN gateway (Models with around view monitor system). Connect the connector of chassis control module harness connector terminals. Chassis control module harness connector Chassis control module harness connector terminals.	d con-
YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models without around view monitor system: GO TO 3. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) . Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 4 6 M24 10 12 Existed 10 12 Sthe inspection result normal? YES YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). Check the connector of CAN gateway (Models with around view monitor system). Connect the connector of chassis control module. Check the resistance between the chassis control module harness connector terminals.	
CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Continuity Connector No. Continuity A A A A A A Continuity Existed Existed S S GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of chassis control module. Check the resistance between the chassis control module harness connector terminals.	
. Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 4 6 Existed M24 10 12 Existed sthe inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). CHECK HARNESS FOR OPEN CIRCUIT . Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of chassis control module. . Check the resistance between the chassis control module harness connector Resistance (Ω)	
CAN gateway harness connector Continuity Connector No. Terminal No. Continuity M24 4 6 Existed M24 10 12 Existed s the inspection result normal? YES >> GO TO 3. Existed NO >> Check the harness and repair the root cause (CAN communication circuit 2). CHECK HARNESS FOR OPEN CIRCUIT . Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of chassis control module. . Check the resistance between the chassis control module harness connector terminals. Resistance (Q)	
Connector No. Terminal No. M24 4 6 Existed 10 12 Existed sthe inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). CHECK HARNESS FOR OPEN CIRCUIT . Connect the connector of CAN gateway (Models with around view monitor system). . Disconnect the connector of chassis control module. . Check the resistance between the chassis control module harness connector terminals.	
M24 4 0 Existed in the inspection result normal? YES >> GO TO 3. YES >> Check the harness and repair the root cause (CAN communication circuit 2). In the CHECK HARNESS FOR OPEN CIRCUIT In the connector of CAN gateway (Models with around view monitor system). In the provide the connector of chassis control module. In the chassis control module harness connector	
the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit 2). •.CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of chassis control module. Check the resistance between the chassis control module harness connector terminals.	
Chassis control module harness connector Resistance (Q)	
Kesistance (Q)	
Connector No. Terminal No.	
E22 4 3 Approx. 54 – 66	I
 the measurement value within the specification? YES >> GO TO 4. NO >> Repair the chassis control module branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT 	
heck the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-541, "Diagno rocedure"</u> . <u>rocedure"</u> . <u>a the inspection result normal?</u>	<u>gnosis</u>
YES (Present error)>>Replace the chassis control module. Refer to <u>DAS-542, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the chassis control module branch line. NO >> Repair the power supply and the ground circuit.	<u>on"</u> .

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789264

[CAN SYSTEM (TYPE 7)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		Continuity
Connector No.	Termi	nal No.	Continuity
M24	4	6	Existed
IVIZ4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	ng angle sensor harness conne	ector	Posistance (O)
Connector No.	Termi	nal No.	
M77	5	2	Approx. 54 – 66
	hin the energification?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-180, "Removal and Installation"</u>.

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

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:00000009789265 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M25 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M25 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 4}$. CHECK ECM AND BCM TERMINATION CIRCUIT Remove the ECM and the BCM. 1. 2. Check the resistance between the ECM terminals. LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 Check the resistance between the BCM terminals. BCM Resistance (Ω) Terminal No. 60 59 Approx. 108 – 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. >> Replace the ECM and/or the BCM. NO 5. CHECK SYMPTOM

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

< DTC/CIRCUIT DIAGNOSIS >

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< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

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

N	IAIN LINE	BETW	EEN DLC AND) HVA		
< DTC/CIRCUIT DIAG	NOSIS >				[CA	N SYSTEM (TYPE 8)]
DIC/CIRCUI	I DIAG	SNOS	SIS			
MAIN LINE BET	WEEN D	LC AN	ID HVAC CIRC	CUIT		
Diagnosis Procedu	ıre					INFOID:000000009789266
1. CHECK CONNECTO	DR					
 Turn the ignition sw Disconnect the batt Check the following and harness side). Harness connector 	ritch OFF. ery cable froi g terminals a M133 and fu	m the neo nd conno se block	gative terminal. ectors for damage, (J/B) side connector	bend an r	d loose conr	nection (connector side
Is the inspection result ifYES>> GO TO 2.NO>> Repair the formation of the second	normal? terminal and	connecto	or.			
 Disconnect the fuse Check the continuit 	e block (J/B) I y between th	narness o e fuse blo	connector M65. ock (J/B) terminals.			
	Fuse bl	ock (J/B)				Continuity
Terminal No			Terminal No.			
23C			22C			Existed
5C	10		4C			Existed
YES >> GO TO 3. NO >> Replace the 3. CHECK HARNESS (e fuse block (CONTINUITY	J/B). ′ (OPEN	CIRCUIT)			
 Disconnect the con Check the continuit nector. 	nector of A/C y between the	auto am e fuse blo	ip. ock (J/B) harness co	nnector	and the A/C a	auto amp. harness con-
Fuse block (J/B) ha	arness connecto	r	A/C auto amp. h	arness co	nnector	
Connector No.	Terminal N	No.	Connector No.	Te	minal No.	- Continuity
M133	22C		M88		1	Existed
	4C		moo		2	Existed
YES (Present error)>> YES (Past error)>>Err amp. NO >> Repair the	Check CAN sor was detect	system ty ted in th ween the	/pe decision again. e main line betwee fuse block (J/B) har	n the da	ta link conne nector M133	ector and the A/C auto and the A/C auto amp.

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000009789267

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit	harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	1	M100	29	Existed
1000	21	WITOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

ECM BRANCH LINE CIRCUIT

ECM BRANCH	LINE CIRCUIT			
Diagnosis Proced	ure			INFOID:000000009789268
	OR			
 Turn the ignition sv Disconnect the bai Check the followin nector side). ECM 	witch OFF. ttery cable from the ne g terminals and conne	egative terminal. ectors for damage, ben	nd and loose conn	ection (unit side and con-
Harness connecto	r M133 and fuse block	(J/B) side connector		
VES >> CO TO 2	<u>normal?</u>			
NO >> Repair the	terminal and connect	or.		
2.CHECK HARNESS	FOR OPEN CIRCUIT	-		
 Disconnect the contract the contract. Check the resistant 	nnector of ECM. Ice between the ECM	harness connector ter	minals.	
		oppector		
	ECM harness c	onneetor		$Resistance\left(\Omega\right)$
Connector No.	ECM harness c	Terminal No.		Resistance (Ω)
Connector No. M37	ECM harness c	Terminal No.	113	Resistance (Ω) Approx. 108 – 132
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER S	ECM harness c 114 alue within the specific JPPLY AND GROUNI	Terminal No.	113	Resistance (Ω) Approx. 108 – 132
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp s the inspection result YES (Present error)>>Er YES (Past error)>>Er	ECM harness c 114 alue within the specific UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. R ror was detected in th	Terminal No. <u>ation?</u> D CIRCUIT uit of the ECM. Refer to efer to <u>EC-578, "Remo</u> e ECM branch line.	113 o <u>EC-188. "Diagn</u> oval and Installatio	Resistance (Ω) Approx. 108 – 132 osis Procedure".
Connector No. M37 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp <u>s the inspection result</u> YES (Present error)> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS	ECM harness c 114 alue within the specific UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN	Terminal No. ation? D CIRCUIT uit of the ECM. Refer to efer to <u>EC-578, "Remo</u> e ECM branch line. e ground circuit. I CIRCUIT)	113 o <u>EC-188. "Diagn</u> oval and Installatic	Resistance (Ω) Approx. 108 – 132 Osis Procedure".
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI Check the power supp s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continu	ECM harness c 114 114 alue within the specific UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN ie block (J/B) harness ity between the ECM b	Terminal No. Terminal No. Eation? D CIRCUIT uit of the ECM. Refer to e ECM branch line. e ground circuit. I CIRCUIT) connector M133. harness connector and	113 o <u>EC-188, "Diagn</u> oval and Installation d the fuse block (J.	Resistance (Ω) Approx. 108 – 132 osis Procedure". on". /B) harness connector.
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER S Check the power supp s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS 1. Disconnect the fus 2. Check the continu	ECM harness c 114 114 alue within the specific UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. Re ror was detected in th power supply and the CONTINUITY (OPEN ie block (J/B) harness ity between the ECM b ss connector	Terminal No. Terminal No. Terminal No. D CIRCUIT uit of the ECM. Refer to efer to <u>EC-578, "Remo</u> e ECM branch line. e ground circuit. I CIRCUIT) connector M133. harness connector and Fuse block (J/B) ha	113 o EC-188. "Diagn oval and Installation d the fuse block (J. arness connector	Resistance (Ω) Approx. 108 – 132 osis Procedure". n". /B) harness connector.
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS Disconnect the fus Check the continu ECM harnes Connector No.	ECM harness c 114 114 alue within the specific UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. Re ror was detected in th power supply and the CONTINUITY (OPEN ie block (J/B) harness ity between the ECM to ss connector Terminal No.	Terminal No. Terminal No. Te	113 o EC-188. "Diagn oval and Installation d the fuse block (J. arness connector Terminal No.	Resistance (Ω) Approx. 108 – 132 osis Procedure". (B) harness connector. Continuity
Connector No. M37 S the measurement var YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp S the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the fus 2. Check the continu ECM harnes Connector No. M37	ECM harness c 114 114 alue within the specific UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN is block (J/B) harness ity between the ECM b ss connector Terminal No. 114	Terminal No. Terminal No. Eation? D CIRCUIT uit of the ECM. Refer to e ECM branch line. e ground circuit. I CIRCUIT) connector M133. harness connector and Fuse block (J/B) ha Connector No. M133	113 0 EC-188. "Diagn oval and Installation by al the fuse block (J. arness connector Terminal No. 21C	Resistance (Ω) Approx. 108 – 132 osis Procedure". (B) harness connector. Continuity Existed

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789269

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (O)
Connector No.	Termi		
M25	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 >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

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

Data link	connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M25	6	M122	23C	Existed
IWI25	14	10133	5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009789270 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). IPDM E/R Harness connector E64 and fuse block (J/B) side connector D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. 1. F Check the resistance between the IPDM E/R harness connector terminals. 2. IPDM E/R harness connector Resistance (Ω) Connector No. Terminal No. E121 Approx. 54 - 66 29 28 Is the measurement value within the specification? Н YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-36, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line. >> Repair the power supply and the ground circuit. NO 4.CHECK HARNESS FOR OPEN CIRCUIT Κ 1. Disconnect the harness connector E64. Check the continuity between the IPDM E/R harness connector and harness connector. 2. L IPDM E/R harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. LAN 29 6E Existed E121 E64 28 2E Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789271

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F12
- Harness connector E10
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

	$Resistance\left(\Omega\right)$		
Connector No.	Termi		
F2	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-218, "Exploded View"

Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector	Continuity
Terminal No.	Terminal No.	Continuity
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-181, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-218, "Exploded View".

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

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector E65.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	arness connector	Harness connector		s connector Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

F2	3	Ecc	9F	Existed	
F2	8	203	5F	Existed	A

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789272

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

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

	Posistanco (O)		
Connector No.	Termi		
M88	1	21	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 <u>HAC-92, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-113, "Removal and Installation".

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

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000009789273
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the combi · side).	ninal. nation meter for damage, t	pend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	<u>al?</u> nal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of combination meter. Stween the combination me	ter harness connector termi	nals.
Co	mbination meter harness connec	tor	Resistance (Ω)
Connector No.	Termir	al No.	
M58	41	42	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu	bination meter branch line. Y AND GROUND CIRCUIT	ombination meter. Refer to	MWI-104, "COMBINATION
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	al? ace the combination meter as detected in the combina er supply and the ground ci	. Refer to <u>MWI-126, "Remo</u> tion meter branch line. rcuit.	val and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

Diagnosis Procedure

INFOID:000000009789274

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

AV BRANCH LINE (CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000009789275	A
1. CHECK CONNECTOR				В
 Turn the ignition switch (2. Disconnect the battery of 3. Check the terminals and (unit side and connector) 	OFF. able from the negative tern d connectors of the display side).	ninal. y control unit for damage, l	bend and loose connection	С
Is the inspection result norm	al?			
YES >> GO TO 2.	nal and connector			D
2.CHECK HARNESS FOR	OPEN CIRCUIT			
 Disconnect the connect Check the resistance be 	or of display control unit. tween the display control u	init harness connector term	inals.	E
Dis	splay control unit harness connec	tor	Posistanco (O)	F
Connector No.	Termin	al No.	Resistance (12)	
M100	29	17	Approx. 54 – 66	G
YES >> GO TO 3. NO >> Repair the displa 3.CHECK POWER SUPPL	Ithin the specification? ay control unit. Y AND GROUND CIRCUIT	-		F
Check the power supply and TROL UNIT : Diagnosis Prod	the ground circuit of the o <u>cedure"</u> . al?	display control unit. Refer t	o AV-239, "DISPLAY CON-	
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the display control unit as detected in the display c ar supply and the ground cir	. Refer to <u>AV-277, "Remova</u> ontrol unit branch line. rcuit.	al and Installation".	J
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< DTC/CIRCUIT DIAGNOSIS >

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789276

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 TCU 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 TCU.

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

	Resistance (O)		
Connector No.	Termi		
M81	9	10	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCU branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCU. Refer to <u>AV-589, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation".

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

BCM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000009789277
.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an connector side). 	OFF. cable from the negative tern d connectors of the BCM fe	ninal. or damage, bend and loos	e connection (unit side and
the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	<u>al?</u> inal and connector. OPEN CIRCUIT		
Disconnect the connectCheck the resistance be	or of BCM. atween the BCM harness co	onnector terminals.	
	BCM harness connector		Resistance (0)
Connector No.	Terminal No.		
M14	60	59	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPL heck the power supply and the inspection result norm	branch line. Y AND GROUND CIRCUIT the ground circuit of the Build of the Build of the BCM. Refer to BCM	- CM. Refer to <u>BCS-91, "Dia</u>	gnosis Procedure".
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	ace the BCM. Refer to <u>BCS</u> as detected in the BCM bra ar supply and the ground cir	<u>5-98, "Removal and Installa</u> nch line. rcuit.	<u>ation"</u> .

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789278

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ABS actuator and electric unit (control unit)
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
17124	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. 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	Resistance (O)		
Connector No.	Termi	nal No.	
E35	25	Approx. 54 - 66	

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

4.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-154, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-178, "Removal</u> and Installation".
- 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.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of harness connector E65.
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.
- With around view monitor system

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ABS actuator and elec harness c	etric unit (control unit) onnector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E25	25	For	6F	
E30 -	15	E05	7F	Existed
Without around view m	nonitor system			
ABS actuator and elect harness co	tric unit (control unit) onnector	Harness o	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
F25	25	Ecc	8F	Existed
E30 -	15	E05 -	3F	Existed
the inspection result nor YES >> Replace the fu NO >> Repair the har	<u>mal?</u> se block (J/B) ness between the ABS	actuator and electric	unit (control unit)	harness connecto

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789279

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

YES-2 >> Models without around view monitor system: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector				
Connector No.	Termi	nal No.	Continuity		
M24	4	4 6			
11/24	M24 10 12				

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

$\mathbf{3}$. Check harness for open circuit

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. Disconnect the connector of AWD control unit.
- 3. Check the resistance between the AWD control unit harness connector terminals.

AWI	AWD control unit harness connector				
Connector No.	Termi	nal No.			
M42	M42 8 16				
the measurement value with	in the enertiention?				

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AWD control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-46, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-55, "Removal and Installation".

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

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

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Diagnosis Procedure			INFOID:000000009798835			
1.CHECK CONNECTOR						
 Turn the ignition switch (2) Disconnect the battery of 3. Check the following term nector side). Chassis control module 	OFF. able from the negative tern ninals and connectors for d	ninal. amage, bend and loose co	nnection (unit side and con-			
 Harness connectors E47 Harness connectors M3 CAN gateway (Models v 	7 9 vith around view monitor sy	vstem)				
Is the inspection result norm	al?					
YES-1 >> Models with aro YES-2 >> Models without a NO >> Repair the termi	and view monitor system: G around view monitor system nal and connector.	30 TO 2. n: GO TO 3.				
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)					
 Disconnect the connect Check the continuity bet 	or of CAN gateway. ween the CAN gateway ha	rness connector terminals.				
Connector No	CAN gateway harness connector		Continuity			
	Connector No. Terminal No. 6 Existed					
M24	10	12	Existed			
 CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be 	OPEN CIRCUIT of CAN gateway (Models wi or of chassis control module tween the chassis control r	ith around view monitor sys e. module harness connector	stem). terminals.			
Chas	sis control module harness conne	ector	Popietanes (0)			
Connector No.	Termin	al No.				
E22	4	3	Approx. 54 – 66			
Is the measurement value w YES >> GO TO 4. NO >> Repair the chase 4.CHECK POWER SUPPLY	ithin the specification? sis control module branch li Y AND GROUND CIRCUIT	ine.				
Procedure". Is the inspection result norm	al?	chassis control module. Re	er to <u>DAS-541, "Diagnosis</u>			
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the chassis control mo as detected in the chassis of r supply and the ground cir	dule. Refer to <u>DAS-542, "F</u> control module branch line. rcuit.	emoval and Installation".			

А

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789281

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector				
Connector No.	Termi	nal No.	Continuity		
M24	4	Existed			
11/24	M24 10 12				

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	Steering angle sensor harness connector			
Connector No.	Termi	nal No.		
M77	M77 5 2			
	hin the energification?			

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000009789282 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M25 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M25 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. ${f 4}$. CHECK ECM AND BCM TERMINATION CIRCUIT Remove the ECM and the BCM. 1. 2. Check the resistance between the ECM terminals. LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 Check the resistance between the BCM terminals. BCM Resistance (Ω) Terminal No. 60 59 Approx. 108 – 132 Ρ Is the measurement value within the specification? YES >> GO TO 5. >> Replace the ECM and/or the BCM. NO 5. CHECK SYMPTOM

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

< DTC/CIRCUIT DIAGNOSIS >

LAN-387

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

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

N		BETWE	EEN DLC AND	O HVA		
< DTC/CIRCUIT DIAG					[CA	N STSTEM (TTPE 9)]
MAIN LINE BEI	WEEN D	_C ANL	D HVAC CIR	CUII		
Diagnosis Procedu	ure					INFOID:000000009789283
1. CHECK CONNECTO	OR					
 Turn the ignition sw Disconnect the bat Check the followin and harness side). Harness connector 	vitch OFF. tery cable fror g terminals a M133 and fu	n the nega nd connea se block (、	ative terminal. ctors for damage, I/B) side connecto	bend ar or	d loose con	nection (connector side
Is the inspection resultYES>> GO TO 2.NO>> Repair the	normal? terminal and o	connector.				
 CHECK HARNESS Disconnect the fuse Check the continuit 	CONTINUITY e block (J/B) f y between the	(OPEN C narness co e fuse bloo	IRCUIT) nnector M65. ck (J/B) terminals.			
	Fuse blo	ock (J/B)				Continuity
Terminal No	•		Terminal No.			
			220			Existed
YES >> GO TO 3. NO >> Replace the 3. CHECK HARNESS	<u>normal?</u> e fuse block (CONTINUITY	J/B). (OPEN C	IRCUIT)			
 Disconnect the con Check the continuit nector. 	nector of A/C y between the	auto amp e fuse bloc	k (J/B) harness co	onnector	and the A/C	auto amp. harness con-
Fuse block (J/B) h	arness connecto	r	A/C auto amp. I	harness co	nnector	
Connector No.	Terminal N	lo.	Connector No.	Te	rminal No.	- Continuity
M133	22C		M88		1	Existed
	4C				2	Existed
YES (Present error)>> YES (Past error)>>Err amp. NO >> Repair the	Check CAN sor was detect	system typ ted in the veen the fu	e decision again. main line betwee use block (J/B) hai	en the da	ata link conn	L ector and the A/C auto 3 and the A/C auto amp.

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000009789284

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M88	1	M100	29	Existed
1000	21	WITOO	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

ECM BRANCH LINE CIRCUIT

ECM BRANCH	LINE CIRCUIT			
Diagnosis Proced	ure			INF01D:000000009789286
1.снеск соллест	ÖR			
 Turn the ignition sv Disconnect the bai Check the followin nector side). ECM 	witch OFF. ttery cable from the ne g terminals and conne	egative terminal. ectors for damage, ben	nd and loose conn	ection (unit side and con-
Harness connecto	r M133 and fuse block	k (J/B) side connector		
<u>s the inspection result</u>	normal?			
NO >> Repair the	terminal and connect	or.		
2.CHECK HARNESS	FOR OPEN CIRCUIT	T		
 Disconnect the color Check the resistar 	nnector of ECM. nce between the ECM	harness connector ter	minals.	
	5011	onnector		
	ECM harness c			$Resistance\left(\Omega\right)$
Connector No.	ECM harness c	Terminal No.		Resistance (Ω)
Connector No. M37	ECM harness c	Terminal No.	113	Resistance (Ω) Approx. 108 – 132
Connector No. M37 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI	UPPLY AND GROUNI	Terminal No.	113	Resistance (Ω) Approx. 108 – 132
Connector No. M37 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp <u>s the inspection result</u> YES (Present error)> YES (Past error)>>Er NO >> Repair the	UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the	Terminal No. <u>ation?</u> D CIRCUIT uit of the ECM. Refer to efer to <u>EC-578, "Remo</u> e ECM branch line. a ground circuit.	0 EC-188, "Diagn	Resistance (Ω) Approx. 108 – 132 osis Procedure". on".
Connector No. M37 S the measurement var YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp Is the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS	UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN	Terminal No. Terminal No. CIRCUIT uit of the ECM. Refer to efer to EC-578, "Remo e ECM branch line. e ground circuit. I CIRCUIT)	113 o <u>EC-188. "Diagn</u> oval and Installatio	Resistance (Ω) Approx. 108 – 132 osis Procedure".
Connector No. M37 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp <u>s the inspection result</u> YES (Present error)> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS 1. Disconnect the fus 2. Check the continu	UPPLY AND GROUNI ly and the ground circu normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN ie block (J/B) harness ity between the ECM b	Terminal No. Terminal No. Cation? D CIRCUIT uit of the ECM. Refer to e ECM branch line. e ground circuit. I CIRCUIT) connector M133. harness connector and	o <u>EC-188. "Diagn</u> oval and Installation d the fuse block (J	Resistance (Ω) Approx. 108 – 132 osis Procedure". on". /B) harness connector.
Connector No. M37 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp <u>s the inspection result</u> YES (Present error)> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS 1. Disconnect the fus 2. Check the continu ECM harnes	Interpretended by the second decided by the	Terminal No. Terminal No. Eation? D CIRCUIT uit of the ECM. Refer to efer to <u>EC-578, "Remo</u> e ECM branch line. ground circuit. I CIRCUIT) connector M133. harness connector and Fuse block (J/B) ha	113 0 EC-188. "Diagn oval and Installation by al the fuse block (Jarness connector	Resistance (Ω) Approx. 108 – 132 Osis Procedure". On". /B) harness connector.
Connector No. M37 s the measurement var YES >> GO TO 3. NO >> GO TO 4. CHECK POWER Si Check the power supp s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continu ECM harner Connector No.	Interpretation of the second s	Terminal No. Eation? D CIRCUIT uit of the ECM. Refer to efer to <u>EC-578, "Remo</u> e ECM branch line. e ground circuit. N CIRCUIT) connector M133. harness connector and Fuse block (J/B) ha Connector No.	113 o EC-188, "Diagn oval and Installation o	Resistance (Ω) Approx. 108 – 132 osis Procedure". on". /B) harness connector. Continuity
Connector No. M37 s the measurement var YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SI Check the power supp s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the fus 2. Check the continu ECM harnes Connector No. M37	Interpretation of the second s	Terminal No. Terminal No. Te	113 0 EC-188. "Diagn oval and Installation bval and Installation d the fuse block (Jamess connector Terminal No. 21C	Resistance (Ω) Approx. 108 – 132 osis Procedure". on". /B) harness connector. Continuity Existed

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789287

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

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.

	Resistance (O)		
Connector No.	Termi	nal No.	Tresistance (22)
M25	6	Approx. 54 – 66	

Is the measurement value within the specification?

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

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

NO >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

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

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M25	6	M122	23C	Existed
IWI25	14	10133	5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009789288 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). IPDM E/R Harness connector E64 and fuse block (J/B) side connector D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of IPDM E/R. F Check the resistance between the IPDM E/R harness connector terminals. 2. IPDM E/R harness connector Resistance (Ω) Terminal No. Connector No. E121 Approx. 54 - 66 29 28 Is the measurement value within the specification? Н YES >> GO TO 3. NO >> GO TO 4. ${ m 3.check}$ power supply and ground circuit Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-36, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line. >> Repair the power supply and the ground circuit. NO Κ 4.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the harness connector E64. Check the continuity between the IPDM E/R harness connector and harness connector. 2. L

IPDM E/R harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	I No.	
E121	29	E64	6E	Existed	
	28		2E	Existed	

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789289

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F12
- Harness connector E10
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	$Resistance\left(\Omega\right)$		
Connector No.	Termi	1(03)3(21)00 (32)	
F2	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Remove the joint connector. Refer to <u>TM-218</u>, "Exploded View"
- Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector	Continuity	
Terminal No.	Terminal No.	Continuity	
3	3	Existed	
8	8	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-181, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-218, "Exploded View".

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector E65.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

F2	3	F65	9F	Existed	Λ
	8	205	5F	Existed	A

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789290

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

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

	$Resistance\left(\Omega\right)$		
Connector No.	Termi		
M88	1	21	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 <u>HAC-92, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-113, "Removal and Installation".

YES (Past error)>>Error was detected in the A/C auto amp. branch line.
M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

M&A BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INF0ID:00000009789291
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals ar (unit side and connecto) 	OFF. cable from the negative terr id connectors of the combi r side).	ninal. nation meter for damage, t	pend 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		
 Disconnect the connect Check the resistance be 	or of combination meter. etween the combination me	ter harness connector termi	inals.
C	ombination meter harness connec	tor	Resistance (O)
Connector No.	Termir	nal No.	
M58	41	42	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the com 3. CHECK POWER SUPPL Check the power supply an	bination meter branch line. Y AND GROUND CIRCUIT	- ombination meter. Refer to	<u>MWI-104, "COMBINATION</u>
METER : Diagnosis Proced	ure".		
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	<u>nal?</u> lace the combination meter as detected in the combina er supply and the ground ci	: Refer to <u>MWI-126, "Remo</u> tion meter branch line. rcuit.	val and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure

INFOID:000000009789292

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

AV BRANCH LINE (CIRCUIT			Λ
Diagnosis Procedure			INFOID:00000009789293	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the display side).	ninal. y control unit for damage, t	pend and loose connection	С
Is the inspection result norm	al?			
YES >> GO TO 2.	inal and connector			D
2 CHECK HARNESS FOR				
 Disconnect the connect Check the resistance be 	or of display control unit. Stween the display control u	init harness connector termi	nals.	E
Dis	splay control unit harness connec	tor	$Resistance\left(\Omega\right)$	F
Connector No.	Termir	al No.		
M100	29	17	Approx. 54 – 66	G
Is the measurement value wYES>> GO TO 3.NO>> Repair the display 3. CHECK POWER SUPPL	ithin the specification? ay control unit. Y AND GROUND CIRCUIT			Н
Check the power supply and TROL UNIT : Diagnosis Pro-	d the ground circuit of the c <u>cedure"</u> . al?	display control unit. Refer to	O AV-239, "DISPLAY CON-	Ι
YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	lace the display control unit as detected in the display c er supply and the ground ci	. Refer to <u>AV-277, "Remova</u> ontrol unit branch line. rcuit.	al and Installation".	J
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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789294

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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			Posistanco (O)
Connector No.	Termi		
M14	60 59		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-98, "Removal and Installation".

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

ABS BRANCH LINE			
Diagnosis Procedure			INF01D:000000009789295
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative terr ninals and connectors for d	ninal. lamage, bend and loose cor	nection (unit side and con-
 ABS actuator and electr Harness connector E65 Is the inspection result norm 	ic unit (control unit) and fuse block (J/B) side c al?	connector	
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	und view monitor system: (around view monitor syster inal and connector.	GO TO 2. m: GO TO 3.	
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector	r	Continuity
Connector No.	Termir	nal No.	
M24	4	6	Existed
 Connect the connector of Disconnect the connect Check the resistance be nals. 	of CAN gateway (Models w or of ABS actuator and elec	rith around view monitor sys	tem).
ABS actuator	and electric unit (control unit) harr	ness connector	Resistance (Ω)
E35	25	15	Approx 54 - 66
s the measurement value w YES >> GO TO 4. NO >> GO TO 5. 1.CHECK POWER SUPPL	<u>ithin the specification?</u> Y AND GROUND CIRCUIT	Γ	
Check the power supply an BRC-154, "Diagnosis Proce	d the ground circuit of the <u>dure"</u> .	ABS actuator and electric	unit (control unit). Refer to
s the inspection result norm YES (Present error)>>Rep and Installation	<u>al?</u> lace the ABS actuator and	electric unit (control unit). Re	efer to <u>BRC-178, "Removal</u>
NO >> Repair the powe	sr supply and the ground ci	rcuit.	
 Disconnect the connect Check the resistance be nals. 	or of harness connector E6	9 5. and electric unit (control unit) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-401

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and ele harness	ctric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E25	25	EGE	6F	Existed
E33	15		7F	Existed
	nonitor avatom			

- Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	8F	Existed
E35	15	205	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure			INFOID:00000009789296
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Steering force control m 	OFF. cable from the negative terr ninals and connectors for d nodule	ninal. amage, bend and loose cor	nnection (unit side and con-
- CAN gateway (Models)	with around view monitor sy	/stem)	
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	und view monitor system: (around view monitor syster inal and connector.	GO TO 2. n: GO TO 3.	
2. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT))	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	EXISTED
tion circuit 2 sid	ess and repair or replace (i	t snield line is open) the roo	
3.CHECK HARNESS FOR	e). OPEN CIRCUIT		ot cause (CAN communica-
 3.CHECK HARNESS FOR 1. Connect the connector of 2. Disconnect the connect 3. Check the resistance be 	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co	ith around view monitor sys module. ontrol module harness conn	ot cause (CAN communica- tem). ector terminals.
3.CHECK HARNESS FOR 1. Connect the connector of 2. Disconnect the connector 3. Check the resistance be Steering	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co	ith around view monitor sys module. ontrol module harness conn	ot cause (CAN communica- tem). ector terminals. Resistance (Ω)
3.CHECK HARNESS FOR 1. Connect the connector of 2. Disconnect the connect 3. Check the resistance be Steering Connector No. M71	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termir	ith around view monitor sys module. ontrol module harness conn onnector nal No.	tem). ector terminals. Resistance (Ω)
3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steering Connector No. M71 Is the measurement value w	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termir 14	refined into the openly the for module. ontrol module harness conn onnector hal No. 15	ot cause (CAN communica- item). ector terminals. Resistance (Ω) Approx. 54 – 66
3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the box 4. CHECK POWER SUPPL	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termir 14 vithin the specification? dy harness. Y AND GROUND CIRCUIT	ith around view monitor sys module. ontrol module harness conn onnector hal No. 15	ot cause (CAN communica- item). ector terminals. Resistance (Ω) Approx. 54 – 66
3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be Steering Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the boo 4. CHECK POWER SUPPL Check the power supply and nosis Procedure".	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termir 14 vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s	ith around view monitor sys module. ontrol module harness conn onnector nal No. 15	ot cause (CAN communica- item). ector terminals. Resistance (Ω) Approx. 54 – 66
3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the box 4. CHECK POWER SUPPL Check the power supply and nosis Procedure". Is the inspection result norm YES (Present error)>>Rep tion".	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termir 14 vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s hal? lace the steering force con	ith around view monitor sys module. ontrol module harness conn onnector hal No. 15 teering force control module trol module. Refer to <u>STC-4</u>	et cause (CAN communica- item). ector terminals. Resistance (Ω) Approx. 54 – 66 e. Refer to <u>STC-407, "Diag-</u>
3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the boo 4.CHECK POWER SUPPL Check the power supply and nosis Procedure". Is the inspection result norm YES (Present error)>>Rep tion". YES (Past error)>>Error w NO >> Repair the power YES (Past error)>>Error w NO >> Repair the power State of the power Stat	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force con g force control module harness co Termir 14 vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s hal? lace the steering force con as detected in the steering er supply and the ground ci	ith around view monitor sys module. ontrol module harness connon nector hal No. 15 teering force control module trol module. Refer to <u>STC-4</u> control module branch line. rcuit.	ector terminals. Resistance (Ω) Approx. 54 – 66 Refer to <u>STC-407, "Diag-</u>

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789297

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

YES-2 >> Models without around view monitor system: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
11/24	M24 10 12		Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. Disconnect the connector of AWD control unit.
- 3. Check the resistance between the AWD control unit harness connector terminals.

AWI	Posistanaa (O)		
Connector No.	Termi		
M42	8 16		Approx. 54 – 66
	in the enertiention?		+

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AWD control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-46, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-55. "Removal and Installation".

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

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 9)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

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Diagnosis Procedure			INFOID:00000009798836
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following term 	OFF. able from the negative tern ninals and connectors for d	ninal. amage, bend and loose co	onnection (unit side and con-
 nector side). Chassis control module Harness connectors E4 Harness connectors M3 CAN gateway (Models v 	7 9 vith around view monitor sy	stem)	
Is the inspection result norm	<u>al?</u>	,	
YES-1 >> Models with aro YES-2 >> Models without a NO >> Repair the termi	und view monitor system: G around view monitor systen nal and connector.	GO TO 2. n: GO TO 3.	
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)		
 Disconnect the connect Check the continuity bet 	or of CAN gateway. ween the CAN gateway ha	rness connector terminals	
	CAN gateway harness connector		Continuity
Connector No.	Termin	al No.	
M24	4	6 12	Existed
 CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be 	OPEN CIRCUIT of CAN gateway (Models wi or of chassis control module tween the chassis control r	ith around view monitor sy e. nodule harness connector	stem). terminals.
Chas	sis control module harness conne	ector	Posietanco (O)
Connector No.	Termin	al No.	
E22	4	3	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO >> Repair the chase 4. CHECK POWER SUPPLE Check the power supply and Procedure". Is the inspection result norm YES (Present error)>>Repl	<u>itmin the specification?</u> sis control module branch li Y AND GROUND CIRCUIT I the ground circuit of the c <u>al?</u> ace the chassis control mo	ine. chassis control module. Re dule. Refer to <u>DAS-542, "I</u>	efer to <u>DAS-541, "Diagnosis</u> Removal and Installation <u>"</u> .
YES (Past error)>>Error wa NO >> Repair the powe	as detected in the chassis c r supply and the ground cir	control module branch line cuit.	

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009789299

[CAN SYSTEM (TYPE 9)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
10124	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	Registered (O)		
Connector No.	Termi		
M77	5	Approx. 54 – 66	
	hin the energification?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "Diagnosis <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "Removal and Installation".

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

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and lon nector side). - Steering angle main control module - Chassis control module Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. 2. Check the continuity between the chassis control module harness contro	nector terminals.
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 lonnector side). - Steering angle main control module - Chassis control module Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. 2. Check the continuity between the chassis control module harness control Chassis control module harness connector E22 19 19 11 7 8	nector terminals.
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 lonector side). - Steering angle main control module - Chassis control module Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. 2. Check the continuity between the chassis control module harness control module harness connector Chassis control module harness connector E22 19 19 11 7 8	nector terminals.
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. 2. Check the continuity between the chassis control module harness control Chassis control module harness connector Connector No. Terminal No. E22 19 11 7 8	nector terminals.
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. 2. Check the continuity between the chassis control module harness connector Chassis control module harness connector Chassis control module harness connector Connector No. Terminal No. E22 19 11 7 8	Continuity
2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. 2. Check the continuity between the chassis control module harness control Chassis control module harness connector Connector No. 19 11 E22 7 8	Continuity
1. Disconnect the connector of chassis control module. 2. Check the continuity between the chassis control module harness connector Chassis control module harness connector Connector No. Terminal No. E22 19 11 7 8	Continuity
Chassis control module harness connector Connector No. Terminal No. E22 19 11 7 8	Continuity
Connector No. Terminal No. E22 19 11 7 8	Continuity
E22 19 11 11 8	Eviete d
7 8	Existed
	Existed
 Connect the connector of chassis control module. Disconnect the connector of steering angle main control module. Check the resistance between the steering angle main control module 	harness connector terminals.
Steering angle main control module harness connector	
Connector No. Terminal No.	Resistance (12)
E26 14 15	Approx. 54 – 66
Is the measurement value within the specification? YES >> GO TO 4.	
4.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle main "Diagnosis Procedure". Is the inspection result normal?	control module. Refer to STC-407.

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009789301

[CAN SYSTEM (TYPE 9)]

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Continuity	
M25	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
M25	6	Ground	Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

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

3. Check the resistance between the BCM terminals.

BCM		- Resistance (Ω)	
Terminal No.			
60	59	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5.CHECK SYMPTOM

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

LAN-408

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009789303

[CAN SYSTEM (TYPE 9)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.

Are the CAN communication 1 and/or CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

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

Check the continuity between the chassis control module harness connector.

Connector No. Terminal No. Contractive E22 19 7 Not existed	Cha	ssis control module harness conr	ector	Continuity
E22 19 7 Not existed	Connector No.	Termi	nal No.	Continuity
	E22	19	7	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control mod	lule harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	19	Ground	Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

${f 5.}$ CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

- 1. Remove the chassis control module.
- 2. Check the resistance between the chassis control module terminals.

Chassis control module		Posistance (O)
Terminal No.		Resistance (22)
19	7	Approx. 108 – 132
11	8	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 9)]	
Connect all the connectors. Check if the symptoms described in the "Sym customer)" are reproduced.	ptom (Results from interview with	A
Inspection result		
Reproduced>>GO TO 7. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnost detected.	sis procedure when past error is	В
7. CHECK UNIT REPRODUCTION		
Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF.	(С
 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of chassis communication circuit. NOTE: 		D
 Chassis control module has two termination circuits. Check other units f Connect the battery cable to the negative terminal. Check if the symp (Results from interview with customer)" are reproduced. NOTE: 	irst. otoms described in the "Symptom _F	
Although unit-related error symptoms occur, do not confuse them with a Inspection result	ther symptoms.	F
Reproduced>>Connect the connector. Check other units as per the above Non-reproduced>>Replace the unit whose connector was disconnected.	procedure.	G

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000009790539

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 M133 and fuse block (J/B) side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M65.
- 2. Check the continuity between the fuse block (J/B) terminals.

Fuse bl	ock (J/B)	Continuity
Terminal No.	Terminal No.	Continuity
23C	22C	Existed
5C	4C	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of A/C auto amp.
- Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness connector.

Fuse block (J/B)	Fuse block (J/B) harness connector A/C auto amp. harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133	22C	Μοο	1	Existed
	4C	IVIOO	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 fuse block (J/B) harness connector M133 and the A/C auto amp.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 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.
- Display control unit
- Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M88	1	M100	29	Existed	E
	21	IVI I UU	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

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[CAN SYSTEM (TYPE 10)]

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INFOID:000000009790540

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790544

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No Terminal No	
M37 114 1 ⁻	3 Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-188, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the fuse block (J/B) harness connector M133.

2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ess connector	Fuse block (J/B) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	114	M122	21C	Existed
10137	113	- WI135	3C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

DLC BRANCH L	INE CIRCUIT				Λ
Diagnosis Procedu	ure			INFOID:00000009790545	A
1.CHECK CONNECTO	OR				В
 Turn the ignition sw Disconnect the bat Check the followin and harness side). Data link connector Harness connector 	vitch OFF. tery cable from the n g terminals and con M133 and fuse bloc	egative terminal. nectors for damage, I k (J/B) side connector	bend and loose o	connection (connector side	C
Is the inspection result	normal?				
NO >> Repair the 2.CHECK HARNESS	terminal and connec FOR OPEN CIRCUI	tor. T			E
Check the resistance be	etween the data link	connector terminals.			F
	Data link co	nnector		Resistance (O)	
Connector No.		Terminal No.			0
M25	6		14	Approx. 54 – 66	G
Is the measurement valueYES (Present error)>>YES (Past error)>>ErrNO>> GO TO 3.3.CHECK HARNESS	Check CAN system	<u>cation?</u> type decision again. ne data link connector N CIRCUIT)	branch line circu	it.	H
 Disconnect the har Check the continuit 	ness connector M13 between the data l	3. link connector and the	harness connect	tor.	J
Data link o	Data link connector Harness connector				
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M25	6	M133	23C	Existed	K
W20	14		5C	Existed	
Is the inspection result	normal?				I

YES >> Replace the fuse block (J/B).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790546

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. E121 29 28 Approx. 54 – 66		Resistance (O)	
E121 29 28 Approx. 54 – 66	Connector No.	Termi	Resistance (12)
	E121	29	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the harness connector E64.

2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R harness connector		Harness	Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
F121	29	E64	6E	Existed	
LIZI	28	L04	2E	Existed	

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

TCM BRANCH LIN	E CIR	CUIT				Λ
Diagnosis Procedure					INF01D:000000009790547	A
1.CHECK CONNECTOR						В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F12 	OFF. cable fror ninals an	n the negative ter d connectors for c	minal. damage, bend	and loose cor	nnection (unit side and con-	С
 Harness connector E10 Harness connector E65 	and fuse	e block (J/B) side (connector			D
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term	nal? inal and o	connector.				E
2. CHECK HARNESS FOR	OPEN C	CIRCUIT				F
 Disconnect the connect Check the resistance be 	or of A/T etween th	assembly. ne A/T assembly h	arness conne	ctor terminals.		G
	A/T assem	bly harness connecto	r 		Resistance (Ω)	
Connector No.		3		3	Approx, 54 – 66	Н
 3.CHECK HARNESS FOR 1. Remove the joint conne 2. Check the continuity be side of the joint connect 	OPEN C ctor. Refe tween the or.	CIRCUIT er to <u>TM-218, "Ex</u> e A/T assembly ha	<u>ploded View"</u> arness conneo	ctor side and th	he TCM harness connector	J
A/T assembly harness connect	tor side	TCM harne	ss connector			Κ
Terminal No.		Termi	nal No.		Continuity	
3			3		Existed	L
8			8		Existed	
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPL	nal? nt connec .Y AND G	xtor. GROUND CIRCUI	T			LAN
Check the power supply and	d the grou	und circuit of the T	CM. Refer to	<u>TM-181, "Diac</u>	nosis Procedure".	IN
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	<u>al?</u> lace the as detect er supply	control valve & TC ted in the TCM bra and the ground c	CM. Refer to \underline{T} anch line. ircuit.	<u>M-218, "Explo</u>	ded View".	0
5. CHECK HARNESS CON	ITINUITY	(OPEN CIRCUIT	-)			Ρ
 Disconnect the harness Check the continuity be 	connect tween the	or E65. e A/T assembly ha	arness connec	tor and the ha	irness connector.	

A/T assembly h	A/T assembly harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

E2	3	E65	9F	Existed
12	8	205	5F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

HVAC BRANCH LIN	NE CIRCUIT		
Diagnosis Procedure			INFOID:00000009790548
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an side and connector side Is the inspection result porm 	OFF. cable from the negative terr d connectors of the A/C au).	ninal. Ito amp. for damage, ber	nd and loose connection (unit
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of A/C auto amp. etween the A/C auto amp. h	arness connector termina	als.
	A/C auto amp. harness connecto	r	Resistance (O)
Connector No.	Termir	nal No.	
M88	1	21	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the A/C a 3.CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUIT	- -	
Diagnosis Procedure".	id the ground circuit of the	A/C auto amp. Refer to	<u>HAC-92, "A/C AUTO AMP. :</u>
YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	lace the A/C auto amp. Ref as detected in the A/C auto er supply and the ground ci	er to <u>HAC-113, "Removal</u> amp. branch line. rcuit.	and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790549

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

C	Resistance (O)	
Connector No.	Termi	
M58	41	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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to <u>MWI-126, "Removal and Installation"</u>.

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

[CAN SYSTEM (TYPE 10)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009790550 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790551

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the display 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 display control unit.
- 2. Check the resistance between the display control unit harness connector terminals.

Di	$Resistance\left(\Omega\right)$	
Connector No.	Termi	
M100	29	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the display control unit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the display control unit. Refer to <u>AV-239, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-277, "Removal and Installation"</u>.

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

TCU BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

TCU BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000009790836
1.CHECK CONNECTOR			
 Turn the ignition switch (2. Disconnect the battery c Check the terminals and connector side). 	DFF. able from the negative terr d connectors of the TCU fe	ninal. or damage, bend and loose	e connection (unit side and
Is the inspection result norm YES >> GO TO 2.	<u>al?</u>		
NO >> Repair the termin	nal and connector.		
 Disconnect the connect Check the resistance be 	or of TCU. tween the TCU harness co	onnector terminals.	
	TCU harness connector		Posistanco (0)
Connector No.	Termir	nal No.	
M81	9	10	Approx. 54 – 66
Is the measurement value with the measurement value withe with the measurement value with the with	thin the specification? branch line. Y AND GROUND CIRCUIT the ground circuit of the T	- CU. Refer to <u>AV-589, "TCU</u>	: Diagnosis Procedure".
Is the inspection result normal YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	al? ace the TCU. Refer to <u>AV-</u> as detected in the TCU bra r supply and the ground ci	597, "Removal and Installati nch line. rcuit.	on".

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790552

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

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

	Posistanco (O)		
Connector No.	Termi		
M14	60 59		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-98, "Removal and Installation"</u>.

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

ABS BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000000979055
.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). ABS actuator and electric Harness connector E65 <u>s the inspection result norm</u> YES-1 >> Models with arc YES-2 >> Models with arc YES-2 >> Models without NO >> Repair the term CHECK HARNESS CON Disconnect the connect 	OFF. cable from the negative tern ninals and connectors for de- ic unit (control unit) and fuse block (J/B) side c hal? und view monitor system: C around view monitor system inal and connector. TINUITY (OPEN CIRCUIT) or of CAN gateway.	ninal. amage, bend and loose c onnector GO TO 2. n: GO TO 3.	onnection (unit side and con-
. Check the continuity be	tween the CAN gateway ha	rness connector terminals	5.
	CAN gateway harness connector		Continuity
Connector No.	Iermin 4	al No.	Existed
M24	10	12	Existed
. Check the resistance b nals.	etween the ABS actuator a	nd electric unit (control u	nit) harness connector termi-
ABS actuator	and electric unit (control unit) harn	ess connector	Resistance (O)
Connector No.	Termin	al No.	
E35	25	15	Approx. 54 - 66
YES >> GO TO 4. NO >> GO TO 5. 1 .CHECK POWER SUPPL Check the power supply an <u>3RC-154, "Diagnosis Proce</u> <u>s the inspection result norm</u> YES (Present error)>>Rep <u>and Installation</u> YES (Past error)>>Error w NO >> Repair the power	Y AND GROUND CIRCUIT d the ground circuit of the <u>dure</u> ". <u>hal?</u> lace the ABS actuator and e as detected in the ABS actu er supply and the ground cir	ABS actuator and electri electric unit (control unit). uator and electric unit (cor rcuit.	c unit (control unit). Refer to Refer to <u>BRC-178, "Remova</u> htrol unit) branch line.
 Disconnect the connect Check the resistance b nals. 	or of harness connector E6 etween the ABS actuator a	5. nd electric unit (control u	nit) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

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ABS BRANCH LINE CIRCUIT

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ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	6F	Existed
L 30	E35 15		7F	Existed
MCth and an and a start				

- Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	8F	Existed
E35	15	205	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

[CAN SYSTEM (TYPE 10)]

EPS/DAST 3 BRAN	ICH LINE CIRCUIT	-	
Diagnosis Procedure			INFOID:00000009790554
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Steering force control m CAN gateway (Models of 	OFF. cable from the negative terr ninals and connectors for d nodule with around view monitor sy	ninal. lamage, bend and loose col /stem)	nnection (unit side and con-
Is the inspection result norm	nal?		
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor system inal and connector.	GO TO 2. m: GO TO 3.	
2. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector	r	Continuity
Connector No.	Termiı	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control	rith around view monitor sys	stem).
3. Check the resistance be	etween the steering force c	ontrol module harness conr	nector terminals.
Steerin	g force control module harness co	onnector	Resistance (0)
Connector No.	Termiı	nal No.	
M71	14	15	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO >> Replace the box 4.CHECK POWER SUPPL Check the power supply and pagin Dreaddurg"	vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s	r teering force control module	e. Refer to <u>STC-407, "Diag-</u>
<u>Is the inspection result norm</u> YES (Present error)>>Rep tion".	nal? lace the steering force con	trol module. Refer to <u>STC</u>	427, "Removal and Installa-
YES (Past error)>>Error w NO >> Repair the powe	as detected in the steering er supply and the ground ci	control module branch line.	

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790555

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

YES-2 >> Models without around view monitor system: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24 4		6	Existed
11/24	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. Disconnect the connector of AWD control unit.
- 3. Check the resistance between the AWD control unit harness connector terminals.

AWI	Posistance (O)		
Connector No.	nector No. Terminal No.		
M42	8	Approx. 54 – 66	
	in the enertiention?		+

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AWD control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-46, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-55, "Removal and Installation".

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

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procoduro

А

.CHECK CONNECTOR			
Turn the ignition switch Disconnect the battery Check the following ter nector side). Chassis control module	OFF. cable from the negative term minals and connectors for date	ninal. amage, bend and loose o	connection (unit side and con-
Harness connectors E4 Harness connectors M CAN gateway (Models	47 39 with around view monitor sy	stem)	
the inspection result norm YES-1 >> Models with an YES-2 >> Models without NO >> Repair the term	<u>nal?</u> ound view monitor system: G t around view monitor system ninal and connector.	60 TO 2. n: GO TO 3.	
CHECK HARNESS CO	NTINUITY (OPEN CIRCUIT)		
 Disconnect the connect Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha	rness connector terminal	S.
	CAN gateway harness connector		Continuity
Connector No.	4	al No. 6	Existed
M24	10	12	Existed
CHECK HARNESS FOR			Sircuit Z).
CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b	R OPEN CIRCUIT of CAN gateway (Models wi tor of chassis control module between the chassis control n	th around view monitor s anodule harness connecto	ystem).
CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b	R OPEN CIRCUIT of CAN gateway (Models wi stor of chassis control module between the chassis control n assis control module harness conne	th around view monitor s anodule harness connector	rystem). or terminals.
CHECK HARNESS FOI Connect the connector Disconnect the connector Check the resistance b Check the resistance b Check the resistance b	R OPEN CIRCUIT of CAN gateway (Models with tor of chassis control module between the chassis control n assis control module harness conne	th around view monitor s e. nodule harness connecto ector al No.	Pystem). pr terminals. Resistance (Ω)
B.CHECK HARNESS FOR Connect the connector Check the resistance to Connector No. E22 S the measurement value to Check the resistance to Chec	R OPEN CIRCUIT of CAN gateway (Models within the specification?	th around view monitor s anodule harness connector al No. 3	Stream 2). System). or terminals. Resistance (Ω) Approx. 54 – 66
 CHECK HARNESS FOI Connect the connector Disconnect the connector Check the resistance b Connector No. E22 <u>s the measurement value</u> YES >> GO TO 4. NO >> Repair the cha CHECK POWER SUPP 	R OPEN CIRCUIT of CAN gateway (Models within the specification? Sisis control module branch ling	th around view monitor s e. nodule harness connecto al No. 3 ne.	Stream 2). System). Or terminals. Resistance (Ω) Approx. 54 – 66
CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b Connector No. E22 s the measurement value YES >> GO TO 4. NO >> Repair the cha A.CHECK POWER SUPP Check the power supply an	R OPEN CIRCUIT of CAN gateway (Models wi ctor of chassis control module between the chassis control n assis control module harness conne Termini 4 within the specification? ssis control module branch li LY AND GROUND CIRCUIT nd the ground circuit of the c	th around view monitor s e. nodule harness connecto al No. 3 ne.	rystem). pr terminals. Resistance (Ω) Approx. 54 – 66 Refer to <u>DAS-541, "Diagnosis</u>
CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance to Check the resistance to Check the resistance to Check the neasurement value to YES >> GO TO 4. NO >> Repair the cha ChECK POWER SUPP Check the power supply an Procedure". s the inspection result norm	R OPEN CIRCUIT of CAN gateway (Models without of chassis control module between the chassis control n assis control module harness connection assis control module harness connection 4 within the specification? ssis control module branch lice LY AND GROUND CIRCUIT nd the ground circuit of the consection nal?	th around view monitor s enodule harness connector al No. 3 ne.	Pystem). Prover terminals. Resistance (Ω) Approx. 54 – 66 Refer to DAS-541, "Diagnosis

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790557

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
IVIZ4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steeri	Registered (O)		
Connector No.	Termi	Resistance (12)	
M77	5	Approx. 54 – 66	
	hin the energification?		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "Removal and Installation".

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

DAST 1 BRANCH LINE CIRCUIT

А **Diagnosis** Procedure INFOID:000000009790558 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-С nector side). Steering angle main control module Chassis control module D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. F Check the continuity between the chassis control module harness connector terminals. 2. Chassis control module harness connector Continuity Connector No. Terminal No. 19 11 Existed E22 7 8 Existed Н Is the inspection result normal? >> GO TO 3. YES NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side). **3.**CHECK HARNESS FOR OPEN CIRCUIT 1 Connect the connector of chassis control module. Disconnect the connector of steering angle main control module. 2. Check the resistance between the steering angle main control module harness connector terminals. 3. Κ Steering angle main control module harness connector Resistance (Ω) Connector No. Terminal No. E26 14 15 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 4. LAN NO >> Repair the steering angle main control module branch line. **4.**CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle main control module. Refer to STC-407. N "Diagnosis Procedure" Is the inspection result normal? YES (Present error)>>Replace the steering angle main control module. Refer to STC-428, "Removal and Installation". YES (Past error)>>Error was detected in the steering angle main control module branch line. NO >> Repair the power supply and the ground circuit. Ρ

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009790559

[CAN SYSTEM (TYPE 10)]

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Continuity	
Connector No.	Termi	Continuity
M25	6	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
M25	6		Not existed
WIZ5	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

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

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)
Terminal No.		
60	59	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5. CHECK SYMPTOM

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

LAN-432
CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009790560

[CAN SYSTEM (TYPE 10)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.

Are the CAN communication 1 and/or CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

${ m 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the chassis control module harness connector.

Cha	Continuity	
Connector No.	Termi	Continuity
E22	19	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control mod	ule harness connector		Continuity	
Connector No. Terminal No.		Cround	Continuity	
M22	19	Gibana	Not existed	
	7		Not existed	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

${f 5.}$ CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

- 1. Remove the chassis control module.
- 2. Check the resistance between the chassis control module terminals.

Chassis co	- Resistance (Ω)	
Terminal No.		
19	7	Approx. 108 – 132
11	8	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 10)]
Connect all the connectors. Check if the symptoms described in the "Sympto customer)" are reproduced.	m (Results from interview with A
Inspection result	
Reproduced>>GO TO 7. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	procedure when past error is B
7.CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit.	C
1. Turn the ignition switch OFF.	
2. Disconnect the battery cable from the negative terminal.	
3. Disconnect one of the unit connectors of chassis communication circuit. NOTE:	D
Chassis control module has two termination circuits. Check other units first	t.
4. Connect the battery cable to the negative terminal. Check if the symptor	ms described in the "Symptom \Box
(Results from interview with customer)" are reproduced.	
NOTE:	
Although unit-related error symptoms occur, do not confuse them with othe	er symptoms.
Inspection result	F

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

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000009790564

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 M133 and fuse block (J/B) side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M65.
- 2. Check the continuity between the fuse block (J/B) terminals.

Fuse bl	Continuity		
Terminal No. Terminal No.		Continuity	
23C	22C	Existed	
5C	4C	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of A/C auto amp.
- Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness connector.

Fuse block (J/B) harness connector A/C auto amp. harness connector		Continuity		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M133	22C	Moo	1	Existed
	4C	IVIOO	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 fuse block (J/B) harness connector M133 and the A/C auto amp.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

A/C auto amp. harness connector		Display control unit harness connector		Continuity	E
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
Moo	1	M100	29	Existed	F
10188	21		17	Existed	1

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

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[CAN SYSTEM (TYPE 11)]

А INFOID:000000009790565

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MAIN LINE BETWEEN ABS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ABS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000009790567

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B39 and fuse block (J/B) side connector

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.
- Fuse block (J/B) harness connector B39
- ABS actuator and electric unit (control unit)
- 2. Check the continuity between the harness connector terminals.

ABS actuator and electric unit (control unit) harness connector		Fuse block (J/B) terminals	Continuity	
Connector No.	Terminal No.	Terminal No.		
E35	25	6Н	Existed	
ESS	15	4H	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of driver seat control unit.
- 2. Check the continuity between the harness connector and the driver seat control unit harness connector.

Fuse block (J/B) harness connector		Driver seat control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
B39 -	6H	P601	1	Existed
	4H	6001	17	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 ABS actuator and electric unit (control unit) and the driver seat control unit.

NO >> Repair the main line between the harness connector B39 and the driver seat control unit.

	MAIN LINE BET	WEEN ADP AND		
DTC/CIRCUIT DIAC	GNOSIS > TW/EENLADD AL			
liagnosis Proced	ure			INFOID:000000009790568
.CHECK CONNECT	OR			
 Turn the ignition sy Disconnect the base Check the following and harness side). Harness connectore Harness connectores the inspection result 	witch OFF. Itery cable from the ne ing terminals and coni r B37 r B72 <u>normal?</u>	egative terminal. nectors for damage, b	pend and loose conne	ection (connector side
YES >> GO TO 2. NO >> Repair the	terminal and connect	or		
CHECK HARNESS	CONTINUITY (OPEN			
 Disconnect the foll Harness connecto Harness connecto Check the continue 	owing harness conne rs B600 and B12 rs B37 and B72 ty between the harne	ctors.	S.	
Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B12	1	B37	4	Existed
	17		3	Existed
YES >> GO TO 3. NO >> Replace the CHECK HARNESS Disconnect the con Check the continue Harness	ne body harness. CONTINUITY (OPEN nector of around view ity between the harne connector Terminal No.	I CIRCUIT) w monitor control unit. ss connector and the Around view mo harness o Connector No.	around view monitor c nitor control unit connector Terminal No.	control unit.
Connector No.	4	Connector No.	27	Existed
B72	3	B50	28	Existed
<u>s the inspection result</u> YES (Present error)> YES (Past error)>>Er view monit NO >> Replace the second	normal? >Check CAN system ror was detected in the for control unit. he body harness.	type decision again. ne main line between	the driver seat contro	ol unit and the around

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MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:000000009790569

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connectors B62
- Harness connectors M22

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.
- Around view monitor control unit
- Harness connectors B62 and M22
- 2. Check the continuity between the around view monitor control unit harness connector and the harness connector.
- With around view monitor, without ICC

Around view mo harness	onitor control unit connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
P50	27	B62	63	Existed
850	28		53	Existed

With ICC

Around view monitor control unit harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
B50	P50 27 P62	B62	18	Existed	
800	28	Boz	17	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M95 and M155.
- 2. Check the continuity between the harness connectors.

- With around view monitor, without ICC

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	63	MOS	15	Existed
IVIZZ	53	10195	7	Existed

With ICC

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Maa	18	MOS	14	Existed
IVIZZ	17	10195	6	Existed

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

[CAN SYSTEM (TYPE 11)]

< DTC/CIRCUIT DIAGNOSIS >

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 around view monitor control unit and the sonar control unit	А
NO >> Repair the main line between the harness connectors M22 and sonar control unit.	В
	С
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MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000009790570

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- CAN gateway
- Harness connectors M155 and M95
- 4. 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
MQ5	15	M25	13	Existed
IVI90	7	IVIZ5	12	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 sonar control unit and the data link connector.

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

MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Existed

Existed

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT

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D	agnosis Proced	lure			INFOID:000000009799540	
1	CHECK CONNECT	OR				В
1. 2. 3.	Turn the ignition s Disconnect the ba Check the followin and harness side) Harness connecto	witch OFF. ttery cable from the ne ng terminals and coni or M19	egative terminal. nectors for damage, I	pend and loose conn	ection (connector side	С
- - -	Harness connecto Harness connecto Harness connecto	or B18 or M40 or E25				D
<u>וs</u> זי 2	the inspection result (ES >> GO TO 2. IO >> Repair the CHECK HARNESS	t normal? e terminal and connect S CONTINUITY (OPEN	tor. N CIRCUIT)			E
<u> </u>	Disconnect the fol Steering angle ma	lowing harness conne	ctors.			F
- 2.	Harness connecto Check the continu	ity between the harne	ss connectors.			G
_	Steering angle m harness	ain control module connector	Harness	connector	Continuity	Η
	Connector No.	Terminal No.	Connector No.	Terminal No.		

Is the inspection result normal?

YES >> GO TO 3.

E26

NO >> Repair the main line between the steering angle main control module and the harness connector E25.

E25

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3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M19 and B18.

2. Check the continuity between the harness connectors M40 and M19.

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Side radar LH h	arness connector	Harness	connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M40	51	M10	74	Existed	
10140	52	IVI 19	75	Existed	

Is the inspection result normal?

YES >> GO TO 4.

>> Repair the main line between the harness connectors M40 and M19. NO

4.CHECK CONNECTOR

Check the continuity between the harness connector terminals.

Connector No.	Termi	nal No.	Continuity	F
B18	74	84	Existed	
DIO	75	85	Existed	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the main line between the harness connector B18.

LAN-443

< DTC/CIRCUIT DIAGNOSIS >

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M75 and R3.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M10	84	M75	32	Existed
10119	85	- IVI75	31	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 steering angle main control module and the lane camera unit.

NO >> Repair the main line between the harness connectors M19 and the lane camera unit.

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Proced	ure			INFOID:00000000979057
1.снеск соллест	OR			
 Turn the ignition si Disconnect the ba Check the followin nector side). ECM 	witch OFF. ttery cable from the ne g terminals and conne	egative terminal. ectors for damage,	bend and loose co	nnection (unit side and con-
Harness connecto s the inspection result	r M133 and fuse block normal?	(J/B) side connec	tor	
YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS	terminal and connect FOR OPEN CIRCUIT	or.		
 Disconnect the color Check the resistar 	nnector of ECM. nce between the ECM	harness connecto	r terminals.	
	ECM harness o			Resistance (Ω)
Connector No.		Terminal No.	44.0	Approv 100 100
		ation 2	110	
YES >> GO TO 3. NO >> GO TO 4. J.CHECK POWER SI Check the power supp s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the J.CHECK HARNESS	UPPLY AND GROUN ly and the ground circ normal? >Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN	D CIRCUIT uit of the ECM. Re efer to <u>EC-578, "R</u> e ECM branch line ground circuit. I CIRCUIT)	fer to <u>EC-188. "Diag</u> emoval and Installa s.	gnosis Procedure". Ition".
 Disconnect the fus Check the continu 	e block (J/B) harness ity between the ECM	connector M133. harness connector	and the fuse block	(J/B) harness connector.
	ss connector	Fuse block (J/	B) harness connector	Continuity
ECM harne		Connector No	Terminal No.	
ECM harne Connector No.	Terminal No.	Connector No.		
ECM harne Connector No. M37	Terminal No.	M133	21C	Existed

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 11)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000009790760

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal. 2.
- Check the following terminals and connectors for damage, bend and loose connection (connector side 3. and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

	Data link connector		Resistance (O)
Connector No.	Termi	nal No.	
M25	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 (CAN communication circuit 1 side).

NO >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connector M133. 1.

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

Data link	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M25	6	M122	23C	Existed
WZ3	14	10133	5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 11)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

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CHECK CONNECTOR			
Turn the ignition switch (Disconnect the battery c Check the following terr and harness side).	OFF. able from the negative termin minals and connectors for da	nal. amage, bend and loos	e connection (connector side
he inspection result norm	<u>al?</u>		
ES >> GO TO 2.	nal and connector branch line		
Disconnect the connect			
Check the continuity bet	ween the CAN gateway harne	ess connector terminal	ls.
	CAN gateway harness connector		Continuity
Connector No.	Terminal	No.	Continuity
M24	4	6	Existed
the inspection result norm ES >> GO TO 3. O >> Check the harne CHECK HARNESS FOR	10 al? ess and repair the root cause OPEN CIRCUIT	12 (CAN communication of	Existed
the inspection result norm ES >> GO TO 3. IO >> Check the harne CHECK HARNESS FOR Connect the connector of Check the resistance be	10 al? ess and repair the root cause OPEN CIRCUIT of CAN gateway. etween the data link connector	12 (CAN communication of terminals.	Existed
the inspection result norm (ES >> GO TO 3. NO >> Check the harne CHECK HARNESS FOR Connect the connector of Check the resistance be	10 al? ess and repair the root cause OPEN CIRCUIT of CAN gateway. tween the data link connector	12 (CAN communication of terminals.	Existed
the inspection result norm (ES >> GO TO 3. NO >> Check the harne .CHECK HARNESS FOR Connect the connector of Check the resistance be Connector No.	10 al? ess and repair the root cause OPEN CIRCUIT of CAN gateway. of CAN gateway. tween the data link connector Data link connector Terminal	12 (CAN communication of r terminals.	Existed circuit 2).
the inspection result norm (ES >> GO TO 3. NO >> Check the harne .CHECK HARNESS FOR Connect the connector of Check the resistance be Connector No. M25	10 al? ess and repair the root cause OPEN CIRCUIT of CAN gateway. of CAN gateway. tween the data link connector Data link connector Terminal 13	12 (CAN communication of r terminals. No. 12	Existed circuit 2). Resistance (Ω) Approx. 54 – 66

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790574

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. E121 29 28 Approx. 54 – 66	IPDM E/R harness connector			Resistance (O)
E121 29 28 Approx. 54 – 66	Connector No.	Termi	Resistance (22)	
	E121	29	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the harness connector E64.

2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R harness connector		Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F121	29	E64	6E	Existed
	28	L04	2E	Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

TCM BRANCH LINI	E CIRC	UIT				Λ
Diagnosis Procedure					INF01D:000000009790575	A
1.CHECK CONNECTOR						В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F12 Harness connector E10 	OFF. cable from ninals and	the negative ter connectors for c	minal. damage, ben	d and loose cor	nnection (unit side and con-	C
- Harness connector E65	and fuse	block (J/B) side	connector			
Is the inspection result norm	<u>al?</u>					Е
NO >> Repair the term	inal and co	onnector.				
2.CHECK HARNESS FOR	OPEN CI	RCUIT				F
1. Disconnect the connect	or of A/T a	issembly.				
2. Check the resistance be	etween the	A/I assembly h	arness conn	ector terminals.		C
	A/T assemb	ly harness connecto	r		Resistance (Ω)	G
Connector No.		Termi	nal No.			
F2		3		8	Approx. 54 – 66	Н
3.CHECK HARNESS FOR 1. Remove the joint conne 2. Check the continuity be side of the joint connect	OPEN CI ctor. Refer tween the or.	RCUIT r to <u>TM-218, "Ex</u> A/T assembly h	<u>ploded View</u> arness conn	ector side and t	he TCM harness connector	J
A/T assembly harness connect	tor side	TCM harne	ess connector			Κ
Terminal No.		Termi	inal No.		Continuity	
3			3		Existed	L
8			8		Existed	
Is the inspection result norm YES >> GO TO 4. NO >> Replace the join 4. CHECK POWER SUPPL Check the power supply and	a <u>l?</u> ht connecto Y AND GF d the grour	or. ROUND CIRCUI nd circuit of the 1	T TCM. Refer to	o TM-181. "Diac	anosis Procedure".	LAN N
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	al? lace the co as detecte er supply a	ontrol valve & TC on the TCM bra	CM. Refer to anch line. ircuit.	<u>TM-218, "Explo</u>	ded View".	0
5. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT	-)			Ρ
 Disconnect the harness Check the continuity be 	connector tween the	r E65. A/T assembly ha	arness conne	ector and the ha	arness connector.	

A/T assembly h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

F2	3	E65	9F	Existed
12	8	200	5F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 11)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure			INFCID:00000009790689	A
1.снеск отс				В
Check DTC of the CAN gate	eway with CONSULT.			
Is U1010 or B2600 indicate	<u>d?</u>			
YES >> Perform a diagonal NO >> GO TO 2.	nosis of the indicated DTC.			С
2.CHECK CONNECTOR				D
 Turn the ignition switch Disconnect the battery Check the following ter (unit side and connector) 	OFF. cable from the negative tern minals and connectors of (or side).	ninal. CAN gateway for damage,	bend and loose connection	E
Is the inspection result norn	nal?			
YES >> GO TO 3. NO >> Repair the term	inal and connector.			F
3.CHECK HARNESS FOR	R OPEN CIRCUIT			
 Disconnect the connect Check the resistance b 	tor of CAN gateway. etween the CAN gateway h	arness connector terminals		G
	CAN gateway harness connecto		Desistance (0)	Н
Connector No.	Termi	nal No.	Resistance (12)	
M24	1	7	Approx. 54 – 66	
Is the measurement value v YES >> GO TO 4.	vithin the specification?			I
4.CHECK POWER SUPPL		r		J
Check the power supply an dure".	nd the ground circuit of the	e CAN gateway. Refer to L	AN-171. "Diagnosis Proce-	K
Is the inspection result norm	nal?			
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	place the CAN gateway. Ref vas detected in the CAN gat er supply and the ground ci	er to <u>LAN-172, "Removal a</u> eway branch line (CAN con rcuit.	nd Installation". nmunication circuit 1 side).	L
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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009790761

[CAN SYSTEM (TYPE 11)]

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. 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).
- CAN gateway
- Harness connector M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M24	4	6	Existed
17124	10	12	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-171</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-172, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

CAN gateway h	arness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M24	4	M133	13C	Existed
17124	10		2C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the CAN gateway harness connector M24 and the harness connector M133.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

HVAC BRANCH LIN	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:00000009790679	~
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals and side and connector side 	OFF. cable from the negative terr d connectors of the A/C au e).	ninal. ito amp. for damage, bend	and loose connection (unit	С
Is the inspection result normYESYESNO>> Repair the terminationO	nal? inal and connector.			D
 CHECK HARNESS FOR Disconnect the connect Check the resistance be 	OPEN CIRCUIT or of A/C auto amp. etween the A/C auto amp. h	narness connector terminals		E
	A/C auto amp. harness connecto	r	Resistance (Ω)	F
Connector No.	Termir	nal No.		
Is the measurement value wYESYESNO>> Repair the A/C a3.CHECK POWER SUPPLI	<u>vithin the specification?</u> auto amp. branch line. Y AND GROUND CIRCUIT	-		Н
Check the power supply an Diagnosis Procedure".	d the ground circuit of the	A/C auto amp. Refer to <u>H</u>	AC-92, "A/C AUTO AMP. :	I
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	<u>aal?</u> lace the A/C auto amp. Ref as detected in the A/C auto er supply and the ground ci	fer to <u>HAC-113, "Removal a</u> amp. branch line. rcuit.	nd Installation".	J
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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790680

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

C	Resistance (O)		
Connector No.	Termi		
M58	41	42	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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-126, "Removal and Installation".

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

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

[CAN SYSTEM (TYPE 11)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009790681 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790682

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the display 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 display control unit.
- 2. Check the resistance between the display control unit harness connector terminals.

Di	$Resistance\left(\Omega\right)$		
Connector No.	Termi		
M100	29	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the display control unit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the display control unit. Refer to <u>AV-239, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-277, "Removal and Installation"</u>.

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

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

TCU BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

iagnosis Procedure	iagnosis Procedure .CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the TCU for damage, bend and loose of connector side). the inspection result normal? ('ES) >> GO TO 2. IO) >> Repair the terminal and connector. .CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of TCU. Check the resistance between the TCU harness connector terminals. TCU harness connector Connector No. TCU harness connector Connector No. TCU harness connector K81 9 10 the measurement value within the specification? 'ES >> GO TO 3. IO >> Repair the TCU branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT teck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : If the inspection result normal? 'ES (Present error)>> Replace the TCU. Refer to AV-597, "Removal and Installation ('ES (Past error)>> Replace the TCU. Refer to AV-597, "Removal and Installation ('ES (Past error)>> Replace the TCU. Refer to AV-597, "Removal and Installation ('ES (Past error)>> Replace the TCU. Refer to AV-597, "Removal and Installation ('ES (Past error)>> Replace the TCU. Refer to AV-597, "Removal and Installa	
.CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. .Check the terminals and connectors of the TCU for damage, bend and loose connection (unit side and connector side). .the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. .CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of TCU. .Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) M81 9 10 Approx. 54 – 66 .the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : Diagnosis Procedure". .the inspection result normal? YES (Present error)>> Replace the TCU. Refer to AV-597, "Removal and Installation". YES (Past error)>> Error was detected in the TCU branch line.	.CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the TCU for damage, bend and loose of connector side). the inspection result normal? YES >> GO TO 2. IO >> Repair the terminal and connector. .CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of TCU. Check the resistance between the TCU harness connector terminals. TCU harness connector Connector No. TCU harness connector M81 9 10 the measurement value within the specification? YES >> GO TO 3. IO >> Repair the TCU branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT teck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : If the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation YES (Past error)>>Error was detected in the TCU branch line. IO >> Repair the power supply and the ground circuit of the TCU. Refer to AV-597, "Removal and Installation YES (Past error)>>Error was detected in the TCU branch line.	INFOID:00000000979068
Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the TCU for damage, bend and loose connection (unit side and connector side). .the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. .CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of TCU. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) M81 9 10 Approx.54 - 66 Ithe measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : Diagnosis Procedure". .the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation". YES (Present error)>>Error was detected in the TCU branch line.	Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the TCU for damage, bend and loose of connector side). the inspection result normal? (ES >> GO TO 2. IO >> Repair the terminal and connector. .CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of TCU. Check the resistance between the TCU harness connector terminals. TCU harness connector Connector No. Terminal No. M81 9 10 the measurement value within the specification? (ES >> GO TO 3. IO >> Repair the TCU branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT teck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : If the inspection result normal? 'ES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation (ES (Past error))>>Error was detected in the TCU branch line. IO >> Repair the power supply and the ground circuit of circuit	
the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT • Disconnect the connector of TCU. • Check the resistance between the TCU harness connector terminals. Image: TCU harness connector Resistance (Ω) Connector No. Image: TCU harness connector M81 9 10 Approx.54 – 66 Inthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. Image: CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : Diagnosis Procedure". Image: Check the reror)>>Replace the TCU. Refer to AV-597, "Removal and Installation". YES (Present error)>>Error was detected in the TCU branch line.	the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. .CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of TCU. Check the resistance between the TCU harness connector terminals. TCU harness connector terminals. TCU harness connector terminals. TCU harness connector terminals. M81 9 10 the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT teck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : I the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation YES (Past error)>>Error was detected in the TCU branch line. VO >> Repair the power supply and the ground circuit	connection (unit side and
Disconnect the connector of TCU. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) Connector No. Terminal No. M81 9 10 Approx. 54 – 66 the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. . CHECK POWER SUPPLY AND GROUND CIRCUIT . . heck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : Diagnosis Procedure". . the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation". YES (Past error)>>Error was detected in the TCU branch line. .	Disconnect the connector of TCU. Check the resistance between the TCU harness connector terminals. TCU harness connector Connector No. M81 9 10 the measurement value within the specification? (ES >> GO TO 3. NO >> Repair the TCU branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the TCU. Refer to <u>AV-589, "TCU : I</u> the inspection result normal? (ES (Present error)>>Replace the TCU. Refer to <u>AV-597, "Removal and Installation</u> (ES (Past error)>>Error was detected in the TCU branch line. NO => Repair the power supply and the ground circuit	
TCU harness connector Resistance (Ω) Connector No. Terminal No. M81 9 10 Approx. 54 – 66 the measurement value within the specification? YES >> GO TO 3. YES >> Repair the TCU branch line. VCHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : Diagnosis Procedure". the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation". YES (Past error)>>Error was detected in the TCU branch line.	TCU harness connector Connector No. M81 9 10 M81 9 10 the measurement value within the specification? (ES >> GO TO 3. 0 NO >> Repair the TCU branch line. . .CHECK POWER SUPPLY AND GROUND CIRCUIT . neck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : I the inspection result normal? . (ES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation" (ES (Past error)>>Error was detected in the TCU branch line. IO >> Repair the power supply and the ground circuit	
Connector No. Terminal No. Terminal No. M81 9 10 Approx. 54 – 66 the measurement value within the specification? YES >> GO TO 3. YES >> GO TO 3. Separative for the TCU branch line. • CHECK POWER SUPPLY AND GROUND CIRCUIT Separative for the ground circuit of the TCU. Refer to AV-589, "TCU : Diagnosis Procedure". • the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation". YES (Past error)>>Error was detected in the TCU branch line.	Connector No. Terminal No. M81 9 10 the measurement value within the specification? (ES >> GO TO 3.) YO >> Repair the TCU branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT neck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : Interspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation" YES (Past error)>>Error was detected in the TCU branch line. YO >> Repair the power supply and the ground circuit	Resistance (0)
M81 9 10 Approx. 54 – 66 the measurement value within the specification? YES >> GO TO 3. YES >> GO TO 3. >> Repair the TCU branch line. NO >> Repair the TCU branch line. . • CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the TCU. Refer to <u>AV-589, "TCU : Diagnosis Procedure".</u> • the inspection result normal? YES (Present error)>>Replace the TCU. Refer to <u>AV-597, "Removal and Installation".</u> YES (Past error)>>Error was detected in the TCU branch line.	M81 9 10 the measurement value within the specification? (ES >> GO TO 3. (ES >> Repair the TCU branch line. .O >> Repair the TCU branch line. (EECK POWER SUPPLY AND GROUND CIRCUIT .CHECK POWER SUPPLY AND GROUND CIRCUIT (EECK POWER SUPPLY AND GROUND CIRCUIT) .CHECK power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : If the inspection result normal? (ES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation" (ES (Past error)>>Error was detected in the TCU branch line.	Resistance (22)
the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. • CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the TCU. Refer to <u>AV-589, "TCU : Diagnosis Procedure".</u> • the inspection result normal? YES (Present error)>>Replace the TCU. Refer to <u>AV-597, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the TCU branch line.	the measurement value within the specification? (ES >> GO TO 3. IO >> Repair the TCU branch line. .CHECK POWER SUPPLY AND GROUND CIRCUIT neck the power supply and the ground circuit of the TCU. Refer to AV-589, "TCU : International the inspection result normal? (ES (Present error)>>Replace the TCU. Refer to AV-597, "Removal and Installation" (ES (Past error)>>Error was detected in the TCU branch line. IO >> Repair the power supply and the ground circuit	Approx. 54 – 66
	IO >> Repair the power supply and the ground circuit	<u>Diagnosis Procedure"</u> . <u>m"</u> .

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790684

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

	BCM harness connector		
Connector No.	Terminal No.		
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-98, "Removal and Installation".

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

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

ABS BRANCH LINE			
Diagnosis Procedure			INF01D:000000009790685
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). ABS actuator and electr 	OFF. cable from the negative tern ninals and connectors for d	ninal. amage, bend and loose co	nnection (unit side and con-
 Harness connector E65 Is the inspection result norm YES-1 >> Models with aro YES-2 >> Models without 	and fuse block (J/B) side c <u>al?</u> und view monitor system: C around view monitor syster	onnector GO TO 2. n: GO TO 3.	
2.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)	1	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termin	nal No.	
M24	4	6	Existed
 Disconnect the connect Check the resistance be nals. 	or of ABS actuator and elec etween the ABS actuator a	ctric unit (control unit). nd electric unit (control uni	t) harness connector termi-
ABS actuator	and electric unit (control unit) harn	ness connector	Resistance (Ω)
Connector No.	Termin	nal No.	
E35	25	15	Approx. 54 - 66
YES >> GO TO 4. NO >> GO TO 5. 4. CHECK POWER SUPPL Check the power supply an BRC-154, "Diagnosis Proce	Y AND GROUND CIRCUIT	- ABS actuator and electric	unit (control unit). Refer to
<u>s the inspection result norm</u> YES (Present error)>>Rep <u>and Installation</u> YES (Past error)>>Error w	<u>al?</u> lace the ABS actuator and e as detected in the ABS actu	electric unit (control unit). R uator and electric unit (cont	efer to <u>BRC-178, "Removal</u> rol unit) branch line.
5.CHECK HARNESS CON	supply and the ground cli TINUITY (OPEN CIRCUIT)		
 Disconnect the connect Check the resistance be nals. 	or of harness connector E6 etween the ABS actuator a	5. nd electric unit (control uni	t) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-459

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and ele harness	ABS actuator and electric unit (control unit) harness connector		Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.		
E35	25	E65	6F	Existed	
E35	15	L03	7F	Existed	

- Without around view monitor system

ABS actuator and ele harness	ABS actuator and electric unit (control unit) harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	8F	Existed
E35	15	E65	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

ADP BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:000000009790686
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the follow terminator side). Driver seat control unit Harness connectors B6 	OFF. cable from the negative terr als and connectors for dam	ninal. age, bend and loose conne	ction (unit side and connec-
 Harness connectors B3 tem) 	9 and fuse block (J/B) side	e connector (iviodeis withou	It around view monitor sys-
Is the inspection result norm YES - 1>> Models with aro YES - 2>> Models without NO >> Repair the term	<u>al?</u> and view monitor system: (around view monitor syster inal and connector.	GO TO 2. n: GO TO 3.	
Z.CHECK HARNESS CON)	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Evictod
M24	10	12	Existed
 CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be 	OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit	vith around view monitor sy t.	stem)
		or unit namess connector t	
Driv	er seat control unit harness conne	ector	Resistance (Ω)
B601	1	17	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO - 1 >> Models without NO - 2 >> Models with arc	<u>vithin the specification?</u> around view monitor syster ound view monitor system: F	n: GO TO 5. Repair the driver seat contr	ol unit branch line.
4.CHECK POWER SUPPL	Y AND GROUND CIRCUIT	iver east control unit. Defer	
CONTROL UNIT : Diagnosi	<u>s Procedure"</u> .	iver seal control unit. Reler	10 ADP-75, DRIVER SEAT
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	<u>al?</u> lace the driver seat control as detected in the driver se er supply and the ground ci	unit. Refer to <u>ADP-145, "Re</u> at control unit branch line. rcuit.	emoval and Installation".
D. CHECK HARNESS CON)	
 Disconnect the harness Check the continuity be 	connector B39. Stween the driver seat cont	rol unit harness connector	B601 and the harness con-

nector.

< DTC/CIRCUIT DIAGNOSIS >

LAN-461

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Driver seat control u	Driver seat control unit harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B601	1	B30	3H	Existed
B601	17		8H	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the driver seat control unit harness connector B601 and the harness connector B39.

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure
1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and cornector side). - Steering force control module - CAN gateway (Models with around view monitor system) Is the inspection result normal? YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models with around view monitor system: GO TO 3. NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. Image: Connector No. Terminal No. M24 4 6 M24 10 12 Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). 3. CHECK HARNESS FOR OPEN CIRCUIT Image: CAN communication circuit 2 side).
. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and cornector side). Steering force control module CAN gateway (Models with around view monitor system) s the inspection result normal? YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models with around view monitor system: GO TO 3. NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) . Disconnect the connector of CAN gateway. . Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 4 6 M24 10 12 YES >> GO TO 3. NO NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). CHECK HARNESS FOR OPEN CIRCUIT CAN communication circuit 2 side).
CAN gateway (models with around view monitor system; GO TO 2. YES-1 >> Models with around view monitor system; GO TO 3. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) . Disconnect the connector of CAN gateway. . Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 4 6 M24 10 12 Existed Sthe inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). CHECK HARNESS FOR OPEN CIRCUIT
YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models without around view monitor system: GO TO 3. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) . Disconnect the connector of CAN gateway. . Check the continuity between the CAN gateway harness connector terminals. Connector No. Terminal No. M24 4 6 M24 10 12 Existed 10 12 Sthe inspection result normal? YES YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). CHECK HARNESS FOR OPEN CIRCUIT
CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Connector No. CAN gateway harness connector Continuity Connector No. CAN gateway harness connector Continuity Connector No. Auguation Additional No. Auguation Additional No. Auguation Additional No. Continuity Continuity Connector No. CAN gateway harness connector Continuity Continuity Connector No. CAN gateway harness CAN gateway harne
 Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Continuity Connector No. M24 4 6 Existed 10 12 Existed S the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). CHECK HARNESS FOR OPEN CIRCUIT
CAN gateway harness connector Continuity Connector No. Terminal No. Continuity M24 4 6 Existed M24 10 12 Existed s the inspection result normal? YES >> GO TO 3. Existed NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Check HARNESS FOR OPEN CIRCUIT
Connector No. Terminal No. M24 4 6 M24 10 12 Existed Existed Sthe inspection result normal? Existed YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). CHECK HARNESS FOR OPEN CIRCUIT
M24 6 Existed 10 12 Existed s the inspection result normal? 12 Existed YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). CHECK HARNESS FOR OPEN CIRCUIT
Sthe inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communica tion circuit 2 side). Image: CHECK HARNESS FOR OPEN CIRCUIT
 Connect the connector of CAN gateway (Models with around view monitor system). Disconnect the connector of steering force control module.
. Check the resistance between the steering force control module namess connector terminals.
Steering force control module harness connector Resistance (Ω)
Connector No. Ierminal No. M71 14 15 Approx 54 – 66
Sthe measurement value within the specification? YES >> GO TO 4. NO >> Replace the body harness.
The power supply and the ground circuit of the steering force control module. Refer to STC-407, "Diac
osis Procedure". <u>s the inspection result normal?</u> YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427, "Removal and Installa</u> tion"
<u>tion</u> . YES (Past error)>>Error was detected in the steering control module branch line. NO >> Repair the power supply and the ground circuit.

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790688

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

YES-2 >> Models without around view monitor system: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	6	Existed	
11/24	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

- 2. Disconnect the connector of AWD control unit.
- 3. Check the resistance between the AWD control unit harness connector terminals.

AWI	Basistanas (O)				
Connector No.	Connector No. Terminal No.				
M42	8	16	Approx. 54 – 66		
	in the enertiention?		+		

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AWD control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-46, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-55, "Removal and Installation".

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

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

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 11)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procoduro

А

Diagnosis Procedure			INFOID:00000009799879	
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Chassis control module Harness connectors E4 	OFF. cable from the negative tern ninals and connectors for d	ninal. amage, bend and loose con	nection (unit side and con-	С
 Harness connectors M3 CAN gateway (Models v 	, 9 with around view monitor sy	stem)		D
Is the inspection result norm YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	al? und view monitor system: G around view monitor systen inal and connector.	GO TO 2. n: GO TO 3.		E
2.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)			Г
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.		G
	CAN gateway harness connector		Continuity	
Connector No. Terminal No.				Н
M24	4	6	Existed	
	10	12	EXISTED	1
YES >> GO TO 3. NO >> Check the harm 3. CHECK HARNESS FOR 1. Connect the connector	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w	e (CAN communication circ	cuit 2). tem).	J
 Disconnect the connect Check the resistance be 	or of chassis control module atween the chassis control r	e. nodule harness connector t	erminals.	Κ
Cha	ssis control module harness conne	ector	Resistance (O)	L
Connector No.	Termin	al No.		
E22	4	3	Approx. 54 – 66	
Is the measurement value wYES>> GO TO 4.NO>> Repair the chass4.CHECK POWER SUPPL	<u>ithin the specification?</u> sis control module branch li Y AND GROUND CIRCUIT	ne.		LAN N
Check the power supply an	d the ground circuit of the o	chassis control module. Ref	fer to DAS-541, "Diagnosis	
<u>Procedure</u> . Is the inspection result norm	al?			0
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the chassis control mo as detected in the chassis c ar supply and the ground ci	dule. Refer to <u>DAS-542, "Re</u> control module branch line. rcuit	emoval and Installation".	Ρ

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790692

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	6	Existed	
M24	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steering angle sensor harness connector			Pagistanag (O)
Connector No.	Terminal No.		
M77	5	2	Approx. 54 – 66
	hin the energification?	•	:

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

 ${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-180. "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.

AVM BRANCH LINI	E CIRCUIT					
Diagnosis Procedure			INFOID:000000009790693			
1. CHECK CONNECTOR						
 Turn the ignition switch Disconnect the battery Check the following terr nector side). Around view monitor complete 	OFF. cable from the negative tern ninals and connectors for d	ninal. amage, bend and loose cor	nnection (unit side and con-			
- CAN gateway (Models	CAN gateway (Models without ICC)					
YES-1 >> Models without	ICC: GO TO 2.					
YES-2 >> Models with ICO	C: GO TO 3.					
2 CHECK HARNESS CON	INALANG CONNECTOR.					
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.				
Connector No.	Termir	nal No.	Continuity			
	4	6	Existed			
M24	10	12	Existed			
NO >> Check the harn 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w or of around view monitor c etween the around view mo	ithout ICC). ontrol unit. nitor control unit harness co	onnector terminals.			
Around	view monitor control unit barness (connector				
Connector No.	Termir	nal No.	Resistance (Ω)			
B50	27	28	Approx. 54 – 66			
Is the measurement value v YES >> GO TO 4. NO >> Repair the arou 4.CHECK POWER SUPPL	vithin the specification? nd view monitor control unit Y AND GROUND CIRCUIT	t branch line.	L			
Check the power supply a "AROUND VIEW MONITOR	nd the ground circuit of the control unit is the control unit is being the control unit is being the control units and the control u	e around view monitor cor <u>sis Procedure"</u> .	trol unit. Refer to <u>AV-435.</u>			
<u>Is the inspection result normal?</u> YES (Present error)>>Replace the around view monitor control unit. Refer to <u>AV-458, "Removal and Installa-</u> tion".						
YES (Past error)>>Error w NO >> Repair the powe	as detected in the around v er supply and the ground cir	iew monitor control unit bra rcuit.	nch line.			

< DTC/CIRCUIT DIAGNOSIS >

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790694

[CAN SYSTEM (TYPE 11)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Sonar control unit
- Harness connector M95
- Harness connector M155
- CAN gateway

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Terminal No.		Continuity
M24	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 $\mathbf{3}$. Check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector			$Resistance\left(\Omega\right)$
Connector No.	Terminal No.		
M76	5	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-435, "SONAR CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-462, "Removal and Installation".

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

NO >> Repair the power supply and the ground circuit.
DAST 1 BRANCH LINE CIRCUIT

А **Diagnosis** Procedure INFOID:000000009790695 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-С nector side). Steering angle main control module Chassis control module D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. Check the continuity between the chassis control module harness connector terminals. F 2. Chassis control module harness connector Continuity Connector No. Terminal No. 19 11 Existed E22 7 8 Existed Н Is the inspection result normal? >> GO TO 3. YES NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side). **3.**CHECK HARNESS FOR OPEN CIRCUIT 1 Connect the connector of chassis control module. Disconnect the connector of steering angle main control module. 2. Check the resistance between the steering angle main control module harness connector terminals. 3. Κ Steering angle main control module harness connector Resistance (Ω) Connector No. Terminal No. E26 14 15 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 4. LAN NO >> Repair the steering angle main control module branch line. **4.**CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle main control module. Refer to STC-407. N

"Diagnosis Procedure"

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to STC-428, "Removal and Installation".
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

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

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
- 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
M25	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
MOS	6		Not existed
WIZ5	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

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

3. Check the resistance between the BCM terminals.

BCM Terminal No.		Resistance (Q)	
60	59	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5. CHECK SYMPTOM

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

LAN-470

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

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

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CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000009790696

[CAN SYSTEM (TYPE 11)]

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 circuit 2.
- 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
M25	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
Mae	13	Ground	Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway Terminal No.		Resistance (O)	
4	10	Approx. 108 – 132	
6	12	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

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.

LAN-472

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

6.CHECK UNIT REPRODUCTION А 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. В 3. Disconnect one of the unit connectors of CAN communication circuit 2. NOTE: CAN gateway has two termination circuits. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom С (Results from interview with customer)" are reproduced. NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms. D Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected. Е F Н Κ L LAN Ν Ρ

CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INF0ID:000000009790697

[CAN SYSTEM (TYPE 11)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.

Are the CAN communication 1 and/or CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

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

Check the continuity between the chassis control module harness connector.

Chassis control module harness connector			Continuity
Connector No.	Terminal No.		Continuity
E22	19	7	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control module harness connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	19		Not existed
10122	7		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

${f 5.}$ CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

- 1. Remove the chassis control module.
- 2. Check the resistance between the chassis control module terminals.

Chassis control module Terminal No.		Posistanco (O)	
19	7	Approx. 108 – 132	
11	8	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

CHASSIS COMMUNICATION CIDCUIT

CHASSIS COMMUNICATION CIRCU	11
< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 11)]
Connect all the connectors. Check if the symptoms described in the "Symptocustomer)" are reproduced.	om (Results from interview with A
Inspection result	
Reproduced>>GO TO 7. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	procedure when past error is B
7.CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit.	C
 Disconnect the battery cable from the negative terminal. 	
3. Disconnect one of the unit connectors of chassis communication circuit. NOTE:	D
 Chassis control module has two termination circuits. Check other units first 4. Connect the battery cable to the negative terminal. Check if the symptot (Results from interview with customer)" are reproduced. NOTE: 	st. oms described in the "Symptom $_{ ext{E}}$
Although unit-related error symptoms occur, do not confuse them with oth	er symptoms.
Inspection result	
Non-reproduced>>Connect the connector. Check other units as per the above pr	oceaure.

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000009790698

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 M133 and fuse block (J/B) side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the fuse block (J/B) harness connector M65.
- 2. Check the continuity between the fuse block (J/B) terminals.

Fuse block (J/B)		Continuity
Terminal No.	Terminal No.	Continuity
23C	22C	Existed
5C	4C	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of A/C auto amp.
- Check the continuity between the fuse block (J/B) harness connector and the A/C auto amp. harness connector.

Fuse block (J/B) harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133	22C	Moo	1	Existed
	4C	IVIOO	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 fuse block (J/B) harness connector M133 and the A/C auto amp.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 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.
- Display control unit
- Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit harness connector		Display control unit harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
Μοο	M88 1 21	M100	29	Existed	E		
IVIOO			17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

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[CAN SYSTEM (TYPE 12)]

INFOID:000000009790699

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MAIN LINE BETWEEN ABS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ABS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000009790701

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B39 and fuse block (J/B) side connector

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.
- Fuse block (J/B) harness connector B39
- ABS actuator and electric unit (control unit)
- 2. Check the continuity between the harness connector terminals.

ABS actuator and electric unit (control unit) harness connector		Fuse block (J/B) terminals	Continuity
Connector No.	Terminal No.	Terminal No.	
E35	25	6Н	Existed
235	15	4H	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse block (J/B).

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of driver seat control unit.
- 2. Check the continuity between the harness connector and the driver seat control unit harness connector.

Fuse block (J/B)	harness connector	Driver seat control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B39	6H	P601	1	Existed
	4H	6001	17	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 ABS actuator and electric unit (control unit) and the driver seat control unit.

NO >> Repair the main line between the harness connector B39 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ICC CIRCUIT [CAN SYSTEM (TYPE 12)] < DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN ADP AND ICC CIRCUIT **Diagnosis Procedure** INFOID:000000009790705 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. 3. CAN gateway Harness connectors B600 and B12 ADAS control unit 4. Check the continuity between the harness connector and the ADAS control unit harness connector. Harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. 1 1 Existed B12 B1 17 2 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ADAS control unit. NO >> Replace the body harness.

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MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

Diagnosis Procedure

INFOID:000000009790706

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B37
- Harness connector B72
- Harness connector B62
- Harness connector M22

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.

- ADAS control unit
- Harness connectors B37 and B72
- 2. Check the continuity between the ADAS control unit harness connector and the harness connector.

ADAS control unit	harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R1	1	P27	4	Existed
וט	2		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B62 and M22.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
P72	4	Pc2	63	Existed
072	3	002	53	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of steering force control module.

2. Check the continuity between the harness connector and the steering force control module.

Harness	connector	Steering force control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	63	N/74	14	Existed
IWIZZ	53		15	Existed

Is the inspection result normal?

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

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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YES (Past error)>>Error was detected in the main line between the ADAS control unit and the steering force control module.

NO >> Repair the main line between the harness connector M22 and the steering force control module.

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MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

Diagnosis Procedure

INFOID:000000009790707

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following harness connectors.
- CAN gateway
- Steering force control module
- 4. Check the continuity between the steering force control module harness connector and the data link connector.

Steering force control module harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M71	14	M25	13	Existed
	15	WIZ5	12	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 steering force control module and the data link connector.

NO >> Repair the main line between the steering force control module and the data link connector.

Ν	IAIN LINE BETW	VEEN RDR-L AN	ID AVM CIRCUIT	-
< DTC/CIRCUIT DIAC	NOSIS >		[CAN S	SYSTEM (TYPE 12)]
MAIN LINE BET	WEEN RDR-L	AND AVM CIR	CUIT	
Diagnosis Proced	ure			INFOID:000000009790708
1.CHECK CONNECT	OR			
 Turn the ignition sy Disconnect the bar Check the followin and harness side). Harness connecto Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the foll Harness connecto Harness connecto Check the continut 	witch OFF. tery cable from the ne ig terminals and conr r B3 r B52 <u>normal?</u> terminal and connect CONTINUITY (OPEN owing harness conne rs B87 and B8 rs B3 and B52 ty between the harnes	egative terminal. nectors for damage, I or. I CIRCUIT) ctors. ss connectors.	pend and loose conne	ection (connector side
Harness	connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	6	B3	1	Existed
	5	25	9	Existed
YES >> GO TO 3. NO >> Replace th 3. CHECK HARNESS 1. Disconnect the con 2. Check the continu connector.	ie body harness. CONTINUITY (OPEN nnector of around view ity between the harne	I CIRCUIT) v monitor control unit. ess connector and th	e around view monito	r control unit harness
Harness	connector	Around view mo harness	nitor control unit connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	1	B50	27	Existed
	9		28	Existed
Is the inspection result YES (Present error)> YES (Past error)>>Er itor control NO >> Replace th	9 <u>normal?</u> >Check CAN system to ror was detected in the unit control unit. the body harness.	type decision again. e main line between t	28 he side radar LH and	Existed

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MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:000000009790703

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connectors B62
- Harness connectors M22

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.
- Around view monitor control unit
- Harness connectors B62 and M22
- 2. Check the continuity between the around view monitor control unit harness connector and the harness connector.
- With around view monitor, without ICC

Around view mo harness	onitor control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
R50	27	B62	63	Existed
B30	28		53	Existed

With ICC

Around view monitor control unit harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
P50	27	Peo	18	Existed	
	28	Boz	17	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M95 and M155.
- 2. Check the continuity between the harness connectors.

- With around view monitor, without ICC

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	63	MOE	15	Existed
IVIZZ	53	10195	7	Existed

With ICC

Harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
Maa	18	MOS	14	Existed	
IVIZZ	17	10195	6	Existed	

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

[CAN SYSTEM (TYPE 12)] < DTC/CIRCUIT DIAGNOSIS >

<u>Is the</u>	e inspection result normal?	
YES YES	S (Present error)>>Check CAN system type decision again. S (Past error)>>Error was detected in the main line between the around view monitor control unit and the sonar control unit	А
NO	>> Repair the main line between the harness connectors M22 and sonar control unit.	В
		С
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MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

Diagnosis Procedure

INFOID:000000009790709

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Chassis control module
- Harness connectors E25
- Harness connectors M40
- Harness connector M19
- Harness connectors B18
- Chassis control module

Is the inspection result normal?

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Steering angle main control module
- Harness connectors E25 and M40
- 2. Check the continuity between the steering angle main control module harness connector and harness connector.

Steering angle m harness	Steering angle main control module harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E26	14	E25	51	Existed
E20	15	LZ5	52	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the steering angle main control module harness connector and harness connector E25.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M19 and B18.

2. Check the continuity between the harness connectors.

Harness	connector	ector Harness of		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M40	51	M10	74	Existed
W40	52	10119	75	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between harness connectors M40 and M19.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ADAS control unit.

2. Check the continuity between the harness connector B18 and ADAS control unit harness connector.

Harness connector		ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

B1 8	74	R1	8	Existed	^
DIO	75	DI	9	Existed	A

Is the inspection result normal?

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

В YES (Past error)>>Error was detected in the main line between the steering angle main control module and the ADAS control unit.

>> Replace the body harness. NO

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MAIN LINE BETWEEN ICC AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ICC AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000009790710

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Chassis control module
- Harness connector B18
- Harness connector M19

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.
- ADAS control unit
- Harness connectors B18 and M19
- 2. Check the continuity between the harness connector terminals.

ADAS control unit	ADAS control unit harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
D1	8	D10	84	Existed
	9		85	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M75 and R3.
- 2. Check the continuity between the harness connectors.

Harness	connector	ctor Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M10	84	M75	32	Existed		
10119	85	10175	31	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 ADAS control unit and the lane camera unit.

NO >> Repair the main line between the harness connectors M19 and lane camera unit.

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

· · · · · · · · · · · · · · · · ·				
agnosis Procedi	ure			INFOID:0000000097907
CHECK CONNECT	OR			
Turn the ignition sv Disconnect the bat Check the following nector side). ECM	vitch OFF. tery cable from the ne g terminals and conne	egative terminal. ectors for damage, b	end and loose conn	ection (unit side and con-
the inspection result	normal?		Л	
YES >> GO TO 2. NO >> Repair the	terminal and connect	or. -		
CHECK HARNESS	FOR OPEN CIRCUIT			
. Disconnect the cor . Check the resistan	nector of ECM. ce between the ECM	harness connector t	erminals.	
_	ECM harness c	connector		Resistance (Ω)
Connector No.		Terminal No.		
M37	114		113	Approx. 108 – 132
NO >> GO TO 4. CHECK POWER SU heck the power suppl the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the fus Check the continui	JPPLY AND GROUN y and the ground circ normal? Replace the ECM. R ror was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM	D CIRCUIT uit of the ECM. Refe efer to <u>EC-578, "Rer</u> e ECM branch line. e ground circuit. I CIRCUIT) connector M133. harness connector a	r to <u>EC-188. "Diagn</u> moval and Installatic nd the fuse block (J	osis Procedure". on". /B) harness connector.
	s connector	Fuse block (.1/B)	harness connector	·
FCM harnes			Terminal No.	Continuity
ECM harnes Connector No.	Terminal No.	Connector No.		
ECM harnes Connector No.	Terminal No. 114		21C	Existed

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 12)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000009790768

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal. 2.
- Check the following terminals and connectors for damage, bend and loose connection (connector side 3. and harness side).
- Data link connector
- Harness connector M133 and fuse block (J/B) side connector

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.

	Resistance (O)	
Connector No.	Termi	
M25	6	Approx. 54 – 66

Is the measurement value within the specification?

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

YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 1 side).

NO >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

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

Data link	Data link connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M25	6	M122	23C	Existed
WZ3	14	10133	5C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the data link connector M25 and the harness connector M133.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 12)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009790712

А

.CHECK CONNECTOR			
Turn the ignition switch of Disconnect the battery of Check the following term and harness side).	OFF. able from the negative terr minals and connectors for	ninal. damage, bend and loose	connection (connector side
the inspection result norm	al?		
IO >> GO TO 2.	nal and connector branch I	ine.	
CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	
Disconnect the connector Check the continuity bet	or of CAN gateway. ween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
CHECK HARNESS FOR Connect the connector of Check the resistance be	OPEN CIRCUIT of CAN gateway. tween the data link connec	ctor terminals.	
Connector No	Data link connector		Resistance (Ω)
M25	13	12	Approx 54 – 66
the measurement value w	ithin the specification?		
ES (Present error)>>Cheo ES (Past error)>>Error wa cuit 2 side). IO >> Repair the data	ck CAN system type decisions detected in the data link link connector branch line.	on again. connector branch line circu	uit (CAN communication cir-

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790713

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R
- Harness connector E64 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. E121 29 28 Approx. 54 – 66	IPDM E/R harness connector			Resistance (O)
E121 29 28 Approx. 54 – 66	Connector No.	Termi		
	E121	29	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

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

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

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "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.

4.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the harness connector E64.

2. Check the continuity between the IPDM E/R harness connector and harness connector.

IPDM E/R harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F121	29	E64	6E	Existed
LIZI	28	L04	2E	Existed

Is the measurement value within the specification?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

TCM BRANCH LIN		CUIT				Λ
Diagnosis Procedure					INF01D:000000009790714	A
1.CHECK CONNECTOR						В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F12 Harness connector E10 	OFF. cable fror ninals an	m the negative ter	minal. damage, benc	and loose cor	nnection (unit side and con-	C
- Harness connector E65	and fuse	e block (J/B) side (connector			
YES >> GO TO 2.	<u>iai :</u>					Е
NO >> Repair the term	inal and o	connector.				
2.CHECK HARNESS FOR	OPEN C	CIRCUIT				F
1. Disconnect the connect	or of A/T	assembly.		otor torminals		
	etween ti	le A/T assembly h				G
	A/T assem	bly harness connecto	r		Resistance (Ω)	
Connector No.		Termi	nal No.	0		Ц
				0	Appi0x. 54 – 66	11
3.CHECK HARNESS FOR 1. Remove the joint connect 2. Check the continuity be side of the joint connect	OPEN C ctor. Ref tween th cor.	CIRCUIT er to <u>TM-218, "Ex</u> e A/T assembly h	<u>ploded View"</u> arness conne	ctor side and t	he TCM harness connector	J
A/T assembly harness connec	tor side	TCM harne	ss connector			Κ
Terminal No.		Termi	nal No.		Continuity	
3			3		Existed	L
8			8		Existed	
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPL	nal? nt connec Y AND G	ctor. GROUND CIRCUI	T	TM 494 "Dioc		LAN
Lineck the power supply and	a the grou nal?	und circuit of the 1	UNI. Refer to	<u>1 IVI-181, "Diag</u>	<u>anosis procedure"</u> .	
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the as detect er supply	control valve & TC ted in the TCM bra and the ground c	CM. Refer to <u>1</u> anch line. ircuit.	<u>M-218, "Explo</u>	ded View".	0
5. CHECK HARNESS CON	ITINUITY	(OPEN CIRCUIT	-)			Ρ
 Disconnect the harness Check the continuity be 	connect tween the	or E65. e A/T assembly ha	arness conne	ctor and the ha	irness connector.	

A/T assembly h	A/T assembly harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

F2	3	E65	9F	Existed
12	8	200	5F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 12)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure			INFOID:00000009790769	A
1.снеск отс				В
Check DTC of the CAN gate	way with CONSULT.			
Is U1010 or B2600 indicated	<u> ?</u>			0
YES >> Perform a diagn	osis of the indicated DTC.			C
2 of the constant of the				
				D
 Turn the ignition switch 0 Disconnect the battery of Check the following terr (unit side and connector) 	OFF. able from the negative terr ninals and connectors of (side).	ninal. CAN gateway for damage,	bend and loose connection	Е
Is the inspection result norm	<u>al?</u>			
YES >> GO TO 3. NO >> Repair the termi	nal and connector.			F
3.CHECK HARNESS FOR	OPEN CIRCUIT			
 Disconnect the connect Check the resistance be 	or of CAN gateway. tween the CAN gateway h	arness connector terminals		G
	CAN gateway harness connector			Н
Connector No.	Termir	nal No.	Resistance (Ω)	
M24	1	7	Approx. 54 – 66	
Is the measurement value w	ithin the specification?			
YES >> GO TO 4.	actoway branch line			
		-		J
Check the power supply an dure"	d the ground circuit of the	e CAN gateway. Refer to L	<u>AN-171, "Diagnosis Proce-</u>	K
Is the inspection result norm	al?			IX.
YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe	ace the CAN gateway. Ref as detected in the CAN gat er supply and the ground ci	er to <u>LAN-172, "Removal a</u> eway branch line (CAN con rcuit.	nd Installation". nmunication circuit 1 side).	L
				LAN
				LAN
				N

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009790715

[CAN SYSTEM (TYPE 12)]

1.c	IECK	DTC
-----	------	-----

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. 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).
- CAN gateway
- Harness connector M133 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M24	4	6	Existed
10124	10	12	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-171</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-172, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M133.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

CAN gateway h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M24	4	M122	13C	Existed
11/24	10	- WIT35	2C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the CAN gateway harness connector M24 and the harness connector M133.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

HVAC BRANCH LIN	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:00000009790716	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the terminals an side and connector side Is the inspection result norm 	OFF. cable from the negative tern d connectors of the A/C at e). nal?	ninal. uto amp. for damage, bend	and loose connection (unit	С
YES >> GO TO 2.				D
2.CHECK HARNESS FOR	OPEN CIRCUIT			
1. Disconnect the connect	or of A/C auto amp.			Ε
2. Check the resistance be	etween the A/C auto amp. I	narness connector terminals		
	A/C auto amp. harness connecto	r	Resistance (O)	F
Connector No.	Termi	nal No.		
M88	1	21	Approx. 54 – 66	G
Is the measurement value w YES >> GO TO 3. NO >> Repair the A/C a 3. CHECK POWER SUPPL	<u>/ithin the specification?</u> auto amp. branch line. Y AND GROUND CIRCUI ⁻	r		Н
Check the power supply an Diagnosis Procedure".	nd the ground circuit of the	A/C auto amp. Refer to <u>H</u>	AC-92, "A/C AUTO AMP. :	
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the A/C auto amp. Re as detected in the A/C auto er supply and the ground ci	fer to <u>HAC-113, "Removal ar</u> amp. branch line. rcuit.	nd Installation".	J
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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790717

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

C	Resistance (O)		
Connector No.	Termi		
M58	41	42	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-104, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to <u>MWI-126, "Removal and Installation"</u>.

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

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

[CAN SYSTEM (TYPE 12)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009790718 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790719

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

AFS control unit harness connector			Resistance (O)
Connector No.	Termi		
M4	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to <u>EXL-128, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-181, "Removal and Installation".

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

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

AV BRANCH LINE	CIRCUIT				
Diagnosis Procedure	INFOID:000000009790720				
1.CHECK CONNECTOR					
 Turn the ignition switch Disconnect the battery of Check the terminals and (unit side and connector) 	OFF. cable from the negative terr d connectors of the display r side).	ninal. y control unit for damage, l	bend and loose connection		
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2.CHECK HARNESS FOR	nal? inal and connector. OPEN CIRCUIT				
 Disconnect the connect Check the resistance be 	or of display control unit. Setween the display control u	init harness connector term	inals.		
Di	Resistance (Ω)				
Connector No.	Termir	nal No.	()		
M100	29	17	Approx. 54 – 66		
Is the measurement value w YES >> GO TO 3. NO >> Repair the displ 3.CHECK POWER SUPPL	vithin the specification? ay control unit. Y AND GROUND CIRCUIT	-			
Check the power supply an TROL UNIT : Diagnosis Pro	Check the power supply and the ground circuit of the display control unit. Refer to <u>AV-239, "DISPLAY COI</u> TROL UNIT : Diagnosis Procedure".				
Is the inspection result norm	nal?				
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the display control unit as detected in the display c er supply and the ground ci	t. Refer to <u>AV-277, "Remova</u> control unit branch line. rcuit.	al and Installation".		

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HBA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790721

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Auto anti- dazzling inside mirror (High beam assist control module)
- Harness connector R2
- Harness connector M74

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 auto anti dazzling inside mirror (High beam assist control module).
- 2. Check the resistance between the auto anti dazzling inside mirror (High beam assist control module) harness connector terminals.

Auto anti - dazzli	Auto anti - dazzling inside mirror (High beam assist control module) harness connector			
Connector No.	Termi			
R9	12	11	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the anti - dazzling inside mirror (High beam assist control module) branch line.

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

Check the power supply and the ground circuit of the anti - dazzling inside mirror (High beam assist control module). Refer to <u>EXL-128</u>, "HIGH BEAM ASSIST CONTROL MODULE : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror. Refer to <u>MIR-45, "Removal and Installation"</u> (With automatic drive positioner system) or <u>MIR-80, "Removal and Installation"</u> (Without automatic drive positioner system).
- YES (Past error)>>Error was detected in the anti dazzling inside mirror (High beam assist control module) branch line.
- NO >> Repair the power supply and the ground circuit.

TCU BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

TCU BRANCH LINE	CIRCUIT			
Diagnosis Procedure	INF0ID:000000009790722			
1.CHECK CONNECTOR				
 Turn the ignition switch O Disconnect the battery ca Check the terminals and connector side). 	FF. ble from the negative ter connectors of the TCU	rminal. for damage, bend and lo	ose connection (unit side and	
s the inspection result norma	?			
YES >> GO TO 2.	al and connector			
$2_{\rm CHECK}$ HARNESS FOR C	PEN CIRCUIT			
Disconnect the connector				
 Check the resistance bety 	veen the TCU harness c	connector terminals.		
TCU harness connector		Resistance (Q)		
Connector No.	Term	inal No.		
M81	9	10	Approx. 54 – 66	
YES >> GO TO 3. NO >> Repair the TCU b CHECK POWER SUPPLY Check the power supply and t	ranch line. AND GROUND CIRCUI	T TCU. Refer to <u>AV-589, "T(</u>	CU : Diagnosis Procedure".	
s the inspection result norma	?			
YES (Present error)>>Repla YES (Past error)>>Error was NO >> Repair the power	ce the TCU. Refer to <u>AV</u> detected in the TCU bra supply and the ground c	-597, "Removal and Insta anch line. sircuit.	<u>llation"</u> .	

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790723

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

	Posistance (O)		
Connector No.	Termi		
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-98, "Removal and Installation"</u>.

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

NO >> Repair the power supply and the ground circuit.
ABS BRANCH LINE			
Diagnosis Procedure			INFOID:000000009790724
1.CHECK CONNECTOR			
 Turn the ignition switch (Disconnect the battery of Check the following term nector side). 	OFF. able from the negative terr ninals and connectors for d	ninal. amage, bend and loose con	nection (unit side and con-
 Harness connector E65 Is the inspection result norm YES-1 >> Models with arous 	and fuse block (J/B) side c <u>al?</u> und view monitor system: (onnector GO TO 2.	
YES-2 >> Models without a NO >> Repair the termi	around view monitor syster nal and connector.	n: GO TO 3.	
 Disconnect the connect Check the continuity bet 	or of CAN gateway. ween the CAN gateway ha	rness connector terminals.	
Connector No.	CAN gateway harness connector Termir	nal No.	Continuity
M24	4	6	Existed
102 1	10	12	Existed
 Disconnect the connector Check the resistance be nals. 	or of ABS actuator and election the ABS actuator a	nd electric unit (control unit).) harness connector termi-
Connector No		nal No	Resistance (Ω)
	25	15	Approx, 54 - 66
s the measurement value w YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPPL Check the power supply and	thin the specification? Y AND GROUND CIRCUIT d the ground circuit of the	ABS actuator and electric	unit (control unit). Refer to
<u>3RC-154, "Diagnosis Proceed</u> to the inspection result norm	<u>Jure"</u> . <u>al?</u> acc the ADC actuates and		
YES (Present error)>>Repi and Installation" YES (Past error)>>Error wa NO >> Repair the powe	ace the ABS actuator and o as detected in the ABS actu r supply and the ground ci	uator and electric unit (control unit). Re rcuit.	ol unit) branch line.
5. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	
 Disconnect the connect Check the resistance be nals. 	or of harness connector E6 etween the ABS actuator a	5. nd electric unit (control unit) harness connector termi-

- With around view monitor system

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ABS BRANCH LINE CIRCUIT

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ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	6F	Existed
E30	15	L03	7F	Existed

- Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	8F	Existed
E35	15	205	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

ADP BRANCH LINE			
Diagnosis Procedure			INFOID:00000009790725
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the follow terminator side). Driver seat control unit 	OFF. able from the negative terr als and connectors for dama	ninal. age, bend and loose conne	ection (unit side and connec-
 Harness connectors B6 Harness connectors B3 tem) 	00 and B12 9 and fuse block (J/B) side	e connector (Models withou	ut around view monitor sys-
Is the inspection result norm YES - 1>> Models with aro YES - 2>> Models without NO >> Repair the term	<u>al?</u> und view monitor system: 0 around view monitor syster inal and connector.	GO TO 2. n: GO TO 3.	
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)		
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.	
2	CAN gateway harness connector		Continuity
Connector No.	Iermir	nal No.	Evistod
M24	10	12	Existed
 CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be 	OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit	vith around view monitor sy	stem)
	tween the driver seat contr	or unit namess connector t	
Driv	er seat control unit harness conne	ector	Resistance (Ω)
B601	1	17	Approx, 54 – 66
Is the measurement value w	vithin the specification?		
YES >> GO TO 4. NO - 1 >> Models without NO - 2 >> Models with aro	around view monitor syster und view monitor system: F	n: GO TO 5. Repair the driver seat contr -	ol unit branch line.
Check the power supply and	the ground circuit of the dr	iver seat control unit. Refer	to ADP-75, "DRIVER SEAT
Is the inspection result norm	<u>al?</u>		
YES (Present error)>>Rep YES (Past error)>>Error wants NO >> Repair the power	lace the driver seat control as detected in the driver se er supply and the ground ci	unit. Refer to <u>ADP-145, "Re</u> at control unit branch line. rcuit.	emoval and Installation".
5. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	
 Disconnect the harness Check the continuity be 	connector B39.	rol unit harness connector	B601 and the harness con-

nector.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Driver seat control u	nit harness connector	ector Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
B601	1	B39	3H	Existed
	17	039	8H	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the driver seat control unit harness connector B601 and the harness connector B39.

PSB BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			- NFOID:000000009790726
1. CHECK CONNECTOR			E
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). CAN gateway Pre-crash seat belt continued in the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS CON Disconnect the connect Check the continuity box 	OFF. cable from the negative terr ninals and connectors for d and connectors for d nal and connector. TINUITY (OPEN CIRCUIT or of CAN gateway.	ninal. amage, bend and loose cor	nection (unit side and con-
2. Check the continuity be	CAN gateway harness connector		1
Connector No.	Termin	nal No.	Continuity
	4	6	Existed
M24	10	12	Existed
YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	ess and repair or replace (i e). OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co	f shield line is open) the roc	ot cause (CAN communica-
 Check the resistance be nals. 	etween the pre-crash seat	belt control unit (driver side) harness connector termi- K
Pre-crash sea	t belt control unit (driver side) har	ness connector	Resistance (Ω)
Connector No.	Termi	nal No.	
B19	14	4	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the pre-co 4.CHECK POWER SUPPL Check the power supply an SBC-62, "Diagnosis Proceed Is the inspection result norm	Crash seat belt control unit (Y AND GROUND CIRCUIT d the ground circuit of the ure".	(driver side) branch line. - pre-crash seat belt control	unit (driver side). Refer to
YES (Present error)>>Rep and Installation" YES (Past error)>>Error w NO >> Repair the powe	lace the seat belt pre-tensing as detected in the pre-cras er supply and the ground ci	oner retractor (driver side). I h seat belt control unit (drive rcuit.	Refer to <u>SBC-76, "Removal</u> er side) branch line.

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009790727

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
10124	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

ADA	Resistance (O)		
Connector No.	Termi		
B1	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-160. "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation".

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

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

[CAN SYSTEM (TYPE 12)]

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< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

Diagnosis Procedure INFOID:000000009799544 **1**.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). ADAS control unit Chassis control module D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. F Check the continuity between the chassis control module harness connector terminals. 2. Chassis control module harness connector Continuity Connector No. Terminal No. 19 11 Existed E22 7 8 Existed Н Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side). **3.**CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of ADAS control unit. 1 Check the resistance between the ADAS control unit harness connector terminals. 2. ADAS control unit harness connector Κ Resistance (Ω) Connector No. Terminal No. B1 8 9 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 4. >> Replace the body harness. NO LAN 4.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-160, "Diagnosis Procedure". Ν Is the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line circuit (chassis communication circuit side). NO >> Repair the power supply and the ground circuit. Ρ

EPS/DAST 3 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790770

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering force control module
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4 6		Existed	
17124	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of steering force control module.
- 3. Check the resistance between the steering force control module harness connector terminals.

Steerin	Posistanco (O)		
Connector No.	Termi		
M71	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering force control module. Refer to <u>STC-407, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427</u>, "<u>Removal and Installa-</u> <u>tion</u>".

YES (Past error)>>Error was detected in the steering control module branch line.

4WD BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			/ INFOID:00000009790771
1. CHECK CONNECTOR			E
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). AWD control unit CAN gateway Is the inspection result norm YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term 	OFF. cable from the negative terr ninals and connectors for d <u>nal?</u> und view monitor system: 0 around view monitor syster inal and connector.	ninal. amage, bend and loose cor GO TO 2. n: GO TO 3.	nnection (unit side and con-
2.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)		
 2. Check the continuity be 	tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
YES >> GO TO 3. NO >> Check the harn 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w or of AWD control unit. etween the AWD control unit	se (CAN communication cire ith around view monitor sys	cuit 2). .tem).
/	WD control unit barness connect	or	
Connector No.	Termir	nal No.	Resistance (Ω)
M42	8	16	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO >> Repair the AWE 4.CHECK POWER SUPPL Check the power supply an	ithin the specification? Control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the 2	- AWD control unit. Refer to	L/ DLN-46. "Diagnosis Proce-
dure". <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w	al? lace the AWD control unit. I as detected in the AWD cor	Refer to <u>DLN-55, "Removal</u> ntrol unit branch line.	and Installation".
NO >> Repair the power	er suppry and the ground Cl	icuit.	F

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:000000009799703

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Chassis control module
- Harness connectors E47
- Harness connectors M39
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M24	4	6	Existed	
M24	10	12	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

$\mathbf{3}$. Check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of chassis control module.
- 3. Check the resistance between the chassis control module harness connector terminals.

Cha	ssis control module harness conr	nector	Resistance (O)
Connector No.	Termi	nal No.	
E22	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the chassis control module branch line.

${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-541</u>, "Diagnosis <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-542, "Removal and Installation".

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

STRG BRANCH LI	NE CIRCUIT			Δ
Diagnosis Procedure			INFOID:00000009790728	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery Check the following tern nector side). Steering angle sensor CAN gateway (Models) 	OFF. cable from the negative terr minals and connectors for d with around view monitor sy	minal. lamage, bend and loose cor vstem)	nnection (unit side and con-	С
Is the inspection result norn	nal?	jotomy		D
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term 2 CHECK HARNESS CON	ound view monitor system: (around view monitor syster inal and connector.	GO TO 2. m: GO TO 3.		E
1 Disconnect the connect	for of CAN gateway)		F
 Check the continuity be 	tween the CAN gateway ha	arness connector terminals.		1
	CAN gateway harness connector		0	G
Connector No.	Termir	nal No.	Continuity	
M24	4	6	Existed	
	10	12	Existed	П
YES >> GO TO 3. NO >> Check the harn 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w for of steering angle sensor etween the steering angle s	se (CAN communication cire rith around view monitor sys sensor harness connector te	cuit). tem). rminals.	l J
Ste	ering angle sensor barness conne	ector		Κ
Connector No.	Termir	nal No.	Resistance (Ω)	
M77	5	2	Approx. 54 – 66	L
Is the measurement value vYES>> GO TO 4.NO>> Repair the stee 4. CHECK POWER SUPPL	vithin the specification? ring angle sensor branch lir Y AND GROUND CIRCUIT	ne F		LAI
Check the power supply an <u>Procedure</u> ".	nd the ground circuit of the	steering angle sensor. Ret	er to <u>BRC-123, "Diagnosis</u>	Ν
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	blace the steering angle sen as detected in the steering er supply and the ground ci	isor. Refer to <u>BRC-180, "Re</u> angle sensor branch line. rcuit.	moval and Installation".	0
				Ρ

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790729

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Side radar LH
- Harness connector B87
- Harness connector B8

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 side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

	Side radar LH harness connecto	r	Resistance (O)
Connector No.	Termi	nal No.	
B92	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-359</u>, "SIDE RADAR LH : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-386, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

RDR-R BRANCH LINE CIRCUIT		
Diagnosis Procedure		NFOID:00000009790730
1.CHECK CONNECTOR		В
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, nector side). Side radar RH Harness connector B87 Harness connector B8 	pend and loose connection	ו (unit side and con- C
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal and connector.2.CHECK HARNESS FOR OPEN CIRCUIT		E
 Disconnect the connector of side radar RH. Check the resistance between the side radar RH harness of 	onnector terminals.	F
Side radar RH harness connector		G
Connector No. Terminal No.		
B93 4	3 A	Approx. 54 – 66
Is the measurement value within the specification?YES>> GO TO 3.NO>> Repair the side radar RH branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT		
Check the power supply and the ground circuit of the side rada Diagnosis Procedure". Is the inspection result normal? XES (Present error)>>Replace the side radar RH, Refer to DA	r RH. Refer to <u>DAS-360,</u>	"SIDE RADAR RH : J
YES (Past error)>>Error was detected in the side radar RH bra NO >> Repair the power supply and the ground circuit.	anch line.	K
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< DTC/CIRCUIT DIAGNOSIS >

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790731

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Around view monitor control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
11/24	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models without ICC).

- 2. Disconnect the connector of around view monitor control unit.
- 3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view	w monitor control unit harness con	nector	Posistanco (O)
Connector No.	Terminal I	No.	
B50	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

 ${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to <u>AV-435.</u> "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to <u>AV-458</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

APA BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

APA BRANCH LINE			
Diagnosis Procedure			INF0/D:00000009790732
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following term nector side). Accelerator pedal actua Harness connector M12 Harness connector M67 	OFF. cable from the negative term ninals and connectors for c ntor / accelerator pedal pos 25	minal. damage, bend and loose co ition sensor	nnection (unit side and con-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of accelerator pedal actuet ween the accelerator ped	uator / accelerator pedal pos lal actuator harness connect	sition sensor. tor terminals.
Accelerator pedal actua	ator / accelerator pedal position se	ensor harness connector	Posistanco (O)
Connector No.	Termi	inal No.	
M124	3	9	Approx. 54 – 66
YES >> GO TO 3. NO >> Repair the acce 3. CHECK POWER SUPPL Check the power supply an sensor. Refer to <u>DAS-359</u> , "	Itnin the specification? Ierator pedal actuator bran Y AND GROUND CIRCUI d the ground circuit of the ACCELERATOR PEDAL A	nch line. T accelerator pedal actuator ACTUATOR : Diagnosis Prod	/ accelerator pedal position cedure".
Is the inspection result norm YES (Present error)>>Rep <u>TANCE CONTR</u> YES (Past error)>>Error wa NO >> Repair the powe	<u>ial?</u> lace the accelerator peda <u>COL ASSIST SYSTEM : Re</u> as detected in the accelerater er supply and the ground c	al assembly. Refer to <u>ACC</u> <u>emoval and Installation"</u> . ator pedal actuator branch liu ircuit.	C-4, "MODELS WITH DIS- ne.

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< DTC/CIRCUIT DIAGNOSIS >

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790733

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

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

2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assista	ance buzzer control module harne	ess connector	Resistance (O)
Connector No.	Termi	nal No.	
M56	3	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to <u>DAS-</u> <u>361, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to <u>DAS-389</u>, "Removal and <u>Installation"</u>.

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

LASER BRANCH L	INE CIRCUIT			Δ
Diagnosis Procedure			INFOID:00000009790734	~
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). ICC sensor 	OFF. cable from the negative term ninals and connectors for da	ninal. amage, bend and loose cor	nnection (unit side and con-	С
 Harness connector E76 Harness connector E14 Harness connector E25 Harness connector M40 	1			D
Is the inspection result norm	al?			Е
YES >> GO TO 2. NO >> Repair the term 2 CHECK HARNESS FOR	inal and connector.			F
 Disconnect the connect Check the resistance be 	or of ICC sensor. etween the ICC sensor harn	ess connector terminals.		G
	ICC sensor harness connector		Resistance (Ω)	
Connector No.	Termin	al No.		Н
E80	3	6	Approx. 108 – 132	
YES >> GO TO 3. NO >> Repair the ICC 3.	sensor branch line.			
Check the power supply and	the ground circuit of the IC	C sensor Refer to CCS-11	8 "Diagnosis Procedure"	J
Is the inspection result norm	al?	0 361301. Refer to <u>000-11</u>	o, Diagnosis i locedure.	
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the ICC sensor. Refer t as detected in the ICC sens er supply and the ground cir	o <u>CCS-135, "Removal and</u> or branch line. cuit.	Installation".	K
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				LAN
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SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790735

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Sonar control unit
- Harness connector M95
- Harness connector M155
- CAN gateway

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector		Continuity
Connector No.	Termi	nal No.	Continuity
M24	4	6	Existed
17124	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 $\mathbf{3}$. Check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of sonar control unit.
- 3. Check the resistance between the sonar control unit harness connector terminals.

S	onar control unit harness connec	tor	Resistance (O)
Connector No.	Termi	nal No.	
M76	5	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to <u>AV-435, "SONAR CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-462, "Removal and Installation".

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

DAST 1 BRANCH LINE CIRCUIT

DAST I BRANCH L			
iagnosis Procedure			INFOID:0000000979073
.CHECK CONNECTOR			
. Turn the ignition switch	OFF.		
 Disconnect the battery c Check the following tern nector side). 	able from the negative terr ninals and connectors for d	ninal. amage, bend and loose	connection (unit side and con-
Steering angle main con	trol module		
the inspection result norm	al?		
YES >> GO TO 2.			
NO >> Repair the termi	nal and connector.		
CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	
Disconnect the connectCheck the continuity bet	or of chassis control modul ween the chassis control n	e. nodule harness connecto	or terminals.
Chas	sis control module harness conn	ector	Continuity
		nal No.	
Connector No.	Termir		
Connector No.	Termir 19	11	Existed
Connector No. E22 the inspection result norm YES >> GO TO 3. NO >> Check the harne cation circuit sid CHECK HARNESS FOR	Termir 19 7 al? ess and repair or replace (i e). OPEN CIRCUIT	11 8 f shield line is open) the	Existed Existed
Connector No. E22 the inspection result norm YES >> GO TO 3. NO >> Check the harne cation circuit sid CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	Termin 19 7 al? ess and repair or replace (i e). OPEN CIRCUIT of chassis control module. or of steering angle main control module is the steering angle is the steering angle in the steering a	11 8 f shield line is open) the ontrol module. nain control module harn	Existed Existed root cause (chassis communi-
Connector No. E22 the inspection result norm YES >> GO TO 3. NO >> Check the harne cation circuit sid CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Steering ar	Termin 19 7 al? ess and repair or replace (i e). OPEN CIRCUIT of chassis control module. or of steering angle main control module harness otween the steering angle harness	11 8 f shield line is open) the pontrol module. hain control module harn	Existed Existed root cause (chassis communi-
Connector No. E22 the inspection result norm YES >> GO TO 3. NO >> Check the harne cation circuit sid CHECK HARNESS FOR Connect the connector of Disconnect the connector of Check the resistance be Steering ar Connector No.	Termin 19 7 al? ess and repair or replace (i e). OPEN CIRCUIT of chassis control module. or of steering angle main control module harness ngle main control module harness Termin	11 8 f shield line is open) the pontrol module. hain control module harn connector hal No.	Existed Existed root cause (chassis communi- ess connector terminals.
Connector No. E22 the inspection result norm YES >> GO TO 3. NO >> Check the harned cation circuit sid CHECK HARNESS FOR Connect the connector of Disconnect the connector of Check the resistance be Steering ar Connector No. E26	Termin 19 7 al? ess and repair or replace (i e). OPEN CIRCUIT of chassis control module. or of steering angle main control module harness tween the steering angle n ngle main control module harness Termin 14	11 8 f shield line is open) the ontrol module. nain control module harmed connector connector nal No. 15	Existed Existed root cause (chassis communi- ess connector terminals. Resistance (Ω) Approx. 54 – 66

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009790737

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R13
- Harness connector M75
- Chassis control module

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of chassis control module.

2. Check the continuity between the chassis control module harness connector terminals.

Cha	Chassis control module harness connector			
Connector No.	Termir	Continuity		
Ebb	19	11	Existed	
L22	7	8	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side).

$\mathbf{3.}$ CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of chassis control module.
- 2. Disconnect the connector of lane camera unit.
- 3. Check the resistance between the lane camera unit harness connector terminals.

L	Resistance (O)		
Connector No.	Termi		
R13	4 8		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the lane camera unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-610, "LANE CAMERA</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-620, "Removal and Installation".

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

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure			
			INFOID:0000000097907
I CONNECTOR INSPECT	ON		
 Turn the ignition switch (2. Disconnect the battery c Disconnect all the unit co Check terminals and cor Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 	OFF. able from the negative ter onnectors on CAN commu- nectors for damage, bence al? nal and connector.	minal. Inication circuit 1. I and loose connection.	
Check the continuity betwee	n the data link connector to	erminals.	
	Data link connector		
Connector No.	Termi	nal No.	- Continuity
M25	6	14	Not existed
Check the continuity between Data link (n the data link connector a	and the ground.	
Connector No.	Terminal No.		Continuity
	6	- Ground	Not existed
	14		Not existed
YES >> GO TO 4. NO >> Check the harne 1 .CHECK ECM AND BCM 1. Remove the ECM and th 2. Check the resistance be	ess and repair or replace [i TERMINATION CIRCUIT ne BCM. tween the ECM terminals.	f shield line or fuse block (J/B) is short] the root cause.
			Resistance (Ω)
	тегтіпаї і і і і і і і і і і і і і і і і і і і		
114			Approx. 108 – 132
114 3. Check the resistance be	tween the BCM terminals.		Approx. 108 – 132
114 3. Check the resistance be	tween the BCM terminals.		Approx. 108 – 132
114 3. Check the resistance be	tween the BCM terminals. BCM Ferminal No.		Approx. 108 – 132 Resistance (Ω)

NO >> Replace the ECM and/or the BCM.

5. CHECK SYMPTOM

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

LAN-525

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

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

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT 2

	HON CIRCUIT 2		
Diagnosis Procedure			INFOID:00000009790738
CONNECTOR INSPECT	ION		
 Turn the ignition switch is Disconnect the battery of Disconnect all the unit c Check terminals and constant structure the inspection result norm YES >> GO TO 2. NO >> Repair the terminal 	OFF. able from the negative terr onnectors on CAN commu nnectors for damage, bend al?	minal. nication circuit 2. I and loose connection.	
CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)	
Check the continuity betwee	n the data link connector te	erminals.	
	Data link connector		
Connector No.	Termir	nal No.	Continuity
M25	13	12	Not existed
CHECK HARNESS CON	TINUITY (SHORT CIRCUI n the data link connector a	T) Ind the ground.	
Data link	connector Terminal No		Continuity
	13	Ground	Not existed
M25	12		Not existed
NO >> Check the harne CHECK CAN GATEWAY Remove the CAN gatew Check the resistance be	ess and repair or replace [if TERMINATION CIRCUIT vay. Itween the CAN gateway te	f shield line or fuse block (J, erminals.	B) is short] the root cause.
C	AN gateway	R	esistance (Ω)
4	10	Ap	prox. 108 – 132
6	12	Ар	orox. 108 – 132
 <u>s the measurement value w</u> YES >> GO TO 5. NO >> Replace the CA D.CHECK SYMPTOM Connect all the connectors. customer)" are reproduced. nspection result 	<u>ithin the specification?</u> N gateway. Check if the symptoms de	escribed in the "Symptom (Results from interview with
Reproduced>>GO TO 6. Non-reproduced>>Start the	ə diagnosis again. Follow	the trouble diagnosis pro	cedure when past error is

detected.

LAN-527

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 circuit 2. **NOTE:**

CAN gateway has two termination circuits. 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.

< DTC/CIRCUIT DIAGNOSIS >

CHASSIS COMMU	NICATION CIRCUI			
Diagnosis Procedure				INF01D:000000009790739
1.CHECK CAN DIAGNOS	S			
Check the CAN diagnosis r communication circuit 2 hav	esults from CONSULT to s e no malfunction.	see that the	e CAN communi	cation circuit 1 and/or CAN
Are the CAN communication YES >> GO TO 2. NO >> Check and repart	n 1 and/or CAN communication circ	ation 2 circu cuit 1 and/o	<u>uits normal?</u> or CAN communic	cation circuit 2.
2.CONNECTOR INSPECT	ION			
 Turn the ignition switch Disconnect the battery of Disconnect all the unit of Check terminals and co Is the inspection result norm 	OFF. cable from the negative terr connectors on chassis com nnectors for damage, benc nal?	minal. munication I and loose	circuit. connection.	
NO >> Repair the term	inal and connector.			
3.CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)		
Check the continuity betwee	n the chassis control modu	ule harness	s connector.	
Cha	ssis control module harness conn	nector		Continuity
Connector No.	Termi	nal No.	_	
E22	19		1	Not existed
YES >> GO TO 4. NO >> Check the harn 4. CHECK HARNESS CON	ess and repair or replace [ii TINUITY (SHORT CIRCUI	f shield line T)	e or fuse block (J/	/B) is short] the root cause.
Check the continuity betwee	en the data link connector a	and the gro	und.	
Chassis control mod	ule harness connector			Continuity
Connector No.	Terminal No.	-	Ground	Continuity
M22	19	-	-	Not existed
le the inspection result perm	v nol2			
YES >> GO TO 5. NO >> Check the harn 5.CHECK CHASSIS CON	ess and repair or replace [it ROL MODULE TERMINA	f shield line TION CIRC	e or fuse block (J/ CUIT	/B) is short] the root cause.
 Remove the chassis co Check the resistance be 	ntrol module. etween the chassis control	module ter	minals.	
Chas	sis control module		R	esistance (Ω)
10	Ierminal No.		Δη	 prox_108 – 132
10	,		, YPI	

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

11

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Approx. 108 – 132

CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT 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 7.

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

7. 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 chassis communication circuit. **NOTE:**

Chassis control module has two termination circuits. Check other units first.

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

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

Inspection result

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

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

ITS COMMUNICATION CIRCUIT

TS COMMUNI			LOAN	•••••=···(••••=•=/]
iagnosis Proced	CATION CIRCU	ИТ		
	ure			INFOID:000000009790740
.CHECK CAN DIAG	NOSIS			
heck the CAN diagno	sis results from CON	SULT to see that the C cuit have no malfunctio	CAN communication	circuit 1, CAN commu-
re the CAN communit	cation 1 and CAN con	nmunication 2 circuits	normal?	
NO >> Check and	l repair CAN commun	ication circuit 1 and CA	AN communication ci	ircuit 2.
CONNECTOR INSP	PECTION			
 Turn the ignition sy Disconnect the bat Check the termina (unit side and conr 	vitch OFF. tery cable from the ne als and connectors of nector side).	egative terminal. the ADAS control un	it for damage, bend	and loose connection
the inspection result	normal?			
NO >> Repair the	terminal and connect	or.		
CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
ADAS control unit ICC sensor Check the continui nector.	ity between the ADAS	control unit harness c	connector and the IC	C sensor harness con-
ADAS control unit	harness connector	ICC sensor harn	ness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	6	E80	3	Existed
the inspection result	normal?		0	Existed
 /ES >> GO TO 4. NO >> Repair the .CHECK HARNESS 	harness between the CONTINUITY (SHOF	ADAS control unit and RT CIRCUIT)	d the ICC sensor.	
Disconnect the foll Side radar LH	owing harness connector or control unit actuator / accelerator	ctors.		
Side radar RH Around view monit Accelerator pedal Driver assistance t Sonar control unit Check the continui	buzzer control module ty between the ADAS	control unit harness c	connector terminals.	
Side radar RH Around view monit Accelerator pedal Driver assistance t Sonar control unit Check the continui	ty between the ADAS	control unit harness c	connector terminals.	Continuity
Side radar RH Around view monit Accelerator pedal a Driver assistance to Sonar control unit Check the continui	ty between the ADAS	ness connector Terminal No.	connector terminals.	Continuity

Check the continuity between the ADAS control unit harness connector and the ground.

LAN-531

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ADAS control unit	ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
B1	6	Ground	Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.

2. Check the resistance between the ADAS control unit terminals.

ADAS control unit		- Resistance (Ω)	
Terminal No.			
6	7	Approx. 108 – 132	

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)	
Terminal No.			
3	6	Approx. 108 – 132	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ADAS control unit and/or the ICC sensor.

7.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 8.

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

8. 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 ITS communication circuit. **NOTE:**

ADAS control unit and ICC sensor 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.

IAIN LINE	BETWEEN DLC AND	HVAC CIRCUI	Ē
NOSIS >		[CAN	SYSTEM (TYPE 13)]
T DIAG	NOSIS		
WEEN DL	_C AND HVAC CIRC	CUIT	
ure			INFOID:00000009791194
OR			
vitch OFF. tery cable fron g terminals ar M133 and fus	n the negative terminal. nd connectors for damage, l se block (J/B) side connector	bend and loose conr	ection (connector side
normal?			
terminal and c	connector.		
CONTINUITY	(OPEN CIRCUIT)		
e block (J/B) h ty between the	arness connector M65. e fuse block (J/B) terminals.		
Fuse blo	ock (J/B)		Continuity
	Terminal No.		Continuity
	22C		Existed
	4C		Existed
e fuse block (CONTINUITY	J/B). (OPEN CIRCUIT) auto amp.		
y between the	fuse block (J/B) harness co	nnector and the A/C a	uto amp. harness con-
arness connector	A/C auto amp. h	arness connector	Continuity
Terminal N	o. Connector No.	Terminal No.	
22C	M88	1	Existed
40		2	Existed
normal? Check CAN s	system type decision again. ted in the main line betwee	n the data link conne	ector and the A/C auto
	AIN LINE NOSIS > T DIAG WEEN DI Jre DR Vitch OFF. tery cable from g terminals and fus normal? terminal and fus normal? terminal and fus normal? terminal and fus normal? terminal and fus normal? terminal and fus potention Fuse block CONTINUITY e block (J/B) h by between the Fuse block CONTINUITY anector of A/C by between the arness connector Terminal N 22C 4C normal?	IAIN LINE BETWEEN DLC AND NOSIS > IT DIAGNOSIS WEEN DLC AND HVAC CIRC JIC JUNE OFF. orgen colspan="2">And connectors for damage, I M133 and fuse block (J/B) side connector normal? terminal and connector. CONTINUITY (OPEN CIRCUIT) e block (J/B) harness connector M65. by between the fuse block (J/B) terminals. Fuse block (J/B) Terminal No. 22C AC normal? e fuse block (J/B). CONTINUITY (OPEN CIRCUIT) nector of A/C auto amp. y between the fuse block (J/B) harness co arness connector A/C auto amp. y between the fuse block (J/B) harness co arness connector A/C auto amp. y between the fuse block (J/B) harness co A/C auto amp. y between the fuse block (J/B) harness co arness connector A/C auto amp. y between the f	IAIN LINE BETWEEN DLC AND HVAC CIRCUIT NOSIS > [CAN ICAN T DIAGNOSIS WEEN DLC AND HVAC CIRCUIT JITE OR ///////////////////////////////////

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000009791195

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	ess connector Display control unit harnes		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	1	M100	29	Existed
1000	21	IVI I UU	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

	MAIN LINE BE	TWEEN	ABS AN	D ADP CIRCU	IIT
COTC/CIRCUIT DIAG	SNOSIS >			[C/	AN SYSTEM (TYPE 13)]
MAIN LINE BET	WEEN ABS /	AND AD	P CIRC	UIT	
Diagnosis Proced	ure				INFOID:000000009791196
1.CHECK CONNECT	OR				
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Harness connector 	vitch OFF. tery cable from the og terminals and co r B39 and fuse bloc	negative te onnectors fo k (J/B) side	rminal. r damage, connector	bend and loose co	onnection (connector side
s the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	normal? terminal and conne CONTINUITY (OPI	ector. EN CIRCUI ⁻	Г)		
 Disconnect the foll Fuse block (J/B) has ABS actuator and Check the continuity 	owing harness con arness connector B electric unit (contro ty between the harr	nectors. 39 unit) ness connec	ctor termina	als.	
ABS actuator and harne	l electric unit (control un ess connector	it)	Fuse bloc	ck (J/B) terminals	Continuity
Connector No.	Terminal N	lo.	Те	rminal No.	
F35	25		6H 4H		Existed
200	15				Existed
YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the cort Check the continui	e fuse block (J/B). CONTINUITY (OPI nnector of driver sea ty between the har	EN CIRCUI ⁻ at control un ness connec	T) hit. ctor and the	e driver seat contro	l unit harness connector.
Fuse block (J/B) ha	rness connector	Driver	seat control u	nit harness connector	Continuity
Connector No.	Terminal No.	Connec	ctor No.	Terminal No.	Continuity
B 30	6H	De	01	1	Existed
53	4H	DO	UT .	17	Existed
s the inspection result YES (Present error)> YES (Past error)>>Er unit) and th	4H <u>normal?</u> >Check CAN syster ror was detected in the driver seat contro	B6 n type decis 1 the main li 51 unit.	sion again. ine betwee	17 n the ABS actuato	Existed

- >> Repair the main line between the harness connector B39 and the driver seat control unit. NO
- Ο
- Ρ

MAIN LINE BETWEEN ADP AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND AVM CIRCUIT

Diagnosis Procedure

INFOID:000000009791197

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B37
- Harness connector B72

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 B600 and B12
- Harness connectors B37 and B72
- 2. Check the continuity between the harness connector terminals.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
B 12	1	B 37	4	Existed
DIZ	17	- 537	3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of around view monitor control unit.
- 2. Check the continuity between the harness connector and the around view monitor control unit.

Harness	Harness connector		Around view monitor control unit harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		
P72	4	PEO	27	Existed
DIZ	3	630	28	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 around view monitor control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >					
				0	

[CAN SYSTEM (TYPE 13)]

IAIN LINE DE I						
iagnosis Proced	ure			INFOID:000000009791198		
CHECK CONNECT	OR					
Turn the ignition sy Disconnect the bat Check the followir and harness side). Harness connecto Harness connecto the inspection result (ES >> GO TO 2. IO >> Repair the	vitch OFF. ttery cable from the ne ig terminals and conr rs B62 rs M22 <u>normal?</u> terminal and connect	egative terminal. nectors for damage, b or.	end and loose conr	ection (connector side		
CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)				
Disconnect the foll Around view monit Harness connecto Check the continu connector. With around view	owing harness conne or control unit rs B62 and M22 ity between the arou monitor, without ICC	ctors. nd view monitor contr	ol unit harness conr	ector and the harness		
Around view mo	nitor control unit	Harness o	connector	Continuity		
harness	connector			Continuity		
Connector No.	connector Terminal No.	Connector No.	Terminal No.	Continuity		
Connector No.	connector Terminal No. 27	Connector No.	Terminal No.	Existed		
Connector No.	connector Terminal No. 27 28	Connector No.	Terminal No. 63 53	Continuity Existed Existed		
Connector No. B50 With ICC	Connector Terminal No. 27 28	Connector No.	Terminal No. 63 53	Continuity Existed Existed		
Connector No. B50 With ICC Around view mo	connector Terminal No. 27 28 nitor control unit connector	Connector No. B62 Harness c	Terminal No. 63 53	Continuity Existed Existed Continuity		
Connector No. B50 With ICC Around view mo harness of Connector No.	connector Terminal No. 27 28 nitor control unit connector Terminal No.	Connector No. B62 Harness c Connector No.	Terminal No. 63 53 connector Terminal No.	Continuity Existed Existed Continuity		
Connector No. B50 With ICC Around view mo harness of Connector No. B50	connector Terminal No. 27 28 nitor control unit connector Terminal No. 27	Connector No. B62 Harness c Connector No. B62	Terminal No. 63 53 connector Terminal No. 18	Continuity Existed Existed Continuity Existed		
Connector No. B50 With ICC Around view mo harness of Connector No. B50	connector Terminal No. 27 28 initor control unit connector Terminal No. 27 28 normal?	Connector No. B62 Harness c Connector No. B62	Terminal No. 63 53 connector Terminal No. 18 17	Continuity Existed Existed Continuity Existed Existed		
Connector No. B50 With ICC Around view model harness of Connector No. B50 the inspection result 'ES >> GO TO 3. JO >> Replace the .CHECK HARNESS Disconnect the hard Check the continue With around view result	connector Terminal No. 27 28 nitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne monitor, without ICC	Connector No. B62 Harness c Connector No. B62 I CIRCUIT) and M155. ss connectors.	Terminal No. 63 53 connector Terminal No. 18 17	Continuity Existed Existed Continuity Existed Existed		
Connector No. B50 With ICC Around view models of the inspection result (ES >> GO TO 3. NO >> Replace the second of the seco	connector Terminal No. 27 28 nitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne monitor, without ICC	Connector No. B62 Harness of Connector No. B62 I CIRCUIT) and M155. ss connectors.	Terminal No. 63 53 connector Terminal No. 18 17	Continuity Existed Continuity Existed Existed		
Connector No. B50 With ICC Around view mc harness Connector No. B50 the inspection result (ES >> GO TO 3. NO >> Replace th .CHECK HARNESS Disconnect the hall Check the continuit With around view m	connector Terminal No. 27 28 mitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne monitor, without ICC connector Terminal No.	Connector No. B62 Harness c Connector No. B62 I CIRCUIT) and M155. ss connectors. Harness c Connector No.	Terminal No. 63 53 connector Terminal No. 18 17 connector connector	Continuity Existed Existed Continuity Existed Existed Continuity		
Connector No. B50 With ICC Around view models Around view models Connector No. B50 the inspection result (ES >> GO TO 3. NO >> Replace the CHECK HARNESS Disconnect the hall Check the continue With around view models Connector No.	connector Terminal No. 27 28 mitor control unit connector Terminal No. 27 28 normal? ne body harness. CONTINUITY (OPEN rness connectors M95 ty between the harne monitor, without ICC connector Terminal No. 63	Connector No. B62 Harness of Connector No. B62 N CIRCUIT) and M155. ss connectors. Harness of Connector No.	Terminal No. 63 53 connector Terminal No. 18 17 20 20 20 20 20 20 20 20 20 20 20 20 20	Continuity Existed Existed Continuity Existed Existed Continuity Existed		

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
Maa	18	MQ5	14	Existed
IVIZZ	17	10135	6	Existed

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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 around view monitor control unit and the sonar control unit.
- NO >> Repair the main line between the harness connectors M22 and sonar control unit.

MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN SONAR AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000009791199

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[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect the following harness connectors. С CAN gateway -Harness connectors M155 and M95 Check the continuity between the harness connector and the data link connector. D Harness connector Data link connector Continuity Connector No. Terminal No. Connector No. Terminal No. Ε 15 13 Existed M95 M25 7 12 Existed F Is the inspection result normal? YES (Present error)>>Check CAN system type decision again.

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

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

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MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DAST 1 AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000009799761

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M19
- Harness connector B18
- Harness connector M40
- Harness connector E25

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.

- Steering angle main control module

- Harness connectors E25 and M40
- 2. Check the continuity between the harness connectors.

Steering angle main control module harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E26	14	F25	51	Existed
L20	15	LZJ	52	Existed

Is the inspection result normal?

YES >> GO TO 3.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M19 and B18.
- 2. Check the continuity between the harness connectors M40 and M19.

Side radar LH h	narness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
M40	51	M10	74	Existed
10140	52	10119	75	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M40 and M19.

4.CHECK CONNECTOR

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B18	74	84	Existed
BIO	75	85	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the main line between the harness connector B18.

LAN-540

NO >> Repair the main line between the steering angle main control module and the harness connector E25.
< DTC/CIRCUIT DIAGNOSIS >

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M75 and R3.

2. Check the continuity between the harness connectors.

rness conne	ector	Harness	connector	Continuity	
	Terminal No.	Connector No.	Terminal No.	Continuity	
	84	MZE	32	Existed	_
	85	10175	31	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 steering angle main control module and the lane camera unit.

NO >> Repair the main line between the harness connectors M19 and the lane camera unit.

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791201

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. M37 114 113 Approx. 108 – 132		ECM harness connector		
M37 114 113 Approx. 108 – 132	Connector No.	Terminal No.		- Resistance (Ω)
	M37	114	113	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-188, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the fuse block (J/B) harness connector M133.

2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ess connector	Fuse block (J/B) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	114	M122	21C	Existed
10137	113	- WI135	3C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 13)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procoduro

А

1.снеск соллест	OR			
 Turn the ignition sv Disconnect the bat Check the followin and harness side). Data link connecto 	vitch OFF. tery cable from the n g terminals and con r	egative terminal. nectors for damage,	bend and loose o	connection (connector side
- Harness connector	M133 and fuse bloc	k (J/B) side connector	r	
Is the inspection result	normal?			
NO >> Repair the	terminal and connec	tor.		
2. CHECK HARNESS	FOR OPEN CIRCUI	Т		
Check the resistance b	etween the data link	connector terminals.		
	Data link co	nnector		Resistance (O)
Connector No.		Terminal No.		
M25 6 14		14	Approx. 54 – 66	
CHECK (Past error)>>Er cuit 1 side) NO >> GO TO 3. CHECK HARNESS Disconnect the har Check the continui	ror was detected in the control of t	N CIRCUIT) 3. ink connector and the	harness connect	or.
Data link	connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Connector No. Terminal No.	
Mar	6	M400	23C	Existed
IVI25	M25 14		5C	Existed
Is the inspection result YES >> Replace th NO >> Repair the	normal? e fuse block (J/B). harness between the	e data link connector I	M25 and the harno	ess connector M133.

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 13)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009791203

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector branch line.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

Check the continuity between the CAN gateway harness connector terminals. 2.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M24	4	6	Existed
WIZ4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 ${
m 3.}$ CHECK HARNESS FOR OPEN CIRCUIT

Connect the connector of CAN gateway. 1.

Check the resistance between the data link connector terminals. 2.

	Data link connector			
Connector No.	Terminal No.			
M25	13 12		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 (CAN communication circuit 2 side).

NO >> Repair the data link connector branch line.

IPE	DM-E BRANCH	I LINE CIRCU	IT			
Dia	gnosis Procedur	е			INFOID:000000009791204	/
1. c	HECK CONNECTOR	२				ļ
1. 2. 3.	Turn the ignition swite Disconnect the batter Check the following t nector side). IPDM F/R	ch OFF. ry cable from the ne erminals and conne	gative terminal. ctors for damage, l	pend and loose cor	nnection (unit side and con-	(
-	Harness connector E	64 and fuse block (J/B) side connector			
<u>Is th</u> ∨⊨	e inspection result no	ormal?				
NC 2.c	>> Repair the te CHECK HARNESS FC	rminal and connecto	or.			
1. 2.	Disconnect the connect the connect the connect the resistance	ector of IPDM E/R. between the IPDM	E/R harness conn	ector terminals.		
		IPDM E/R harness	connector		Resistance (O)	
	Connector No.		Terminal No.			
	E121	29		28	Approx. 54 – 66	
YE NC 3. C	e measurement value S >> GO TO 3. >> GO TO 4. CHECK POWER SUP	e within the specificates with	ation? D CIRCUIT			
Che	ck the power supply a	and the ground circu	uit of the IPDM E/R	. Refer to <u>PCS-36.</u>	"Diagnosis Procedure".	
Is th YE YE NC	e inspection result no S (Present error)>>R S (Past error)>>Error >> Repair the po	ormal? eplace the IPDM E/ r was detected in the ower supply and the	R. Refer to <u>PCS-3</u> PIPDM E/R brancl ground circuit.	7 <u>, "Removal and In</u> n line.	stallation".	
4.0	HECK HARNESS FO	OR OPEN CIRCUIT				
1. 2.	Disconnect the harne Check the continuity	ess connector E64. between the IPDM	E/R harness conne	ctor and harness c	onnector.	
	IPDM E/R har	ness connector	Harness	s connector	Continuiti	
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	I
		29		6E	Existed	Ē

Is the measurement value within the specification?

28

YES >> Replace the fuse block (J/B).

E121

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

E64

2E

Ο

Ν

Existed

Existed

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791205

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F12
- Harness connector E10
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

	A/T assembly harness connector			
Connector No.	Terminal No.			
F2	3	8	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-218, "Exploded View"

Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector	Continuity	
Terminal No.	Terminal No.	Continuity	
3	3	Existed	
8	8	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-181, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-218, "Exploded View".

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector E65.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly ha	A/T assembly harness connector Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

E2	3	E65	9F	Existed	^
12	8	205	5F	Existed	P

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000009791206

[CAN SYSTEM (TYPE 13)]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

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

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of CAN gateway.

2. Check the resistance between the CAN gateway harness connector terminals.

	CAN gateway harness connector		Resistance (O)
Connector No.	Terminal No.		
M24	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-171, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-172, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

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

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 13)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Proced	ure	,		NF0ID:000000009791207
1. CHECK DTC				
Check DTC of the CAN	I gateway with CONS	ULT.		
<u>Is U1010 or B2600 indi</u>	icated?			
YES >> Perform a	diagnosis of the indic	ated DTC.		
2 CHECK CONNECT				
 Turn the ignition sv Disconnect the bat Check the following nector side). CAN gateway Harness connector 	tery cable from the ne g terminals and conne r M133 and fuse block	egative terminal. ectors for damage, be < (J/B) side connecto	end and loose connec r	tion (unit side and con-
Is the inspection result	normal?			
YES >> GO TO 3. NO >> Repair the	terminal and connect	or.		
3. CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
 Disconnect the cor Check the continuit 	nnector of CAN gatew ty between the CAN g	/ay. gateway harness con	nector terminals.	
	CAN gateway harne	ess connector		
Connector No.		Terminal No.		Continuity
M24	4		6	Existed
	10		12	Existed
Is the inspection resultYES>> GO TO 4.NO>> GO TO 5.	normal?			
4.CHECK POWER SI	JPPLY AND GROUN	D CIRCUIT		
Check the power supp dure".	bly and the ground ci	rcuit of the CAN gat	eway. Refer to <u>LAN-</u>	171. "Diagnosis Proce-
Is the inspection result	normal?			
YES (Present error)>> YES (Past error)>>Err NO >> Repair the	Replace the CAN ga ror was detected in th power supply and the	iteway. Refer to <u>LAN-</u> le CAN gateway bran e ground circuit.	<u>172, "Removal and Ir</u> the line (CAN community)	nstallation". nication circuit 2 side).
5. CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
 Disconnect the har Check the continuit 	rness connector M133 ty between the CAN g	3. gateway harness con	nector and the harnes	ss connector.
CAN gateway ha	arness connector	Harness	connector	Continuitu
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	4	M133	13C	Existed

YES >> Replace the fuse block (J/B).

>> Repair the harness between the CAN gateway harness connector M24 and the harness connec-NO tor M133.

LAN-549

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791208

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

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

	Posistanco (O)		
Connector No.	Termi		
M88	1	21	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 <u>HAC-92, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-113, "Removal and Installation".

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

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

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000009791209
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the combi r side).	ninal. nation meter for damage, b	end and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	<u>ial?</u> inal and connector. OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of combination meter. etween the combination me	ter harness connector termi	nals.
Co	ombination meter harness connect	tor	Resistance (Ω)
Connector No.	Termir	nal No.	
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL	pination meter branch line. Y AND GROUND CIRCUIT	-	
Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result porm	d the ground circuit of the c <u>ure"</u> . al2	ombination meter. Refer to	MWI-104, "COMBINATION
YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	lace the combination meter as detected in the combina er supply and the ground ci	. Refer to <u>MWI-126, "Remov</u> tion meter branch line. rcuit.	val and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791210

[CAN SYSTEM (TYPE 13)]

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

AV BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INF01D:000000009791212
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connecto) 	OFF. cable from the negative tern d connectors of the display r side).	ninal. / control unit for damage,	bend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
Disconnect the connect Check the resistance be	or of display control unit. etween the display control u	nit harness connector term	inals.
Di	splay control unit harness connect	tor	Desistance (O)
Connector No.	Termin	al No.	Resistance (12)
M100	29	17	Approx. 54 – 66
 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the displ CHECK POWER SUPPL Check the power supply an 	ay control unit. Y AND GROUND CIRCUIT d the ground circuit of the o	display control unit. Refer t	0 <u>AV-239, "DISPLAY CON-</u>
<u> IROL UNIT : Diagnosis Pro</u>	<u>cedure"</u> .		
s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	<u>al?</u> lace the display control unit as detected in the display c er supply and the ground cir	. Refer to <u>AV-277, "Remova</u> ontrol unit branch line. cuit.	al and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791213

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

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

	Posistanco (O)		
Connector No.	Termi		
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-98, "Removal and Installation".

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

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

ABS BRANCH LINE			
Diagnosis Procedure			INFOID:00000009791214
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following tern nector side). 	OFF. able from the negative terr ninals and connectors for d	ninal. amage, bend and loose con	nection (unit side and con-
Harness connector E65 s the inspection result norm YES-1 >> Models with aro	and fuse block (J/B) side c <u>al?</u> und view monitor system: (onnector GO TO 2.	
YES-2 >> Models without a NO >> Repair the termi CHECK HARNESS CON	around view monitor syster nal and connector.	n: GO TO 3.	
 Disconnect the connect Check the continuity bet 	or of CAN gateway. ween the CAN gateway ha	rness connector terminals.	
Connector No.	CAN gateway harness connector Termir	nal No.	Continuity
M24	4	6	Existed
1012-4	10	12	Existed
 Disconnect the connect Check the resistance be nals. 	or of ABS actuator and electrony (in the ABS actuator and electrony) and electrony with (actuator a	ctric unit (control unit). nd electric unit (control unit) harness connector termi-
Connector No		al No	Resistance (Ω)
E35	25	15	Approx. 54 - 66
s the measurement value w YES >> GO TO 4. NO >> GO TO 5. CHECK POWER SUPPL Check the power supply an Check the power supply an Check the power supply an Check the power supply an the inspection result porm	ithin the specification? Y AND GROUND CIRCUIT d the ground circuit of the dure". al?	ABS actuator and electric	unit (control unit). Refer to
YES (Present error)>>Repl and Installation" YES (Past error)>>Error wa	ar: ace the ABS actuator and o as detected in the ABS actu	electric unit (control unit). Re uator and electric unit (contre	efer to <u>BRC-178, "Removal</u> ol unit) branch line.
5.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))	
 Disconnect the connect Check the resistance be nals. 	or of harness connector E6 etween the ABS actuator a	5. nd electric unit (control unit) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-555

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	6F	Existed
L 30	15	E65	7F	Existed
MCth and an and a start				

- Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	8F	Existed
E35	15	205	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 13)]

ADP BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000009791215
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the follow terminator side). Driver seat control unit Harness connectors B6 	OFF. cable from the negative tern als and connectors for dam 00 and B12	ninal. age, bend and loose conne	ction (unit side and connec-
 Harness connectors B3 tem) 	9 and fuse block (J/B) side	e connector (Models withou	ut around view monitor sys-
Is the inspection result norm YES - 1>> Models with aro YES - 2>> Models without NO >> Repair the term	<u>al?</u> und view monitor system: C around view monitor syster inal and connector.	GO TO 2. n: GO TO 3.	
Z.CHECK HARNESS CON			
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termin	nal No.	Evictod
M24	10	12	Existed
3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit	vith around view monitor sy t. rol unit harness connector t	stem)
Connector No	er seat control unit harness conne	ector	Resistance (Ω)
B601	1	17	Approx. 54 – 66
Is the measurement value w YES >> GO TO 4. NO - 1 >> Models without NO - 2 >> Models with aro 4.CHECK POWER SUPPL	ithin the specification? around view monitor syster und view monitor system: F Y AND GROUND CIRCUIT	n: GO TO 5. Repair the driver seat contro - iver seat control unit_Refer	ol unit branch line.
CONTROL UNIT : Diagnosi	<u>s Procedure"</u> .		No <u>NDI TO, DRIVEROEM</u>
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	al? lace the driver seat control as detected in the driver se or supply and the ground cir	unit. Refer to <u>ADP-145, "Re</u> at control unit branch line. rcuit.	emoval and Installation".
D. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)		
 Disconnect the harness Check the continuity be 	connector B39. tween the driver seat contr	rol unit harness connector	B601 and the harness con-

nector.

< DTC/CIRCUIT DIAGNOSIS >

LAN-557

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Driver seat control u	Driver seat control unit harness connector Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B601	1	B30	ЗH	Existed
Boot	17	039	8H	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the driver seat control unit harness connector B601 and the harness connector B39.

[CAN SYSTEM (TYPE 13)]

			/
Diagnosis Procedure			INFOID:00000009791216
1. CHECK CONNECTOR			E
 Turn the ignition switch Disconnect the battery of Check the following tern nector side). Steering force control m CAN gateway (Models of 	OFF. cable from the negative terr ninals and connectors for d odule with around view monitor sy	ninal. lamage, bend and loose cor /stem)	nection (unit side and con-
Is the inspection result norm	al?		L
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term	und view monitor system: (around view monitor syster inal and connector.	GO TO 2. m: GO TO 3.	E
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	F
	CAN gateway harness connector	r	Continuity
Connector No. Terminal No.			
M24	4	6	Existed
Is the inspection result norm	io ial?	12	Existed
YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid	ess and repair or replace (i e).	f shield line is open) the roc	t cause (CAN communica-
O.CHECK HARNESS FOR	OPEN CIRCUIT		
Connect the connector Disconnect the connect	OPEN CIRCUIT of CAN gateway (Models w	rith around view monitor sys	tem).
 Connect the connector Disconnect the connect Check the resistance be 	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co	rith around view monitor sys module. ontrol module harness conn	tem). ector terminals.
 Connect the connector Disconnect the connect Check the resistance be Steering 	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co	rith around view monitor sys module. ontrol module harness conn	tem). ector terminals.
Connect the connector Disconnect the connect Disconnect the connect Steering Connector No.	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termin	rith around view monitor sys module. ontrol module harness conn onnector nal No.	tem). ector terminals. Resistance (Ω)
Connect the connector of 2. Disconnect the connect and th	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termin 14	rith around view monitor sys module. ontrol module harness conn onnector nal No. 15	tem). ector terminals. Resistance (Ω) Approx. 54 – 66
1. Connect the connector 2. Disconnect the connect 3. Check the resistance be Steering Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the box 4.CHECK POWER SUPPL	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termir 14 rithin the specification? dy harness. Y AND GROUND CIRCUIT	rith around view monitor sys module. ontrol module harness conn onnector nal No. 15	tem). ector terminals. Resistance (Ω) Approx. 54 – 66
1. Connect the connector 2. Disconnect the connect 3. Check the resistance be Steering Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the boo 4.CHECK POWER SUPPL Check the power supply and nosis Procedure".	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termin 14 ithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s	rith around view monitor sys module. ontrol module harness conn onnector nal No. 15	tem). ector terminals. Resistance (Ω) Approx. 54 – 66 LA e. Refer to <u>STC-407, "Diag-</u>
1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steering Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the box Check the power supply and nosis Procedure". Is the inspection result norm YES (Present error)>>Rep tion"	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termir 14 ithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s hal? lace the steering force con	rith around view monitor sys module. ontrol module harness conn onnector hal No. 15	tem). ector terminals. Resistance (Ω) Approx. 54 – 66 L4 e. Refer to <u>STC-407, "Diag-</u>
O.CHECK HARRESS FOR1. Connect the connector2. Disconnect the connector3. Check the resistance beSteeringConnector No.M71Is the measurement value wYESYESYESSGO TO 4.NONOSeplace the boot4.CHECK POWER SUPPLCheck the power supply andnosis Procedure".Is the inspection result normYES (Present error)>>Reption".YES (Past error)>>Error wNONO>> Repair the power	OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force co g force control module harness co Termin 14 ithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s hal? lace the steering force con as detected in the steering er supply and the ground ci	rith around view monitor sys module. ontrol module harness conn onnector hal No. 15	tem). ector terminals. Resistance (Ω) Approx. 54 – 66 LA 2. Refer to <u>STC-407, "Diag-</u> 2. Refer to <u>STC-407, "Diag-</u>

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:000000009799837

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Chassis control module
- Harness connectors E47
- Harness connectors M39
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector				
Connector No.	Termi	Continuity			
M24	4	6	Existed		
IVIZ4	10	12	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 $\mathbf{3}$. Check harness for open circuit

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of chassis control module.
- 3. Check the resistance between the chassis control module harness connector terminals.

Cha	Resistance (O)		
Connector No.	Termi		
E22	4 3		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the chassis control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-541</u>, "Diagnosis <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-542, "Removal and Installation".

YES (Past error)>>Error was detected in the chassis control module branch line.

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

STRG BRANCH LI	NE CIRCUIT			Λ
Diagnosis Procedure			INFOID:00000009791219	A
1. CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery Check the following tern nector side). Steering angle sensor CAN gateway (Models) 	OFF. cable from the negative terr minals and connectors for d	minal. lamage, bend and loose cor	nnection (unit side and con-	С
Is the inspection result norn	nal?	(stem)		D
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term 2 CHECK HARNESS CON	bund view monitor system: (around view monitor syster inal and connector.	GO TO 2. m: GO TO 3.		Е
)		_
 Disconnect the connect Check the continuity be 	tween the CAN gateway.	arness connector terminals.		Г
	CAN gateway harness connector		2	G
Connector No. Terminal No. Continuity				0
M24	4	6	Existed	
	10	12	Existed	Н
NO >> Check the harn 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be	ess and repair the root cause OPEN CIRCUIT of CAN gateway (Models w for of steering angle sensor etween the steering angle s	se (CAN communication cire with around view monitor sys	cuit). .tem). .rminals.	J
Ste	ering angle sensor harness conne	ector		Κ
Connector No.	Termir	nal No.	Resistance (Ω)	
M77	5	2	Approx. 54 – 66	L
Is the measurement value v YES >> GO TO 4. NO >> Repair the stee 4.CHECK POWER SUPPL	vithin the specification? ring angle sensor branch lir Y AND GROUND CIRCUIT	пе Г		LA
Check the power supply an <u>Procedure"</u> .	nd the ground circuit of the	steering angle sensor. Ref	er to <u>BRC-123, "Diagnosis</u>	Ν
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	blace the steering angle sen as detected in the steering er supply and the ground ci	sor. Refer to <u>BRC-180, "Re</u> angle sensor branch line. rcuit.	moval and Installation".	0
				Ρ

< DTC/CIRCUIT DIAGNOSIS >

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791220

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Around view monitor control unit
- CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: GO TO 3.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

	CAN gateway harness connector				
Connector No.	Termir	Continuity			
M24	4	6	Existed		
WI24	10	12	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models without ICC).

- 2. Disconnect the connector of around view monitor control unit.
- 3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view	w monitor control unit harness con	nector	Posistanco (O)
Connector No.	Terminal No.		
B50	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

 ${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to <u>AV-435.</u> "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to <u>AV-458</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

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

SONAR BRANCH I	LINE CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000009791221	A
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery Check the following term nector side). Sonar control unit Harness connector M98 Harness connector M18 CAN gateway 	OFF. cable from the negative terr minals and connectors for d 55	minal. lamage, bend and loose col	nnection (unit side and con-	C
Is the inspection result norn	nal?			Е
YES-1 >> Models with and YES-2 >> Models without NO >> Repair the term 2.CHECK HARNESS CON	ound view monitor system: (around view monitor syster inal and connector. ITINUITY (OPEN CIRCUIT)	GO TO 2. m: GO TO 3.)		F
 Disconnect the connect Check the continuity be 	tween the CAN gateway ha	arness connector terminals.		G
	CAN gateway harness connector		Continuity	
Connector No. Terminal No.				Н
M24	4	6	Existed	
	10	12	Existed	1
YES >> GO TO 3. NO >> Check the harn 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance b	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w for of sonar control unit.	se (CAN communication cir	cuit 2). stem).	J
	etween the sonal control of		1015.	
S	Sonar control unit harness connect	tor	Resistance (Ω)	L
Connector No.	Termir	nal No.		
M76	5	6	Approx. 54 – 66	A 8
YES >> GO TO 4. NO >> Repair the sona 4.CHECK POWER SUPPL	vitnin the specification? ar control unit branch line. Y AND GROUND CIRCUIT	Г		AI N
Check the power supply and UNIT : Diagnosis Procedure	d the ground circuit of the so <u>e</u> ".	onar control unit. Refer to <u>A</u>	<u>V-435, "SONAR CONTROL</u>	0
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	lace the sonar control unit. as detected in the sonar co er supply and the ground ci	Refer to <u>AV-462, "Removal</u> Introl unit branch line. rcuit.	and Installation".	Ρ

< DTC/CIRCUIT DIAGNOSIS >

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791222

[CAN SYSTEM (TYPE 13)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of chassis control module.
- 2. Check the continuity between the chassis control module harness connector terminals.

Cha	Chassis control module harness connector				
Connector No.	Termi	Continuity			
E22	19	11	Existed		
E22	7	8	Existed		

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of chassis control module.
- 2. Disconnect the connector of steering angle main control module.
- 3. Check the resistance between the steering angle main control module harness connector terminals.

Steering a	Resistance (O)		
Connector No.	Termi	Resistance (22)	
E26	14	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle main control module branch line.

${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle main control module. Refer to <u>STC-407.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-428</u>, "Removal and <u>Installation"</u>.
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

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

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT 1

	TION CIRCUIT 1		
Diagnosis Procedure			INFOID:000000009791223
.CONNECTOR INSPECT	ION		
I. Turn the ignition switch	OFF.		
 Disconnect the battery Disconnect all the unit of Check terminals and co 	cable from the negative tern connectors on CAN commu nnectors for damage, benc	minal. inication circuit 1. I and loose connection.	
s the inspection result norm	nal?		
YES >> GO TO 2.	inal and connector		
2. CHECK HARNESS CON	ITINUITY (SHORT CIRCUI	Т)	
Check the continuity betwee	en the data link connector to	erminals.	
	Data link connector		
Connector No.	Termi	nal No.	- Continuity
M25	6	14	Not existed
s the inspection result norm	nal?		·
YES >> GO TO 3. NO >> Check the harn 3.CHECK HARNESS CON	ess and repair or replace [i ITINUITY (SHORT CIRCUI	f shield line or fuse block (. T)	J/B) is short] the root cause.
Check the continuity betwee	en the data link connector a	ind the ground.	
		5	
Data link	connector	-	Continuity
	6	Ground	Not existed
M25	14		Not existed
s the inspection result norm YES >> GO TO 4. NO >> Check the harn 1. CHECK ECM AND BCM	nal? ess and repair or replace [i TERMINATION CIRCUIT	f shield line or fuse block (J/B) is short] the root cause.
 Remove the ECM and t Check the resistance be 	he BCM. etween the ECM terminals.		
	ECM		Resistance (Ω)
11.4	Terminal No.		pprov 109 133
3. Check the resistance be	etween the BCM terminals.	A	pprox. 108 – 132
	BCM		
	Terminal No.		Resistance (Ω)
60	59	A	pprox. 108 – 132
Is the measurement value v YES >> GO TO 5.	vithin the specification?		

5.CHECK SYMPTOM

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

LAN-565

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

ECM and BCM have a termination circuit. Check other units first.

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

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

Inspection result

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

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure			INFOID:000000009791224
1.CONNECTOR INSPECT	ION		
 Turn the ignition switch Disconnect the battery of Disconnect all the unit of Check terminals and construction result norm YES >> GO TO 2. 	OFF. cable from the negative terr onnectors on CAN commu nnectors for damage, bend al?	minal. nication circuit 2. I and loose connection.	
2. CHECK HARNESS CON	TINUITY (SHORT CIRCUI	Т)	
Check the continuity betwee	n the data link connector te	erminals.	
	Data link connector		Continuity
Connector No.	Termi	nal No.	Continuity
M25	13	12	Not existed
3. CHECK HARNESS CON Check the continuity betwee	TINUITY (SHORT CIRCUI	T) Ind the ground.	
Data link	connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M25	13		Not existed
	12		Not existed
YES >> GO TO 4. NO >> Check the harne 4.CHECK CAN GATEWAY 1. Remove the CAN gatew 2. Check the resistance be	ess and repair or replace [if TERMINATION CIRCUIT vay. etween the CAN gateway te	f shield line or fuse block (J,	/B) is short] the root cause.
	CAN gateway	a	Posistanco (O)
	Terminal No.		
4	10	Ap	prox. 108 – 132
6		Ар	orox. 108 – 132
YES >> GO TO 5. NO >> Replace the CA 5.CHECK SYMPTOM Connect all the connectors.	N gateway. Check if the symptoms de	escribed in the "Symptom (Results from interview with
customer)" are reproduced.			
Reproduced>>GO TO 6.			
Non-reproduced>>Start the	e diagnosis again. Follow	the trouble diagnosis pro	cedure when past error is

detected.

LAN-567

< DTC/CIRCUIT DIAGNOSIS >

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 circuit 2. **NOTE:**

CAN gateway has two termination circuits. 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.

CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure			INFOID:000000009791225		
	\$				
Check the CAN diagnosis r	esults from CONSULT to s	see that the CAN comm	nunication circuit 1 and/or CAN		
Are the CAN communication	e no manuncuon. h 1 and/or CAN communica	ation 2 circuits normal?			
YES >> GO TO 2.		<u></u>			
NO >> Check and repa 2.CONNECTOR INSPECT	ir CAN communication circ	uit 1 and/or CAN comm	unication circuit 2.		
 Turn the ignition switch Disconnect the battery of Disconnect all the unit of Check terminals and control 	OFF. cable from the negative terr onnectors on chassis com nnectors for damage, bend	minal. munication circuit. I and loose connection.			
Is the inspection result norm YES >> GO TO 3. NO >> Repair the termi	al? nal and connector.				
3. CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)			
Check the continuity betwee	n the chassis control modu	le harness connector.			
Chassis control module harness connector					
Connector No.	Termir	Terminal No.			
E22	19	7	Not existed		
NO >> Check the harne 4.CHECK HARNESS CON Check the continuity betwee	ess and repair or replace [if TINUITY (SHORT CIRCUI in the data link connector a	f shield line or fuse blocl T) nd the ground.	k (J/B) is short] the root cause.		
Chassis control modu	Ile harness connector				
Connector No.	Terminal No.	Oraciand	Continuity		
	19	Ground	Not existed		
IVIZZ	7		Not existed		
Is the inspection result norm YES >> GO TO 5. NO >> Check the harne 5.CHECK CHASSIS CONT 1. Remove the chassis con 2. Check the resistance be	al? ess and repair or replace [if ROL MODULE TERMINA ⁻ ntrol module. etween the chassis control	f shield line or fuse bloch TION CIRCUIT module terminals.	k (J/B) is short] the root cause.		
Chase	sis control module				
	Terminal No.		Resistance (Ω)		
19	7		Approx. 108 – 132		

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

CHASSIS COMMUNICATION CIRCUIT

< DTC/CIRCUIT 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 7.

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

7. 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 chassis communication circuit. **NOTE:**

Chassis control module has two termination circuits. Check other units first.

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

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

Inspection result

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

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

		BETW	EEN DLC ANI	O HVA		T SYSTEM (TYPE 14)]
DTC/CIRCUIT DIAG	T DIAC	NOS	IS		Įovak	
MAIN LINE BET				СШТ		
				0011		
Diagnosis Procedu	lre					INFOID:000000009791226
1.CHECK CONNECTO	OR					
 Turn the ignition sw Disconnect the batt Check the followin and harness side). Harness connector 	vitch OFF. tery cable fror g terminals a M133 and fu	n the neg nd conne se block (ative terminal. ctors for damage, J/B) side connecto	bend ar r	d loose con	nection (connector side
Is the inspection resultYES>> GO TO 2.NO>> Repair the	normal? terminal and	connector				
2.CHECK HARNESS	CONTINUITY	(OPEN C	CIRCUIT)			
 Disconnect the fuse Check the continuit 	e block (J/B) I y between the	narness co e fuse blo	onnector M65. ck (J/B) terminals.			
	Fuse blo	ock (J/B)				Continuity
Terminal No	Terminal No.		Terminal No.			
23C			22C			Existed
Jc	normal?		40			EXISTED
YES >> GO TO 3. NO >> Replace the 3. CHECK HARNESS	e fuse block (CONTINUITY	J/B). ′ (OPEN (CIRCUIT)			
 Disconnect the con Check the continuit nector. 	nector of A/C y between the	auto amp e fuse blo	o. ck (J/B) harness co	onnector	and the A/C	auto amp. harness con-
Fuse block (J/B) h	arness connecto	r	A/C auto amp. I	harness co	nnector	
Connector No.	Terminal N	lo.	Connector No.	Те	rminal No.	- Continuity
M133	22C		M88		1	Existed
	4C				2	Existed
YES (Present error)>> YES (Past error)>>Err amp. NO >> Repair the	Check CAN sor was detect	system typ ted in the veen the f	be decision again. 9 main line betwee use block (J/B) hai	en the da	ata link conn	L ector and the A/C auto 3 and the A/C auto amp.

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000009791227

[CAN SYSTEM (TYPE 14)]

1.CHECK CONNECTOR

- 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.
- Display control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the display control unit harness connector.

A/C auto amp. h	arness connector	Display control unit harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M88	1	M100	29	Existed
1000	21	M100	17	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 display control unit.

NO >> Repair the main line between the A/C auto amp. and the display control unit.

MAIN LINE		ADS AND	ADF CINCU	11
CUIT DIAGNOSIS >			AD]	N SYSTEM (TYPE 14)
INE BETWEEN AB	S AND AD	P CIRCUI	Т	
is Procedure				INFOID:00000000979122
CONNECTOR				
ne ignition switch OFF. Inect the battery cable from the following terminals and arness side). ss connector B39 and fuse b <u>ection result normal?</u> > GO TO 2. > Repair the terminal and co C HARNESS CONTINUITY (Innect the following harness of clock (J/B) harness connector ctuator and electric unit (con the continuity between the	the negative te d connectors fe block (J/B) side onnector. OPEN CIRCU connectors. or B39 ntrol unit) harness conne	erminal. or damage, be e connector IT) ector terminals.	and loose co	onnection (connector side
		Fuse block (J/B) terminals		
3S actuator and electric unit (contro harness connector	ol unit)	Fuse block (J/B) terminals	Continuity
3S actuator and electric unit (contro harness connector nector No. Termi	ol unit) inal No.	Fuse block (J/B) terminals nal No.	Continuity
BS actuator and electric unit (contro- harness connector inector No. Termi E35	ol unit) inal No. 25	Fuse block (Termin 6	J/B) terminals nal No. SH	Continuity Existed
BS actuator and electric unit (contribution harness connector Inector No. Termi E35	ol unit) inal No. 25 15	Fuse block (. Termin 6 4	J/B) terminals nal No. SH IH	Continuity Existed Existed
BS actuator and electric unit (contribution in the connector in the context of the context of the continuity between the continuity between the context of t	ol unit) inal No. 25 15 (B). (OPEN CIRCU r seat control u harness conne	Fuse block (Termin 6 4 1T) IT) ector and the dr	J/B) terminals nal No. 3H IH IH	Continuity Existed Existed unit harness connector.
BS actuator and electric unit (contri- harness connector inector No. Termi E35 Cection result normal? > GO TO 3. > Replace the fuse block (J/ CHARNESS CONTINUITY (inect the connector of driver the continuity between the lock (J/B) harness connector	ol unit) inal No. 25 15 (B). (OPEN CIRCU r seat control u harness conne Driver	Fuse block (Termin 6 4 IT) IT) ector and the dr	J/B) terminals nal No. 5H IH IH	Continuity Existed Existed unit harness connector.
AS actuator and electric unit (contribution in a contribution of the contribution of the contribution of the continuity between the solution of the continuity between the continuity between the continuity between the solution of the continuity between the continuity between the solution of the continuity between the solution of the continuity between the continuity between the solution of the continuity between the solution of the continuity between the continuity between the solution of the continuity between the solution of the continuity between the continuity between the continuity between th	ol unit) inal No. 25 15 (OPEN CIRCU r seat control u harness conne Driver Conne	Fuse block (Termin 6 4 IT) Init. ector and the dr r seat control unit h ector No.	J/B) terminals nal No. 3H H H river seat control narness connector Terminal No.	Continuity Existed Existed unit harness connector. Continuity
BS actuator and electric unit (contribution in the connector in the connector in the context of the continuity between the section is connector of the continuity between the section is connector in the continuity between the section is connector in the continuity between the section is connector is connected is conn	ol unit) inal No. 25 15 /B). (OPEN CIRCU r seat control u harness conne Driver Conne	Fuse block (Termin 6 4 IT) IT) ector and the dr r seat control unit h ector No.	J/B) terminals nal No. H H river seat control narness connector Terminal No. 1	Continuity Existed Existed unit harness connector. Continuity Existed

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

NO >> Repair the main line between the harness connector B39 and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ICC CIRCUIT

Diagnosis Procedure

INFOID:000000009791233

[CAN SYSTEM (TYPE 14)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- CAN gateway
- Harness connectors B600 and B12
- ADAS control unit
- 4. Check the continuity between the harness connector and the ADAS control unit harness connector.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B12 —	1	B1	1	Existed
	17		2	Existed

Is the inspection result normal?

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

- YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ADAS control unit.
- NO >> Replace the body harness.

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

Diagnosis Procedure			INFOID:000000009791234	
1.CHECK CONNECT	OR			
 Turn the ignition s Disconnect the ba Check the following and harness side) Harness connectore Is the inspection result YES >> GO TO 2. NO >> Repair the ADAS control unit Harness connectore Check the continue 	witch OFF. ttery cable from the ne og terminals and conf or B37 or B72 or B62 or M22 <u>tormal?</u> e terminal and connect cONTINUITY (OPEN lowing harness conne ors B37 and B72 ity between the ADAS	egative terminal. nectors for damage, tor. N CIRCUIT) ctors.	bend and loose conne	ness connector.
ADAS control unit	harness connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	1	B37	4	Existed
Is the inspection resultYES>> GO TO 3.NO>> Replace the3.CHECK HARNESS1.Disconnect the has2.Check the continue	<u>ne body harness.</u> CONTINUITY (OPEN ress connectors B62 ity between the harne	N CIRCUIT) and M22. ss connectors.		
Harness	connector	Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	4	B62	63	Existed
B/2	3		53	Existed
Is the inspection result YES >> GO TO 4. NO >> Replace the 4.CHECK HARNESS 1. Disconnect the continue 2. Check the continue	<u>: normal?</u> ne body harness. CONTINUITY (OPEN nnector of steering for ity between the harne	N CIRCUIT) rce control module. ss connector and the	steering force control	nodule.
Harness	connector	Steering force control module harness connector		

Harness connector		Steering force control module harness connector		Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M22 —	63	N71	14	Existed	-
	53		15	Existed	-

Is the inspection result normal?

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

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MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

YES (Past error)>>Error was detected in the main line between the ADAS control unit and the steering force control module.

NO >> Repair the main line between the harness connector M22 and the steering force control module.
MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND STRG CIRCUIT

Diagnosis Procedure

INFOID:000000009791235

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[CAN SYSTEM (TYPE 14)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following harness connectors.
- CAN gateway
- Steering force control module
- Check the continuity between the steering force control module harness connector and the data link connector.

Steering force control m	odule harness connector	Data link	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
N71	14	MOE	13	Existed	
1017-1	15	IWI25	12	Existed	F

Is the inspection result normal?

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

- YES (Past error)>>Error was detected in the main line between the steering force control module and the G data link connector.
- NO >> Repair the main line between the steering force control module and the data link connector.

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MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

Diagnosis Procedure

INFOID:000000009791236

[CAN SYSTEM (TYPE 14)]

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 B3
- Harness connector B52

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 B87 and B8
- Harness connectors B3 and B52
- 2. Check the continuity between the harness connectors.

Harness	Harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
D07	6	P2	1	Existed
Dor	5	60	9	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of around view monitor control unit.
- 2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	1	B 50	27	Existed
	9	. 630	28	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 side radar LH and the around view monitor control unit control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

[CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS >		
MAINI I INE DETVICEN	Λ\/N/I	SON

iagnosis Proced	lure			INFOID:00000000979123
.CHECK CONNECT	ſOR			
Turn the ignition s Disconnect the ba Check the followin and harness side) Harness connecto Harness connecto	witch OFF. Ittery cable from the r ng terminals and cor ors B62 ors M22	negative terminal. nnectors for damage, k	pend and loose conn	ection (connector side
the inspection result	t normal?			
YES >> GO TO 2. NO >> Repair the CHECK HARNESS	eterminal and connects CONTINUITY (OPE	ctor. N CIRCUIT)		
Disconnect the fol	lowing harness connection	ectors.		
Disconnect the fol Around view moni Harness connector Check the continu connector. With around view mo	llowing harness conn- itor control unit ors B62 and M22 uity between the arou monitor, without ICC	ectors. und view monitor contr	ol unit harness conn	ector and the harness
Disconnect the fol Around view moni Harness connecto Check the continu connector. With around view mo Around view mo harness	llowing harness conn- itor control unit ors B62 and M22 uity between the arou monitor, without ICC onitor control unit connector	ectors. und view monitor contr Harness	ol unit harness conn	ector and the harness
Disconnect the fol Around view moni Harness connector Check the continu connector. With around view Around view mo harness Connector No.	Ilowing harness conn- itor control unit ors B62 and M22 uity between the arou monitor, without ICC onitor control unit connector Terminal No.	ectors. und view monitor contr Harness Connector No.	ol unit harness conn connector Terminal No.	ector and the harness Continuity
Disconnect the fol Around view moni Harness connector Check the continu connector. With around view Around view mo harness Connector No.	Ilowing harness connitor control unit ors B62 and M22 uity between the aroumonitor, without ICC onitor control unit connector Terminal No. 27	ectors. und view monitor contr Harness Connector No. B62	ol unit harness conn connector Terminal No. 63	ector and the harness Continuity Existed
Disconnect the fol Around view moni Harness connector Check the continu- connector. With around view mo- harness Connector No. B50	Ilowing harness connitor control unit brs B62 and M22 uity between the arou monitor, without ICC onitor control unit connector Terminal No. 27 28	ectors. und view monitor contr Harness of Connector No. B62	rol unit harness conn connector Terminal No. 63 53	ector and the harness Continuity Existed Existed
Disconnect the fol Around view moni Harness connector Check the continu- connector. With around view mo- harness Connector No. B50 With ICC	Ilowing harness connitor control unit brs B62 and M22 uity between the arou monitor, without ICC onitor control unit connector Terminal No. 27 28	ectors. und view monitor contr Harness Connector No. B62	rol unit harness conn connector Terminal No. 63 53	ector and the harness Continuity Existed Existed
Disconnect the fol Around view moni Harness connector Check the continu- connector. With around view mo- harness Connector No. B50 With ICC Around view mo- harness	Ilowing harness connitor control unit brs B62 and M22 uity between the arou monitor, without ICC onitor control unit connector Terminal No. 27 28 onitor control unit connector	ectors. und view monitor contr Harness of Connector No. B62 Harness of	connector Terminal No. 63 53 connector	ector and the harness Continuity Existed Existed Continuity
Disconnect the fol Around view moni Harness connecto Check the continu- connector. With around view mo- harness Connector No. B50 With ICC Around view mo- harness Connector No.	Ilowing harness connitor control unit fors B62 and M22 uity between the aroumonitor, without ICC onitor control unit connector 27 28 onitor control unit connector Terminal No.	ectors. und view monitor contr Harness of Connector No. B62 Harness of Connector No.	connector Terminal No. 63 53 connector Connector Terminal No.	ector and the harness Continuity Existed Existed Continuity
Disconnect the fol Around view moni Harness connecto Check the continu- connector. With around view Around view mo- harness Connector No. B50 With ICC Around view mo- harness Connector No.	Ilowing harness connitor control unit brs B62 and M22 uity between the arou monitor, without ICC onitor control unit connector Terminal No. 27 28 onitor control unit connector Terminal No. 27	ectors. und view monitor contr Harness of Connector No. B62 Harness of Connector No. B62	connector Terminal No. 63 53 connector connector Terminal No. 18	ector and the harness Continuity Existed Existed Continuity Existed

NO >> Replace the body harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M95 and M155.

Check the continuity between the harness connectors. 2.

With around view monitor, without ICC -

Harness	connector	Harness	connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	0
Maa	63	MOE	15	Existed	_
IVIZZ	53	10195	7	Existed	P

With ICC

Harness	Harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	18	MOS	14	Existed
IVIZZ	17	10195	6	Existed

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MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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 around view monitor control unit and the sonar control unit.
- NO >> Repair the main line between the harness connectors M22 and sonar control unit.

Ν	AIN LINE BETV	VEEN DAST 1 A	ND ICC CIRCUI	Г
< DTC/CIRCUIT DIAC	GNOSIS >		[CAN	SYSTEM (TYPE 14)]
MAIN LINE BET	WEEN DAST	1 AND ICC CIR	CUIT	,
Diagnosis Proced	lure			F INFOID:000000009791237
1.CHECK CONNECT	OR			E
 Turn the ignition s Disconnect the ba Check the followin and harness side) Chassis control m Harness connector 	witch OFF. ttery cable from the ne ng terminals and con odule irs E25	egative terminal. nectors for damage, l	bend and loose conn	ection (connector side
 Harness connector Harness connector Harness connector Chassis control m 	rs M40 rr M19 rs B18 odule			E
Is the inspection resultYES>> GO TO 2.NO>> Repair the2.CHECK HARNESS	terminal and connect CONTINUITY (OPEN	or. I CIRCUIT)		F
 Disconnect the fol Steering angle ma Harness connecto Check the continu connector. 	lowing harness conne in control module rs E25 and M40 uity between the stee	ctors. ring angle main cont	rol module harness c	onnector and harness
Steering angle m harness	ain control module connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	,
F26	14	F25	51	Existed
	15		52	Existed
Is the inspection result YES >> GO TO 3. NO >> Repair the ness conn 3. CHECK HARNESS	t normal? e main line between th ector E25. E CONTINUITY (OPEN	e steering angle main	control module harne	ess connector and har-

1. Disconnect the harness connector M19 and B18.

2. Check the continuity between the harness connectors.

					LA
Harness	connector	Harness	connector	Orationity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M40	51	M10	74	Existed	N
1/140	52	IVI 19	75	Existed	-

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between harness connectors M40 and M19.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ADAS control unit.

2. Check the continuity between the harness connector B18 and ADAS control unit harness connector.

Harness	connector	ADAS control unit	harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

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MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

B18	74	B1	8	Existed
DIO	75	Ы	9	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 steering angle main control module and the ADAS control unit.

NO >> Replace the body harness.

	MAIN LINE BET	WEEN ICC AND	LANE CIRCUIT	
DTC/CIRCUIT DIAC	NOSIS >		[CAN S	SYSTEM (TYPE 14)]
AIN LINE BEI	WEEN ICC AN	D LANE CIRCI	UT	
Diagnosis Proced	ure			INFOID:000000009791238
.CHECK CONNECT	ÖR			
 Turn the ignition sy Disconnect the bat Check the followir and harness side). Chassis control ma Harness connecto Harness connectos s the inspection result YES >> GO TO 2. 	vitch OFF. Itery cable from the ne ig terminals and conr odule r B18 r M19 <u>normal?</u> torminal and connect	gative terminal. ectors for damage, b	end and loose conne	ection (connector side
		or. I CIRCUIIT)		
Disconnect the foll ADAS control unit Harness connecto Check the continui	owing harness conne rs B18 and M19 ity between the harne:	ctors. ss connector terminal	S.	
ADAS control unit	harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	8	B18	84	Existed
	9		85	Existed
YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha	ie body harness. CONTINUITY (OPEN rness connectors M75 ity between the harne	I CIRCUIT) and R3. ss connectors.		
Harness	connector	Harness	connector	Continuitu
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M19	84	M75	32	Existed
	85		31	Existed
<u>s une inspection result</u> YES (Present error)>>Er YES (Past error)>>Er unit. NO >> Repair the	Check CAN system t >Check CAN system t ror was detected in th main line between the	type decision again. le main line between e harness connectors	the ADAS control uni M19 and lane camera	t and the lane camera a unit.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791239

[CAN SYSTEM (TYPE 14)]

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).
- ECM
- Harness connector M133 and fuse block (J/B) side connector

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.

Connector No. Terminal No. Terminal No. M37 114 113 Approx. 108 – 132		Posistanco (O)		
M37 114 113 Approx. 108 – 132	Connector No.	Termi	Resistance (22)	
	M37	114 113		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to <u>EC-188, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-578, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the fuse block (J/B) harness connector M133.

2. Check the continuity between the ECM harness connector and the fuse block (J/B) harness connector.

ECM harne	ess connector	Fuse block (J/B) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M27	114	M422	21C	Existed
10137	113	- WI135	3C	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the ECM harness connector M37 and the harness connector M133.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

А

1.CHECK CONNECTO 1. Turn the ignition swi 2. Disconnect the batte	R				
 Turn the ignition swi Disconnect the batter 					
 Check the following and harness side). Data link connector Harness connector I <u>s the inspection result n</u> YES >> GO TO 2. NO >> Repair the to CHECK HARNESS F 	tch OFF. yry cable from the n terminals and con M133 and fuse bloc <u>ormal?</u> erminal and connec TOR OPEN CIRCUI	egative terminal. nectors for damage, k (J/B) side connecto tor. T	bend and loose cor	nection (connector side	
heck the resistance be	tween the data link	connector terminals.			
	Data link co	nnector		Posistanco (O)	
Connector No.		Terminal No.			
M25	6		14	Approx. 54 – 66	
YES (Present error)>>0 YES (Past error)>>Erro cuit 1 side). NO >> GO TO 3. CHECK HARNESS C	Check CAN system or was detected in th CONTINUITY (OPE)	type decision again. ne data link connecto N CIRCUIT)	r branch line circuit (CAN communication cir-	
 Disconnect the harn Check the continuity 	ess connector M13 / between the data I	3. ink connector and the	e harness connector.		
Data link connector Harness connector Continuity				Continuity	
	Terminal No.	Connector No.	Terminal No.		
Connector No.	0		23C	Existed	
Connector No. M25	6	M133			

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009791242

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector branch line.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- Check the continuity between the CAN gateway harness connector terminals. 2.

	CAN gateway harness connector				
Connector No.	Termi	Continuity			
M24	4	6	Existed		
W24	10	12	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2).

 ${
m 3.}$ CHECK HARNESS FOR OPEN CIRCUIT

Connect the connector of CAN gateway. 1.

Check the resistance between the data link connector terminals. 2.

Data link connector			Resistance (O)
Connector No.	Termi		
M25	13	12	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 (CAN communication circuit 2 side).

NO >> Repair the data link connector branch line.

IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000009791243 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). IPDM E/R Harness connector E64 and fuse block (J/B) side connector D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. 1. F Check the resistance between the IPDM E/R harness connector terminals. 2. IPDM E/R harness connector Resistance (Ω) Connector No. Terminal No. E121 Approx. 54 - 66 29 28 Is the measurement value within the specification? Н YES >> GO TO 3. NO >> GO TO 4. ${ m 3.check}$ power supply and ground circuit Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-36, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-37, "Removal and Installation". YES (Past error)>>Error was detected in the IPDM E/R branch line. >> Repair the power supply and the ground circuit. NO 4.CHECK HARNESS FOR OPEN CIRCUIT Κ 1. Disconnect the harness connector E64. Check the continuity between the IPDM E/R harness connector and harness connector. 2. L IPDM E/R harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. LAN

Is the measurement value within the specification?

29

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YES >> Replace the fuse block (J/B).

E121

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the IPDM E/R harness connector E121 and harness connector E64.

E64

6E

2E

Existed

Existed

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791244

[CAN SYSTEM (TYPE 14)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F12
- Harness connector E10
- Harness connector E65 and fuse block (J/B) side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

	Resistance (O)		
Connector No.	Termi		
F2	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-218, "Exploded View"

Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side TCM harness connector		Continuity
Terminal No.	Terminal No.	Continuity
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-181, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-218, "Exploded View".

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

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector E65.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	A/T assembly harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

E2	3	E65	9F	Existed	^
12	8	205	5F	Existed	P

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the A/T assembly harness connector F2 and the harness connector E65.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000009791245

[CAN SYSTEM (TYPE 14)]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

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

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of CAN gateway.

2. Check the resistance between the CAN gateway harness connector terminals.

CAN gateway harness connector			Posistanco (O)
Connector No.	Termir		
M24	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-171, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-172, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Proced	ure	,		A INFOID:00000009791246
1. СНЕСК ДТС				В
Check DTC of the CAN Is U1010 or B2600 ind YES >> Perform a NO >> GO TO 2.	I gateway with CONS icated? diagnosis of the indic	ULT. ated DTC.		C
2.CHECK CONNECT	OR			D
 Turn the ignition sy Disconnect the bar Check the followin nector side). CAN gateway Harness connector 	witch OFF. Itery cable from the ne g terminals and conne r M133 and fuse block	egative terminal. ectors for damage, < (J/B) side connec	, bend and loose conne	ction (unit side and con- $_{ ext{E}}$
Is the inspection result	normal?			F
NO >> Repair the	terminal and connect	or. I CIRCUIT)		G
1 Disconnect the co	nector of CAN gatew	av		
2. Check the continu	ty between the CAN g	gateway harness o	connector terminals.	Н
	CAN gateway harne	ess connector		
Connector No.		Terminal No.		Continuity
M24	4		6 12	Existed Existed
Is the inspection result	normal?			J
YES >> GO TO 4. NO >> GO TO 5.				K
4.CHECK POWER S	JPPLY AND GROUN	D CIRCUIT		K
Check the power supp dure".	bly and the ground ci	rcuit of the CAN o	gateway. Refer to <u>LAN-</u>	<u>171, "Diagnosis Proce-</u> ∟
Is the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 5.CHECK HARNESS	normal? >Replace the CAN ga ror was detected in th power supply and the CONTINUITY (OPEN	teway. Refer to LA e CAN gateway be ground circuit. I CIRCUIT)	<u>N-172, "Removal and I</u> ranch line (CAN commu	nstallation". nication circuit 2 side).
 Disconnect the ha Check the continuit 	rness connector M133 ity between the CAN (3. gateway harness c	connector and the harne	ss connector.
CAN gateway ha	arness connector	Harn	ess connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	4	M133	13C	Existed
Le dhe been d'	10		2C	Existed
is the inspection result	normal?			

YES >> Replace the fuse block (J/B).

>> Repair the harness between the CAN gateway harness connector M24 and the harness connec-NO tor M133.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791247

[CAN SYSTEM (TYPE 14)]

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.

	Resistance (O)		
Connector No.	Termi		
M88	1	21	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 <u>HAC-92, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-113, "Removal and Installation".

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

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

Diagnosis Procedure						
1.CHECK CONNECTOR						
 Turn the ignition switch Disconnect the battery of Check the terminals an (unit side and connector) 	OFF. cable from the negative terr d connectors of the combi r side).	ninal. nation meter for damage, b	end and loose connection			
Is the inspection result normYES>> GO TO 2.NO>> Repair the term 2. CHECK HARNESS FOR	<u>al?</u> inal and connector. OPEN CIRCUIT					
 Disconnect the connect Check the resistance be 	or of combination meter. atween the combination me	ter harness connector termi	nals.			
Cc	mbination meter harness connec	tor	Resistance (Ω)			
Connector No.	Termir	nal No.				
Is the measurement value w	vithin the specification?	42	Applox. 54 – 66			
YES >> GO TO 3. NO >> Repair the coml						
3.CHECK POWER SUPPL	Y AND GROUND CIRCUI	г				
3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Proceed	AND GROUND CIRCUIT the ground circuit of the c <u>ure</u> ".	combination meter. Refer to	MWI-104, "COMBINATION			
3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the power	AND GROUND CIRCUIT the ground circuit of the c <u>ure"</u> . al? lace the combination meter as detected in the combina or supply and the ground ci	Tombination meter. Refer to The combination meter. Refer to The combine to the combine of the	<u>WWI-104, "COMBINATION</u> val and Installation".			
3.CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the power	AND GROUND CIRCUIT the ground circuit of the c <u>are"</u> . al? lace the combination meter as detected in the combina or supply and the ground ci	Tombination meter. Refer to The Refer to <u>MWI-126, "Remov</u> tion meter branch line. rcuit.	WWI-104, "COMBINATION			

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791249

[CAN SYSTEM (TYPE 14)]

WARNING:

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

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-36, "Work Flow".

Is the inspection result normal?

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

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

AFS BRANCH LINE	: CIRCUII				
Diagnosis Procedure					
1.CHECK CONNECTOR					
 Turn the ignition switch Disconnect the battery of Check the terminals and side and connector side 	OFF. cable from the negative tern d connectors of the AFS co	ninal. ntrol unit for damage, bend	and loose connection (unit		
Is the inspection result norm YES >> GO TO 2.	al?				
2.CHECK HARNESS FOR	OPEN CIRCUIT				
 Disconnect the connect Check the resistance be 	or of AFS control unit. wween the AFS control unit	harness connector termina	ls.		
	AFS control unit harness connecto	pr	Resistance (O)		
Connector No.	Termir	Terminal No.			
M4	1	13	Approx. 54 – 66		
YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL	<u>utnin the specification?</u> control unit branch line. Y AND GROUND CIRCUIT	-			
Check the power supply an UNIT : Diagnosis Procedure	d the ground circuit of the	AFS control unit. Refer to	EXL-128, "AFS CONTROL		
Is the inspection result norm	<u>al?</u>				
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the AFS control unit. R as detected in the AFS con ar supply and the ground cir	Refer to <u>EXL-181, "Removal</u> trol unit branch line. rcuit.	and Installation".		
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	lace the AFS control unit. F as detected in the AFS con ar supply and the ground cir	Refer to <u>EXL-181, "Removal</u> trol unit branch line. rcuit.	and Installation".		

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791251

[CAN SYSTEM (TYPE 14)]

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 display 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 display control unit.
- 2. Check the resistance between the display control unit harness connector terminals.

Di	Posistanco (O)		
Connector No.	Termi		
M100	29	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the display control unit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the display control unit. Refer to <u>AV-239, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-277, "Removal and Installation"</u>.

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

HBA BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

HBA BRANCH LINE	ECIRCUIT			Λ
Diagnosis Procedure			INFOID:000000009791252	A
1.CHECK CONNECTOR				В
 Turn the ignition switch of 2. Disconnect the battery of 3. Check the following term nector side). Auto anti- dazzling insid Harness connector R2 Harness connector M74 	OFF. cable from the negative tern ninals and connectors for d e mirror (High beam assist	ninal. amage, bend and loose co control module)	nnection (unit side and con-	C
Is the inspection result norm	al?			
YES >> GO TO 2.				Е
NO >> Repair the termi	nal and connector.			
Z.CHECK HARNESS FOR	OPEN CIRCUIT			_
 Disconnect the connect Check the resistance be harness connector term 	or of auto anti - dazzling ins etween the auto anti - daz inals.	side mirror (High beam ass zling inside mirror (High b	ist control module). eam assist control module)	F
Auto anti - dazzlir	na inside mirror (High beam assis	et control module)		G
	harness connector		Resistance (Ω)	
Connector No.	Termin	nal No.		Н
R9	12	11	Approx. 54 – 66	
Is the measurement value wYES>> GO TO 3.NO>> Repair the anti - 3. CHECK POWER SUPPLY	ithin the specification? dazzling inside mirror (Hig Y AND GROUND CIRCUIT	h beam assist control mod -	ule) branch line.	I
Check the power supply and	d the ground circuit of the	anti - dazzling inside mirro	or (High beam assist control	J
Inodule). Relef to $EXE-128$.	<u> </u>	NTROL MODULE : Diagnos	<u>sis Procedure</u> .	
YES (Present error)>>Repl drive positioner	ace the inside mirror. Refer system) or <u>MIR-80, "Remov</u>	r to <u>MIR-45, "Removal and val and Installation"</u> (Witho	Installation" (With automatic ut automatic drive positioner	K
YES (Past error)>>Error wa branch line.	as detected in the anti - da	zzling inside mirror (High t	peam assist control module)	L
NO >> Repair the powe	er supply and the ground ci	rcuit.		LA
				Ν
				0

< DTC/CIRCUIT DIAGNOSIS >

Ρ

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791253

[CAN SYSTEM (TYPE 14)]

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.

	Posistanco (O)		
Connector No.	Termi		
M14	60	59	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-91, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-98, "Removal and Installation".

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

ABS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000009791254
1. CHECK CONNECTOR			
 Turn the ignition switch 0 Disconnect the battery c Check the following term nector side). ABS actuator and electri Harness connector E65)FF. able from the negative tern inals and connectors for da c unit (control unit) and fuse block (J/B) side c	ninal. amage, bend and loose con onnector	nection (unit side and con-
s the inspection result norma YES-1 >> Models with arou YES-2 >> Models without a NO >> Repair the termin	<u>וו?</u> וnd view monitor system: G וround view monitor systen nal and connector.	GO TO 2. n: GO TO 3.	
2. CHECK HARNESS CON	FINUITY (OPEN CIRCUIT)		
 Disconnect the connector Check the continuity betw 	r of CAN gateway. ween the CAN gateway ha	rness connector terminals.	
(CAN gateway harness connector		Continuity
Connector No.	Termin	al No.	Continuity
M24	4	6	Existed
	10	12	Existed
 Disconnect the connector Check the resistance be nals. ABS actuator a 	r of ABS actuator and elec tween the ABS actuator a	ess connector) harness connector termi-
Connector No.	Termin	al No.	Resistance (Ω)
E35	25	15	Approx. 54 - 66
s the measurement value wi YES >> GO TO 4. NO >> GO TO 5. CHECK POWER SUPPLY Check the power supply and <u>BRC-154</u> , "Diagnosis Proceed s the inspection result normations YES (Present error)>>Replation and Installation". YES (Past error)>>Error wat NO >> Repair the power	thin the specification? AND GROUND CIRCUIT the ground circuit of the ure". al? ace the ABS actuator and e s detected in the ABS actu r supply and the ground cir	ABS actuator and electric electric unit (control unit). Re nator and electric unit (contr cuit.	unit (control unit). Refer to efer to <u>BRC-178, "Removal</u> ol unit) branch line.
5.CHECK HARNESS CON	INUITY (OPEN CIRCUIT)	F	
 Disconnect the connector Check the resistance be nals. 	r or narness connector E6 tween the ABS actuator a	o. nd electric unit (control unit) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-599

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			
E35	25	E65	6F	Existed
L 30	15	L03	7F	Existed
MCth and an and a start				

- Without around view monitor system

ABS actuator and ele harness	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	8F	Existed
E35	15	205	3F	Existed

Is the inspection result normal?

YES >> Replace the fuse block (J/B)

NO >> Repair the harness between the ABS actuator and electric unit (control unit) harness connector E35 and the harness connector E65

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 14)]

ADP BRANCH LINE	E CIRCUIT		
Diagnosis Procedure			INFOID:00000000979125
1. CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the follow terminator side). Driver seat control unit Harness connectors B6 Harness connectors B3 	OFF. cable from the negative terr als and connectors for dama 00 and B12 39 and fuse block (J/B) side	ninal. age, bend and loose conne e connector (Models withou	ction (unit side and connec- ut around view monitor sys-
tem)		·	
Is the inspection result norm YES - 1>> Models with aro YES - 2>> Models without NO >> Repair the term 2.CHECK HARNESS CON	<u>al?</u> Jund view monitor system: (around view monitor syster inal and connector. ITINUITY (OPEN CIRCUIT)	GO TO 2. n: GO TO 3.)	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	irness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termir	nal No.	
M24	4	6	Existed
3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit	vith around view monitor sy	stem)
	stween the driver seat contr	of unit namess connector t	erminais.
Connector No.	er seat control unit harness conne Termir	ector	Resistance (Ω)
B601	1	17	Approx. 54 – 66
s the measurement value w YES >> GO TO 4. NO - 1 >> Models without NO - 2 >> Models with aro CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the power	<u>vithin the specification?</u> around view monitor system ound view monitor system: F Y AND GROUND CIRCUIT the ground circuit of the dr <u>s Procedure</u> ". <u>nal?</u> lace the driver seat control as detected in the driver se er supply and the ground ci	n: GO TO 5. Repair the driver seat contra- iver seat control unit. Refer unit. Refer to <u>ADP-145, "Re</u> at control unit branch line. rcuit.	ol unit branch line. to <u>ADP-75, "DRIVER SEAT</u> emoval and Installation".
5. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT))	
 Disconnect the harness Check the continuity be 	connector B39. etween the driver seat contr	rol unit harness connector	B601 and the harness con

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nector.

< DTC/CIRCUIT DIAGNOSIS >

LAN-601

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Driver seat control u	nit harness connector	Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
B601	1	B39	ЗH	Existed		
	17	039	8H	Existed		

Is the inspection result normal?

YES >> Replace the fuse block (J/B).

NO >> Repair the harness between the driver seat control unit harness connector B601 and the harness connector B39.

PSB BRANCH LINE	CIRCUIT		
Diagnosis Procedure			F INFOID:000000009791256
1. CHECK CONNECTOR			E
 Turn the ignition switch Disconnect the battery of Check the following term nector side). CAN gateway Pre-crash seat belt cont Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS CON Disconnect the connect 	OFF. cable from the negative terr ninals and connectors for d rol unit (driver side) <u>al?</u> inal and connector. TINUITY (OPEN CIRCUIT)	ninal. amage, bend and loose col	nnection (unit side and con-
 Check the continuity be 	tween the CAN gateway ha	arness connector terminals.	F
	CAN gateway harness connector		Continuity
Connector No.	ıermir 4	6	Existed
M24	10	12	Existed
YES >> GO TO 3. NO >> Check the harmed tion circuit 2 side 3.CHECK HARNESS FOR 1. Connect the connector of 2. Disconnect the connector of 3. Check the resistance be nals.	ess and repair or replace (i e). OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat	f shield line is open) the roo ntrol unit (driver side). belt control unit (driver side	ot cause (CAN communica-
Pre-crash seat	t belt control unit (driver side) har	ness connector	Resistance (Ω)
Connector No.	Termir	nal No.	
B19	14 vithin the specification?	4	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the pre-co 4.CHECK POWER SUPPL Check the power supply an SBC-62, "Diagnosis Proceed Is the inspection result norm YES (Present error)>>Rep and Installation" YES (Past error)>>Error way	AND GROUND CIRCUIT AND GROUND CIRCUIT d the ground circuit of the <u>ure"</u> . al? lace the seat belt pre-tension as detected in the pre-cras	(driver side) branch line. pre-crash seat belt control oner retractor (driver side).	LA I unit (driver side). Refer to Refer to <u>SBC-76, "Removal</u> er side) branch line.

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000009791257

[CAN SYSTEM (TYPE 14)]

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).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
10124	10	12	Existed

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Resistance (O)
Connector No.	Terminal No.		
B1	1 2		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-160. "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation".

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

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

[CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

А Diagnosis Procedure INFOID:000000009791258 **1**.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). ADAS control unit Chassis control module D Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. Е 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of chassis control module. Check the continuity between the chassis control module harness connector terminals. F 2. Chassis control module harness connector Continuity Connector No. Terminal No. 19 11 Existed E22 7 8 Existed Н Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side). **3.**CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of ADAS control unit. 1 Check the resistance between the ADAS control unit harness connector terminals. 2. ADAS control unit harness connector Κ Resistance (Ω) Connector No. Terminal No. B1 8 9 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 4. NO >> Replace the body harness. LAN 4.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-160, "Diagnosis Procedure". Ν Is the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-161, "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line circuit (chassis communication circuit side). NO >> Repair the power supply and the ground circuit. Ρ

EPS/DAST 3 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791259

[CAN SYSTEM (TYPE 14)]

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).
- Steering force control module
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

YES-1 >> Models with around view monitor system: GO TO 2.

- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M24	4	6	Existed
WZ4	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway (Models with around view monitor system).
- 2. Disconnect the connector of steering force control module.
- 3. Check the resistance between the steering force control module harness connector terminals.

Steering force control module harness connector			Posistanco (O)
Connector No.	Termi		
M71	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering force control module. Refer to <u>STC-407, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-427</u>, "<u>Removal and Installa-</u> <u>tion</u>".

YES (Past error)>>Error was detected in the steering control module branch line.

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) [CAN SYSTEM (TYPE 14)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

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Diagnosis Procedure			INFOID:000000009799878	
1.CHECK CONNECTOR				В
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). 	OFF. cable from the negative tern ninals and connectors for d	ninal. amage, bend and loose con	nection (unit side and con-	С
 Chassis control module Harness connectors E4 Harness connectors M3 CAN gateway (Models v) 	7 9 with around view monitor sy	vstem)		D
Is the inspection result norm YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	<u>al?</u> und view monitor system: G around view monitor systen inal and connector.	GO TO 2. n: GO TO 3.		E
2.CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))		F
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	rness connector terminals.		G
	CAN gateway harness connector		Continuity	
Connector No.	Connector No. Terminal No.			
M24	4	6	Existed	
	10	12	Existed	I
NO >> Check the harm 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models wi or of chassis control module	se (CAN communication circ ith around view monitor sys e. module barness connector t	tem).	J
		nodule namess connector t		
Cha	ssis control module harness conne	ector	Resistance (Ω)	L
Connector No.	Termin	al No.		
E22	4	3	Approx. 54 – 66	
Is the measurement value w YES >> GO TO 4. NO >> Repair the chas 4.CHECK POWER SUPPL	<u>ithin the specification?</u> sis control module branch li Y AND GROUND CIRCUIT	ine.		LAN
Check the power supply an Procedure".	d the ground circuit of the c	chassis control module. Ref	er to <u>DAS-541, "Diagnosis</u>	
Is the inspection result norm	al?			0
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the powe	lace the chassis control mo as detected in the chassis o er supply and the ground cir	dule. Refer to <u>DAS-542, "Re</u> control module branch line. rcuit.	emoval and Installation".	Ρ

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791261

[CAN SYSTEM (TYPE 14)]

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).
- Steering angle sensor
- CAN gateway (Models with around view monitor system)

Is the inspection result normal?

- YES-1 >> Models with around view monitor system: GO TO 2.
- YES-2 >> Models without around view monitor system: GO TO 3.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		Continuity
M24	4	6	Existed
11/24	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (Models with around view monitor system).

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

Steering angle sensor harness connector			Posistance (O)
Connector No.	Termi	Resistance (22)	
M77	5 2		Approx. 54 – 66
	hin the energification?		:

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle sensor branch line

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-123</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-180, "Removal and Installation"</u>.

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

				Λ	
Diagnosis Procedure			INFOID:00000009791262	A	
1.CHECK CONNECTOR	1.CHECK CONNECTOR				
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Side radar LH Harness connector B87 Harness connector B8 	OFF. able from the negative termi ninals and connectors for dar	nal. nage, bend and loose conn	ection (unit side and con-	C	
Is the inspection result normYES>> GO TO 2.NO>> Repair the term	<u>al?</u> inal and connector.			E	
 Disconnect the connect Check the resistance be 	or of side radar LH. atween the side radar LH har	ness connector terminals.		F	
Connector No		Νο	Resistance (Ω)	G	
	loinina	110.			
B92	4	3	Approx. 54 – 66		
B92 Is the measurement value w YES >> GO TO 3. NO >> Replace the box 3.CHECK POWER SUPPL	4 <u>ithin the specification?</u> Jy harness. Y AND GROUND CIRCUIT	3	Approx. 54 – 66	H	
B92 Is the measurement value w YES >> GO TO 3. NO >> Replace the box 3. CHECK POWER SUPPL Check the power supply an Diagnosis Procedure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the power	4 <u>vithin the specification?</u> dy harness. Y AND GROUND CIRCUIT d the ground circuit of the siven <u>val?</u> lace the side radar LH. Refer as detected in the side radar yr supply and the ground circ	3 de radar LH. Refer to <u>DAS</u> - to <u>DAS-386, "Removal and</u> LH branch line. uit.	Approx. 54 – 66 359, "SIDE RADAR LH : Installation".	H J K	

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< DTC/CIRCUIT DIAGNOSIS >

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791263

[CAN SYSTEM (TYPE 14)]

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).
- Side radar RH
- Harness connector B87
- Harness connector B8

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 side radar RH.

2. Check the resistance between the side radar RH harness connector terminals.

Side radar RH harness connector			Posistanco (O)
Connector No.	Termi		
B93	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar RH branch line.

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

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-360, "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-386, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar RH branch line.

AVM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000009791264
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the following tern nector side). Around view monitor co CAN gateway (Models 	OFF. cable from the negative terr minals and connectors for d ontrol unit without ICC)	ninal. lamage, bend and loose cor	nnection (unit side and con-
Is the inspection result norn	nal?		
YES-1 >> Models without YES-2 >> Models with IC NO >> Repair the term	ICC: GO TO 2. C: GO TO 3. inal and connector.		
2. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT))	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
Connector No	CAN gateway harness connector	nal No	Continuity
	4	6	Existed
M24	10	12	Existed
 CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be 	of CAN gateway (Models w or of around view monitor c etween the around view mo	rithout ICC). control unit. nitor control unit harness co	onnector terminals.
Around	view monitor control unit harness of	connector	
Connector No.	Termir	nal No.	Resistance (Ω)
B50	27	28	Approx. 54 – 66
Is the measurement value v YES >> GO TO 4. NO >> Repair the arou 4.CHECK POWER SUPPL	vithin the specification? nd view monitor control uni Y AND GROUND CIRCUIT	t branch line.	L
Check the power supply a "AROUND VIEW MONITOR" Is the inspection result norm	nd the ground circuit of th <u>CONTROL UNIT : Diagno</u> nal?	e around view monitor cor sis Procedure".	ntrol unit. Refer to <u>AV-435.</u>
YES (Present error)>>Rep tion".	lace the around view monit	or control unit. Refer to <u>AV-</u>	458. "Removal and Installa-
NO >> Repair the pow	er supply and the ground ci	rcuit.	

< DTC/CIRCUIT DIAGNOSIS >

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791265

[CAN SYSTEM (TYPE 14)]

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).
- Accelerator pedal actuator / accelerator pedal position sensor
- Harness connector M125
- Harness connector M67

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 accelerator pedal actuator / accelerator pedal position sensor.

2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator / accelerator pedal position sensor harness connector			Posistanco (O)
Connector No.	Termi		
M124	3	9	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator / accelerator pedal position sensor. Refer to <u>DAS-359</u>, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4</u>, "MODELS WITH DIS-<u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation"</u>.

YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > **BSW/BUZZER BRANCH LINE CIRCUIT**

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal. 2.
- Check the terminals and connectors of the drive assistance buzzer control module for damage, bend and 3. С 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 drive assistance buzzer control module.

Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Posistanco (O)	F
Connector No.	Termi			
M56	3	11	Approx. 54 – 66	G

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to DAS-361. "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the drive assistance buzzer control module. Refer to DAS-389, "Removal and Installation".

YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.

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

[CAN SYSTEM (TYPE 14)]

INFOID:000000009791266

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LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791267

[CAN SYSTEM (TYPE 14)]

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).
- ICC sensor
- Harness connector E76
- Harness connector E14
- Harness connector E25
- Harness connector M40

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

ICC sensor harness connector			Resistance (O)
Connector No.	Terminal No.		
E80	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-118</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the ICC sensor. Refer to CCS-135, "Removal and Installation".

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

SONAR BRANCH I	LINE CIRCUIT		۵	
Diagnosis Procedure			INFOID:00000009791268	
1. CHECK CONNECTOR			В	
 Turn the ignition switch Disconnect the battery Check the following tern nector side). Sonar control unit Harness connector M95 Harness connector M15 CAN gateway 	OFF. cable from the negative terr minals and connectors for d 55	ninal. amage, bend and loose con	nection (unit side and con-	
Is the inspection result norm	nal?		E	
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term 2. CHECK HARNESS CON	around view monitor system: C around view monitor syster inal and connector. ITINUITY (OPEN CIRCUIT)	n: GO TO 3.	F	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. tween the CAN gateway ha	rness connector terminals.	G	
	CAN gateway harness connector		Continuity	
Connector No.	Connector No. Terminal No.			
M24	4	6	Existed	
Is the inspection result norm	nal?	12		
YES >> GO TO 3. NO >> Check the harn 3. CHECK HARNESS FOR	ess and repair the root caus	se (CAN communication circ	cuit 2).	
 Connect the connector Disconnect the connect Check the resistance be 	of CAN gateway (Models w tor of sonar control unit. etween the sonar control un	ith around view monitor syst	tem). als.	
S	Sonar control unit harness connect	or	Resistance (0)	
Connector No.	Termir	nal No.		
M76	5	6	Approx. 54 – 66	
Is the measurement value v	vithin the specification?		LA	
NO >> Repair the sona	ar control unit branch line.			
4. CHECK POWER SUPPL	Y AND GROUND CIRCUIT	-	Ν	
Check the power supply and UNIT : Diagnosis Procedure	d the ground circuit of the so	onar control unit. Refer to <u>A\</u>	-435, "SONAR CONTROL	
Is the inspection result norm	nal?			
YES (Present error)>>Rep YES (Past error)>>Error w NO >> Repair the pow	place the sonar control unit. as detected in the sonar co er supply and the ground ci	Refer to <u>AV-462, "Removal</u> ntrol unit branch line. rcuit.	and Installation".	

< DTC/CIRCUIT DIAGNOSIS >

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000009791269

[CAN SYSTEM (TYPE 14)]

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).
- Steering angle main control module
- Chassis control module

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of chassis control module.
- 2. Check the continuity between the chassis control module harness connector terminals.

Cha	Chassis control module harness connector			
Connector No.	Terminal No.		Continuity	
E22	19	11	Existed	
	7	8	Existed	

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (chassis communication circuit side).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of chassis control module.
- 2. Disconnect the connector of steering angle main control module.
- 3. Check the resistance between the steering angle main control module harness connector terminals.

Steering angle main control module harness connector			Posistanco (O)
Connector No.	Terminal No.		Resistance (12)
E26	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the steering angle main control module branch line.

${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle main control module. Refer to <u>STC-407.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-428, "Removal and</u> <u>Installation"</u>.
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

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

LANE BRANCH LIN	IE CIRCUIT		Δ
Diagnosis Procedure			INFOID:00000009791270
1.CHECK CONNECTOR			E
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Lane camera unit Harness connector R13 Harness connector M75 	OFF. cable from the negative terr ninals and connectors for d	ninal. amage, bend and loose c	onnection (unit side and con-
- Chassis control module			
YES >> GO TO 2.	<u>ar</u>		E
NO >> Repair the term	inal and connector.		
Z .CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)		F
 Disconnect the connect Check the continuity be 	or of chassis control module tween the chassis control n	e. nodule harness connector	terminals.
Chas	ssis control module harness conn	ector	Continuity
Connector No.	Termir	nal No.	
E22	19	11	Existed
	/	8	Existed
YES >> GO TO 3. NO >> Check the harm cation circuit sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	ess and repair or replace (if le). OPEN CIRCUIT of chassis control module. or of lane camera unit.	f shield line is open) the ro	oot cause (chassis communi- J
3. Check the resistance be	tween the lane camera uni	t harness connector termi	nais.
L	ane camera unit harness connect	or	Resistance (0)
Connector No.	Termir	nal No.	
R13	4	8	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the lane 4.CHECK POWER SUPPL Check the power supply and UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Rep	camera unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the l <u>"</u> . <u>ial?</u> lace the lane camera unit. I	- ane camera unit. Refer to Refer to <u>DAS-620, "Remo</u>	DAS-610, "LANE CAMERA Val and Installation".
NO >> Repair the powe	as detected in the lane carr ar supply and the ground cit	rcuit.	F

< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
- 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	
M25	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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 N	Continuity
M25	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK ECM AND BCM TERMINATION CIRCUIT

1. Remove the ECM and the BCM.

2. Check the resistance between the ECM terminals.

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

3. Check the resistance between the BCM terminals.

BCM		Resistance (O)	
Terminal No.		- Resistance (12)	
60 59		Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the BCM.

5.CHECK SYMPTOM

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

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< DTC/CIRCUIT DIAGNOSIS >

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

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Diagnosis Procedure

INFOID:000000009791272

[CAN SYSTEM (TYPE 14)]

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 circuit 2.
- 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
M25	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] 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
M25	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway		- Resistance (Ω)	
Terminal No.			
4	10	Approx. 108 – 132	
6	12	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

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.

LAN-620

< DTC/CIRCUIT DIAGNOSIS >

6.CHECK UNIT REPRODUCTION А 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. В 3. Disconnect one of the unit connectors of CAN communication circuit 2. NOTE: CAN gateway has two termination circuits. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom С (Results from interview with customer)" are reproduced. NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms. D Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected. Е F Н Κ L LAN Ν Ρ

CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009791273

[CAN SYSTEM (TYPE 14)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1 and/or CAN communication circuit 2 have no malfunction.

Are the CAN communication 1 and/or CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

${ m 3.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the chassis control module harness connector.

Connector No. Terminal No. Contractive E22 19 7 Not existed	Chassis control module harness connector			Continuity
E22 19 7 Not existed	Connector No.	Termi	nal No.	Continuity
	E22	19	7	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Chassis control module harness connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	19	Ground	Not existed
	7]	Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause.

${f 5.}$ CHECK CHASSIS CONTROL MODULE TERMINATION CIRCUIT

1. Remove the chassis control module.

2. Check the resistance between the chassis control module terminals.

Chassis control module		Posistance (O)	
Terminal No.			
19	7	Approx. 108 – 132	
11	8	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

CHASSIS COMMUNICATION CIRCUIT

	-
< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 14)]
Connect all the connectors. Check if the symptoms described in the "Sympto customer)" are reproduced.	m (Results from interview with
Inspection result	
Reproduced>>GO TO 7. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	procedure when past error is
7. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF.	
 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of chassis communication circuit. 	
 A Chassis control module has two termination circuits. Check other units first 4. Connect the battery cable to the negative terminal. Check if the symptor (Results from interview with customer)" are reproduced. 	t. ns described in the "Symptom
Although unit-related error symptoms occur, do not confuse them with othe	er symptoms.
Reproduced>>Connect the connector. Check other units as per the above pro Non-reproduced>>Replace the unit whose connector was disconnected.	ocedure.

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< DTC/CIRCUIT DIAGNOSIS >

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000009791274

[CAN SYSTEM (TYPE 14)]

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit 1, CAN communication circuit 2 and ITS communication circuit have no malfunction.

Are the CAN communication 1 and CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and CAN communication circuit 2.

2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

ADAS control unit harness connector		ICC sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	6	E80	3	Existed
Ы	7	L00	6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harness between the ADAS control unit and the ICC sensor.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Around view monitor control unit
- Accelerator pedal actuator / accelerator pedal position sensor
- Driver assistance buzzer control module
- Sonar control unit
- 2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Termi	Continuity	
B1	6	7	Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace [if shield line or fuse block (J/B) is short] the root cause. 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

LAN-624

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

ADAS control unit h	narness connector		
Connector No. Terminal No. Ground			
B1 6 Ground		Not existed	
	B1 7 Not existent		
Is the inspection result normal YES >> GO TO 6. NO >> Check the harne 6.CHECK TERMINATION C	<u>al?</u> ss and repair or replace [i CIRCUIT	f shield line or fuse block (.	I/B) is short] the root cause.
 Remove the ADAS contr Check the resistance be 	ol unit and the ICC senso tween the ADAS control u	r. Init terminals.	
AD/	AS control unit		Posistance (O)
Т	erminal No.		
6	7	Aj	oprox. 108 – 132
 Check the resistance be 	tween the ICC sensor terr	ninals.	
I	CC sensor		Resistance (Ω)
T	erminal No.		
3	6	Al	oprox. 108 – 132
NO >> Replace the ADA 7.CHECK SYMPTOM Connect all the connectors. customer)" are reproduced. Inspection result Reproduced>>GO TO 8. Non-reproduced>>Start the detected.	AS control unit and/or the Check if the symptoms d e diagnosis again. Follow	ICC sensor. escribed in the "Symptom the trouble diagnosis pro	(Results from interview with
8.CHECK UNIT REPRODU Perform the reproduction tes 1. Turn the ignition switch (CTION t as per the following proc DFF.	edure for each unit.	
 Disconnect the battery c Disconnect one of the ur NOTE: 	able from the negative ter hit connectors of ITS comr	minal. munication circuit.	
ADAS control unit and IC 4. Connect the battery cab (Results from interview v NOTE:	CC sensor have a terminat le to the negative terminative terminative terminative terminative terminative termination of the terminative termination of the terminative termina	tion circuit. Check other uni al. Check if the symptoms luced.	its first. described in the "Symptom
Although unit-related err	or symptoms occur, do no	t confuse them with other s	symptoms.
Reproduced>>Connect the Non-reproduced>>Replace	connector. Check other u the unit whose connector	nits as per the above proce was disconnected.	dure.