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< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL А HOW TO USE THIS SECTION Information INFOID:000000011283543 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 Ε F Н J Κ

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< PRECAUTION > PRECAUTION PRECAUTIONS

Precautions for Trouble Diagnosis

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INFOID:000000011283545

CAUTION:

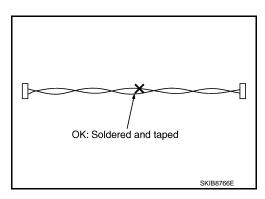
Follow the instructions listed below. Failure to do this may cause damage to parts:

- 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

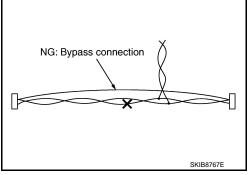
• Solder the repaired area and wrap tape around the soldered area. **NOTE:**

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.

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< SYSTEM DESCRIPTION > SYSTEM DESCRIPTION

SYSTEM

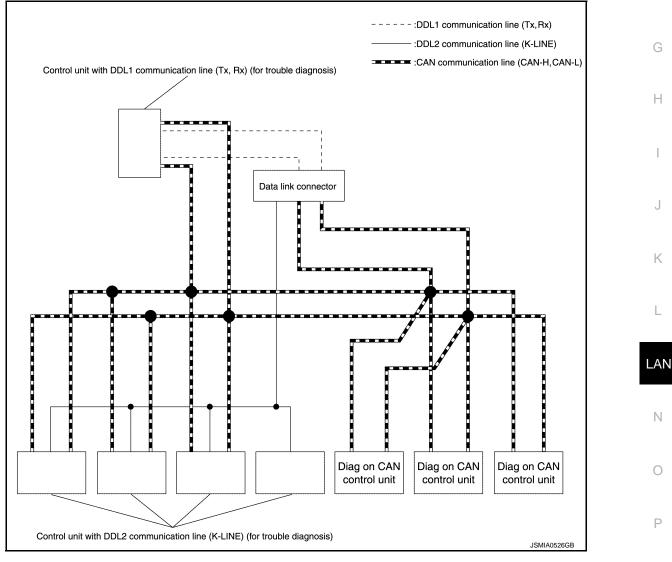
CAN COMMUNICATION SYSTEM

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



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]

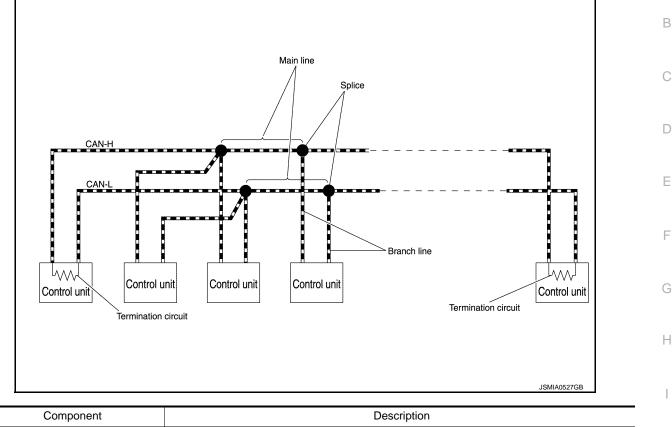
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TROUBLE DIAGNOSIS

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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< SYSTEM DESCRIPTION >

Symptom When Error Occurs in CAN Communication System

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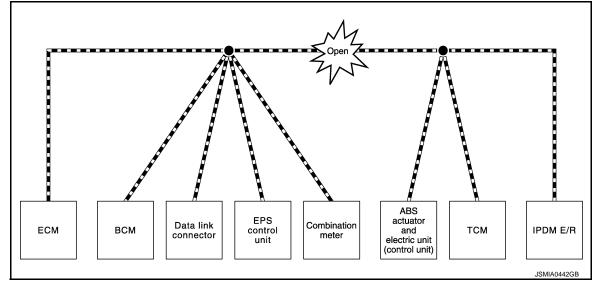
In CAN communication system, multiple control units mutually transmit and receive signals. Each control unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

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

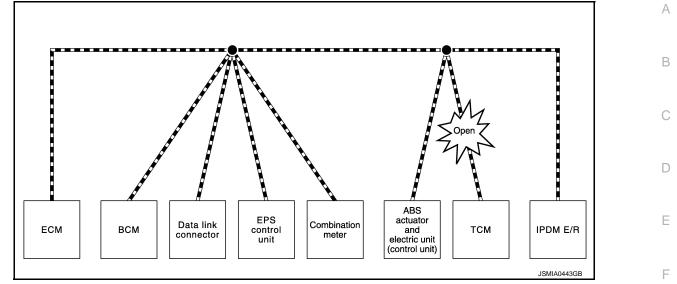
Example: Main Line Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Open Circuit



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



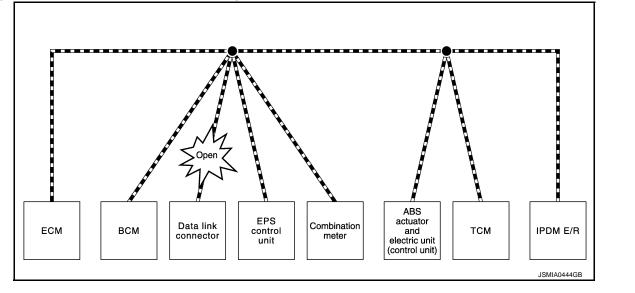
Unit name	Major symptom	
ECM	Engine torque limiting is affected, and shift harshness increases.	G
BCM	Reverse warning buzzer does not sound.	-
EPS control unit	Normal operation.	-
Combination meter	Shift position indicator and O/D OFF indicator turn OFF.Warning lamps turn ON.	H
ABS actuator and electric 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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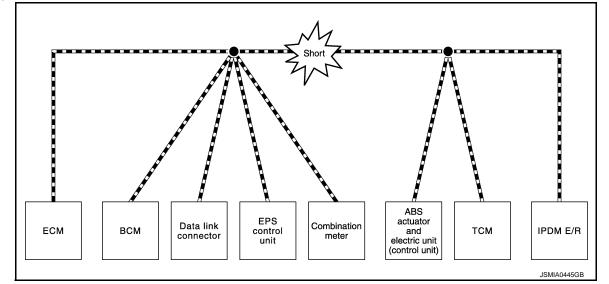
< SYSTEM DESCRIPTION >

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 from 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

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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 screen.

NOTE:

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

DTC	Self-diagnosis item (CONSULT indication)	DTC detection condition		Inspection/Action	E
U1000 CAN COMM CIRCUIT		ECM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.		
UTUUU CAN		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- tion of the indicated	
U1001	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communi- cation signal other than OBD (emission-related diagnosis) for 2 seconds or more.		control unit.	(
U1002	SYSTEM COMM	When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less.			ŀ
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

MONITOR ITEM

TRANSMIT DIAG OK

INITIAL DIAG

METER/M&A

IPDM E/R

ECM

TCM

I-KEY

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Without PAST

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

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

< SYSTEM DESCRIPTION >

How to Use CAN Communication Signal Chart

[CAN FUNDAMENTAL]

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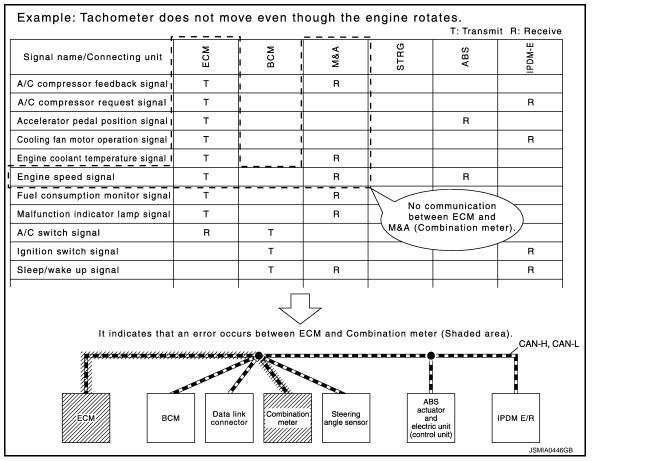
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The CAN communication signal chart lists the signals transmitted/received among control units. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



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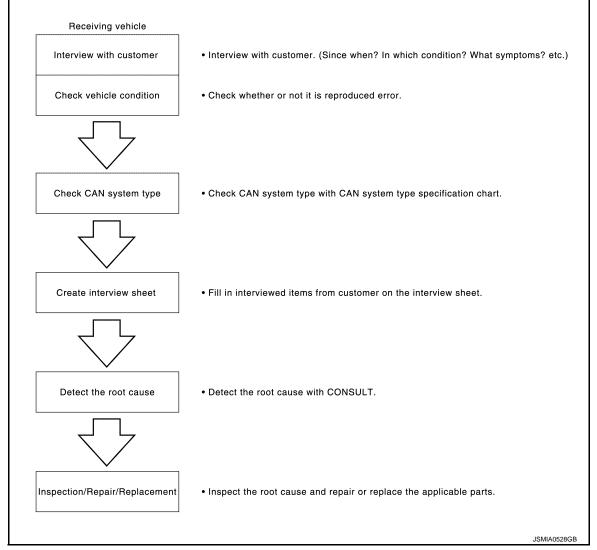
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BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

INFOID:000000011283555

DESCRIPTION



DETAIL OF TROUBLE DIAGNOSIS FLOW CHART

1.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.

LAN-24

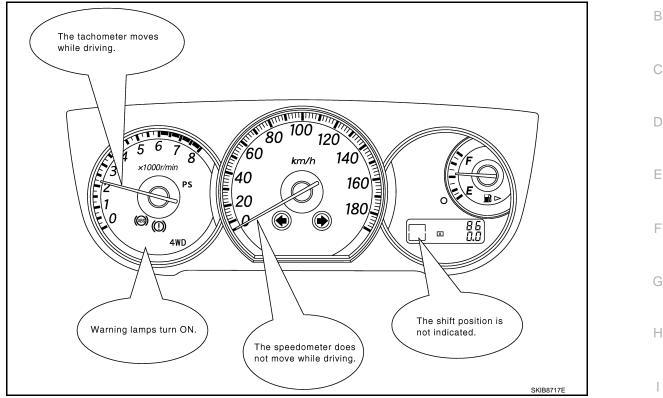
DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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- When a CAN communication system error is present, multiple control units may malfunction or go into failsafe mode.
- 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.



>> GO TO 2.

2. INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not. **NOTE:**

Do not turn the ignition switch OFF or disconnect the 12V battery cable while reproducing the error. The error may temporarily correct itself, making it difficult to determine the root cause.

>> GO TO 3.

3.CHECK OF CAN SYSTEM TYPE (HOW TO USE CAN SYSTEM TYPE SPECIFICATION CHART)

Determine CAN system type based on vehicle equipment.

- 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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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

following appoification abort

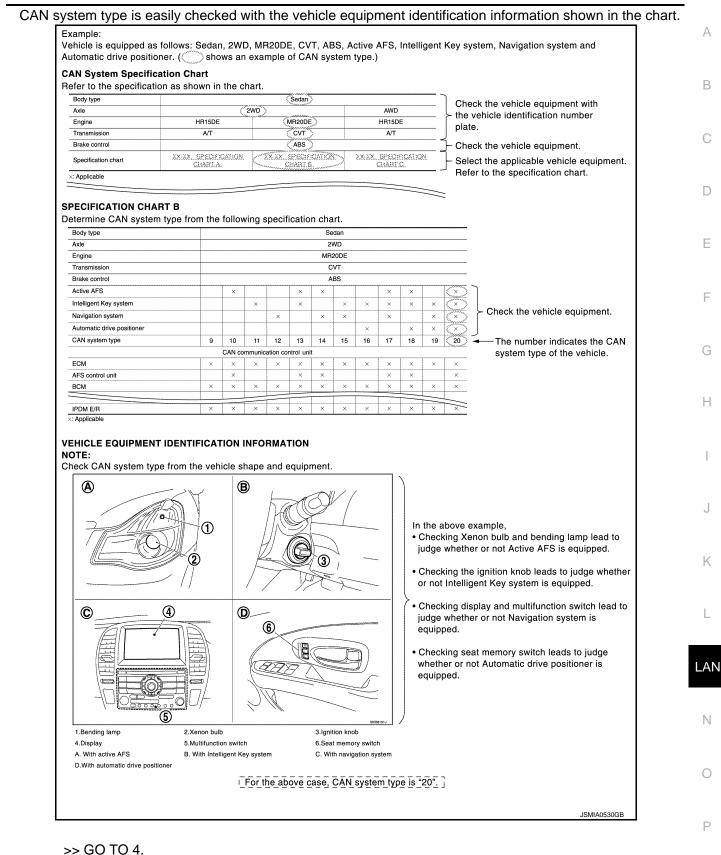
Axle	(Wagon)				Check the vehicle		
			VD		1		equipment with the
Engine	QR25DE (VQ35DE)			vehicle identification			
Transmission	A			number plate.			
Brake control			BS		$ \subseteq $	/DC>	Check the vehicle
Intelligent Key system		×		×		<u> </u>	equipment.
CAN system type	1	2	3	4	5	6	- The number indicates t
			ion control u	·····	r		CAN system type of th vehicle.
ECM	×	×	×	×	×	X	vomolo.
AWD control unit					×	×	
Air bag diagnosis sensor unit	×	×	×	×	×	×	
ВСМ	×	×	×	×	×	×	
Intelligent Key unit		×		×		×	
Steering angle sensor					×	×	
EPS control unit	×	×	×	×	×	×	
Combination meter	×	×	×	×	×	×	
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	
ТСМ	Х	×	×	×	×	×	
IPDM E/R	Х	Х	×	X	×	×	
VEHICLE EQUIPMENT IDE NOTE: Check CAN system type fror							
NOTE:		e shape and)
NOTE: Check CAN system type from		e shape and	l equipment.				leads to judge whether not VDC is equipped. • Checking the ignition leads to judge whether
NOTE: Check CAN system type from	n the vehicl	e shape and	d equipment.		tem type is		Checking VDC OFF s leads to judge whethen not VDC is equipped. Checking the ignition leads to judge whethen not Intelligent Key system
NOTE: Check CAN system type from	n the vehicl	e shape and	d equipment.		tem type is		Checking VDC OFF s leads to judge whethen not VDC is equipped. Checking the ignition leads to judge whethen not Intelligent Key system

CAN

< BASIC INSPECTION >

DIAGNOSIS AND REPAIR WORKFLOW

[CAN FUNDAMENTAL]



4.CREATE INTERVIEW SHEET

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

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

Interview Sheet (Example)

CAN Com	munication Syste	m Diagnosis Iı	nterview She	et
		Date received:	3, Feb. 2006	
Туре:	DBA-KG11	VIN No.:	KG11-005040	
Model:	BDRARGZG11EDA-E-J-			
First registration:	10, Jan. 2001	Mileage:	62,140	
CAN syste	m type: Type 19			
Symptom (Re	esults from interview with cust	omer)		
	os suddenly turn ON while driv ne does not restart after stopp FF.	-	ng the ignition	
•The cooli	ng fan continues rotating while	e turning the ignition swit	ch ON.	
Condition at i	nspection			
Error Sympt	om: Present / Past			
While turn • The head	e does not start. ing the ignition switch ON, llamps (Lo) turn ON, and the c ior lamp does not turn ON.	cooling fan continues rota	ating.	
				JSMIA0531GB

>> GO TO 5.

5. DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects a root cause.

>> GO TO 6.

6.REPAIR OR REPLACE MALFUNCTIONING PART

Repair or replace malfunctioning parts identified by CAN diagnosis function of CONSULT.

CAN communication circuit>>Refer to <u>LAN-88</u>, "CAN Communication Circuit". ITS communication circuit>> Refer to <u>LAN-89</u>, "ITS Communication Circuit". Chassis communication circuit>> Refer to <u>LAN-89</u>, "Chassis Communication Circuit".

HOW TO USE THIS SECTION

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-24</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	——		
BCM	BCM			
BSW/BUZZER	Driver assistance buzzer control module			
ССМ	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		
НВА	High beam assist control module			
HVAC	A/C auto amp.			
ICC	ADAS control unit			
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	0		
STRG	Steering angle sensor			
TCM	ТСМ	P		
TCU	TCU			

LAN-29

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[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 Removing Battery Terminal

 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
 NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

• For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch. **NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

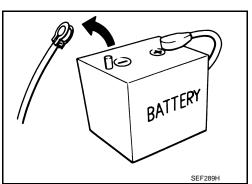
After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.

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.



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PRECAUTIONS

< PRECAUTION >

NOTE:

line are lost.

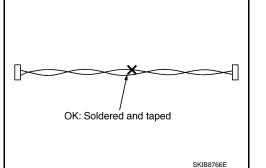
• Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

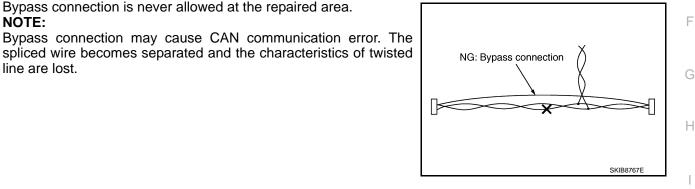
Precautions for Harness Repair

• 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.





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

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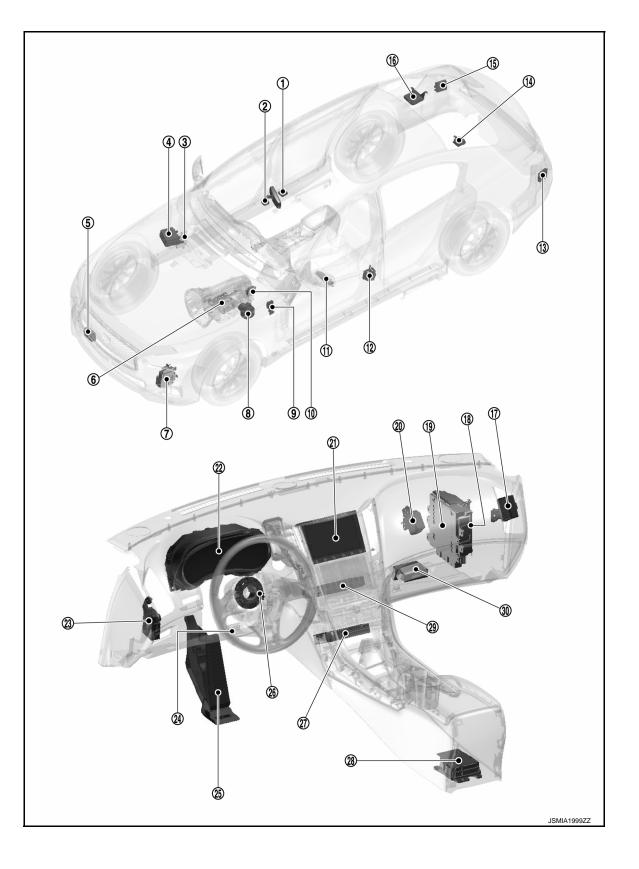
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< SYSTEM DESCRIPTION >

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

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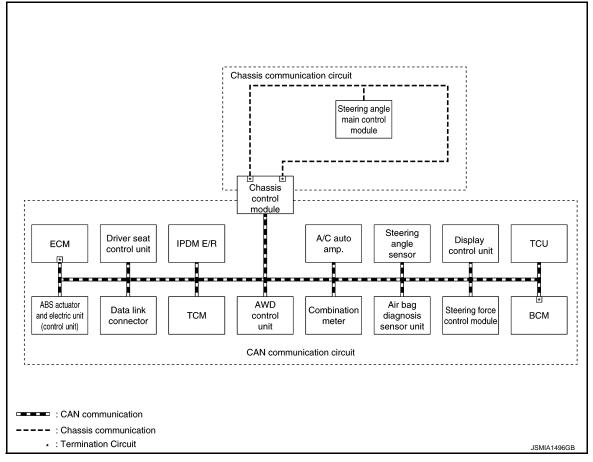
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CAN COMMUNICATION SYSTEM : System Description

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SYSTEM DIAGRAM

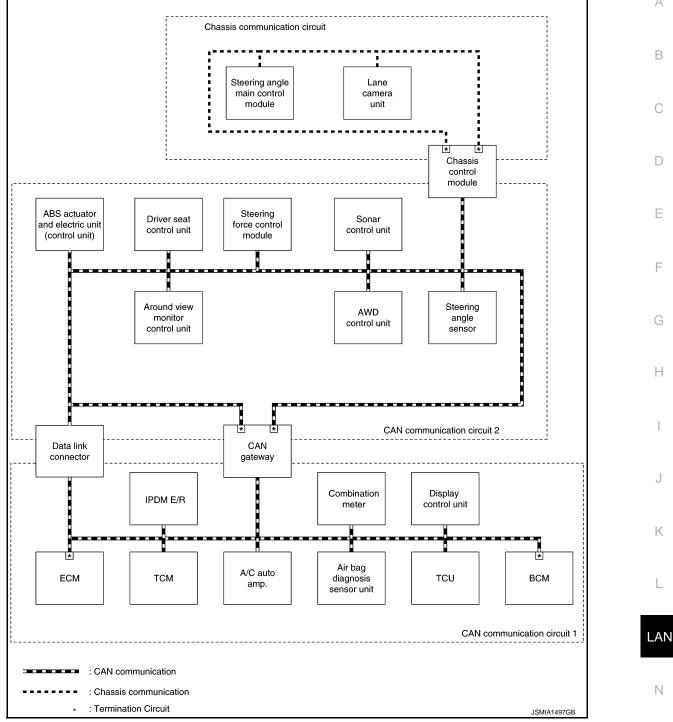
Without Around View Monitor





< SYSTEM DESCRIPTION >

With Around View Monitor, Without ICC



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[CAN]

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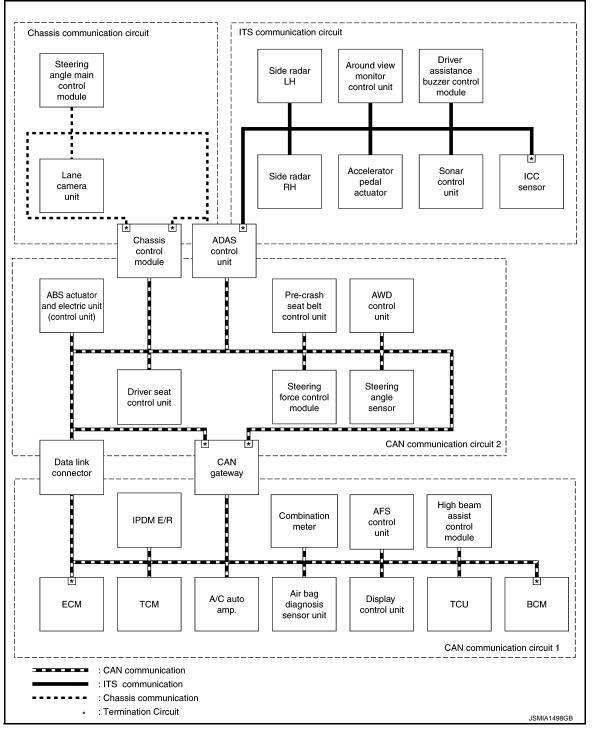
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< SYSTEM DESCRIPTION >





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.

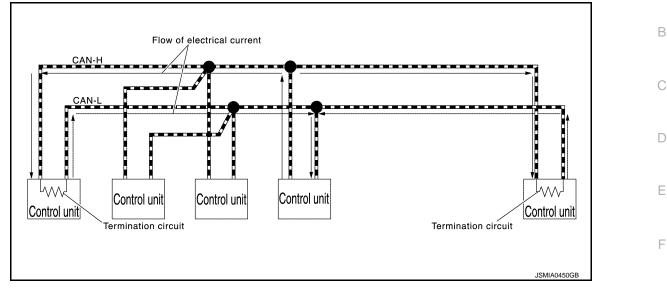
CAN Communication Signal Generation

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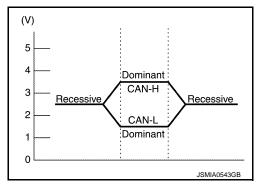
• Termination circuits (resistors) are connected across the CAN communication system. When transmitting a CAN communication signal, each control unit passes a current to the CAN-H line and the current returns to the CAN-L line.



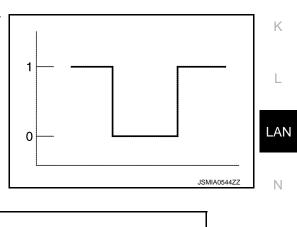
• The current flows separately into the termination circuits connected across the CAN communication system and the termination circuits drop voltage to generate a potential difference between the CAN-H line and the CAN-L line.

NOTE:

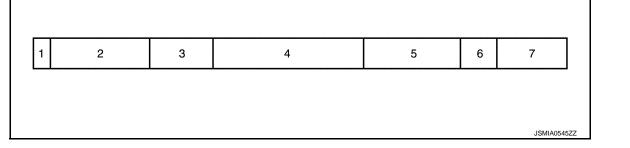
A signal with no current passage is called "Recessive" and one with current passage is called "Dominant".



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



The Construction of CAN Communication Signal (Message)



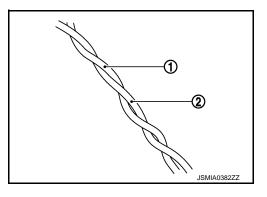
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< SYSTEM DESCRIPTION >

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

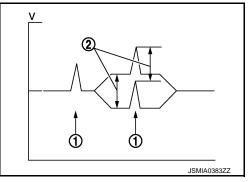
The CAN communication line is a twisted pair wire consisting of strands of CAN-H (1) and CAN-L (2) and has noise immunity.



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.

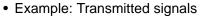


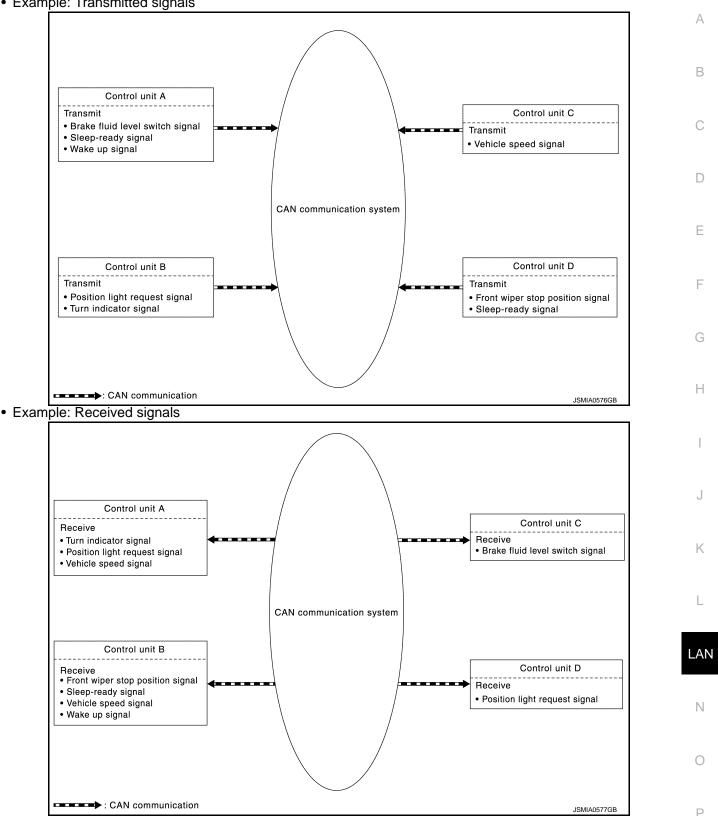
CAN Signal Communications

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.



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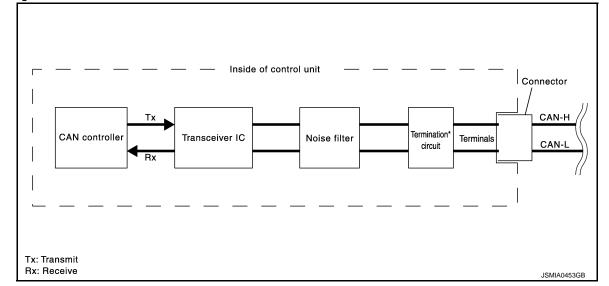


NOTE:

The above signal names and signal communications are provided for reference purposes. For CAN communications signals of this vehicle, refer to <u>LAN-42</u>, <u>"CAN COMMUNICATION SYSTEM : CAN Communication</u> Signal Chart".

< SYSTEM DESCRIPTION >

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 LAN-24, "Trouble Diagnosis Flow Chart" for how to use CAN system specification chart.

Body type						Se	dan					
Axle			21	VD					A۱	ND		
Engine						VQ3	7VHR					
Transmission						Α	/T					
Brake control						V	DC					
Telematics system		×		×	×	×		×		×	×	×
Direct adaptive steering			×	×	×	×			×	×	×	×
Automatic drive positioner					×	×					×	×
ICC system						×						×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12
		CAN	l comm	unicatio	n unit							
ECM	×	×	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×
CAN gateway					×	×					×	×

< SYSTEM DESCRIPTION >

Body type						Se	dan						
Axle			2۱	VD					A	WD			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	5	6	7	8	9	10	11	12	
A/C auto amp.	×	×	×	×	×	×	×	×	×	×	×	×	
Combination meter	×	×	×	×	×	×	×	×	×	×	×	×	E
Air bag diagnosis sensor unit	×	×	×	×	×	×	×	×	×	×	×	×	-
AFS control unit						×						×	
Display control unit	×	×	×	×	×	×	×	×	×	×	×	×	F
High beam assist control module						×						×	
тси		×		×	×	×		×		×	×	×	G
BCM	×	×	×	×	×	×	×	×	×	×	×	×	•
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	-
Driver seat control unit					×	×					×	×	H
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					×	×					×	×	
ICC sensor						×						×	LA
Steering angle main control module			×	×	×	×			×	×	×	×	
Lane camera unit						×						×	N
		ITS	commu	inicatio	n unit		<u> </u>			ļ	<u> </u>		
ADAS control unit						×						×	
Side radar LH						×						×	0
Side radar RH						×						×	
Around view monitor control unit					×	×					×	×	P
Accelerator pedal actuator						×						×	
Driver assistance buzzer control module						×						×	-
Sonar control unit					×	×					×	×	
ICC sensor						×						×	-

Chassis communication unit

< SYSTEM DESCRIPTION >

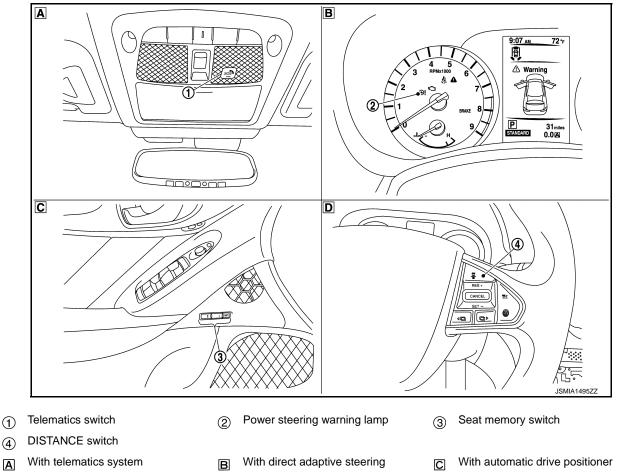
Body type						Se	dan					
Axle			2۱	ND					A۱	ND		
Engine						VQ3	7VHR					
Transmission						А	/T					
Brake control						V	DC					
Telematics system		×		×	×	×		×		×	×	×
Direct adaptive steering			×	×	×	×			×	×	×	×
Automatic drive positioner					×	×					×	×
ICC system						×						×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12
Steering angle main control module			×	×	×	×			×	×	×	×
Lane camera unit						×						×

 \times : Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



D With ICC system

CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

INFOID:000000011283566

Refer to <u>LAN-23</u>, "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart. NOTE:

Refer to LAN-29. "Abbreviation List" for the abbreviations of the connecting units.

LAN-42

< SYSTEM DESCRIPTION >

																		т с				ceive	А
Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST	<u>cc</u>	CCM	SONAR	AVM	В
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			Ċ
ECO drive indicator control signal	Т		R																				F
ECO pedal reaction force control signal	т																		R				1
ECO pedal reaction force	Т								R														
setting signal	R								Т														
Engine and A/T integrated	Т	R																					
control signal	R	Т																					L.
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					R			L
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													C
Power generation com- mand value signal	т			R																			
Stop lamp switch signal	Т	R			Т														R				F
Wide open throttle position signal	т	R												R	Т				R				
A/T CHECK indicator lamp signal		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
A/T self-diagnosis signal	R	Т																				<u> </u>
Current gear position signal	R	Т													R				R	R		<u> </u>
Input speed signal		Т																	R			<u> </u>
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			<u> </u>	<u> </u>
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																	
Vehicle speed signal	R	R	T R	R	R R	R	R		R		R				Т	R	R R	R	R	R		R
A/C compressor feedback signal	R			т							R											

SYSTEM DESCRIPT	ION	>					U			VI											[C/	AN]	
Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	тси	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																		
Low beam status signal	R			Т		R	R																
Push-button ignition switch status signal				т	R																		
BCM malfunction signal					Т															R			
Blower fan motor switch sig- nal	R				Т																		
Buzzer output signal			R R		Т												Т						
Daytime running light re- quest signal				R	Т																		
Dimmer signal			R		Т														R				
Door lock status signal					Т					R													
Door switch signal			R	R	Т											R	R					R	
Door unlock signal					Т												R						
Front fog light request sig- nal			R	R	т																		
Front wiper request signal				R	т														R	R [*] 3			
Handle position signal					Т												R						
High beam assist indicator lamp signal			R		т																		
High beam request signal			R	R	Т																		
Horn reminder signal				R	Т																		
Ignition switch ON signal				R	Т					1		1		1	1	R							
Ignition Switch ON Signal				Т	R																		
Ignition switch signal					Т											R	R				L		1
Interlock/PNP switch signal				R	Т																		
interioent in Switch Siglial	_			Т	R																		
Low beam request signal				R	Т																		
Low tire pressure warning lamp signal			R		Т				R														
Key ID signal			R		Т				R		R						R		R	R			
Meter display signal			R R		Т														Т				
Meter ring illumination re- quest signal			R		т																		
Oil pressure switch signal			R	Т	T R					R													
Position light request signal			R	R	Т	-					-		-			-							

																		е.				
Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST	<u>0</u>	CCM	SONAR	AVM
Rear window defogger con-				R	Т																	<u> </u>
trol signal	R			Т					R													
Shipping mode status signal			R		Т																	
Sleep wake up signal			R	R	Т					R		R				R	R	R				
Starter control relay signal				R	Т																	
Starter relay status signal			R	R	Т																	
				Т	R																	<u> </u>
Starting mode signal					Т												R					<u> </u>
Theft warning horn request signal				R	т																	
Tire pressure data signal			R		Т				R													<u> </u>
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					<u> </u>
System setting signal					Т				R													
									R								Т					
User information signal			R						Т		R						R		R	R		
Voice recognition signal									Т		R											

SYSTEM DESCRIPT	ION	>					3	13		VI											[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 signal					R					т												
Sleep-ready signal				Т	R R					Т												
Wake up signal			Т		R R					Т												
				Т	R																	
A/C display signal A/C evaporator temperature signal	R								R		T T											
A/C ON signal Ambient sensor signal	R		R								T T											
Ambient temperature sig- nal ^{*3}											т								R	R	R	
Blower fan ON signal	R										Т											
Heated seat switch indicator signal									R		т											
Target A/C evaporator tem- perature signal	R										т											
Steering angle sensor mal- function signal						R							Т		R	R		R	R			
Steering angle sensor sig- nal						R			R				Т		R T	R		R	R	R R		R
Steering angle speed signal													Т			R			R			
Steering calibration signal						R							Т			R						
AWD warning lamp signal A/T shift schedule change		R	R											Т	т							
demand signal ABS malfunction signal															T				R	R		
ABS operation signal		R													Т	R			R	R		
ABS warning lamp signal			R							R					Т				R			
Brake fluid pressure signal										<u> </u>					Т					R		
Brake switch signal										<u> </u>					T					R		
Brake warning lamp signal			R T							R					Т							
Decel G signal															Т					R		
EBD operation signal															Т					R		
Engine torque request sig- nal	R														Т							
Front LH wheel speed sig- nal														R	Т			R		R		
Front RH wheel speed sig- nal														R	Т			R		R		
Rear LH wheel speed signal														R	Т					R		R

																		Э				
Signal name	ECM	TCM	M&A	IPDM-E	BCM	AFS	HBA	A-BAG	AV	TCU	HVAC	CGW	STRG	4WD	ABS	PSB	ADP	EPS/DAST :	ICC	CCM	SONAR	AVM
Rear RH wheel speed sig- nal														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 fluid pressure control signal															R					Т		
Brake hold request signal															R					Т		
Brake hold status signal															R					Т		
Chassis control malfunction signal			R																	Т		
Drive mode display signal									R											Т		
Drive mode signal		R							R						R			R	R	Т		
Drive mode signal	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	
nterrupt display signal			R																	Т			•
Key link signal			R						R		R						R		R	Т			•
Log-in permit signal			R						R		R						R		R	Т			•
Steering angle value com- mand signal*3																		R		т			
Tire display signal			R																	Т			•
Turn display signal			R																	Т			•
Vehicle display signal			R																	Т			•
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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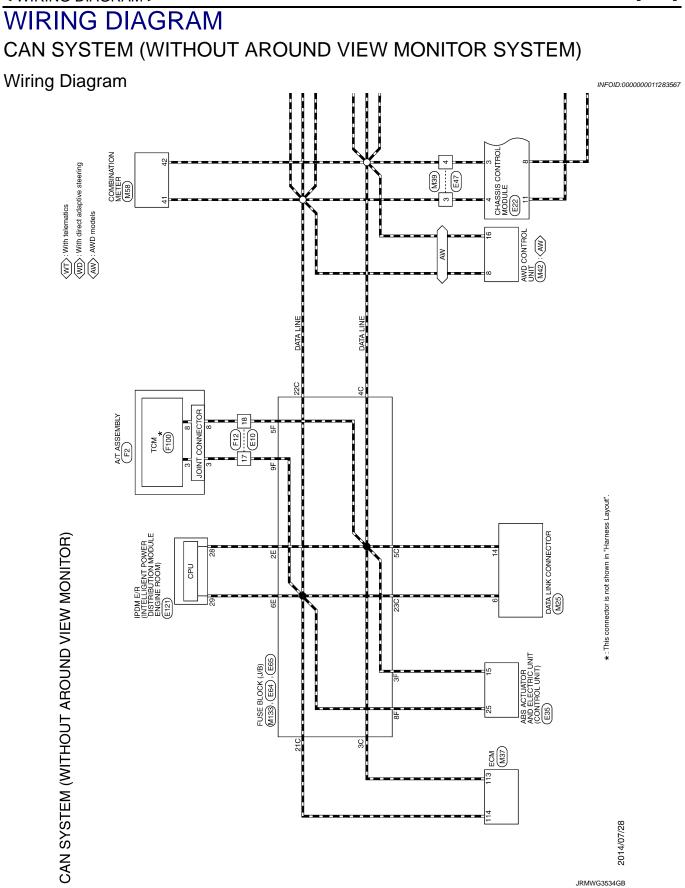
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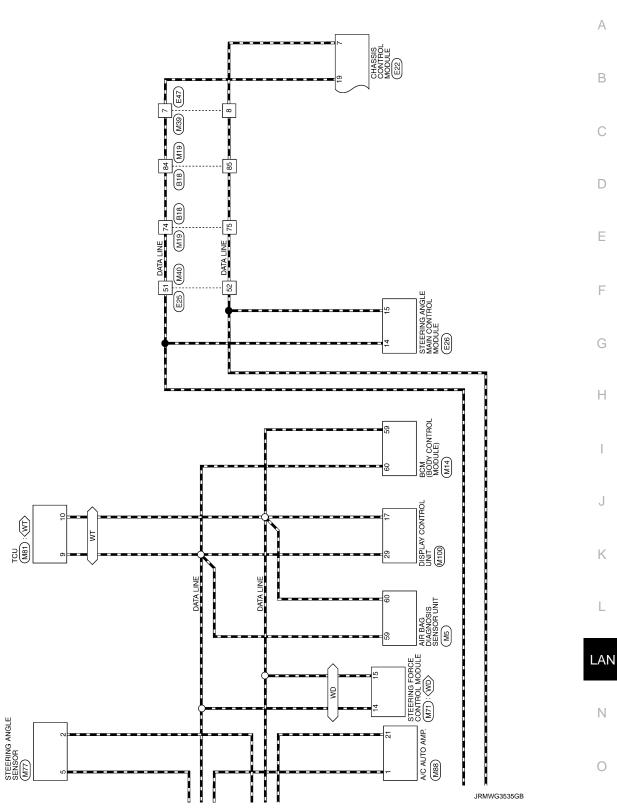
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CAN SYSTEM (WITHOUT AROUND VIEW MONITOR SYSTEM)

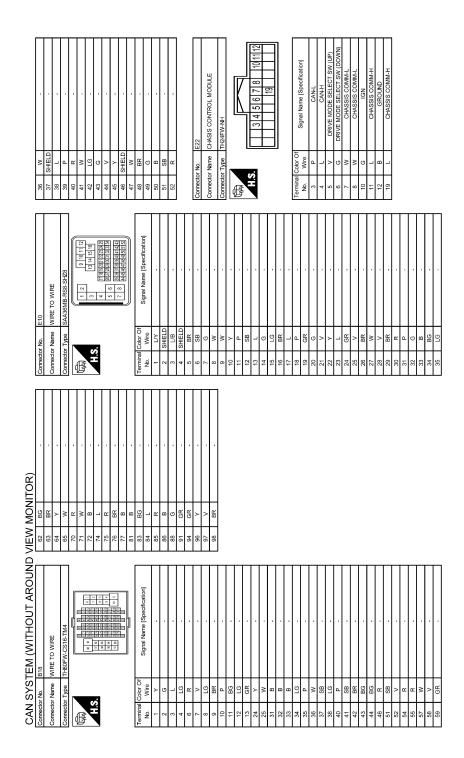


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< WIRING DIAGRAM >



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JRMWG3536GB

30 R VDC OFF SW SIGNAL 32 SHIELD VACUMA SENSOR GROUND 34 G IGN Commetter No. E47 E47 Connector Nome WIRE TO WIRE Connector Nome	Color Clor Clor Clor Vive Clor Clor Clor Vive Clor Clor Clor R - - - Vive - - - BR - - - V - - - BR - - - V - - - BR - - - C - - - D - - - V - - - LG - - -
20 33 Connect Connect	
L STETING ANGLE MANNOTOPRESOUVERS SB TORQUE SENSOR GROL R TORQUE SENSOR GROL R TORQUE SENSOR GROL R STERING ANGL MANNOTOPRESOURSE M CHASSIS COMMUNICATION W CHASSIS COMMUNICATION M CHASSIS COMMUNICATION M CHASSIS COMMUNICATION M CHASSIS COMMUNICATION SB INCLUSTION R FERRARY COMMUNICATION SB INCLUSTION GR FERRARY COMMUNICATION GR FERRARY COMMUNICATION	
NITOR)	E26 E26 E26 Signal Name (Spectra And Control. 1 Signal Name (Spectra And Control. 1) Signal Name (
VIEW MONITORY 57 BG 58 BG 63 K 62 SB 63 K 63 K 63 SB 65 CG 65 SB 66 GR 71 LG 71 LG	
CCAN SYSTEM (WITHOUT AROL Connector Name Connector Name Connector Type THOUT AROL Connector Type THOUT AROL Connector Type THOUT AROL Connector Name THOUT AROL Connector Name Connector Name THOUT AROL Connector Name THOUT AROL Connector Name THOUT AROL Connector Name THOUT AROL Connector Name Connector Name THOUT AROL Connector Name THOUT AROL CONNECTOR CONNECTO	Matrix Model Signal Name [Specification] N. Wire Signal Name [Specification] 2 V - - 1 L L - - 7 L - - - 10 BR - - - 11 L C - - 12 V S - - 13 W - - - 14 B - - - 13 V - - - 33 C N - - 33 C - - - 34 H - - - 43 S - - - 44 V - - - 55 V - - - 66 S - - -

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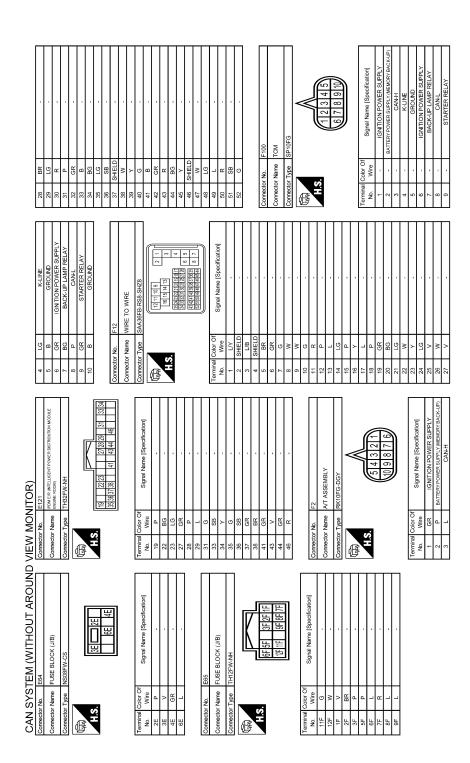
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Image: Second call Image: Second call Image: Second call Image: Second call <td>В</td>	В
MES MES MES MES MES MES MES MES MES MES	С
63 BR 63 97 70 LG 71 LG 72 B 73 LG 74 LG 75 B 83 B 94 CR 95 V 96 V 97 B 98 B 94 CR 96 V 97 B 98 B 94 CR 11 LG 12 LG 13 Connector Man 16 N 13 L 14 P 13 L 14 P 15 LG	D
	E
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Connecto Connecto Connecto Connecto<	Н
Mita Mita Box (BODY CONTROL MODULE) THOFENH Signal Name (Specification) Signal Name (Specification) Pusherin (Specificati	I
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DUT AROUND DUT AROUND DUD DUD DUD DUD DUD DUD DUD	L
TEM (WITHOUT ARO REDUND AMS AMS AMS AMS AMS AMS AMS AMS	LAN
CAN SYSTE 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	Ν
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H	£ :	86 V -	+	94 BG -	95 BR -	+	97 LG		ن م	1		Connector No. M42	Connector Name AWD CONTROL UNIT		Connector Type TH16FW-NH	1	F F		1123 78	11 12 15			Terminal Color Of	No. Wire Signal Name [Specification]	1 BR AWD SOL (+)	2 Y AWD SOL (-)	3 W/B FLUID TEMP (-)	7 G IGN		BG AWD		+	ric C		1									
6 W/B -	+	10 W	+	ľ	14 B -		+	1/ LG	╞		35 BG -	36 G -	37 B -	38 L -	+	40 GR -	+	_	+	46 G	5			+	52 W -	53 G -		55 P -	+	-		+	- 9/M 19				+	87 I.G	╀	71 V	72 16	73 R -		
HOUT AROUND VIEW MONITOR)	Connector Name WIRE TO WIRE	Connector Type TH32EW-NH	٦.	Æ		16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1	32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17			Terminal Color Of Signal Name (Secretized		1 W/B -	2 SB -		۹.	4 R -[With Gateway]	+	+	+	15 R	╉	+	+	f		31 W -	32 LG -			Connector No. M40	Connector Name WIRE TO WIRE		Connector Lype H8UMW-CS16-1M4		1 8 1121 1121 1121 1121 1121 1121 1121		3 8 1952 3545 0566 1398 85 80 - 1000 1954 0400 1398 85 89				Terminal Color Of	No. Wire Signal Name [Specification]	2 GR -	
CAN SYSTEM (WITHOUT AROUND Comector No. M37	Connector Name ECM	Connector Tune BH2/1FGV_B78_P-I H-7		╢	128 124 112108104	-				Terminal Color Of Simul Name (Smoothad)	No. Wire orginal twattie copecification	7	+	W SENSOR POWER SUPPLY (A	G SENSOR GROUND (ACCE	89 (g	L seeon rower summer (a	ж.	105 L REFRIGERANT PRESSURE SENSOR	1	+	RR TRANSMISS	V ENGINE SPE	>	113 P CAN COMMUNICATION LINE	114 L CAN COMMUNICATION LINE	>	+	ß		124 B ECM GROUND	r (+		2								

JRMWG3540GB

7 C AMBIENT SENS 9 R SUM.GAD SENS 16 P CUM.GAD SENS 17 P CUM.GAD SENS 16 P CUM.GAD SENS 17 P CUM.GAD SENS 17 P CUM.GAD SENS 21 P CUM.RANC SENS 22 B CAN.L 23 BC CAN.L 23 BC CAN.L 23 BC CAN.L 23 BC CAN.L 24 BC CONT 25 CONT CONT 26 CONT CONT 27 CONT CONT 28 CONT CONT 29 CONT CONT 20 CONT CONT 21 CONT CONT 22 CONT CONT 23 CONT CONT 24 CONT CONT	
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Revision: 2015 January

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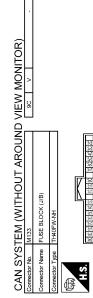
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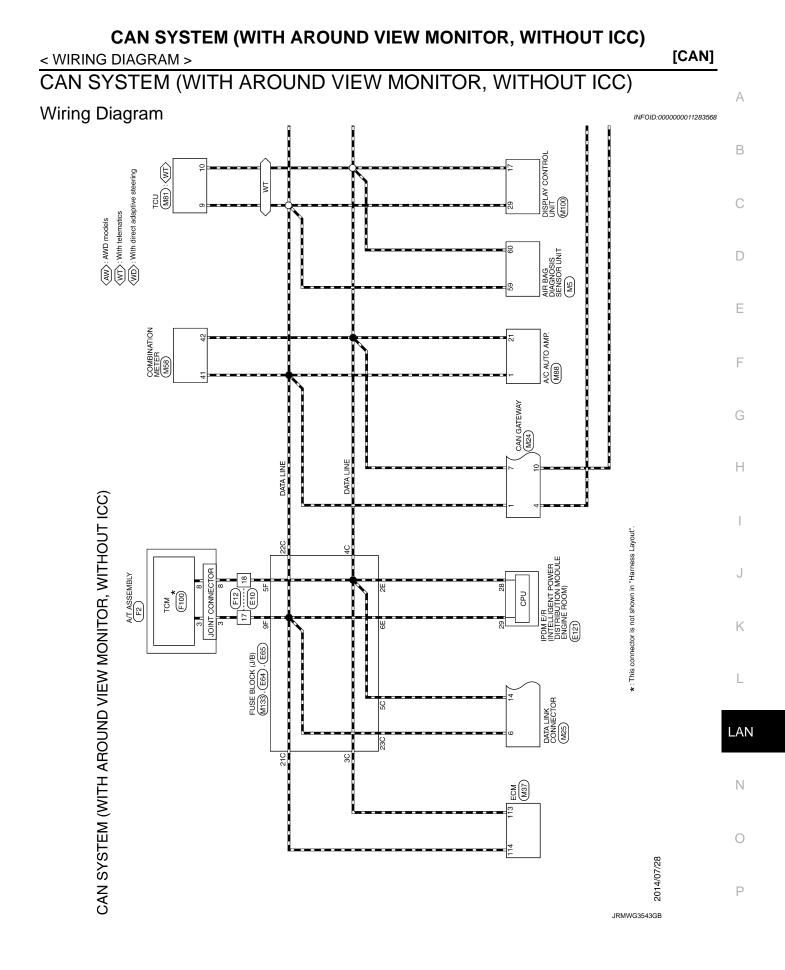
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Signal Name [Specification]				-				 [Without DRPO] 	 [With DRPO] 		-														-		-		-			•		-		
Color Of Wire	>	>	٦	Y	œ	۲	_	BG	٩	8	W	_	_	_	ГG	BB	٩	3	Ņ	æ	۲	×	œ	8	W/B	SB	ч	N	SB	>	٩.	σ	٩.	٩	9	Ċ
Terminal No.	10C	11C	13C	14C	15C	16C	17C	18C	18C	19C	20C	21C	22C	23C	25C	26C	27C	28C	29C	2C	30C	31C	32C	33C	34C	35C	36C	37C	38C	39C	ဗ္ဂ	40C	4C	5C	6C	UL

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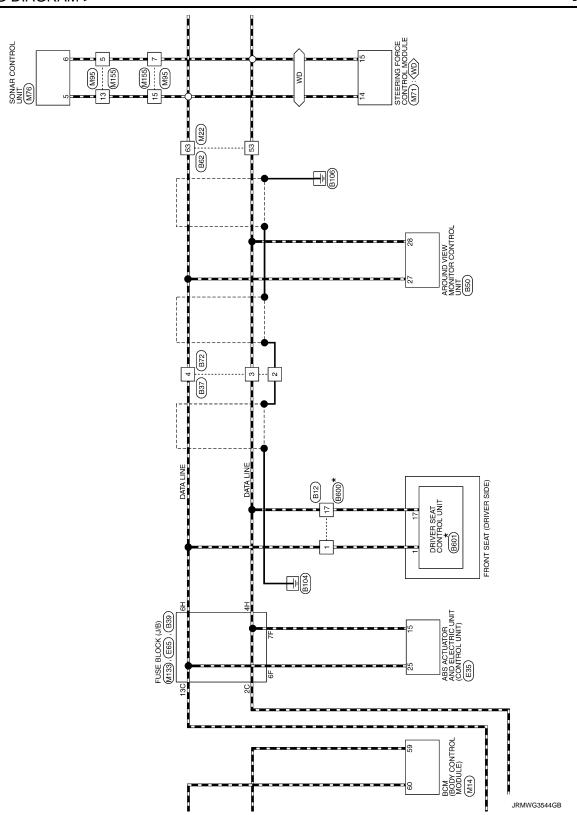


Revision: 2015 January

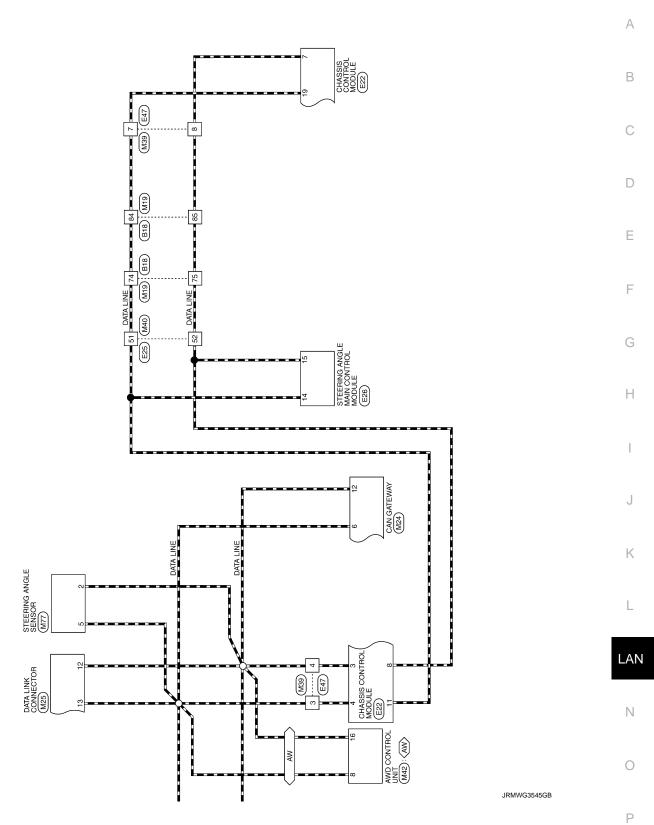
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CAN SYSTEM (WITH AROUND VIEW MONITOR, WITHOUT ICC)

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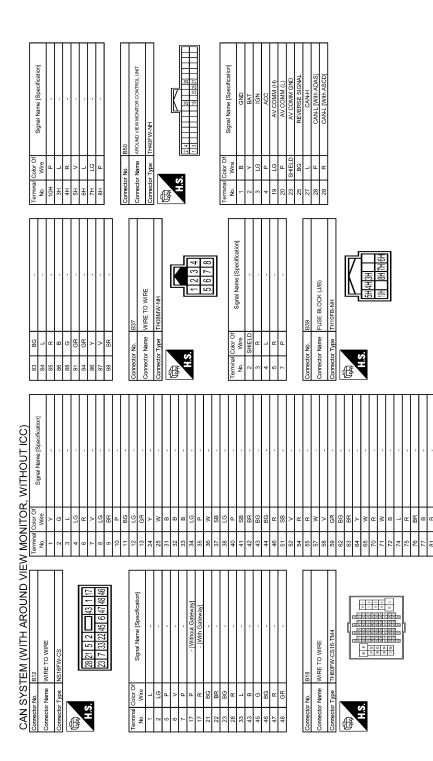






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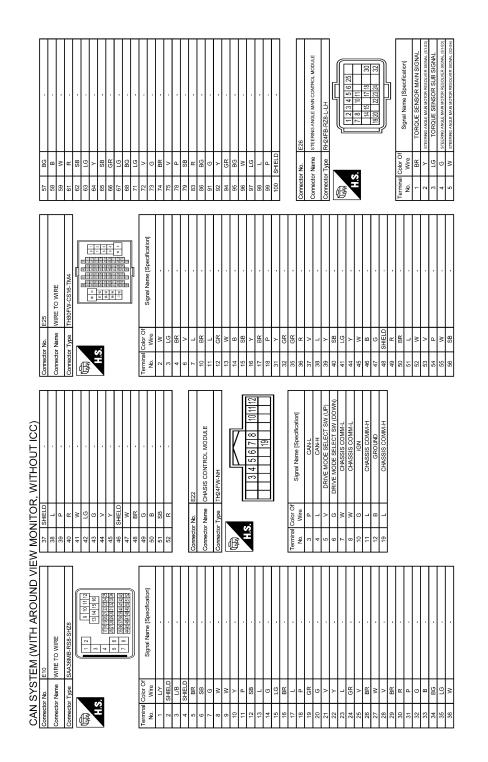
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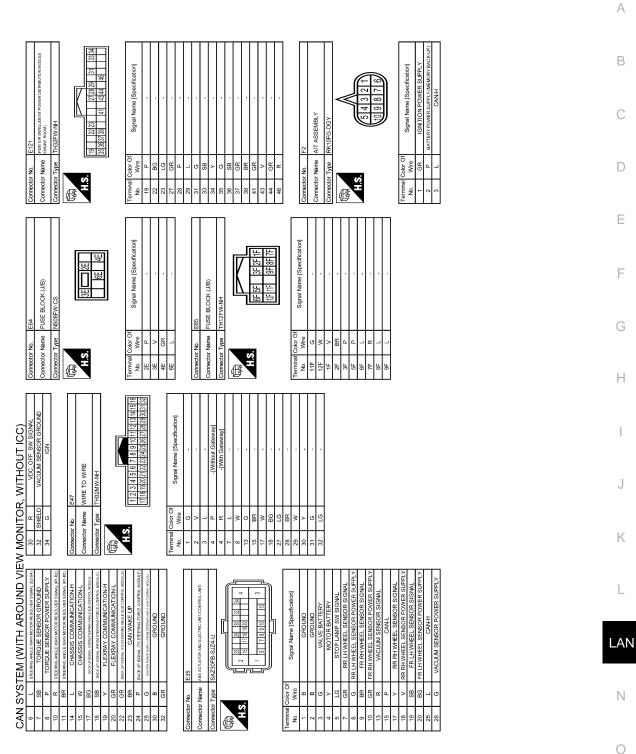
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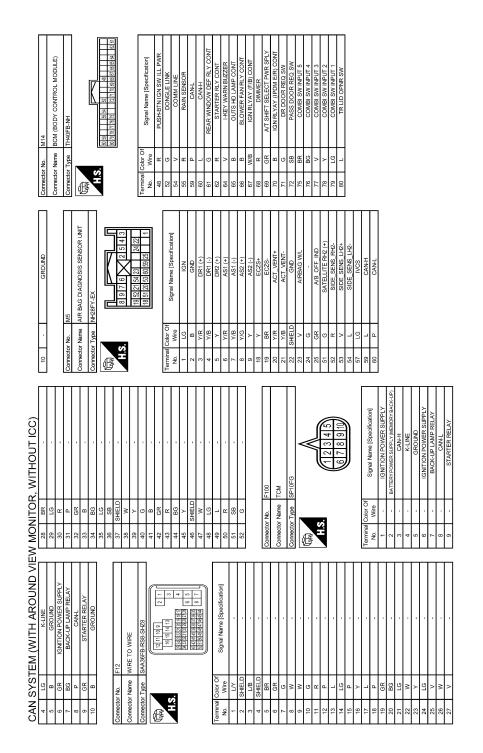


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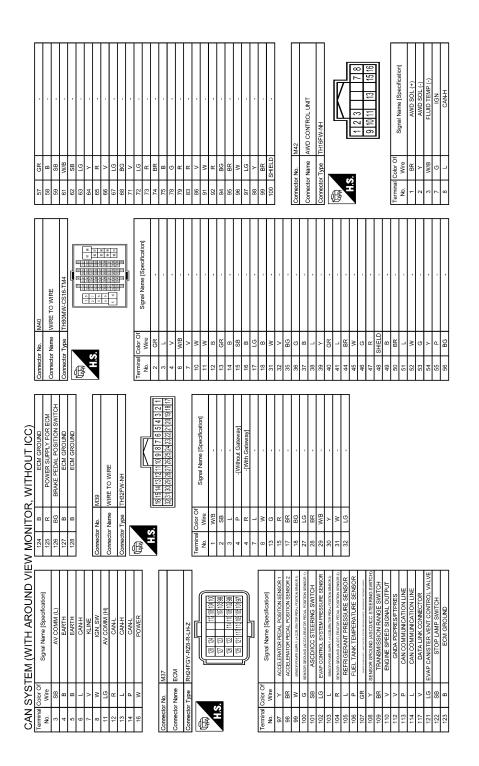
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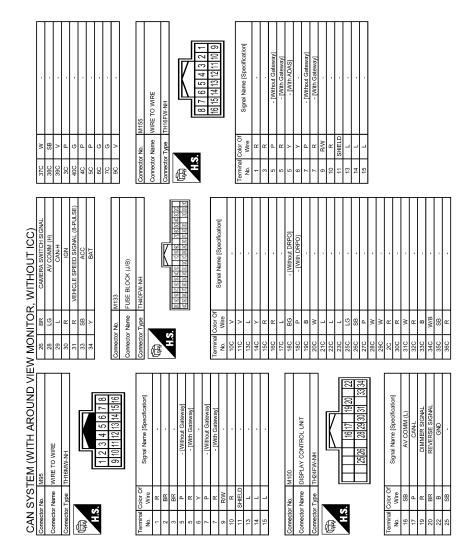
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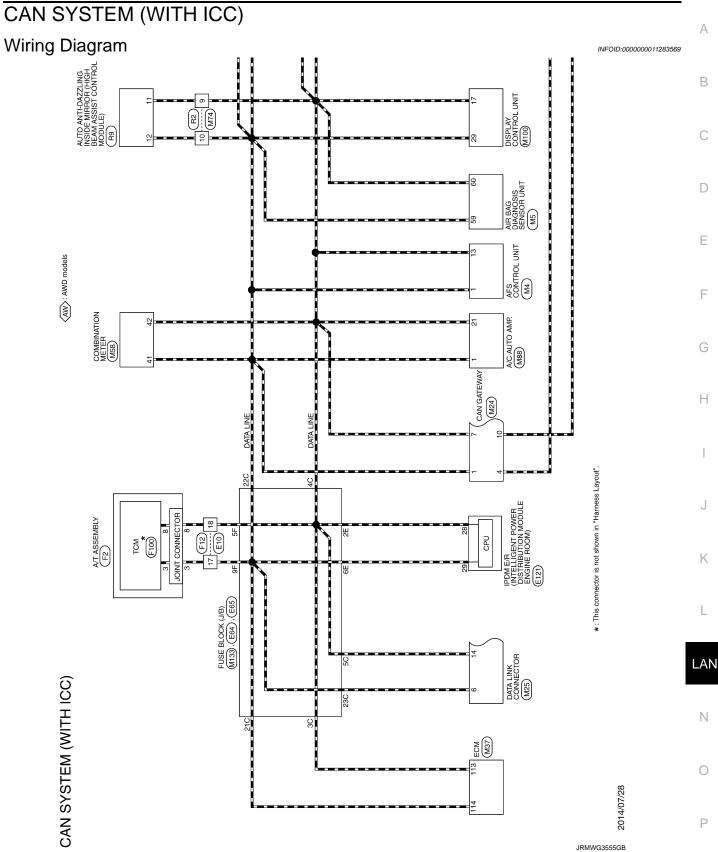
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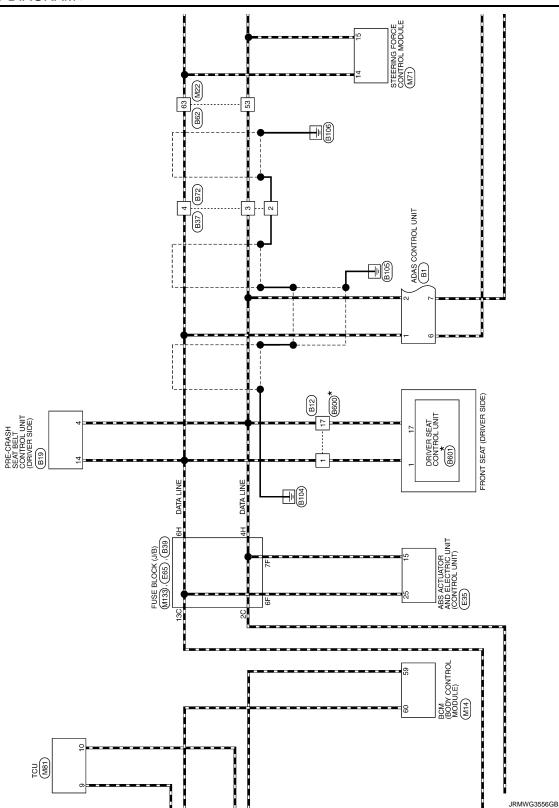


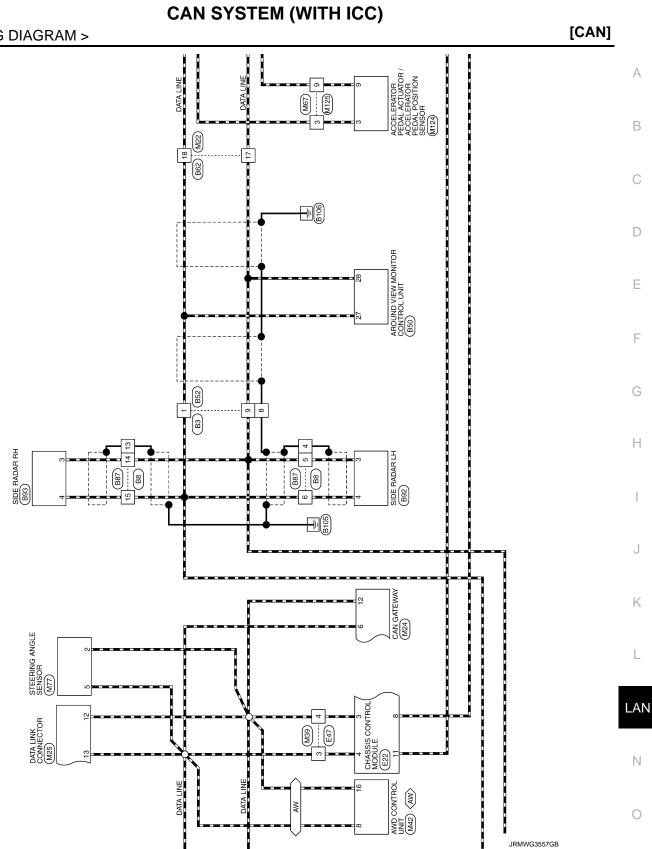
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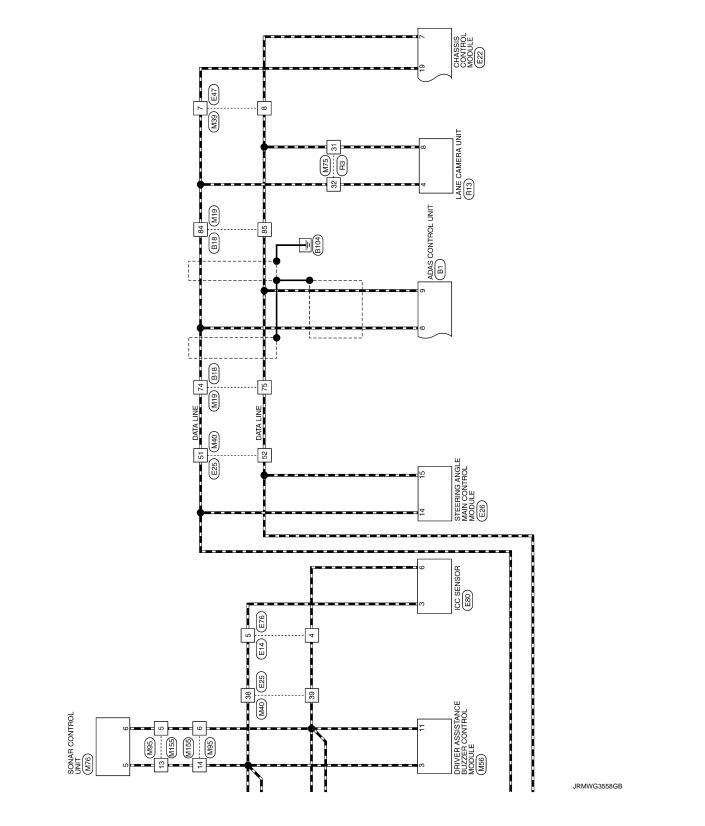






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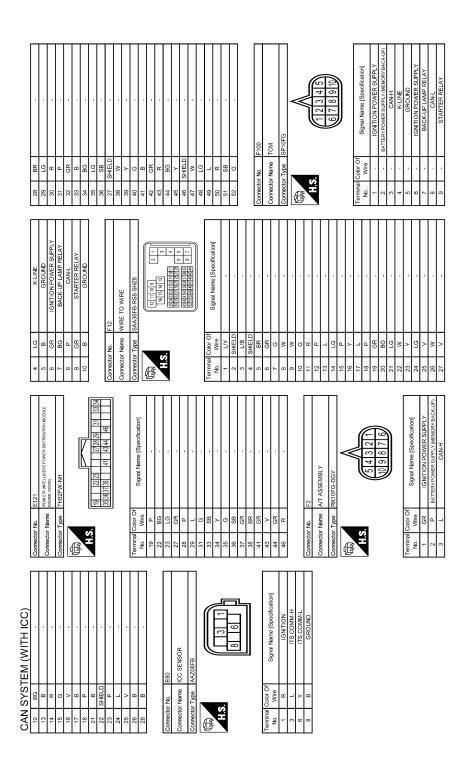
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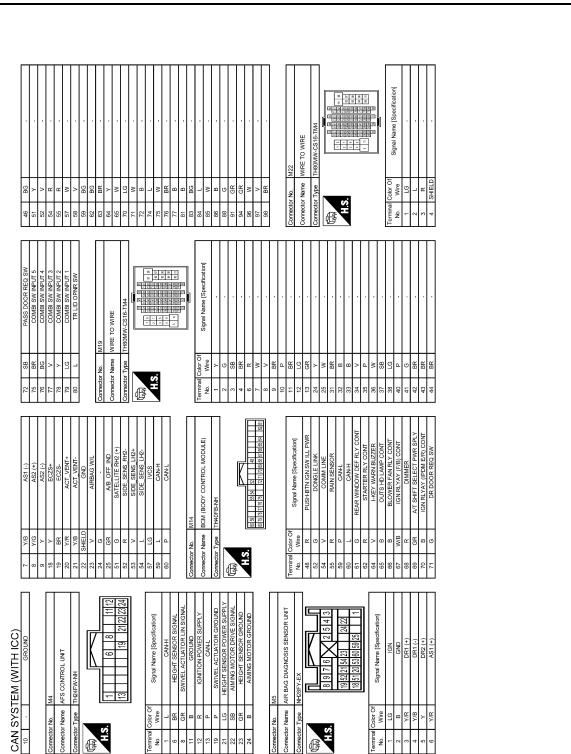
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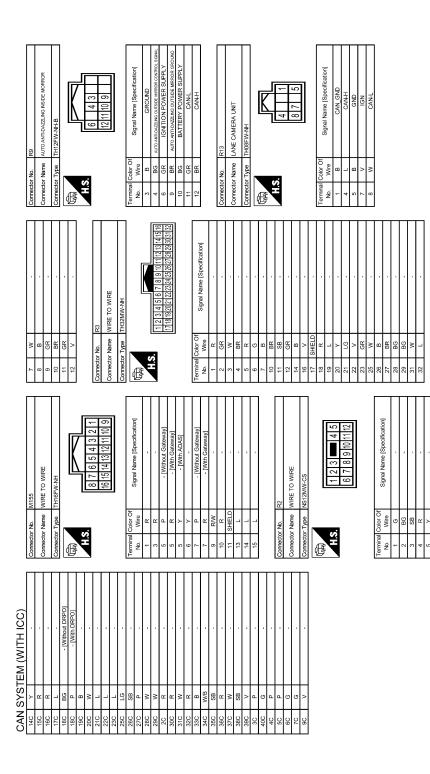
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MALFUNCTION AREA CHART

CAN Communication Circuit

INFOID:000000011283571

MAIN LINE

Malfunction area	Reference
Main line between data link connector and A/C auto amp.	LAN-91, "Diagnosis Procedure"
Main line between A/C auto amp. and display control unit	LAN-92, "Diagnosis Procedure"
Main line between A/C auto amp. and steering force control module	LAN-93, "Diagnosis Procedure"
Main line between steering force control module and display control unit	LAN-94, "Diagnosis Procedure"
Main line between A/C auto amp. and AFS control unit	LAN-95, "Diagnosis Procedure"
Main line between AFS control unit and display control unit	LAN-96, "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-101, "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-122, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-121, "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-130, "Diagnosis Procedure"
ADAS control unit branch line circuit (CAN communication circuit 2)	LAN-131, "Diagnosis Procedure"
Steering force control module branch line circuit	LAN-133, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-134, "Diagnosis Procedure"

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
Chassis control module branch line circuit	LAN-135, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-136, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit	LAN-146, "Diagnosis Procedure"
CAN communication circuit 1	LAN-148, "Diagnosis Procedure"
CAN communication circuit 2	LAN-150, "Diagnosis Procedure"

ITS Communication Circuit

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-137, "Diagnosis Procedure"
Side radar RH branch line circuit	LAN-138, "Diagnosis Procedure"
Around view monitor control unit branch line circuit	LAN-139, "Diagnosis Procedure"
Accelerator pedal actuator branch line circuit	LAN-140, "Diagnosis Procedure"
Driver assistance buzzer control module	LAN-141, "Diagnosis Procedure"
Sonar control unit	LAN-143, "Diagnosis Procedure"
ICC sensor branch line circuit	LAN-142, "Diagnosis Procedure"

SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	LAN-154, "Diagnosis Procedure"

Chassis Communication Circuit

INFOID:000000011283573

MAIN LINE

Malfunction area	Reference
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-144, "Diagnosis Procedure"	
ADAS control unit branch line circuit (Chassis communication circuit)	LAN-132, "Diagnosis Procedure"	
Lane camera unit branch line circuit	LAN-117, "Diagnosis Procedure"	

SHORT CIRCUIT

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INFOID:0000000011283572

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Chassis communication circuit	LAN-152, "Diagnosis Procedure"

MAIN LINE BETWEEN DLC AND HVAC CIRCUIT [CAN] < DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN DLC AND HVAC CIRCUIT А **Diagnosis** Procedure INFOID:000000011283574 **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 1. Disconnect the fuse block (J/B) harness connector M65. 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). 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.

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

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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. h	arness connector	Display control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	1	M100	29	Existed
Mioo 21	MITOO	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 HVAC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND EPS/DAST 3 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.
- Steering force control module
- Check the continuity between the A/C auto amp. harness connector and the steering force control module harness connector.

A/C auto amp. harness connector		Steering force control module harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M88	1	N74	14	Existed	- F
IVIOO	21	M71	15	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 steering force control module.

NO >> Repair the main line between the A/C auto amp. and the steering force control module.

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MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 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
- Steering force control module
- Display control unit
- 4. Check the continuity between the steering force control module harness connector and the display control unit harness connector.

Steering force control module harness connector		Display control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M71	14	M100	29	Existed	
1017	15	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 steering force control module and the display control unit.

NO >> Repair the main line between the steering force control module and the display control unit.

connector.

A/C auto amp. I	narness connector	AFS control unit harness connector		Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
MOO	1	N44	1	Existed	
M88	21	M4	13	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 A/C auto amp. and the AFS control unit.

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

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Revision: 2015 January

MAIN LINE BETWEEN HVAC AND AFS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN HVAC AND AFS 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. -
- AFS control unit
- 4. Check the continuity between the A/C auto amp. harness connector and the AFS control unit harness

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INFOID:000000011562004

MAIN LINE BETWEEN AFS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AFS 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
- AFS control unit
- Display control unit
- 4. Check the continuity between the AFS control unit harness connector and the display control unit harness connector.

AFS control unit	harness connector	Display control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M4	1	M100	29	Existed	
1114	13	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 AFS control unit and the display control unit.

NO >> Repair the main line between the AFS control unit and the display control unit.

< DTC/CIRCUIT DIA		TWEEN ABS A	ND ADP CIRCUI	T [CAN]
		AND ADP CIRC	CUIT	[0,]
Diagnosis Proce	dure			INFOID:000000011283577
1.CHECK CONNEC	TOR			
 Check the follow and harness side Harness connect Is the inspection resu YES >> GO TO 2 	attery cable from the ing terminals and co). or B39 and fuse bloc <u>It normal?</u> e terminal and conne	onnectors for damage k (J/B) side connecto ector.		nnection (connector side
 Disconnect the for Fuse block (J/B) ABS actuator and Check the contin 	ollowing harness con harness connector B d electric unit (control uity between the harr	nectors. 39 I unit) ness connector termir	nals.	
	nd electric unit (control un ness connector	Fuse bl	ock (J/B) terminals	Continuity
Connector No.	Terminal N	No.	Ferminal No.	
E35	25		6H 4H	Existed
3. CHECK HARNES	the fuse block (J/B). S CONTINUITY (OP onnector of driver sea	at control unit.	ne driver seat control u	unit harness connector.
Fuse block (J/B) h	narness connector	Driver seat control	unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
D20	6H	DC04	1	Existed
B39	4H	B601	17	Existed
<u>s the inspection resu</u> YES (Present error): YES (Past error)>>E unit) and	lt normal? >>Check CAN syster	m type decision again n the main line betwe ol unit.	en the ABS actuator	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:000000011283578

[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	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B12	1	B37	4	Existed
DIZ	17		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		onitor control unit connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B72	4	B50	27	Existed
D/2	3	— DDU	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

[CAN]

< DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN AVM AND SONAR CIRCUIT А **Diagnosis** Procedure INFOID:000000011283579 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 3. Check the following terminals and connectors for damage, bend and loose connection (connector side С and harness side). Harness connectors B62 Harness connectors M22 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 following harness connectors. F 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 monitor control unit Harness connector Н harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. 27 63 Existed B50 B62 28 53 Existed With ICC Around view monitor control unit Harness connector harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Κ 27 18 Existed B50 B62 28 17 Existed Is the inspection result normal? YES >> GO TO 3. NO >> Replace the body harness. LAN **3.** CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the harness connectors M95 and M155. Check the continuity between the harness connectors. 2. Ν With around view monitor, without ICC Harness connector Harness connector Continuity Connector No. Connector No. Terminal No. Terminal No. 63 15 Existed M22 M95 7 Ρ 53 Existed With ICC

Harness	Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	18	M95	14	Existed
	17	MeS	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

1.

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INFOID:000000011283580 1.CHECK CONNECTOR Turn the ignition switch OFF. 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.

-	Continuity	connector	Data link	connector	Harness
F	Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
	Existed	13	MOE	15	MOE
_	Existed	12	M25	7	M95

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:000000011283581

[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	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B12	1	- B1	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

Diagnosis Proced	ure			INFOID:000000011283582
1.CHECK CONNECT	OR			
1. Turn the ignition s	witch OFF.			
2. Disconnect the bar	ttery cable from the ne og terminals and conr		pend and loose conne	ection (connector side
 Harness connecto Harness connecto Harness connecto Harness connecto 	r B72 r B62			
Is the inspection resultYES>> GO TO 2.NO>> Repair the	normal? terminal and connect	or.		
2.CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
	owing harness conne	ctors.		
 ADAS control unit Harness connecto Check the continuit 		control unit harness	connector and the har	ness connector.
ADAS control unit	harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	1	B37	4	Existed
	2		3	Existed
3.CHECK HARNESS	e body harness. CONTINUITY (OPEN			
	rness connectors B62 ty between the harne			
	connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B72	4	B62	63	Existed
	3		53	Existed
Is the inspection resultYES>> GO TO 4.NO>> Replace the4.CHECK HARNESS	e body harness.	I CIRCUIT)		_
1. Disconnect the con	nnector of steering for	ce control module.	steering force control	module.

-	Harness	connector	Steering force control module harness connector		Continuity	D
-	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	1
-	M22	63	M71	14	Existed	
		53		15	Existed	

Is the inspection result normal?

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

LAN-103

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 DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND DLC CIRCUIT

Diagnosis Procedure

[CAN]

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INFOID:000000011283583

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	eering force control module harness connector		Data link connector		Data link connector Continuity		F
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E		
		14	M25	13	Existed			
M71	15	WI25	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:000000011283584

[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	
B87	6	B3	1	Existed	
687	5		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	Around view monitor control unit harness connector Continuity				
Connector No.	Terminal No.	Connector No.	Terminal No.		
B52	1	B50	27	Existed	
B32	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.

N	IAIN LINE BETV	VEEN DAST 1 A			
< DTC/CIRCUIT DIAG				[CAN]	
MAIN LINE BET	WEEN DAST	1 AND ICC CIR	CUIT		
Diagnosis Proced	ure			INFOID:000000011283585	
1.CHECK CONNECT	OR				
 Check the followir and harness side). Chassis control me - Harness connecto Harness connecto Harness connecto Harness connecto Chassis control me Is the inspection result YES >> GO TO 2. 	tery cable from the ne og terminals and com rs E25 rs M40 r M19 rs B18 odule <u>normal?</u> terminal and connect	nectors for damage, k	pend and loose conn	ection (connector side	
 Steering angle ma Harness connecto 	rs E25 and M40		ol module harness c	onnector and harness	
Steering angle ma		Harness	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
E26	14	E25	51	Existed Existed	
L20	15	L2J	52		
ness conn	main line between th		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					_ LAN
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
	M40	51	M19	74	Existed	N
_		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

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MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

74 8 Existed B18 B1 75 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	ICAN
DTC/CIRCUIT DIAC	WEEN ICC AN		ПТ	[CAN
			OTT	
iagnosis Proced	ure			INFOID:0000000112835
.CHECK CONNECT	ÖR			
	ttery cable from the ne ng terminals and conr odule r B18		pend and loose conne	ection (connector sid
the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	e terminal and connect	or.		
	CONTINUITY (OPEN			
ADAS control unit Harness connecto . Check the continu	rs B18 and M19 ity between the harne		S.	
ADAS control unit	harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
B1	8	B18	84	Existed
the inspection result	9		85	Existed
CHECK HARNESS	ne body harness. CONTINUITY (OPEN rness connectors M75 ity between the harnes	and R3.		
	connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	84	M75	32	Existed
the inspection result	85		31	Existed
YES (Present error)> YES (Past error)>>Er unit.	Check CAN system to rror was detected in the main line between the main line between the provide the provided to the pro	e main line between		

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

ECM harness connector			Resistance (Ω)
Connector No.	Termina	Resistance (32)	
M37	114	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-189, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-580, "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	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	114	M133	21C	Existed
10137	113	IVIT55	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.

INFOID:000000011283587

DLC BRANCH LINE CIRCUIT

COTC/CIRCUIT DIAG				[CAN]
DLC BRANCH L	INE CIRCUIT			
Diagnosis Procedu	ure			INFOID:000000011283588
	OR			
 Check the followin and harness side). Data link connector Harness connector s the inspection result YES >> GO TO 2. 	tery cable from the neig terminals and coning r M133 and fuse block normal? terminal and connect FOR OPEN CIRCUIT	nectors for damage, I k (J/B) side connector tor. T		ection (connector side
	Data link cor	nnector		Desistance (0)
Connector No.		Terminal No.		Resistance (Ω)
M25	6		14	Approx. 54 – 66
	Check CAN system ror was detected in th CONTINUITY (OPEN mess connector M133	type decision again. ne data link connector N CIRCUIT)		
Data link o	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

14 Is the inspection result normal?

M25

6

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

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

M133

23C

5C

LAN

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L

Existed

Existed

Ν

0

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000011283589

[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 (Ω)
Connector No.	Termi	(100)3(d)(CC (22)	
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	Data link connector		Harness connector		
Connector No.	Terminal No.	Connector No. Terminal No.		- Continuity	
M25	6	M133	23C	Existed	
M25	14	- 101133	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:000000011283590

[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			
Connector No.	Termi	nal No.	Continuity	
M24	4	6	Existed	G
11/124	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			Resistance (Ω)	
Connector No.	Termin	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.

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 connector			Resistance (Ω)
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-37, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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
EIZI	28	E04	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:000000011283591

TCM BRANCH LINE CIRCUIT

[CAN]
[CAN]

TCM BRANCH LINE	ECIR	CUIT				
Diagnosis Procedure					INFOID:000000011283592	
1. CHECK CONNECTOR						
nector side). - A/T assembly	cable from			nd loose cor	nnection (unit side and con-	
 Harness connector F12 Harness connector E10 Harness connector E65 	and fuse	e block (J/B) side	connector			
Is the inspection result norm						
YES >> GO TO 2.						
NO >> Repair the termi 2.CHECK HARNESS FOR						
 Disconnect the connect Check the resistance be 			arness connecto	or terminals.		
	A/T assem	nbly harness connecto			Resistance (Ω)	
Connector No.			inal No.			
F2 Is the measurement value w		3	8		Approx. 54 – 66	
 CHECK HARNESS FOR Remove the joint conne Check the continuity be side of the joint connect 	ctor. Ref tween th	er to <u>TM-215, "Ex</u>		or side and t	ne TCM harness connector	
A/T assembly harness connec	tor side	TCM harne	ess connector			
Terminal No.			inal No.		Continuity	
3			3		Existed	
8			8		Existed	
Is the inspection result normYES>> GO TO 4.NO>> Replace the join4.CHECK POWER SUPPL	nt connec		т			
Check the power supply and	the gro	und circuit of the	FCM. Refer to T	<mark>∕I-178, "Dia</mark> g		
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa NO >> Repair the powe	lace the as detect	ted in the TCM brains	anch line.	- <u>215, "Explo</u>	ded View".	
5. CHECK HARNESS CON	TINUITY	(OPEN CIRCUIT	-)			
 Disconnect the harness Check the continuity bet 			arness connecto	r and the ha	rness connector.	

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

< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

F2	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)

Diagnosis Procedure			
0			INFOID:000000011283593
1.CHECK DTC			
Check DTC of the CAN gate	way with CONSULT.		
Is U1010 or B2600 indicated	•		
YES >> Perform a diagn NO >> GO TO 2.	osis of the indicated DTC.		
2. CHECK CONNECTOR			
	cable from the negative termi minals and connectors of CA		bend and loose connection
Is the inspection result norm YES >> GO TO 3. NO >> Repair the termi			
3. CHECK HARNESS FOR	OPEN CIRCUIT		
	etween the CAN gateway har	rness connector terminals	5.
Connector No.	CAN gateway harness connector Termina		Resistance (Ω)
M24	1	7	Approx. 54 – 66
Is the measurement value w			
YES >> GO TO 4.	gateway branch line.		
NO >> Repair the CAN 4.CHECK POWER SUPPL	Y AND GROUND CIRCUIT		
		CAN gateway. Refer to <u>l</u>	AN-171, "Diagnosis Proce-
4.CHECK POWER SUPPL Check the power supply an dure". Is the inspection result norm	d the ground circuit of the (
4.CHECK POWER SUPPL Check the power supply an <u>dure</u> ". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the (r to <u>LAN-172, "Removal a</u> way branch line (CAN cor	und Installation".
4.CHECK POWER SUPPL Check the power supply an dure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the (al? lace the CAN gateway. Refer as detected in the CAN gate	r to <u>LAN-172, "Removal a</u> way branch line (CAN cor	und Installation".

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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:0000000011283594

[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.

	Continuity		
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	M133 —	13C	Existed	
11/24	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

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
HVAC BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011283595
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery 	Cable from the negative terr	ninal	
			d and loose connection (unit
side and connector side	,		
Is the inspection result norm	<u>nal?</u>		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2.CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	etween the A/C auto amp. h	arness connector termina	als.
	A/C auto amp. harness connecto	r	Resistance (Ω)
Connector No.	Termir	nal No.	
M88	1	21	Approx. 54 – 66
Is the measurement value v	vithin the specification?		
YES >> GO TO 3. NO >> Repair the A/C	auto amp. branch line.		
3.CHECK POWER SUPPL	•		
Diagnosis Procedure".	id the ground circuit of the	A/C auto amp. Refer to	HAC-92, "A/C AUTO AMP. :
Is the inspection result norm	nal?		
•	lace the A/C auto amp. Ref	er to HAC-113, "Removal	and Installation".
YES (Past error)>>Error w	as detected in the A/C auto	amp. branch line.	
NO >> Repair the pow	er supply and the ground ci	rcuit.	

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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.

Co	Resistance (Ω)		
Connector No.	Termi	Resistance (12)	
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:000000011283596

AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
AFS BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:000000011283598
1.CHECK CONNECTOR			
side and connector side).	e from the negative termir		nd and loose connection (unit
Is the inspection result normal?YES>> GO TO 2.NO>> Repair the terminal2OUTO 2.			
2.CHECK HARNESS FOR OP			
 Disconnect the connector o Check the resistance betwee 		arness connector termir	als.
AFS	control unit harness connector		Desistance (O)
Connector No.	Terminal	No.	Resistance (Ω)
M4	1	13	Approx. 54 – 66
Is the measurement value withinYES>> GO TO 3.NO>> Repair the AFS con 3. CHECK POWER SUPPLY A	trol unit branch line.		
Check the power supply and th UNIT : Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su	the AFS control unit. Ref	er to <u>EXL-178, "Remova</u> I unit branch line.	

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011283597

[CAN]

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-38, "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]
UIT		
		INFOID:000000011283599
ectors of the display contro I connector. CIRCUIT splay control unit.		
trol unit harness connector		
Terminal No.		- Resistance (Ω)
29	17	Approx. 54 – 66
rol unit. GROUND CIRCUIT round circuit of the display		
	d connector. CIRCUIT splay control unit. the display control unit harm introl unit harness connector Terminal No. 29 e specification? trol unit. GROUND CIRCUIT round circuit of the display	om the negative terminal. ectors of the display control unit for damage, d connector. CIRCUIT splay control unit. the display control unit harness connector term ntrol unit harness connector Terminal No. 29 17 e specification? trol unit. GROUND CIRCUIT round circuit of the display control unit. Refer

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:0000000011283600

[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 - dazzl	Resistance (Ω)		
Connector No.	-		
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-125</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-42, "Removal and Installation"</u> (With automatic drive positioner system) or <u>MIR-68, "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			INFOID:000000011283601
1.CHECK CONNECTOR			
	FF. ble from the negative termina connectors of the TCU for c		e connection (unit side and
Is the inspection result norma	<u>?</u>		
YES >> GO TO 2. NO >> Repair the termin	al and connector		
2.CHECK HARNESS FOR C			
 Disconnect the connector Check the resistance bety 	TCU harness connector	ector terminals.	
Connector No.	Terminal N	lo.	Resistance (Ω)
M81	9	10	Approx. 54 – 66
Is the measurement value with YES >> GO TO 3.	nin the specification?		
NO >> Repair the TCU b			
3.CHECK POWER SUPPLY	AND GROUND CIRCUIT		
Check the power supply and t	•	Refer to <u>AV-578, "TCU</u>	: Diagnosis Procedure".
Is the inspection result norma			
YES (Present error)>>Repla YES (Past error)>>Error was NO >> Repair the power		line.	<u>tion"</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		
Connector No.	Terminal No.		Resistance (Ω)
M14	60	59	Approx. 108 – 132

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.

INFOID:0000000011283602

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:0000000011283603
1.CHECK CONNECTOR			E
 Check the following terr nector side). ABS actuator and elect 	cable from the negative terr minals and connectors for d ric unit (control unit) 5 and fuse block (J/B) side c	lamage, bend and loose con	nection (unit side and con-
YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor syster inal and connector.	m: GO TO 3.	E
2.CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. htween the CAN gateway ha	arness connector terminals.	F
	CAN gateway harness connector	r	Quatinuitu
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
	10	12	Existed
2. Disconnect the connect	tor of ABS actuator and elec	vith around view monitor syst ctric unit (control unit). and electric unit (control unit)	
ABS actuator	and electric unit (control unit) harr		Resistance (Ω)
Connector No.		nal No.	L
E35	25	15	Approx. 54 - 66
Is the measurement value wYES>> GO TO 4.NO>> GO TO 5.4.CHECK POWER SUPPLCheck the power supply and	Y AND GROUND CIRCUIT	۲ ABS actuator and electric u	LA unit (control unit). Refer to
BRC-154, "Diagnosis Proce Is the inspection result norm	edure".		
YES (Present error)>>Rep and Installation	blace the ABS actuator and	electric unit (control unit). Re	ol unit) branch line
	er supply and the ground ci	rcuit.	F
1. Disconnect the connect	tor of harness connector E6 etween the ABS actuator a		harness connector termi-

With around view monitor system -

LAN-127

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

Without around view monitor system

	ctric unit (control unit) connector	Harness connector Connector No. Terminal No.		Continuity	
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

			10.4.1		
DTC/CIRCUIT DIAGNOS			[CAN		
DP BRANCH LINE					
iagnosis Procedure			INFOID:000000011283		
.CHECK CONNECTOR					
Check the follow terminator side). Driver seat control unit Harness connectors B60 the inspection result norm (ES >> GO TO 2. NO >> Repair the termi	cable from the negative term als and connectors for dama 00 and B12 <u>al?</u> nal and connector.	age, bend and loose con	nection (unit side and conne		
	TINUITY (OPEN CIRCUIT)				
Disconnect the connector Check the continuity bet	or of CAN gateway. tween the CAN gateway ha	rness connector terminal	ls.		
1	CAN gateway harness connector		Continuity		
	Такизік	Terminal No.			
Connector No.	Termir				
Connector No. M24	4	6	Existed		
M24 the inspection result norm (ES >> GO TO 3. NO >> Check the harne	4 10 al? ess and repair or replace (it	12	Existed Existed		
M24 the inspection result norm (ES >> GO TO 3. NO >> Check the harned tion circuit 2 side .CHECK HARNESS FOR Connect the connector of Disconnect the connector	4 10 al? ess and repair or replace (if e).	12 f shield line is open) the rith around view monitor s	Existed root cause (CAN communica		
M24 the inspection result norm (ES >> GO TO 3. NO >> Check the harne tion circuit 2 side .CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	4 10 al? ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit	12 f shield line is open) the vith around view monitor s	Existed root cause (CAN communica system) r terminals.		
M24 the inspection result norm (ES >> GO TO 3. NO >> Check the harne tion circuit 2 side .CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	4 10 al? ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit etween the driver seat control	12 f shield line is open) the vith around view monitor s ol unit harness connecto	Existed root cause (CAN communications) system) r terminals. Resistance (Ω)		
M24 the inspection result norm (ES >> GO TO 3. NO >> Check the harned tion circuit 2 side .CHECK HARNESS FOR Connect the connector of Disconnect the connector of Check the resistance be Drive	4 10 al? ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit etween the driver seat control er seat control unit harness conne Termin 1	12 f shield line is open) the vith around view monitor s ol unit harness connecto	Existed root cause (CAN communica system) r terminals.		

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011283605

[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).
- CAN gateway
- Pre-crash seat belt control unit (driver side)

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
WIZ4	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 pre-crash seat belt control unit (driver side).
- 3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash sea	Pre-crash seat belt control unit (driver side) harness connector		
Connector No.	Terminal No.		Resistance (Ω)
B19	14	4	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the pre-crash seat belt control unit (driver side) branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to <u>SBC-62, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (driver side). Refer to <u>SBC-76, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line.

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

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

CHECK CONNECTOR			
 Check the following ter nector side). ADAS control unit CAN gateway the inspection result norm YES >> GO TO 2. 	cable from the negative term minals and connectors for da nal?		nnection (unit side and con-
, I	ninal and connector. NTINUITY (OPEN CIRCUIT)		
. Disconnect the connec			
	CAN gateway harness connector		Continuity
Connector No.	Termin		
M24	4	6	Existed
CHECK HARNESS FOR			
Connect the connectorDisconnect the connect		it harness connector termi	nals.
 Connect the connector Disconnect the connec Check the resistance b 	of CAN gateway. tor of ADAS control unit. etween the ADAS control un	n	nals. Resistance (Ω)
 Connect the connector Disconnect the connect Check the resistance b 	of CAN gateway. tor of ADAS control unit. etween the ADAS control un	n	

[CAN]

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ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011283607

[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
- 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).

$\mathbf{3}$. 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.

ADAS control unit harness connector			Resistance (Ω)
Connector No.	Termi	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-</u> dure".

Is the inspection result normal?

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

- 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.

EPS/DAST 3 BRANCH LINE CIRCUIT

EPS/DAST 3 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).
 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		Continuity	0	
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 or replace (if shield line is open) the root cause (CAN communication circuit 2 side).

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

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

Steering force control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M71	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

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

Check the power supply and the ground circuit of the steering force control module. Refer to <u>STC-397, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-418, "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.

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INFOID:000000011283608

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011283609

[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).
- 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
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).

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.

AWD control unit harness connector			Posistance (O)
Connector No.	Terminal No.		Resistance (Ω)
M42	8 16		Approx. 54 – 66
the measurement value with	in the encellingtion?		

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-47, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-56, "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)

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

<u>.</u>.

Diagnosis Procedure			INFOID:0000000011283610	
1.CHECK CONNECTOR				
 Check the following terr nector side). Chassis control module Harness connectors E4 Harness connectors M3 CAN gateway (Models visual states) Is the inspection result norm YES-1 >> Models with aro 	cable from the negative terr ninals and connectors for d 9 with around view monitor sy nal? ound view monitor system: 0	lamage, bend and loose cor ystem) GO TO 2.	nnection (unit side and con-	
YES-2 >> Models without NO >> Repair the term		m: GO TO 3.		
2. CHECK HARNESS CON)		
1. Disconnect the connect	or of CAN gateway.	arness connector terminals.		
	CAN gateway harness connector Continuity			
Connector No.	4	nal No. 6	Existed	
M24	10	12	Existed	
2. Disconnect the connect	of CAN gateway (Models w or of chassis control modul	rith around view monitor sys e. module harness connector t		
Cha	ssis control module harness conn	ector	Desistance (O)	
Connector No.	Termiı	nal No.	Resistance (Ω)	
E22	4	3	Approx. 54 – 66	
Is the measurement value w YES >> GO TO 4. NO >> Repair the chas 4.CHECK POWER SUPPL	sis control module branch			
Check the power supply an <u>Procedure"</u> .	-	chassis control module. Re	fer to <u>DAS-542, "Diagnosis</u>	
Is the inspection result norm YES (Present error)>>Rep		odule. Refer to <u>DAS-543, "R</u>	emoval and Installation"	
YES (Past error)>>Error wa		control module branch line.		

[CAN]

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011283611

[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 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.	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).

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			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M77	5	2	Approx. 54 – 66

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-122, "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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
RDR-L BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011283612
1.CHECK CONNECTOR			
 Turn the ignition switch OFI Disconnect the battery cabl Check the following termina nector side). Side radar LH Harness connector B87 Harness connector B8 	e from the negative term		nection (unit side and con-
Is the inspection result normal?			
YES >> GO TO 2.			
NO >> Repair the terminal			
2. CHECK HARNESS FOR OP	EN CIRCUIT		
 Disconnect the connector o Check the resistance betwee 	en the side radar LH ha		
	radar LH harness connector		Resistance (Ω)
Connector No.	Termin		
B92	4	3	Approx. 54 – 66
Is the measurement value withinYES>> GO TO 3.NO>> Replace the body h 3. CHECK POWER SUPPLY A	arness.		
Check the power supply and th Diagnosis Procedure".	e ground circuit of the	side radar LH. Refer to <u>DAS</u>	S-360, "SIDE RADAR LH :
Is the inspection result normal?			
YES (Present error)>>Replace YES (Past error)>>Error was on NO >> Repair the power su		ar LH branch line.	nd Installation".

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RDR-R 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 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			Resistance (Ω)
Connector No.	Terminal No.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-361, "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-387, "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.

INFOID:000000011283613

AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]
AVM BRANCH LINI	E CIRCUIT		
Diagnosis Procedure			INFOID:000000011283614
1.CHECK CONNECTOR			
 Check the following terr nector side). Around view monitor co CAN gateway (Models view) Is the inspection result norm YES-1 >> Models without YES-2 >> Models with ICO NO >> Repair the term CHECK HARNESS CON 	cable from the negative term minals and connectors for da without ICC) <u>nal?</u> ICC: GO TO 2. C: GO TO 3. inal and connector. ITINUITY (OPEN CIRCUIT)		connection (unit side and con-
 Disconnect the connect Check the continuity be 	tween the CAN gateway har	ness connector terminal	s.
Connector No.	CAN gateway harness connector Terminal No.		Continuity
Connector No.	4	6	Existed
M24	10	12	Existed
3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	ess and repair the root cause OPEN CIRCUIT of CAN gateway (Models wit or of around view monitor co etween the around view mon	hout ICC). Introl unit.	·
	view monitor control unit harness co		Resistance (Ω)
Connector No. B50	Terminal No.		Approx. 54 – 66
Is the measurement value w YES >> GO TO 4.			

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to AV-449, "Removal and Installa-Ο tion".
- YES (Past error)>>Error was detected in the around view monitor control unit branch line.

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

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APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011283615

[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).
- 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			Resistance (Ω)
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-360</u>, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4, "MODELS WITH DIS-</u> <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.

E	3SW/BUZZER BRA	NCH LINE CIRCUIT	
< DTC/CIRCUIT DIAGNOSI	IS >		[CAN]
BSW/BUZZER BRAI	NCH LINE CIRCU	IT	
Diagnosis Procedure			INFOID:000000011283616
1.CHECK CONNECTOR			
	able from the negative tern connectors of the drive as de and connector side). al? nal and connector.	minal. ssistance buzzer control mo	dule for damage, bend and
2. Check the resistance bet	r of drive assistance buzz tween the drive assistance	e buzzer control module harr	ness connector terminals.
Connector No.		nal No.	Resistance (Ω)
M56	3	11	Approx. 54 – 66
3.CHECK POWER SUPPLY Check the power supply and 362, "DRIVER ASSISTANCE Is the inspection result norma YES (Present error)>>Repla Installation". YES (Past error)>>Error wa	assistance buzzer control (AND GROUND CIRCUIT the ground circuit of the BUZZER CONTROL MO al? ace the drive assistance bu	T drive assistance buzzer con DULE : Diagnosis Procedur uzzer control module. Refer sistance buzzer control mod	e". to <u>DAS-390, "Removal and</u>

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LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 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.

Connector No. Terminal No.		ICC sensor harness connector Terminal No.		Posistanco (O)	
E80 3 6 Approx 108	Connector No.			Resistance (Ω)	
	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-119</u>, "Diagnosis Procedure". Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-136, "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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]	
SONAR BRANCH L	INE CIRCUIT			
Diagnosis Procedure			INFOID:000000011283618	
1.CHECK CONNECTOR				
1. Turn the ignition switch	OFF.			
Disconnect the battery of	able from the negative terr ninals and connectors for d	minal. lamage, bend and loose cor	nnection (unit side and con-	
s the inspection result norm	al?			
YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the termi 2. CHECK HARNESS CON	around view monitor system nal and connector.	m: GO TO 3.		
1. Disconnect the connect	or of CAN gateway.	arness connector terminals.		
1	CAN gateway harness connector		Continuity	
Connector No.	Terminal No.			
M24	4 10	6	Existed	
s the inspection result norm	-	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 sonar control unit.	se (CAN communication cire rith around view monitor sys nit harness connector termin	tem). als.	
Connector No.	Terminal No.		Resistance (Ω)	
M76	5	6	Approx. 54 – 66	
s the measurement value w	ithin the specification?			
YES >> GO TO 4. NO >> Repair the sona 4.CHECK POWER SUPPL	r control unit branch line.	-		
Check the power supply and UNIT : Diagnosis Procedure		onar control unit. Refer to <u>A</u>	V-429, SUNAR CUNTRUL	
Is the inspection result norm	al?			
YES (Past error)>>Error wa			and Installation".	

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

- 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.

Chassis control module harness connector			Continuity
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			Resistance (Ω)
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-397.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-419, "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.

INFOID:000000011283619

LANE BRANCH LINE CIRCUIT

DTC/CIRCUIT DIAGNO			[CAN
ANE BRANCH LI			
Diagnosis Procedure			INFOID:000000011283
.CHECK CONNECTOR			
	cable from the negative termi minals and connectors for da 3 5		connection (unit side and co
s the inspection result norr	nal?		
YES >> GO TO 2. NO >> Repair the term	ninal and connector.		
· · · · · · · · · · · · · · · · · · ·	NTINUITY (OPEN CIRCUIT)		
	tor of chassis control module. etween the chassis control mo		r terminals.
Cha	assis control module harness connec	tor	Continuity
			— Continuity
Connector No.	Termina		
Connector No. E22	Termina 19 7	11	Existed
	19 7		
E22 s the inspection result norr YES >> GO TO 3. NO >> Check the harr cation circuit si	19 7 nal? ness and repair or replace (if side).	11 8	Existed
E22 <u>s the inspection result norr</u> YES >> GO TO 3. NO >> Check the harr cation circuit si CHECK HARNESS FOR	19 7 nal? ness and repair or replace (if side). R OPEN CIRCUIT	11 8	Existed
E22 <u>s the inspection result norr</u> YES >> GO TO 3. NO >> Check the harr cation circuit si 3. CHECK HARNESS FOF . Connect the connector . Disconnect the connect	19 7 nal? ness and repair or replace (if side).	11 8 shield line is open) the r	Existed Existed
E22 s the inspection result norr YES >> GO TO 3. NO >> Check the harr cation circuit si CHECK HARNESS FOF . Connect the connector . Disconnect the connector . Check the resistance b	19 7 nal? ness and repair or replace (if side). R OPEN CIRCUIT of chassis control module. tor of lane camera unit. etween the lane camera unit _ane camera unit harness connector	11 8 shield line is open) the r	Existed Existed
E22 s the inspection result norr YES >> GO TO 3. NO >> Check the harr cation circuit si CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b	19 7 nal? ness and repair or replace (if side). R OPEN CIRCUIT of chassis control module. tor of lane camera unit. etween the lane camera unit. _ane camera unit harness connector Termina	11 8 shield line is open) the r harness connector term	Existed Existed root cause (chassis commun inals. Resistance (Ω)
E22 s the inspection result norr YES >> GO TO 3. NO >> Check the harr cation circuit si 3. CHECK HARNESS FOF . Connect the connector . Disconnect the connector . Check the resistance b I Connector No. R13	19 7 nal? ness and repair or replace (if side). R OPEN CIRCUIT of chassis control module. tor of lane camera unit. etween the lane camera unit	11 8 shield line is open) the r	Existed Existed
E22 s the inspection result norr YES >> GO TO 3. NO >> Check the harr cation circuit si CHECK HARNESS FOF Connect the connector Disconnect the connector Check the resistance b Connector No. R13 s the measurement value of YES >> GO TO 4. NO >> Repair the lane CHECK POWER SUPP	19 7 nal? ness and repair or replace (if side). COPEN CIRCUIT of chassis control module. tor of lane camera unit. etween the lane camera unit.	11 8 shield line is open) the r harness connector term	Existed Existed root cause (chassis commun inals. Resistance (Ω) Approx. 54 – 66
E22 s the inspection result norr YES >> GO TO 3. NO >> Check the harr cation circuit si CHECK HARNESS FOF Connect the connector Disconnect the connector Check the resistance b Connector No. R13 s the measurement value of YES >> GO TO 4. NO >> Repair the lane CHECK POWER SUPP	19 7 nal? ness and repair or replace (if side). R OPEN CIRCUIT of chassis control module. tor of lane camera unit. etween the lane camera unit	11 8 shield line is open) the r harness connector term	Existed Existed root cause (chassis commun inals. Resistance (Ω) Approx. 54 – 66

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000011283621

[CAN]

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		Continuity
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	Gibunu	Not existed
IW25	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.

E	ECM Resistance (Ω)	
Term	inal No.	
114 113		Approx. 108 – 132

3. Check the resistance between the BCM terminals.

BO	CM	Resistance (Ω)
Termir	nal 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.

< 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.	А
6. CHECK UNIT REPRODUCTION	В
Perform the reproduction test as per the following procedure for each unit.	
1. Turn the ignition switch OFF.	C
2. Disconnect the battery cable from the negative terminal.	C
 Disconnect one of the unit connectors of CAN communication system. 	
 NOTE: ECM and BCM have a termination circuit. Check other units first. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. 	D
NOTE:	_
Although unit-related error symptoms occur, do not confuse them with other symptoms.	E
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	F
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Revision: 2015 January

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000011283622

[CAN]

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
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.

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

3. Check the resistance between the BCM terminals.

BO	CM	Resistance (Ω)
Termir	nal 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.

< 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.	А
6.CHECK UNIT REPRODUCTION	В
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.	С
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:	
Although unit-related error symptoms occur, do not confuse them with other symptoms.	Ε
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	F

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000011283623

[CAN]

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	Giouna	Not existed	
M25	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.

< 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.	
 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication circuit 2. NOTE: 	В
 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: 	С
Although unit-related error symptoms occur, do not confuse them with other symptoms.	D
Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.	E
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CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011283624

[CAN]

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 c	Continuity	
Connector No.	Termir	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 module harness connector			Continuity	
Connector No.	Connector No. Terminal No.		Continuity	
	19	Ground	Not existed	
M22	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]

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Connect all the connectors. Check if the symptoms described in the "Symptom (Results from intercustomer)" are reproduced.	view with
Inspection result	
Reproduced>>GO TO 7.	

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Non-reproduced>>Start the	e diagnosis	again.	Follow	the	trouble	diagnosis	procedure	when	past	error i	s E	3
detected.												
7												

I.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. 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom E (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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ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011283625

[CAN]

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 uni	t harness connector	ICC sensor harness connector		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.

A	Continuity	
Connector No.	Termi	Continuity
B1	6	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.

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Connector No.			Continuity
	Terminal No.	Ground	Continuity
B1	6	Croand	Not existed
	7		Not existed
CHECK TERMINATION C	ess and repair or replace [if	r.	/B) is short] the root cause.
AD/	AS control unit		
 T	erminal No.	F	Resistance (Ω)
6	7	Ap	prox. 108 – 132
. Check the resistance bet	tween the ICC sensor term	ninals.	
I	ICC sensor		Resistance (Ω)
Т	erminal No.		
3	6	Ap	prox. 108 – 132
·			
CHECK SYMPTOM onnect all the connectors. ustomer)" are reproduced. <u>spection result</u> Reproduced>>GO TO 8. Non-reproduced>>Start the detected.			
onnect all the connectors. ustomer)" are reproduced. <u>uspection result</u> Reproduced>>GO TO 8. Non-reproduced>>Start the	e diagnosis again. Follow		
onnect all the connectors. ustomer)" are reproduced. <u>spection result</u> Reproduced>>GO TO 8. Non-reproduced>>Start the detected. •CHECK UNIT REPRODU erform the reproduction tes: • Turn the ignition switch 0 • Disconnect the battery ca • Disconnect one of the ur NOTE:	e diagnosis again. Follow CTION t as per the following proce DFF. able from the negative terr nit connectors of ITS comm	the trouble diagnosis pro edure for each unit. minal. nunication circuit.	bcedure when past error is
onnect all the connectors. ustomer)" are reproduced. <u>Ispection result</u> Reproduced>>GO TO 8. Non-reproduced>>Start the detected. CHECK UNIT REPRODU erform the reproduction tes Turn the ignition switch 0 Disconnect the battery ca Disconnect one of the ur NOTE: ADAS control unit and I0 Connect the battery cab (Results from interview v NOTE:	e diagnosis again. Follow CTION t as per the following proce DFF. able from the negative term hit connectors of ITS comm CC sensor have a terminat ole to the negative terminat with customer)" are reprodu	the trouble diagnosis pro edure for each unit. minal. munication circuit. ion circuit. Check other unital. Check if the symptoms	ts first. described in the "Symptom

< 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.

Precautions for Removing Battery Terminal

 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
 NOTE:

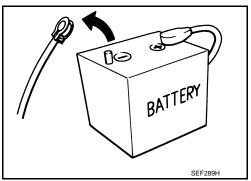
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

• For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch. **NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.



INFOID:000000011568574

COMPONENT PARTS

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

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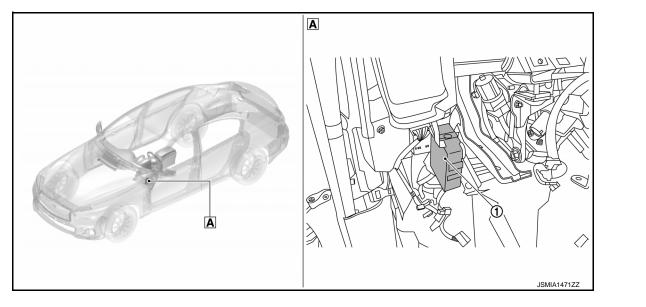
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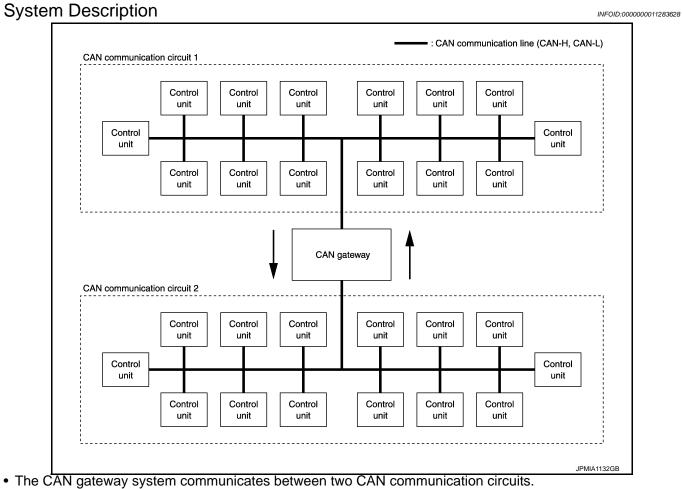
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- (1) CAN gateway
- A Over the instrument lower panel

< SYSTEM DESCRIPTION >

SYSTEM



• This system selects and transmits only necessary information.

[CAN GATEWAY]

DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (CAN GATEWAY)

CONSULT Function

[CAN GATEWAY]

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INFOID:000000011283629

APPLICATION ITEM

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

Diagnosis mode	Function Description	С
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.	D
Configuration	Reads and saves the vehicle specification (Type ID).Writes the vehicle specification (Type ID) when replacing CAN gateway.	

SELF DIAGNOSTIC RESULT

Refer to LAN-161, "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	Н
IGN COUNTER	 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. 	I
(0 – 39)	NOTE: Each time when ignition switch is turned OFF to ON, numerical number increases in $1 \rightarrow 2 \rightarrow 338 \rightarrow 39$. When the operation number of times exceeds 39, the number do not increase and "39" is displayed until self-diagnosis result is erased.	J

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.

			LAN
Funct	ion	Description	
Read / Write Configuration	Before Replace ECU	 Reads the vehicle configuration (Type ID) of current CAN gateway. Saves the read vehicle configuration (Type ID). 	N
	After Replace ECU	Writes the vehicle configuration (Type ID) with saved data.	
Manual Configuration		Writes the vehicle configuration (Type ID) with manual selection.	

CAUTION:

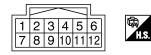
Follow the instructions listed below. Failure to do this may cause malfunctions to the CAN gateway.:

- 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 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

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

DTC Inspection Priority Chart

INFOID:000000011283631

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

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

[CAN GATEWAY]

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INFOID:000000011283630

CAN GATEWAY

< ECU DIAGNOSIS INFORMATION >

DTC Index

INFOID:000000011283632

[CAN GATEWAY]

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

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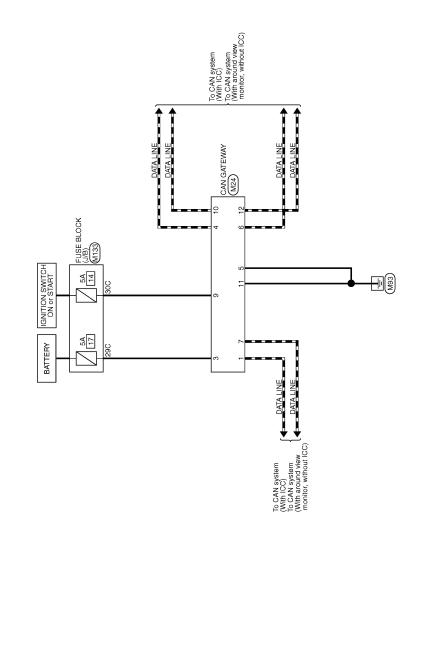
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WIRING DIAGRAM CAN GATEWAY SYSTEM

Wiring Diagram

INFOID:000000011283633

[CAN GATEWAY]



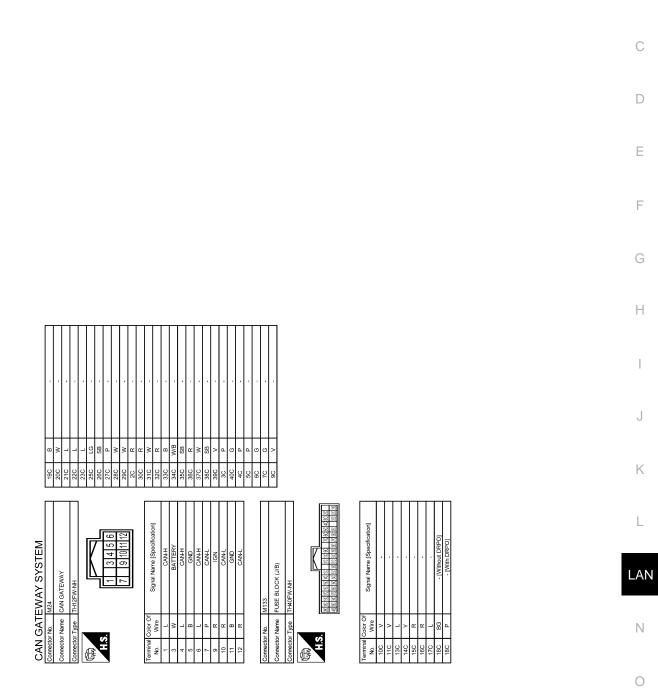
CAN GATEWAY SYSTEM

2013/05/17

CAN GATEWAY SYSTEM

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ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

< BASIC INSPECTION >

BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

Description

INFOID:000000011283634

[CAN GATEWAY]

BEFORE REPLACEMENT

When replacing CAN gateway, save or print current vehicle specification (Type ID) with CONSULT configuration before replacement.

NOTE:

If "Before Replace ECU" of "Read / Write Configuration" can not be used, use the "Manual Configuration" after replacing CAN gateway.

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.
- Complete the procedure of "Read / Write Configuration" or "Manual Configuration" in order.
- If incorrect "Read / Write Configuration" or "Manual Configuration", incidents might occur.
- Never perform "Read / Write Configuration" or "Manual Configuration" except for new CAN gateway.

Work Procedure

INFOID:0000000011283635

1.SAVING VEHICLE SPECIFICATION

CONSULT Configuration

Perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification (Type ID). Refer to <u>LAN-165, "Work Procedure (Before Replacement)"</u>.

NOTE:

If "Before Replace ECU" of "Read / Write Configuration" can not be used, use the "Manual Configuration" after replacing CAN gateway.

>> GO TO 2.

2.REPLACE CAN GATEWAY

Replace CAN gateway. Refer to LAN-172, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT Configuration

Perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" to write vehicle specification (Type ID). Refer to <u>LAN-165, "Work Procedure (After Replacement)"</u>.

>> 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 (CAN GATEWAY) BASIC INSPECTION > [CAN GATEWAY]
ONFIGURATION (CAN GATEWAY)
ork Procedure (Before Replacement)
CHECKING TYPE ID (1)
Use FAST (service parts catalogue) to search CAN gateway of the applicable vehicle and find "Type ID". Print out "Type ID".
>> GO TO 2. CHECKING TYPE ID (2)
CONSULT Configuration Select "Before Replace ECU" of "Read/Write Configuration". Check that "Type ID" is displayed on the CONSULT screen. <u>'Type ID" displayed?</u> ES >> GO TO 3.
 WORK END (Use the "Manual Configuration" after replacing CAN gateway.) VERIFYING TYPE ID (1)
CONSULT Configuration mpare a "Type ID" displayed on the CONSULT screen with the one searched by using FAST (service parts alogue) to check that these "Type ID" agree with each other.
r the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".
>> GO TO 4. SAVING TYPE ID
CONSULT Configuration ve "Type ID" on CONSULT.
>> WORK END
ork Procedure (After Replacement)
UTION: Jse "Manual Configuration" only when "TYPE ID" of CAN gateway cannot be read. f an error occurs during configuration, start over from the beginning.
CHECKING THAT "TYPE ID" IS SAVED ON CONSULT
eck that "TYPE ID" is saved on CONSULT. ' <u>TYPE ID" saved on CONSULT?</u>
ES >> GO TO 2. O >> GO TO 3.
WRITING (AUTOMATIC WRITING)
CONSULT Configuration Select "After Replace ECU" of "Re/programming, Configuration" or that of "Read / Write Configuration". Select the "Type ID" agreeing with the one stored on CONSULT and the one searched by using FAST (service parts catalogue) to write the "Type ID" into the CAN gateway.
NOTE: For the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".
>> GO TO 4. WRITING (MANUAL WRITING)

3.WRITING (MANUAL WRITING)

CONSULT Configuration

CONFIGURATION (CAN GATEWAY)

< BASIC INSPECTION >

1. Select "Manual Configuration".

2. Select the "Type ID" searched by using FAST (service parts catalogue) to write the "Type ID" into the CAN gateway.

NOTE:

For the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".

>> GO TO 4.

4.VERIFYING TYPE ID (2)

Compare "Type ID" written into the CAN gateway with the one searched by using FAST (service parts catalogue) to check that these "Type ID" agree with each other.

NOTE:

For the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".

>> WORK END

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

DTC Description

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INFOID:000000011283638 B

[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-42, "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.
POSSIBLI CAN comm	E CAUSE nunication system	
FAIL-SAF		unit which cannot communicate cannot be transmitted
DTC CON	FIRMATION PROCEDURE	
1.PERFO	RM DTC CONFIRMATION PRO	CEDURE
	nition switch ON and wait at leas "Self Diagnostic Result" mode of	at 2 seconds or more. "CAN GATEWAY" using CONSULT.
	000 detected?	
YES >> NO-1 >>	Proceed to LAN-167, "Diagnosi	before repair: <u>GI-42, "Intermittent Incident"</u> .
Diagnosi	s Procedure	INFOID:000000011283639
1. PERFO	RM DTC CONFIRMATION PRO	CEDURE AGAIN
 Erase Perform 	n DTC confirmation procedure a	gain. Refer to LAN-167, "DTC Description".
	<u>000 displayed?</u> - Perform trouble diagnosis proc	edure for CAN communication system. Refer to LAN-24, "Trouble
NO >>	Diagnosis Flow Chart". NSPECTION END	

U1010 CONTROL UNIT (CAN)

DTC Description

INFOID:0000000011283640

[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-42</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-42, "Intermittent Incident"</u>.
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011283641

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- 1. Turn ignition switch ON.
- 2. Erase DTC.
- 3. Perform DTC confirmation procedure again. Refer to LAN-168, "DTC Description".
- 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:000000011283642

[CAN GATEWAY]

DTC DETECTION LOGIC

DTC	Trouble (Trouble diagr	olagnosis nosis contents)	Detecting condition
B2600	CONFIG ERROR	WRONG DATA (Wrong data)	When errors are detected in the configuration data stored in the CAN gateway.
B2000	(Configuration error)	NOT CONFIGURED (Not configured)	When no data are stored in the CAN gateway.
POSSIBLE CAN gatewa			
FAIL-SAFE Transmission cuit 2 are sto		signal between CAN	communication circuit 1 and CAN communication cir-
	IRMATION PROCE	DURE	
1.PERFOR	M DTC CONFIRMATIO	ON PROCEDURE	
 Select "S Check E 	ition switch ON and wa Self Diagnostic Result" DTC.		or more. EWAY" using CONSULT.
	ONFIG ERROR WRON Procedure".		.)>>Proceed to LAN-169, "WRONG DATA : Diagnosis
NO-1 >> NO-2 >>	Diagnosis Procedure". To check malfunction s Confirmation after repa	symptom before repai	ected.)>>Proceed to <u>LAN-169, "NOT CONFIGURED :</u> r: <u>GI-42, "Intermittent Incident"</u> . D
WRONG		_	
	DATA : Diagnosis		INFOID:000000011283643
	M DTC CONFIRMATIO	ON PROCEDURE AG	JAIN
2. Erase D			
4. Check D		cedure again. Refer to	o LAN-169, "DTC Description".
4. Check E Is DTC B260 YES >> NO >>	OTC. <u>00 displayed?</u> Replace CAN gateway INSPECTION END	-	o LAN-169, "DTC Description". Removal and Installation".
4. Check E <u>Is DTC B260</u> YES >> NO >> NOT CON	DTC. <u>00 displayed?</u> Replace CAN gateway INSPECTION END NFIGURED	v. Refer to <u>LAN-172, "</u>	Removal and Installation".
4. Check E <u>Is DTC B260</u> YES >> NO >> NOT CON NOT CON	OTC. <u>00 displayed?</u> Replace CAN gateway INSPECTION END	. Refer to <u>LAN-172, "</u> nosis Procedure	Removal and Installation".
4. Check E <u>Is DTC B260</u> YES >> NO >> NOT CON NOT CON 1.PERFOR	DTC. <u>O displayed?</u> Replace CAN gateway INSPECTION END NFIGURED IFIGURED : Diag	² . Refer to <u>LAN-172, "</u> nosis Procedure OF CAN GATEWAY	Removal and Installation".
4. Check E Is DTC B260 YES >> NOT CON NOT CON 1.PERFOR Perform CAN	DTC. <u>O displayed?</u> Replace CAN gateway INSPECTION END NFIGURED IFIGURED : Diag M CONFIGURATION	² . Refer to <u>LAN-172, "</u> nosis Procedure OF CAN GATEWAY	Removal and Installation".

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		
(+)	(–)		Voltage	Voltage (Reference value)
CAN g	jateway		Ignition	(Standard) (Reference value)	
Connector	Terminal	Ground	switch		
M24	3		OFF	6 – 16 V	Battery voltage
17124	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	Continuity
M24	5	Ground	Existed
10124	11		Existed

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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INFOID:000000011283645

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REMOVAL AND INSTALLATION CAN GATEWAY

Removal and Installation

INFOID:000000011283646

NOTE:

Before replacing CAN gateway, perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification (Type ID). Refer to <u>LAN-164</u>, "<u>Description</u>".

REMOVAL

- 1. Remove instrument lower panel LH. Refer to IP-13, "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-164, "Description"</u>.

I < DTC/CIRCUIT DIAC		ETWEEN DLC AND		T N SYSTEM (TYPE 1)]
DTC/CIRCU		IOSIS	• • • •	
		CAND HVAC CIRC	CUIT	
Diagnosis Proced	ure			INFOID:000000011564421
1.CHECK CONNECT				
 Turn the ignition state Disconnect the basis Check the followir and harness side) Harness connector Is the inspection result YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS Disconnect the fus 	witch OFF. ttery cable from tl ng terminals and r M133 and fuse <u>normal?</u> terminal and cor CONTINUITY (C se block (J/B) har	PPEN CIRCUIT) ness connector M65.		nection (connector side
2. Check the continu	-	use block (J/B) terminals.	1	
 Terminal N	Fuse block	(J/B) Terminal No.		Continuity
23C		22C		Existed
5C		4C		Existed
3.CHECK HARNESS 1. Disconnect the co	nnector of A/C au	PEN CIRCUIT)	nnector and the A/C a	auto amp. harness con-
Fuse block (J/B)	narness connector	A/C auto amp. h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M133	22C 4C	M88	1 2	Existed Existed
YES (Past error)>>Er amp.	Check CAN sys ror was detected	tem type decision again. I in the main line betwee on the fuse block (J/B) har		

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011564422

[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	A/C auto amp. harness connector Display co		harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	1	M100	29	Existed
IVIOO	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.

ECM BRANCH LINE CIRCUIT

agnosis Procedu	re			INFOID:000000011564423
CHECK CONNECTO	R			
nector side). ECM Harness connector the inspection result n YES >> GO TO 2. NO >> Repair the to .CHECK HARNESS F Disconnect the conr	ery cable from the n terminals and conn M133 and fuse bloc cormal? erminal and connec OR OPEN CIRCUI nector of ECM.	ectors for damage, be ck (J/B) side connector ctor.		ection (unit side and con-
	ECM harness			
		Terminal No.		
Connector No.		Terminal No.		
M37 the measurement valu	114 ue within the specific		113	Approx. 108 – 132
M37 the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supply the inspection result no YES (Present error)>> YES (Past error)>> YES (Past error)>> YES (Past error)>> CHECK HARNESS C Disconnect the fuse	PPLY AND GROUN and the ground circ ormal? Replace the ECM. For was detected in the ower supply and the CONTINUITY (OPEI block (J/B) harness	cation? ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. le ground circuit. N CIRCUIT)	to <u>EC-189. "Diagnation oval and Installation of the second </u>	Approx. 108 – 132
M37 the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUUE heck the power supply the inspection result no YES (Present error)>> YES (Past error)>> YES (Past error)>> FOR SUP CHECK HARNESS CON Disconnect the fuse	PPLY AND GROUN and the ground circ ormal? Replace the ECM. For was detected in the ower supply and the CONTINUITY (OPEI block (J/B) harness between the ECM	cation? ID CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. le ground circuit. N CIRCUIT) s connector M133. harness connector an	to <u>EC-189. "Diagnate</u> oval and Installation d the fuse block (J	Approx. 108 – 132 Desis Procedure". (B) harness connector.
M37 the measurement value YES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SUUE heck the power supply the inspection result no YES (Present error)>>Error YES (Past error)>>Error NO >> Repair the power supply .CHECK HARNESS CO Disconnect the fuse Check the continuity	PPLY AND GROUN and the ground circ ormal? Replace the ECM. For was detected in the ower supply and the CONTINUITY (OPEI block (J/B) harness between the ECM	cation? ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. le ground circuit. N CIRCUIT) s connector M133.	to <u>EC-189. "Diagnate</u> oval and Installation d the fuse block (J	Approx. 108 – 132
M37 the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUUE heck the power supply the inspection result no YES (Present error)>> YES (Past error)>> YES (Past error)>> FOR CHECK HARNESS CON Disconnect the fuse Check the continuity ECM harness	PPLY AND GROUN and the ground circ ormal? Replace the ECM. For was detected in the ower supply and the CONTINUITY (OPEI block (J/B) harness between the ECM	cation? ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. le ground circuit. N CIRCUIT) s connector M133. harness connector an Fuse block (J/B) h	to <u>EC-189. "Diagnations oval and Installation</u> d the fuse block (Junarness connector	Approx. 108 – 132 Desis Procedure". (B) harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564424

[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 (Ω)		
Connector No.	Termi	Resistance (22)	
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	M133	23C	Existed
IWI25	14	IVI I SS	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 CIRCU	IT		
Diagnosis Procedur	е			INFOID:000000011564425
1.CHECK CONNECTOR	2			
 Turn the ignition swite Disconnect the batter Check the following to nector side). IPDM E/R Harness connector E Is the inspection result no 	y cable from the ne erminals and conne 64 and fuse block (、	ctors for damage, b	end and loose conr	nection (unit side and con-
YES >> GO TO 2.	minal and connect			
NO >> Repair the ter 2.CHECK HARNESS FC	rminal and connecto	Dr.		
 Disconnect the connect Check the resistance 	ector of IPDM E/R.	E/R harness conne	ector terminals.	
	IPDM E/R harness	connector		$Posictanco\left(\Omega\right)$
Connector No.		Terminal No.		Resistance (Ω)
E121	29		28	Approx. 54 – 66
<u>s the measurement value</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SUP				
Check the power supply a	and the ground circu	uit of the IPDM E/R.	Refer to PCS-37, "	Diagnosis Procedure".
Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po	rmal? eplace the IPDM E/ was detected in the ower supply and the	R. Refer to <u>PCS-38</u> e IPDM E/R branch	, "Removal and Inst	
4. CHECK HARNESS FO	OR OPEN CIRCUIT			
 Disconnect the harne Check the continuity 		E/R harness connec	ctor and harness co	nnector.
IPDM E/R harr	ness connector	Harness	connector	Continuiti
IPDM E/R harr Connector No.	ness connector Terminal No.	Harness Connector No.	connector Terminal No.	Continuity
			1	- Continuity 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:000000011564426

[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.

	A/T assembly harness connector		
Connector No.	Termi	Resistance (Ω)	
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-215</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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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 1)]

F2	3	F65	9F	Existed	Δ
12	8	E05	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:000000011564427

[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.

	Resistance (Ω)		
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)]

Diagnosis Procedure			INFOID:000000011564426	
CHECK CONNECTOR				
	cable from the negative term d connectors of the combin		end and loose connection	
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.			
2. CHECK HARNESS FOR	OPEN CIRCUIT			
 Disconnect the connect Check the resistance be 	or of combination meter. etween the combination met	er harness connector termi	nals.	
Cc	ombination meter harness connect	or	Resistance (Ω)	
Connector No.	Connector No. Terminal No.			
M58	41	42	Approx. 54 – 66	
s the measurement value w YES >> GO TO 3. NO >> Repair the comb CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu	ithin the specification? bination meter branch line. Y AND GROUND CIRCUIT the ground circuit of the co	,		
Is the measurement value w YES >> GO TO 3. NO >> Repair the comb 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	ithin the specification? bination meter branch line. Y AND GROUND CIRCUIT the ground circuit of the co	ombination meter. Refer to Refer to <u>MWI-126, "Remo</u> rion meter branch line.	MWI-104, "COMBINATION	
Is the measurement value w YES >> GO TO 3. NO >> Repair the comb 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	bination meter branch line. Y AND GROUND CIRCUIT the ground circuit of the co <u>al?</u> lace the combination meter. as detected in the combinat	ombination meter. Refer to Refer to <u>MWI-126, "Remo</u> rion meter branch line.	MWI-104, "COMBINATION	

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564429

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-38, "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			
Diagnosis Procedure			INFOID:000000011564430	
1. CHECK CONNECTOR				
	cable from the negative terr d connectors of the displa		bend and loose connection	
Is the inspection result norm	al?			
YES >> GO TO 2. NO >> Repair the termi	inal and connector			
2. CHECK HARNESS FOR				
1. Disconnect the connect	or of display control unit.			
2. Check the resistance be	etween the display control u	init harness connector term	inals.	
Di	splay control unit harness connec	tor	Resistance (Ω)	
Connector No.	Termir	nal No.		
M100	29	17	Approx. 54 – 66	
Is the measurement value w YES >> GO TO 3.	rithin the specification?			
YES >> GO TO 3. NO >> Repair the displ	ay control unit.			
3. CHECK POWER SUPPL		-		
Check the power supply an TROL UNIT : Diagnosis Pro		display control unit. Refer t	o AV-232, "DISPLAY CON-	
Is the inspection result norm				
YES (Past error)>>Error wa			al and Installation".	
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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564431

[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	Resistance (Ω)	
Connector No.	Terminal No.		Resistance (22)
M14	60	59	Approx. 108 – 132

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	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011564432
1.CHECK CONNECTOR			E
 3. Check the following term nector side). - ABS actuator and elect 	cable from the negative terr minals and connectors for d ric unit (control unit) 5 and fuse block (J/B) side c	lamage, bend and loose con	nection (unit side and con-
YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor system inal and connector.	m: GO TO 3.	E
2.CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha	arness connector terminals.	F
	CAN gateway harness connector	r	Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
Is the inspection result norm	10	12	Existed
2. Disconnect the connect	of CAN gateway (Models w tor of ABS actuator and elec	vith around view monitor syst ctric unit (control unit). and electric unit (control unit	
	and electric unit (control unit) har		Resistance (Ω)
Connector No.		nal No.	I
E35	25	15	Approx. 54 - 66
Is the measurement value v YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPPL	Y AND GROUND CIRCUIT		
Check the power supply ar <u>BRC-154</u> , "Diagnosis Proce		ABS actuator and electric	unit (control unit). Refer to
and Installation YES (Past error)>>Error w	blace the ABS actuator and 		
1. Disconnect the connect	tor of harness connector E6 between the ABS actuator a) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-185

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	ectric unit (control unit) connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	FGE	6F	Existed
E30	15	— E65	7F	Existed

- Without around view monitor system

	ectric unit (control unit) connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	8F	Existed
235	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

ction (unit side and con-	B C D F G H
Continuity Existed	F
Existed	F
Existed	F
Existed	G
Existed	
Existed	H
	I
Existed	I
n). ninals.	K
Resistance (0)	1
Approx. 54 – 66	
to <u>DAS-542, "Diagnosis</u> oval and Installation".	N
t	ninals. Resistance (Ω) Approx. 54 – 66

А

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564434

[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	r	Continuity
Connector No.	Termi	Continuity	
M24	4	6	Existed
11124	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.

Steerin	g angle sensor harness connect	or	Resistance (Ω)
Connector No.	Terminal No.		
M77	5	2	Approx. 54 – 66

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-122, "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.

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 1)]

CAN COMMUNICATION CIRCUIT Diagnosis Procedure 1. CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect all the unit connectors on CAN communication system. 4. Check terminals and connectors for damage, bend and loose connection. Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Check the continuity between the data link connector terminals.	INFOID:00000001156443
 CONNECTOR INSPECTION Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. Check terminals and connectors for damage, bend and loose connection. Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) 	INFOID:00000001156443
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. Check terminals and connectors for damage, bend and loose connection. <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) 	
 Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. Check terminals and connectors for damage, bend and loose connection. <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 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
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	Not existed
M25 14	Not existed
 YES >> GO TO 4. NO >> Check the harness and repair or replace [if shield line or fuse block 4.CHECK ECM AND BCM TERMINATION CIRCUIT 1. Remove the ECM and the BCM. 2. Check the resistance between the ECM terminals. 	(J/B) is short] the root cause.
ECM	Resistance (Ω)
Terminal No.	
114 113 3. Check the resistance between the BCM terminals.	Approx. 108 – 132
BCM	Basistance (0)
Terminal No.	Resistance (Ω)
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 "Sympton	

customer)" are reproduced.

LAN-189

< 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.

<pre>dtc/circuit diagonal</pre>		ETWEEN DLC AND		F N SYSTEM (TYPE 2)]
DTC/CIRCU		IOSIS	•	. ,.
		CAND HVAC CIRC	CUIT	
Diagnosis Proced	lure			INFOID:000000011564436
1.CHECK CONNECT				
 Turn the ignition s Disconnect the basis Check the following and harness side Harness connected Is the inspection result 	witch OFF. attery cable from t ng terminals and or M133 and fuse t normal?	he negative terminal. connectors for damage, block (J/B) side connector		nection (connector side
YES >> GO TO 2. NO >> Repair the	e terminal and cor	nnector.		
2. CHECK HARNESS				
		ness connector M65. use block (J/B) terminals.		
	Fuse block	(J/B)		Continuity
Terminal N	lo.	Terminal No.		·
23C 5C		22C 4C		Existed Existed
3.CHECK HARNESS 1. Disconnect the co	he fuse block (J/E CONTINUITY (Connector of A/C au	OPEN CIRCUIT)	nnector and the A/C a	auto amp. harness con-
Fuse block (J/B)	harness connector	A/C auto amp h	arness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
 M133	22C	M88	1	Existed
IN 135	4C	WIOO	2	Existed
	>Check CAN sys rror was detected	tem type decision again. I in the main line betwee en the fuse block (J/B) han		

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011564437

[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
IVIOO	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.

ECM BRANCH LINE CIRCUIT

CM BRANCH L				
iagnosis Procedu	re			INFOID:000000011564438
.CHECK CONNECTO	R			
nector side). ECM Harness connector N the inspection result ne YES >> GO TO 2.	ery cable from the ne terminals and conn M133 and fuse bloc	ectors for damage, be k (J/B) side connector		ection (unit side and con-
CHECK HARNESS F	OR OPEN CIRCUI	Т		
Disconnect the connCheck the resistance		I harness connector te	rminals.	
	ECM harness of	connector		Desistance (O)
Connector No.		Terminal No.		Resistance (Ω)
M37	114 Ie within the specific		113	Approx. 108 – 132
M37 the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUP heck the power supply the inspection result may YES (Present error)>>F YES (Past error)>>Error NO >> Repair the p CHECK HARNESS C Disconnect the fuse	PPLY AND GROUN and the ground circ ormal? Replace the ECM. R or was detected in th ower supply and the CONTINUITY (OPEN block (J/B) harness	cation? ID CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133.	to <u>EC-189, "Diagn</u> oval and Installatic	Approx. 108 – 132
M37 The measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUF CHECK POWER SUF The inspection result may YES (Present error)>>F YES (Past error)>>Error NO >> Repair the p CHECK HARNESS C Disconnect the fuse	PPLY AND GROUN and the ground circ ormal? Replace the ECM. R or was detected in the ower supply and the CONTINUITY (OPEN block (J/B) harness between the ECM	cation? ID CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133.	to <u>EC-189, "Diagn</u> oval and Installatic d the fuse block (J	Approx. 108 – 132 osis Procedure". on". /B) harness connector.
M37 S the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUF Check the power supply S the inspection result ne YES (Present error)>>F YES (Past error)>>Erro NO >> Repair the p CHECK HARNESS C Disconnect the fuse Check the continuity	PPLY AND GROUN and the ground circ ormal? Replace the ECM. R or was detected in the ower supply and the CONTINUITY (OPEN block (J/B) harness between the ECM	Cation? ID CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector and	to <u>EC-189, "Diagn</u> oval and Installatic d the fuse block (J	Approx. 108 – 132

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:000000011564439

[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.

Data link connector			Resistance (Ω)
Connector No.	Termi	Tesistance (22)	
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	M133	23C	Existed
WI25	14	101133	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 CIRCU	IT		
Diagnosis Procedure	Э			INFOID:000000011564440
1.CHECK CONNECTOR	ł			
nector side). - IPDM E/R - Harness connector E Is the inspection result no YES >> GO TO 2.	y cable from the ne erminals and conne 64 and fuse block (, <u>rmal?</u> minal and connecto	ctors for damage, b J/B) side connector	end and loose conr	nection (unit side and con-
Disconnect the connect the connect. Check the resistance			ector terminals.	
Connector No.		Terminal No.		Resistance (Ω)
E121	29		28	Approx. 54 – 66
s the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP	PLY AND GROUNE) CIRCUIT		
Check the power supply a		it of the IPDM E/R.	Refer to PCS-37, "I	Diagnosis Procedure".
Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS FC	eplace the IPDM E/ was detected in the wer supply and the	e IPDM E/R branch		tallation".
1. Disconnect the harne 2. Check the continuity I	ss connector E64.	E/R harness connec	ctor and harness co	nnector.
IPDM E/R harr	less connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E121	29	E64	6E	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:0000000011564441

[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.

	A/T assembly harness connector		
Connector No.	Termi	Resistance (Ω)	
F2	3	3 8	

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-215, "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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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 2)]

F2	3	F65	9F	Existed	Δ
12	8	E05	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:000000011564442

[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.

	Resistance (Ω)		
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)]

Diagnosis Procedure			INFOID:000000011564443
1.CHECK CONNECTOR			
 Check the terminals an (unit side and connecto 	cable from the negative tern d connectors of the combin r side).		bend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the term			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
	or of combination meter. etween the combination met	er harness connector term	inals.
C	ombination meter harness connect	or	Resistance (Ω)
Connector No.	Termin	al No.	
M58	41		
		42	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the com 3.CHECK POWER SUPPL Check the power supply and	vithin the specification? bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the c		
Is the measurement value w YES >> GO TO 3. NO >> Repair the com 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 w	vithin the specification? bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the cure".	ombination meter. Refer to Refer to <u>MWI-126, "Remo</u> ion meter branch line.	MWI-104, "COMBINATION
Is the measurement value w YES >> GO TO 3. NO >> Repair the com 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 w	vithin the specification? bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the coure". hal? lace the combination meter as detected in the combination	ombination meter. Refer to Refer to <u>MWI-126, "Remo</u> ion meter branch line.	MWI-104, "COMBINATION
Is the measurement value w YES >> GO TO 3. NO >> Repair the com 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 w	vithin the specification? bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the coure". hal? lace the combination meter as detected in the combination	ombination meter. Refer to Refer to <u>MWI-126, "Remo</u> ion meter branch line.	MWI-104, "COMBINATION

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564444

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-38, "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			Д
Diagnosis Procedure			INFOID:000000011564445	1
1.CHECK CONNECTOR				B
	cable from the negative terr d connectors of the displa	ninal. y control unit for damage, l	pend and loose connection	С
Is the inspection result norm	nal?			
YES >> GO TO 2. NO >> Repair the termi	inal and connector			C
2.CHECK HARNESS FOR				
	or of display control unit.			E
		unit harness connector term	inals.	
Di:	splay control unit harness connec	tor		F
Connector No.		nal No.	Resistance (Ω)	
M100	29	17	Approx. 54 – 66	(
Is the measurement value w	vithin the specification?			0
YES >> GO TO 3. NO >> Repair the displ	av control unit			
3.CHECK POWER SUPPL		-		ŀ
Check the power supply an TROL UNIT : Diagnosis Pro	d the ground circuit of the		O AV-232, "DISPLAY CON-	
Is the inspection result norm				
YES (Past error)>>Error wa	lace the display control unit as detected in the display c er supply and the ground ci		al and Installation".	,
				k
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TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564446

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	Resistance (Ω)		
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-578, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-586, "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)]

Diagnosis Procedure			INFOID:00000001156444
1.CHECK CONNECTOR			
	cable from the negative termin d connectors of the BCM for <u>al?</u> nal and connector.		e connection (unit side and
. Disconnect the connect		nector terminals.	
	BCM harness connector		
	Terminal No.		
Connector No.	Terminal	No.	Resistance (Ω)
M14	60	No. 59	Resistance (Ω) Approx. 108 – 132
M14 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and <u>Is the inspection result norm</u> YES (Present error)>>Repl	60 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the BCM	59 M. Refer to <u>BCS-91, "Dia</u> 98, "Removal and Installa	Approx. 108 – 132

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564448

[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.

	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 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			Resistance (Ω)
Connector No.	Terminal 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.
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.
- With around view monitor system

LAN-204

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and elect harness of	· · · · · ·	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	505	6F	Existed
E30	15	E65	7F	Existed
- Without around view n	nonitor system			
ABS actuator and electric harness c	· · · ·	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
F25	25	FOF	8F	Existed
E35 -	15	E65	3F	Existed
s the inspection result nor	mal?			
•	se block (J/B) mess between the ABS arness connector E65	S actuator and electric	unit (control unit)	harness connector

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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:0000000011594963

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			Continuity
Connector No.	Terminal No.		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 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	Chassis control module harness connector		
Connector No.	Terminal No.		Resistance (Ω)
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-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "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		٨
Diagnosis Procedure			INFOID:0000000011564450
1. CHECK CONNECTOR			В
 Check the following tern nector side). Steering angle sensor CAN gateway (Models Is the inspection result norr YES-1 >> Models with an YES-2 >> Models without 	cable from the negative term minals and connectors for c with around view monitor sy nal? ound view monitor system: 0 t around view monitor system	lamage, bend and loose con ystem) GO TO 2.	nection (unit side and con- C
^	ninal and connector. NTINUITY (OPEN CIRCUIT)	
1. Disconnect the connect			F
Occurrent on No.	CAN gateway harness connector		Continuity
Connector No.	4	nal No. 6	Existed
M24	10	12	Existed H
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 	R OPEN CIRCUIT of CAN gateway (Models w tor of steering angle sensor	se (CAN communication circ rith around view monitor syst sensor harness connector ter	tem). J rminals.
Ste	eering angle sensor harness conne	ector	Bosistance (0)
Connector No.	Termi	nal No.	Resistance (Ω)
M77	5	2	Approx. 54 – 66
4.CHECK POWER SUPP	ering angle sensor branch lir LY AND GROUND CIRCUI	г <u> </u>	LA
Procedure" <u>Is the inspection result norr</u> YES (Present error)>>Rep YES (Past error)>>Error v	nal?		
			Ρ

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011564451

[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.

	Data link connector		
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	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M25	6	Gibunu	Not existed
WIZO	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.

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

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)
Termir	nal 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-208

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 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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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:0000000011564452

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	M88	1	Existed	
111133	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 EPS/DAST 3 CIRCUIT T DIAGNOSIS > [CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND EPS/DAST 3 CIRCUIT

Diagnosis Procedure

INFOID:000000011564453

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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.
- Steering force control module
- Check the continuity between the A/C auto amp. harness connector and the steering force control module harness connector.

A/C auto amp. ha	arness connector	Steering force control module harness connector		Steering force control module harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
M88	1	M71	14	Existed	_		
10188	21		15	Existed	_		

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the steering force control module.

NO >> Repair the main line between the A/C auto amp. and the steering force control module.

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MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011564454

[CAN SYSTEM (TYPE 3)]

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
- Steering force control module
- Display control unit
- 4. Check the continuity between the steering force control module harness connector and the display control unit harness connector.

Steering force control m	odule harness connector	Display control unit harness connector				Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M71	14	M100	29	Existed		
1017 1	15		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 steering force control module and the display control unit.

NO >> Repair the main line between the steering force control module and the display control unit.

ECM BRANCH LINE CIRCUIT

agnosis Procedu	re			INFOID:00000001156445
.CHECK CONNECTO	R			
nector side). ECM Harness connector I the inspection result n YES >> GO TO 2. NO >> Repair the to CHECK HARNESS F . Disconnect the conr	ery cable from the neterminals and connecterminals and fuse block ormal? erminal and connection of OPEN CIRCUIT	ectors for damage, be k (J/B) side connector tor.		ection (unit side and con
	ECM harness of	connector		Resistance (Ω)
Connector No.		Terminal No.		
Connector No. M37 s the measurement valu	114 ue within the specific		113	Approx. 108 – 132
M37 S the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUIE S the inspection result no YES (Present error)>>F YES (Past error)>>Error NO >> Repair the power supply CHECK HARNESS CO Disconnect the fuse	PPLY AND GROUN and the ground circ ormal? Replace the ECM. Ro or was detected in the ower supply and the ONTINUITY (OPEN block (J/B) harness	cation? ID CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) is connector M133.	to <u>EC-189, "Diagn</u> oval and Installatio	Approx. 108 – 132 osis Procedure".
M37 S the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUIE S the inspection result no YES (Present error)>>F YES (Past error)>>Error NO >> Repair the power supply CHECK HARNESS CO Disconnect the fuse	PPLY AND GROUN and the ground circ ormal? Replace the ECM. Ror was detected in the ower supply and the CONTINUITY (OPEN block (J/B) harness	cation? ID CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) is connector M133.	to <u>EC-189, "Diagn</u> loval and Installation d the fuse block (J	Approx. 108 – 132 osis Procedure". on". /B) harness connector.
M37 the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SUI the inspection result n YES (Present error)>>F YES (Past error)>>Error NO >> Repair the p CHECK HARNESS C Disconnect the fuse Check the continuity	PPLY AND GROUN and the ground circ ormal? Replace the ECM. Ror was detected in the ower supply and the CONTINUITY (OPEN block (J/B) harness	<u>cation?</u> ID CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) is connector M133. harness connector an	to <u>EC-189, "Diagn</u> loval and Installation d the fuse block (J	Approx. 108 – 132 osis Procedure". on".

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:000000011564456

[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 (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 (Ω)
Connector No.	Terminal No.		Resistance (12)
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	Data link connector		Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M25	6	M133	23C	Existed	
IWI25	14	IVI I SS	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:000000011564457 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-37, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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

< DTC/CIRCUIT DIAGNOSIS >

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
EIZI	28	⊏04	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.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564458

[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).
- 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 Terminal No.		Resistance (Ω)	
Connector 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-215, "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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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 3)]

F2	3	F65	9F	Existed	
	8	E03	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:000000011564459

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	Resistance (Ω)		
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 3)]

Diagnosis Procedure			INFOID:000000011564460
.CHECK CONNECTOR			
	able from the negative tern d connectors of the combin		end and loose connection
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the term	nal and connector.		
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of combination meter. Stween the combination met	ter harness connector termi	nals.
Co	mbination meter harness connect	tor	Resistance (Ω)
Connector No.	Termin	al No.	
M58	41	42	Approx. 54 – 66
a the measurement value w			
YES >> GO TO 3. NO >> Repair the comb 3.CHECK POWER SUPPL	bination meter branch line. Y AND GROUND CIRCUIT		
	bination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the co		MWI-104, "COMBINATION
YES >> GO TO 3. NO >> Repair the comb 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	bination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the co are". al? ace the combination meter.	ombination meter. Refer to . Refer to <u>MWI-126, "Remo</u> ion meter branch line.	
YES >> GO TO 3. NO >> Repair the comb 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 was	bination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the co <u>are"</u> . al? ace the combination meter. as detected in the combinat	ombination meter. Refer to . Refer to <u>MWI-126, "Remo</u> ion meter branch line.	
YES >> GO TO 3. NO >> Repair the comb 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	bination meter branch line. Y AND GROUND CIRCUIT I the ground circuit of the co <u>are"</u> . al? ace the combination meter. as detected in the combinat	ombination meter. Refer to . Refer to <u>MWI-126, "Remo</u> ion meter branch line.	

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564461

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-38, "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 3)]

AV BRANCH LINE (CIRCUIT		
Diagnosis Procedure			INFOID:000000011564462
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the displa	ninal. y control unit for damage, t	pend and loose connection
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi	nal and connector		
2. CHECK HARNESS FOR			
1. Disconnect the connect	or of display control unit.	unit harness connector termi	nals.
Dis	splay control unit harness connec	tor	Resistance (Ω)
Connector No.	Termiı	nal No.	
M100	29	17	Approx. 54 – 66
	ay control unit. Y AND GROUND CIRCUIT d the ground circuit of the	display control unit. Refer to	D AV-232, "DISPLAY CON-
ROL UNIT : Diagnosis Pro			
YES (Past error)>>Error wa	lace the display control uni		I and Installation".

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564463

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

	Resistance (Ω)		
Connector No.	Termi		
M14	60 59		Approx. 108 – 132

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	E CIRCUIT		
Diagnosis Procedure			INFOID:000000011564464
1.CHECK CONNECTOR			В
 Check the following terr nector side). ABS actuator and election Harness connector E65 	cable from the negative terr minals and connectors for d ric unit (control unit) and fuse block (J/B) side c	lamage, bend and loose con	nection (unit side and con- C
	ound view monitor system: (
NO >> Repair the term			E
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.	F
	CAN gateway harness connector	r	Gastiauitu
Connector No.		nal No.	Continuity
	4	6	Existed
M24	10	12	Existed
2. Disconnect the connect	or of ABS actuator and electron	rith around view monitor syst ctric unit (control unit). and electric unit (control unit)	
ABS actuator	and electric unit (control unit) har		Resistance (Ω)
Connector No.	Termir	nal No.	L
E35	25	15	Approx. 54 - 66
Is the measurement value w YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPPL		г	LA
Check the power supply an BRC-154, "Diagnosis Proce		ABS actuator and electric u	
Is the inspection result norm			0
and Installation YES (Past error)>>Error w	<u>_</u> .	electric unit (control unit). Re uator and electric unit (contro rcuit.	
5. CHECK HARNESS CON			
		5. and electric unit (control unit)	harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-223

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	ectric unit (control unit) connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Connector No. Terminal No.		
E35	25	FGE	6F	Existed	
E30	15	E65 7F		Existed	

- Without around view monitor system

	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	8F	Existed
235	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 3)]

		-	
Diagnosis Procedure			INFOID:000000011564465
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 Is the inspection result norm YES-1 >> Models with arc YES-2 >> Models without 	cable from the negative term minals and connectors for conodule with around view monitor synal? bund view monitor system: conod view monitor system around view monitor system inal and connector.	lamage, bend and loose col ystem) GO TO 2. m: GO TO 3.	nnection (unit side and con-
		arness connector terminals.	
	CAN gateway harness connecto	r	Continuity
Connector No.		nal No.	
M24	4	6	Existed
YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid		if shield line is open) the roo	ot cause (CAN communica-
NO >> Check the harn tion circuit 2 sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	ess and repair or replace (e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control	vith around view monitor sys	stem).
 NO >> Check the harn tion circuit 2 sid 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be 	ess and repair or replace (e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control	rith around view monitor sys module. ontrol module harness conr	ector terminals.
NO >> Check the harn tion circuit 2 sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be Steerin Connector No.	ess and repair or replace (e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force c g force control module harness co Termi	rith around view monitor sys module. ontrol module harness conr	stem). nector terminals. Resistance (Ω)
NO >> Check the harn tion circuit 2 sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steerin Connector No. M71 Is the measurement value w YES >> GO TO 4. NO >> Replace the box	ess and repair or replace (e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force c g force control module harness co g force control module harness co Termi 14 vithin the specification? dy harness.	rith around view monitor sys module. ontrol module harness conr onnector nal No. 15	ector terminals.
NO >> Check the harn tion circuit 2 sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steerin 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	ess and repair or replace (e). OPEN CIRCUIT of CAN gateway (Models w or of steering force control etween the steering force c g force control module harness ca g force control module harness ca I Termi 14 vithin 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 nal No. 15	etem). ector terminals. Resistance (Ω) Approx. 54 – 66 e. Refer to <u>STC-397, "Diag-</u> 418, "Removal and Installa-

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

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011564467

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.

	Continuity		
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 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 (Ω)		
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-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "Removal and Installation".

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

STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			A
1. CHECK CONNECTOR			В
 Check the following tern nector side). Steering angle sensor CAN gateway (Models Is the inspection result norr YES-1 >> Models with an YES-2 >> Models without 	cable from the negative term minals and connectors for c with around view monitor sy	lamage, bend and loose con /stem) GO TO 2.	nection (unit side and con- C
^	NTINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha	arness connector terminals.	F
Connector No	CAN gateway harness connector		Continuity
Connector No.	4	nal No. 6	Existed
M24	10	12	Existed
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 	R OPEN CIRCUIT of CAN gateway (Models w tor of steering angle sensor	se (CAN communication circ	tem). J
Ste	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termi	nal No.	
M77	5	2	Approx. 54 – 66
4.CHECK POWER SUPP	ering angle sensor branch lir LY AND GROUND CIRCUI	r	LA
Procedure" <u>Is the inspection result norr</u> YES (Present error)>>Rep YES (Past error)>>Error v	nal?		-
			Ρ

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564469

[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 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	ssis control module harness conn	ector	Continuity
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 and	gle main control module harness co	onnector	Resistance (Ω)
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-397.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-419, "Removal and</u> <u>Installation"</u>.
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000011564470 **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.

< DTC/CIRCUIT DIAGNOSIS >

CHASSIS COMMU	NICATION CIRCUI	Т	٨
Diagnosis Procedure			A INFOID:000000011564471
1.CHECK CAN DIAGNOSI	S		В
Check the CAN diagnosis r communication circuit 2 hav		ee that the CAN commun	ication circuit 1 and/or CAN
Are the CAN communication		tion 2 circuits normal?	С
YES >> GO TO 2. NO >> Check and repa	in CAN communication size		ination circuit 0
2.CONNECTOR INSPECT	ir CAN communication circ	uit Tand/or CAN commun	D
1. Turn the ignition switch			
2. Disconnect the battery of	cable from the negative term		E
	connectors on chassis comr nnectors for damage, bend		
Is the inspection result norm	<u>ial?</u>		F
YES >> GO TO 3. NO >> Repair the term	inal and connector.		
3. CHECK HARNESS CON		T)	G
Check the continuity betwee			0
Cha	ssis control module harness conne	ector	H
Connector No.	Termin	nal No.	Continuity
E22	19	7	Not existed
Is the inspection result norm YES >> GO TO 4.	<u>ial?</u>		I
	ess and repair or replace [if	shield line or fuse block (J/B) is short] the root cause.
4.CHECK HARNESS CON	TINUITY (SHORT CIRCUI	T)	J
Check the continuity betwee	n the data link connector a	nd the ground.	
Chassis control mode	ule harness connector		K
Connector No.	Terminal No.	Ground	Continuity
M22	19	Ground	Not existed
	7		Not existed
<u>Is the inspection result norm</u> YES >> GO TO 5.	<u>al?</u>		LAN
	ess and repair or replace [if	shield line or fuse block (J/B) is short] the root cause.
5. CHECK CHASSIS CONT	ROL MODULE TERMINAT	FION CIRCUIT	Ν
1. Remove the chassis co			
2. Check the resistance be	etween the chassis control r	module terminals.	0
Chas	sis control module		Resistance (Ω)
	Terminal No.		P
19	7		oprox. 108 – 132
11	8	Ar	oprox. 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.

< DTC/CIRCUIT DIA			HVAC CIRCUI	F N SYSTEM (TYPE 4)]
DTC/CIRCU		OSIS	• -	
		AND HVAC CIRC	CUIT	
Diagnosis Proced	lure			INFOID:000000011564472
1.CHECK CONNECT				
1. Turn the ignition s				
 Disconnect the basis Check the following and harness side Harness connector Is the inspection resule YES >> GO TO 2. 	attery cable from the ng terminals and c). or M133 and fuse b <u>t normal?</u>	e negative terminal. connectors for damage, t lock (J/B) side connector nector.		nection (connector side
2. CHECK HARNESS	CONTINUITY (OF	PEN CIRCUIT)		
		ess connector M65. e block (J/B) terminals.		
	Fuse block (J	//B)		Continuity
Terminal N	lo.	Terminal No.		·
23C 5C		22C 4C		Existed Existed
3. CHECK HARNESS	he fuse block (J/B). CONTINUITY (OF Innector of A/C auto	PEN CIRCUIT)	nnector and the A/C a	auto amp. harness con-
Fuse block (I/B)	harness connector	A/C auto amp b	arness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M133	22C	M88	1	Existed
W133	4C	INIOO	2	Existed
	>Check CAN syste rror was detected	em type decision again. in the main line betweer the fuse block (J/B) harr		ector and the A/C auto and the A/C auto

MAIN LINE BETWEEN HVAC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND EPS/DAST 3 CIRCUIT

Diagnosis Procedure

INFOID:000000011564473

[CAN SYSTEM (TYPE 4)]

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.
- Steering force control module
- Check the continuity between the A/C auto amp. harness connector and the steering force control module harness connector.

A/C auto amp. h	arness connector	Steering force control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Moo	1	N/71	14	Existed
M88	21	M71	15	Existed

Is the inspection result normal?

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

- YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the steering force control module.
- NO >> Repair the main line between the A/C auto amp. and the steering force control module.

MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011564474

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[CAN SYSTEM (TYPE 4)]

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
- Steering force control module
- Display control unit
- Check the continuity between the steering force control module harness connector and the display control unit harness connector.

Steering force control m	odule harness connector	Display control unit	harness connector	Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M71	14	M100	29	Existed	_
1017-1	15	WITOU -	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 steering force control module and the display control unit.

NO >> Repair the main line between the steering force control module and the display control unit.

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564475

[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.

	ECM harness connector		Resistance (Ω)
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-189, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-580, "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
M37	114	M133	21C	Existed
IVI 37	113	10133	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)]

Jiagnosis Dracadu	ro			
iagnosis Procedu				INFOID:000000011564476
.CHECK CONNECTO	R			
and harness side). Data link connector Harness connector the inspection result n YES >> GO TO 2.	ery cable from the r terminals and cor M133 and fuse bloo <u>ormal?</u> erminal and connect OR OPEN CIRCU	nnectors for damage, k ck (J/B) side connector ctor. T		nnection (connector side
	Data link co	nnector		
Connector No.		Terminal No.		Resistance (Ω)
M25	6		14	Approx. 54 – 66
s the measurement valu				
YES (Present error)>>0 YES (Past error)>>Erro NO >> GO TO 3. CHECK HARNESS C Disconnect the harn Check the continuity	ONTINUITY (OPE	he data link connector N CIRCUIT)		
Data link co	nnector	Harness	connector	Continuity
	Terminal No.	Connector No.	Terminal No.	Continuity
Connector No.			23C	E viete d
Connector No.	6	M133	200	Existed

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:000000011564477

[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.

IPDM E/R harness connector			Posistanco (O)
Connector No.	Terminal No.		Resistance (Ω)
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-37, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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
EIZI	28	E04	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 LINE CIR	CUIT		
Diagnosis Procedure			INFOID:000000011564478
1. CHECK CONNECTOR			
 Turn the ignition switch OFF. Disconnect the battery cable fro Check the following terminals ar nector side). A/T assembly Harness connector F12 Harness connector E10 		nd and loose con	nection (unit side and con-
- Harness connector E65 and fus	e block (J/B) side connector		
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and 2.CHECK HARNESS FOR OPEN (1. Disconnect the connector of A/T	CIRCUIT assembly.		
 Check the resistance between the	•	nector terminals.	
Connector No.	nbly harness connector Terminal No.		Resistance (Ω)
F2	3	8	Approx. 54 – 66
 Remove the joint connector. Ref Check the continuity between the side of the joint connector. 			e TCM harness connector
A/T assembly harness connector side	TCM harness connector		
Terminal No.	Terminal No.		Continuity
3	3		Existed
8	8		Existed
Is the inspection result normal? YES >> GO TO 4. NO >> Replace the joint connect 4.CHECK POWER SUPPLY AND (GROUND CIRCUIT		
Check the power supply and the gro <u>Is the inspection result normal?</u> YES (Present error)>>Replace the YES (Past error)>>Error was detec NO >> Repair the power supply	control valve & TCM. Refer to ted in the TCM branch line.	-	
5.CHECK HARNESS CONTINUIT	(OPEN CIRCUIT)		
 Check the continuity between th 		ector and the ha	mess 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
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.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:000000011564479
.CHECK CONNECTOR			
	cable from the negative termind connectors of the A/C auto		nd and loose connection (unit
the inspection result norm YES >> GO TO 2. NO >> Repair the term	inal and connector.		
CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	etween the A/C auto amp. ha	ness connector termina	als.
	A/C auto amp. harness connector		Resistance (Ω)
Connector No. M88	Terminal	No21	Approx. 54 – 66
CHECK POWER SUPPL	auto amp. branch line. Y AND GROUND CIRCUIT Id the ground circuit of the A	/C auto amp. Refer to	HAC-92, "A/C AUTO AMP. :
YES (Past error)>>Error w	<u>al?</u> lace the A/C auto amp. Refer as detected in the A/C auto a er supply and the ground circl	mp. branch line.	l and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564480

[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.

Co	Combination meter harness connector				
Connector No.	Termi	Resistance (Ω)			
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:000000011564481 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-38, "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:000000011564482

[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 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	Display control unit harness connector				
Connector No.	Termi	Resistance (Ω)			
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-232, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-270, "Removal and Installation"</u>.

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

TCU BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure)		INFOID:00000001156448
1.CHECK CONNECTOR			
3. Check the terminals a connector side).	/ cable from the negative terr and connectors of the TCU f		se connection (unit side and
Is the inspection result nor YES >> GO TO 2. NO >> Repair the ter	mal? minal and connector.		
2. CHECK HARNESS FO	R OPEN CIRCUIT		
 Disconnect the conne Check the resistance 	ctor of TCU. between the TCU harness co	onnector terminals.	
	TCU harness connector		Resistance (Ω)
Connector No.	Termir	nol No	
Connector No.	Terrini		
M81	9	10	Approx. 54 – 66
M81 <u>Is the measurement value</u> YES >> GO TO 3. NO >> Repair the TC 3. CHECK POWER SUPF Check the power supply a <u>Is the inspection result nor</u>	9 within the specification? U branch line. PLY AND GROUND CIRCUIT nd the ground circuit of the T mal?	10 - CU. Refer to <u>AV-578, "TCL</u>	J : Diagnosis Procedure".
M81 <u>Is the measurement value</u> YES >> GO TO 3. NO >> Repair the TC 3. CHECK POWER SUPF Check the power supply a <u>Is the inspection result non</u> YES (Present error)>>Re YES (Past error)>>Error	9 within the specification? U branch line. PLY AND GROUND CIRCUIT nd the ground circuit of the T	10 - CU. Refer to <u>AV-578, "TCL</u> 586, "Removal and Installa nch line.	J : Diagnosis Procedure".

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564484

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

	BCM harness connector				
Connector No.	Termi	Resistance (Ω)			
M14	60	59	Approx. 108 – 132		

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:000000011564485
1. CHECK CONNECTOR			E
 3. Check the following terr nector side). ABS actuator and electric Harness connector E65 <u>Is the inspection result norm</u> YES-1 >> Models with arc 	cable from the negative terr ninals and connectors for d ric unit (control unit) and fuse block (J/B) side c nal? ound view monitor system: (around view monitor syster	amage, bend and loose col connector GO TO 2.	nnection (unit side and con-
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	-	Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
Is the inspection result norm	10	12	Existed
 Disconnect the connect Check the resistance b nals. 	or of ABS actuator and elec etween the ABS actuator a	ind electric unit (control uni	t) harness connector termi-
	and electric unit (control unit) harr		Resistance (Ω)
Connector No.		nal No.	Approx 54 66
E35 Is the measurement value w YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPPL	Y AND GROUND CIRCUIT		Approx. 54 - 66
Check the power supply an <u>BRC-154, "Diagnosis Proce</u>	dure".	ABS actuator and electric	unit (control unit). Refer to
and Installation YES (Past error)>>Error w	lace the ABS actuator and as detected in the ABS actu er supply and the ground ci	uator and electric unit (cont rcuit.	efer to <u>BRC-178, "Removal</u> rol unit) branch line.
			t) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-247

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS actuator and electric unit (control unit) harness connector		Harness	Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	FGE	6F	Existed
E30	15	— E65	7F	Existed

- Without around view monitor system

	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	E65	8F	Existed
235	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			
Diagnosis Procedure			INFOID:000000011564486
1.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery Check the following tern nector side). Steering force control models CAN gateway (Models s the inspection result norm YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term 	cable from the negative terr minals and connectors for d nodule with around view monitor sy <u>nal?</u> bund view monitor system: (around view monitor system inal and connector.	lamage, bend and loose co /stem) GO TO 2. n: GO TO 3.	nnection (unit side and con-
	etween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termiı	nal No.	Continuity
Connector No.			
M24	4	6	Existed
M24 <u>s the inspection result norn</u> YES >> GO TO 3. NO >> Check the harn	10 nal? ness and repair or replace (i	12	Existed Existed ot cause (CAN communica-
M24 <u>s the inspection result norn</u> YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid 3. CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	10 nal? ness and repair or replace (i de). & OPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force co	12 f shield line is open) the ro ith around view monitor sys module. ontrol module harness con	Existed ot cause (CAN communica- stem).
M24 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steering	10 mal? mess and repair or replace (i de). & OPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control ag force control module harness co	12 f shield line is open) the ro ith around view monitor sys module. ontrol module harness cont onnector	Existed ot cause (CAN communica- stem).
M24 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steerin Connector No.	10 nal? ness and repair or replace (i de). R OPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control of force control module harness control Termin	12 f shield line is open) the ro ith around view monitor sy- module. ontrol module harness cont onnector hal No.	Existed ot cause (CAN communica- stem). nector terminals. Resistance (Ω)
$\begin{array}{rcl} & \underline{M24} \\ \hline s \ the \ inspection \ result \ norm \\ YES \ >> GO TO 3. \\ NO \ >> Check \ the \ harn \\ tion \ circuit 2 \ side \\ \hline \textbf{3. CHECK HARNESS FOR} \\ \hline \textbf{1. Connect the connector} \\ \hline \textbf{2. Disconnect the connector} \\ \hline \textbf{3. Check the resistance be} \\ \hline \hline \hline \textbf{5teerin} \\ \hline \hline \textbf{Connector No.} \\ \hline \hline \textbf{M71} \\ \hline \textbf{s the measurement value v} \\ YES \ >> GO TO 4. \\ NO \ >> Replace \ the bo \\ \hline \end{array}$	10 nal? ness and repair or replace (ide). R OPEN CIRCUIT of CAN gateway (Models weatering force control etween the steering force control etween the steering force control force control module harness control module harness control force control for	12 f shield line is open) the ro ith around view monitor sys module. ontrol module harness cont onnector hal No. 15	Existed ot cause (CAN communica- stem). nector terminals.
$\begin{array}{r} & \underline{M24} \\ \hline s \ the \ inspection \ result \ norm \\ YES \ >> GO TO 3. \\ NO \ >> Check \ the \ harn \\ tion \ circuit \ 2 \ side \\ \hline \textbf{3. CHECK HARNESS FOR } \\ \hline \textbf{1. Connect the \ connector } \\ \hline \textbf{2. Disconnect the \ connector } \\ \hline \textbf{3. Check the \ resistance \ bo } \\ \hline \hline \textbf{3. Check the \ resistance \ bo } \\ \hline \hline \textbf{3. Check the \ resistance \ bo } \\ \hline \hline \textbf{3. Check the \ resistance \ bo } \\ \hline \hline \textbf{3. Check the \ resistance \ bo } \\ \hline \hline \textbf{3. Check the \ resistance \ bo } \\ \hline \hline \textbf{3. Check \ the \ resistance \ bo } \\ \hline \hline \textbf{3. Check \ the \ resistance \ bo } \\ \hline \hline \textbf{3. Check \ the \ resistance \ bo } \\ \hline \hline \textbf{3. Check \ the \ resistance \ bo } \\ \hline \hline \textbf{3. Check \ the \ resistance \ bo } \\ \hline \hline \textbf{4. CHECK \ POWER \ SUPPL } \\ \hline \hline \textbf{Check \ the \ power \ supply \ and } \\ \hline \hline \textbf{5. check \ the \ power \ supply \ and } \\ \hline \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \ \textbf{5. check \ the \ power \ supply \ and } \\ \hline \ \ 5. check \ the $	10 nal? ness and repair or replace (ide). R OPEN CIRCUIT of CAN gateway (Models weatering force control etween the steering force control etween the steering force control module harness control module harness control is force control module harness. 14 vithin the specification? dy harness.	12 f shield line is open) the ro ith around view monitor sysmodule. ontrol module harness commonter onnector hal No. 15	Existed ot cause (CAN communica- stem). nector terminals. Resistance (Ω)
$\begin{array}{r} & \underline{M24} \\ \hline s \ the \ inspection \ result \ norm \\ YES \ >> GO TO 3. \\ NO \ >> Check \ the \ harn \\ tion \ circuit 2 \ side \\ \hline \textbf{3. CHECK HARNESS FOR} \\ \hline \textbf{1. Connect the connector} \\ \hline \textbf{3. Check the resistance be} \\ \hline \hline \hline \textbf{3. Check the resistance be} \\ \hline \hline \hline \textbf{5teerin} \\ \hline \hline \textbf{6} \\ \hline \hline \textbf{1. Connect the connector} \\ \hline \textbf{3. Check the resistance be} \\ \hline \hline \hline \textbf{5teerin} \\ \hline \hline \textbf{6} \\ \hline \hline \textbf{71} \\ \hline \textbf{5 the measurement value v} \\ YES \ >> GO TO 4. \\ NO \ >> Replace \ the bo \\ \hline \textbf{4. CHECK POWER SUPPL} \\ \hline \hline \hline \hline \textbf{Check the power supply and be an analysis Procedure''. \\ \hline \textbf{5 the inspection result norm } \end{array}$	10 nal? ness and repair or replace (if de). R OPEN CIRCUIT of CAN gateway (Models we tor of steering force control etween the steering force control etween the steering force control module harness control module harness control module harness. Image force control module harness control module harness. Image force control module harness control module harnes contres contres control module harnes control module harne	12 f shield line is open) the ro ith around view monitor sysmodule. ontrol module harness commonector hal No. 15 r teering force control module	Existed not cause (CAN communica- stem). nector terminals. Resistance (Ω) Approx. 54 – 66

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:0000000011564488

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.

	Continuity		
Connector No.	Termir	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	ssis control module harness conr	ector	Resistance (Ω)
Connector No.	Terminal 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.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "Removal and Installation".

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

Diagnosis Procedure Avadacceccentre 1. CHECK CONNECTOR Image: Connect 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 3. Check the following terminals and connectors system: Connect 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 3. Check the following terminals and connector. Steering angle sensor Steering angle sensor YES-1 >> Models with around view monitor system: GO TO 2. YES-2 >> Models without around view monitor system: GO TO 3. NO NO >> Repair the terminal and connector. Steering angle sensor Steering angle sensor 1. Disconnect the connector of CAN gateway. Steering angle sensor Continuity 2. Check the continuity between the CAN gateway harness connector terminals. Continuity YES >> GO TO 3. Connect the connector of CAN gateway that ness connector circuit). 3. Check the namess and repair the root cause (CAN communication circuit). Steering angle sensor. 3. Check the connector of Steering angle sensor harness connector terminals. Steering angle sensor harness connector terminals. 1. Connec	STRG BRANCH LI	NE CIRCUIT		
1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). • 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 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. Connector No. Terminal No. 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 SAB gateway (Models with around view monitor system). 2. Disconnect the connector of SAB gateway (Models with around view monitor system). 2. Disconnect the connector of CAN gateway (Models with around view monitor system). 2. Check the	Diagnosis Procedure			A INFOID:000000011564489
 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) 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 the continuity between the CAN gateway. Check the continuity between the CAN gateway harness connector terminals. Connector No. Connector No. Terminal No. Connector normal? YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor and repair the root cause (CAN communication circuit). Connect the connector of CAN gateway (Models with around view monitor system). Disconnect 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). Disconnect the connector of CAN gateway (Models with around view monitor system). Connector No. Steering angle sensor harness connector terminals. 	1. CHECK CONNECTOR			В
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. Connector No. Terminal No. M24 4 6 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. Or >> 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. Resistance (Ω) M77 5 2 Approx. 54 - 66 Is the measurement value within the specification? YES > GO TO 4. NO > Resistance (Ω) M77 YES > GO TO 4. NO >> Repair the steering angle sensor branc	 Disconnect the battery Check the following ternector side). Steering angle sensor 	cable from the negative terminals and connectors for c	lamage, bend and loose co	
YES-2 >> Models without around view monitor system: GO TO 3. NO >> Repair the terminal and connector. Image: Constant in the specification? 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Image: Constant in the specification in the specification? Image: Continuity of the steering angle sensor harness connector terminals. Image: Connector No. Image: Continuity of the constant in the specification? Continuity Image: Connector No. Image: Continuity of the constant in the specification? 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. Image: Steering angle sensor harness connector		-		L
1. Disconnect the connector of CAN gateway. Fill 2. Check the continuity between the CAN gateway harness connector terminals. Continuity 2. Check the continuity between the CAN gateway harness connector terminals. Continuity 2. Connector No. Terminal No. M24 4 6 Existed M24 10 12 Existed Is the inspection result normal? YES >> GO TO 3. NO 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. Resistance (Ω) M77 5 2 Approx.54 - 66 Is the measurement value within the specification? YES >> GO TO 4. NO 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-122. "Diagnosis	YES-2 >> Models without	t around view monitor system		E
2. Check the continuity between the ČAN gateway harness connector terminals. Continuity Continuity Continuity Continuity Continuity Continuity Continuity Continuity Mathematical Street S	2. CHECK HARNESS CO	NTINUITY (OPEN CIRCUIT)	
Connector No. Terminal No. Continuity M24 4 6 Existed Is the inspection result normal? YES >> GO TO 3. YES >> GO TO 3. NO >> Check the harness and repair the root cause (CAN communication circuit). 3. CHECK HARNESS FOR OPEN CIRCUIT 1. 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. Resistance (Ω) M77 5 2 Approx. 54 – 66 1. Is the measurement value within the specification? YES >> GO TO 4. 1. NO >> Repair the steering angle sensor branch line 4. CHECK POWER SUPPLY AND GROUND CIRCUIT 1. Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-122. "Diagnosis 1. 1.			arness connector terminals.	F
Connector No. Terminal No. M24 4 6 Existed Is the inspection result normal? YES >> GO TO 3. NO 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 Resistance (Ω) M77 5 2 Is the measurement value within the specification? YES 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-122, "Diagnosis		CAN gateway harness connector		Continuity
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. Image: Steering angle sensor harness connector terminals. Steering angle sensor harness connector No. Terminal No. Resistance (Ω) M77 5 2 Approx. 54 - 66 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 BRC-122. "Diagnosis Image: Steering angle sensor.	Connector No.			-
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 Connector No. Terminal No. M77 5 2 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 4. NO 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-122. "Diagnosis	M24			L
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 Resistance (Ω) M77 5 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 BRC-122. "Diagnosis	le the increation result per	-	12	Existed
Steering angle sensor harness connector Resistance (Ω) Connector No. Terminal No. Resistance (Ω) M77 5 2 Approx. 54 – 66 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 L Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-122. "Diagnosis N	NO >> Check the harr 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector	R OPEN CIRCUIT of CAN gateway (Models w tor of steering angle sensor	ith around view monitor sys	stem).
Connector No. Terminal No. M77 5 2 Approx. 54 – 66 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-122. "Diagnosis</u>	Ste	eering angle sensor harness conne	ector	
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-122. "Diagnosis</u>	Connector No.	Termi	nal No.	
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-122. "Diagnosis</u>		-	2	Approx. 54 – 66
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. NO >> Repair the power supply and the ground circuit.	YES >> GO TO 4. NO >> Repair the stee 4.CHECK POWER SUPP Check the power supply a <u>Procedure"</u> . Is the inspection result norr YES (Present error)>>Rep YES (Past error)>>Error v	ering angle sensor branch lin LY AND GROUND CIRCUI nd the ground circuit of the mal? place the steering angle ser vas detected in the steering	steering angle sensor. Ret sor. Refer to <u>BRC-180, "Re</u> angle sensor branch line.	

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564490

[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	ssis control module harness conr	ector	Continuity
Connector No.	Termi	nal 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 and	gle main control module harness co	nnector	Resistance (Ω)
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-397.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-419, "Removal and</u> <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)]

CAN COMMUNICA	TION CIRCUIT		
Diagnosis Procedure			INFOID:000000011564491
1.CONNECTOR INSPECT	ION		
3. Disconnect all the unit c	cable from the negative terr onnectors on CAN commun nnectors for damage, bend <u>al?</u> nal and connector.	nication system. and loose connection.	
Check the continuity betwee	n the data link connector te	erminals.	
	Data link connector		Continuity
Connector No.	Termir	nal No.	Continuity
M25	6	14	Not existed
NO $>>$ Check the harned 3. CHECK HARNESS CON Check the continuity betwee	TINUITY (SHORT CIRCUI	Τ)	/B) is short] the root cause.
Data link	connector		
Connector No.	Terminal No.	Ground	Continuity
M25	6	Ground	Not existed
	14		Not existed
4.CHECK ECM AND BCM 1. Remove the ECM and th	TERMINATION CIRCUIT	shield line or fuse block (J	/B) is short] the root cause.
	ECM		Resistance (Ω)
	Terminal No.		. ,
114 3. Check the resistance be	tween the BCM terminals.	Ap	pprox. 108 – 132
	BCM		
-	Terminal No.	F	Resistance (Ω)
60	59	Ар	prox. 108 – 132
Is the measurement value w YES >> GO TO 5. NO >> Replace the EC 5.CHECK SYMPTOM			

Revision: 2015 January

customer)" are reproduced.

< DTC/CIRCUIT DIAGNOSIS >

LAN-253

< 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.

CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure			INFOID:000000011564492
1.CHECK CAN DIAGNOSI	S		
Check the CAN diagnosis recommunication circuit 2 hav Are the CAN communication YES $>>$ GO TO 2. NO $>>$ Check and repa 2.CONNECTOR INSPECT 1. Turn the ignition switch 2. Disconnect the battery of 3. Disconnect all the unit of	esults from CONSULT to see no malfunction. In 1 and/or CAN communication circe in CAN communication circe ION OFF. cable from the negative terr connectors on chassis communectors for damage, bend hal?	ation 2 circuits normal? wit 1 and/or CAN commun minal. munication circuit. I and loose connection.	nication circuit 1 and/or CAN
Check the continuity betwee			
Connector No.	ssis control module harness conn		Continuity
Connector No			
E22 s the inspection result norm	19	nal No. 7	Not existed
E22 <u>s the inspection result norm</u> YES >> GO TO 4. NO >> Check the harne 1. CHECK HARNESS CON	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI	7 f shield line or fuse block (T)	Not existed J/B) is short] the root cause.
E22 s the inspection result norm YES >> GO TO 4. NO >> Check the harne CHECK HARNESS CON Check the continuity betwee	19 hal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a	7 f shield line or fuse block (T)	
E22 <u>s the inspection result norm</u> YES >> GO TO 4. NO >> Check the harne 1. CHECK HARNESS CON Check the continuity betwee Chassis control modu	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector	7 f shield line or fuse block (T)	
E22 s the inspection result norm YES >> GO TO 4. NO >> Check the harne CHECK HARNESS CON Check the continuity betwee	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector Terminal No. 19	7 f shield line or fuse block (T)	J/B) is short] the root cause. Continuity Not existed
E22 <u>s the inspection result norm</u> YES >> GO TO 4. NO >> Check the harne 1 .CHECK HARNESS CON Check the continuity betwee Chassis control modu Connector No. M22 <u>s the inspection result norm</u> YES >> GO TO 5. NO >> Check the harne	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector Terminal No. 19 7 nal? ess and repair or replace [if	7 f shield line or fuse block (T) nd the ground. Ground	J/B) is short] the root cause.
E22 s the inspection result norm YES >> GO TO 4. NO >> Check the harne A.CHECK HARNESS CON Check the continuity betweet Chassis control mode Chassis control mode Connector No. M22 s the inspection result norm YES >> GO TO 5. NO >> Check the harne D.CHECK CHASSIS CONT 1. Remove the chassis con 2. Check the resistance be Chass	19 hal? ess and repair or replace [if TINUITY (SHORT CIRCUI en the data link connector a ule harness connector Terminal No. 19 7 hal? ess and repair or replace [if TROL MODULE TERMINA	7 f shield line or fuse block (T) nd the ground. Ground f shield line or fuse block (FION CIRCUIT module terminals.	J/B) is short] the root cause. Continuity Not existed Not existed J/B) is short] the root cause. Resistance (Ω)
E22 s the inspection result norm YES >> GO TO 4. NO >> Check the harne A.CHECK HARNESS CON Check the continuity betweet Chassis control mode Chassis control mode Connector No. M22 s the inspection result norm YES >> GO TO 5. NO >> Check the harne D.CHECK CHASSIS CONT 1. Remove the chassis con 2. Check the resistance be Chass	19 nal? ess and repair or replace [if TINUITY (SHORT CIRCUI en the data link connector a ule harness connector 19 7 nal? ess and repair or replace [if TROL MODULE TERMINAT ntrol module. etween the chassis control	7 f shield line or fuse block (T) nd the ground. Ground f shield line or fuse block (FION CIRCUIT module terminals.	J/B) is short] the root cause. Continuity Not existed Not existed J/B) is short] the root cause.

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6. СНЕСК ЗҮМРТОМ

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.

I > DTC/CIRCUIT DIAC		ETWEEN DLC AND		T N SYSTEM (TYPE 5)]
DTC/CIRCU		OSIS	• -	
		AND HVAC CIRC	CUIT	
Diagnosis Proced	ure			INFOID:000000011564493
1.CHECK CONNECT				
 Turn the ignition set Disconnect the base Check the following and harness side) Harness connector Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the fus 	witch OFF. ttery cable from th ng terminals and o r M133 and fuse b <u>normal?</u> terminal and con CONTINUITY (Ol se block (J/B) harn	PEN CIRCUIT) less connector M65.		nection (connector side
2. Check the continu	•	se block (J/B) terminals.		
 Terminal No	Fuse block (J/B) Terminal No.		Continuity
23C		22C		Existed
5C		4C		Existed
3.CHECK HARNESS 1. Disconnect the co	nnector of A/C aut	PEN CIRCUIT)	nnector and the A/C a	auto amp. harness con-
Fuse block (J/B) I	narness connector	A/C auto amp. h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M133	22C 4C	M88	1 2	Existed Existed
YES (Past error)>>Er amp.	Check CAN system ror was detected	em type decision again. in the main line between n the fuse block (J/B) harr		

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011564494

[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	Display control unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M88	M88 1 M100		29	Existed
IVIOO	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.

< DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN A Diagnosis Procedure 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Disconnect the battery cable frod 3. Check the following terminals a and harness side) Harness connector B39 and fus Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and 2.CHECK HARNESS CONTINUIT	om the negative and connectors	terminal. for damage, I		INFOID:0000000011564495
 CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the following terminals and harness side). Harness connector B39 and fustion the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and the following the inspection for the terminal and the following terminal and terminal	and connectors	for damage, I	bend and loose conn	
 Turn the ignition switch OFF. Disconnect the battery cable from the following terminals and harness side). Harness connector B39 and fustion the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and the inspection terminal and the inspection terminal and the inspection terminal and terminal an	and connectors	for damage, I	bend and loose conn	
 Disconnect the battery cable from the following terminals and harness side). Harness connector B39 and fusting the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and the inspection result harnest context for the terminal and t	and connectors	for damage, I	bend and loose conn	
YES >> GO TO 2. NO >> Repair the terminal and				ection (connector side
		UIT)		
 Disconnect the following harnes Fuse block (J/B) harness conne ABS actuator and electric unit (Check the continuity between the 	ss connectors. ector B39 control unit)		ls.	
ABS actuator and electric unit (construction harness connector	ontrol unit)	Fuse bloc	k (J/B) terminals	Continuity
Connector No. Te	erminal No.	Terr	minal No.	
E35	25		6H	Existed
	15		4H	Existed
Is the inspection result normal? YES >> GO TO 3. NO >> Replace the fuse block 3. CHECK HARNESS CONTINUIT 1. Disconnect the connector of drin 2. Check the continuity between the	Y (OPEN CIRCU	unit.	driver seat control un	it harness connector.
Fuse block (J/B) harness connector	Drive	er seat control un	it harness connector	Continuity
Connector No. Terminal No.	o. Conr	nector No.	Terminal No.	
B39 6H		B601	1	Existed
4H Is the inspection result normal?			17	Existed

MAIN LINE BETWEEN ADP AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND AVM CIRCUIT

Diagnosis Procedure

INFOID:0000000011564496

[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	Harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B12	1	P27	4	Existed
DIZ	17	B37	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.	
B72	4	B50	27	Existed
DIZ	3	- 650 -	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 >			
MAIN LINE RETVICEN	A\/N/		

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT А Diagnosis Procedure INFOID:000000011564497 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). Harness connectors B62 Harness connectors M22 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 following harness connectors. F 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 monitor control unit Harness connector Н harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. 27 63 Existed B50 B62 28 53 Existed With ICC Around view monitor control unit Harness connector harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Κ 27 18 Existed B50 B62 28 17 Existed Is the inspection result normal? YES >> GO TO 3. NO >> Replace the body harness. LAN **3.** CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the harness connectors M95 and M155. 2. Check the continuity between the harness connectors. Ν With around view monitor, without ICC Harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. 63 15 Existed M22 M95 7 Ρ 53 Existed With ICC

Harness	connector Harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	18	M95	14	Existed
IVIZZ	17	IVI95	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:000000011564498

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[CAN SYSTEM (TYPE 5)]

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. 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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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564500

[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.

	ECM harness connector		Resistance (Ω)
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-189, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-580, "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 harness connector		nector Fuse block (J/B) harness co		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	114	M133	21C	Existed
10137	113	10135	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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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:000000011564502

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		
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			Resistance (Ω)
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.

IPDM-E BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000011564503 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) 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. ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-37, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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:000000011564504

[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.

A/T assembly harness connector			Resistance (Ω)
Connector No.	Terminal No.		1(63)3(8)106 (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-215</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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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	
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

E2	3	E65	9F	Existed	^
12	8	E05	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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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000011564505

[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 (Ω)
Connector No.	Terminal No.		1763131010CE (22)
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 5)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Proced	ure			INFOID:000000011564506
1.снеск отс				
Check DTC of the CAN	A gateway with CONS	ULT.		
Is U1010 or B2600 ind	o ,			
	diagnosis of the indic	ated DTC.		
NO >> GO TO 2.				
2.CHECK CONNECT				
 Check the followin nector side). CAN gateway 	ttery cable from the ne	ectors for damage, be		nnection (unit side and con-
Is the inspection result		· · ·		
YES >> GO TO 3.				
· ·	e terminal and connect			
3.CHECK HARNESS				
	nnector of CAN gatew ity between the CAN		nector terminals.	
	CAN gateway harne	ess connector		Continuity
Connector No.		Terminal No.		Continuity
M24	4		6	Existed
	10		12	Existed
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S				
T.CHECK POWER 3			Defer to L	AN 171 "Diagnosia Drass
	ply and the ground c		leway Refer to L	AN-171, Diagnosis Proce-
				-
dure".	normal?			
YES (Past error)>>Er NO >> Repair the	>Replace the CAN ga rror was detected in the power supply and the	ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit.	-172, "Removal a	-
dure". <u>Is the inspection result</u> YES (Present error)> YES (Past error)>>Er	>Replace the CAN ga rror was detected in the power supply and the	ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit.	-172, "Removal a	nd Installation".
dure". Is the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the ha	>Replace the CAN ga rror was detected in the power supply and the	ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit. N CIRCUIT) 3.	- <u>172, "Removal a</u> nch line (CAN con	nd Installation". nmunication circuit 2 side).
dure". Is the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	>Replace the CAN ga rror was detected in the power supply and the CONTINUITY (OPEN rness connector M133	ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit. N CIRCUIT) 3. gateway harness con	- <u>172, "Removal a</u> nch line (CAN con	nd Installation". nmunication circuit 2 side). arness connector.
dure". Is the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	>Replace the CAN ga rror was detected in the power supply and the CONTINUITY (OPEN rness connector M133 ity between the CAN	ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit. N CIRCUIT) 3. gateway harness con	-172, "Removal a nch line (CAN con nector and the ha	nd Installation". nmunication circuit 2 side).
dure". Is the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the ha 2. Check the continu CAN gateway have	>Replace the CAN ga rror was detected in the power supply and the CONTINUITY (OPEN rness connector M133 ity between the CAN ga arness connector	ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit. N CIRCUIT) 3. gateway harness con Harness	-172, "Removal a nch line (CAN con nector and the ha	nd Installation". nmunication circuit 2 side). arness connector.

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-271

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564507

[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.

	Resistance (Ω)		
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 5)]

M&A BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011564508
1.CHECK CONNECTOR			
 Check the terminals an (unit side and connector 	cable from the negative terr d connectors of the combi r side).		pend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi			
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 		ter harness connector term	nals.
Combination meter harness connector Resistance (Ω)			
Connector No.	Termir	nal No.	
M58	41	42	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the comb CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu s the inspection result norm	bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the cure".		<u>MWI-104, "COMBINATION</u>
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the combination meter	tion meter branch line.	val and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564509

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-38, "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		
Diagnosis Procedure			INFOID:000000011564510
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the display	ninal. y control unit for damage, t	pend and loose connection
s the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the term	inal and connector		
2.CHECK HARNESS FOR			
1. Disconnect the connect	or of display control unit.	init harness connector termi	inals.
Di	splay control unit harness connec	tor	Posistance (0)
Connector No.	Termir	nal No.	Resistance (Ω)
M100	29	17	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the displ 3.CHECK POWER SUPPL	ay control unit. Y AND GROUND CIRCUIT		
ROL UNIT : Diagnosis Pro	<u>cedure"</u> .	display control unit. Refer to	0 AV-232, "DISPLAY CON-
YES (Past error)>>Error w	lace the display control unit		al and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564511

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 (Ω)		
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-578, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-586, "Removal and Installation".

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure			INFOID:000000011564512
1.CHECK CONNECTOR			
 Check the terminals an connector side). 	able from the negative terminal d connectors of the BCM for da	amage, bend and lo	oose connection (unit side and
s the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR	nal and connector.		
 Disconnect the connect Check the resistance be 	or of BCM. tween the BCM harness conne	ctor terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Terminal No		
M14	60	59	Approx. 108 – 132
YES >> GO TO 3.	branch line		
Is the inspection result norm	Y AND GROUND CIRCUIT the ground circuit of the BCM. al?		
3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the BCM.	, "Removal and Inst line.	
3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the BCM. <u>al?</u> ace the BCM. Refer to <u>BCS-98</u> as detected in the BCM branch	, "Removal and Inst line.	

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564513

[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.	Terminal 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 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	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Termi	Terminal 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> <u>and Installation"</u>.
- YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
- NO >> Repair the power supply and the ground circuit.

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

LAN-278

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ABS actuator and elect harness c	(Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E35	25	Ecc	6F	Existed
E35 -	15	E65	7F	Existed
Without around view m	nonitor system			
ABS actuator and elect harness c	(,	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
F25	25	8F		Existed
E35 –	15	E65	3F	Existed
s the inspection result nor	mal?			
•	se block (J/B) ness between the ABS arness connector E65	actuator and electric	unit (control unit) h	narness connector

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564514

[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

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.	Terminal 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 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.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B601	1	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> 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 <u>ADP-145</u>, "Removal and Installation".

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

[CAN SYSTEM (TYPE 5)]

iagnosis Procedure			INFOID:0000000115645
.CHECK CONNECTOR			
 Turn the ignition switch Disconnect the battery of Check the following terr nector side). Steering force control m CAN gateway (Models with aro YES-1 >> Models with aro YES-2 >> Models without NO >> Repair the term 	able from the negative term ninals and connectors for da odule vith around view monitor sys <u>al?</u> und view monitor system: G around view monitor system nal and connector. TINUITY (OPEN CIRCUIT)	mage, bend and loose (tem) O TO 2.	connection (unit side and con
	ween the CAN gateway har	ness connector termina	ls.
	CAN gateway harness connector		Continuity
	Termina	l No.	
Connector No.			
	4	6	Existed
Connector No. M24 the inspection result norm YES >> GO TO 3. NO >> Check the harm	10 al? ess and repair or replace (if	12	Existed Existed root cause (CAN communica
Connector No. M24 Sthe inspection result norm YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Steering	10 al? ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway (Models wit or of steering force control m etween the steering force con	12 shield line is open) the h around view monitor s nodule. htrol module harness co	Existed root cause (CAN communica
Connector No. M24 s the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	10 al? ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway (Models wit or of steering force control m etween the steering force con	12 shield line is open) the h around view monitor s nodule. htrol module harness co	Existed root cause (CAN communica system).

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) RCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011564517

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			Continuity
Connector No.	Terminal 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 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	Chassis control module harness connector		Resistance (Ω)
Connector No.	Termi	Terminal 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.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "Removal and Installation".

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

STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011564518
1. CHECK CONNECTOR			В
 Check the following tern nector side). Steering angle sensor CAN gateway (Models Is the inspection result norr YES-1 >> Models with an YES-2 >> Models without 	cable from the negative term minals and connectors for c with around view monitor sy nal? ound view monitor system: (around view monitor system)	lamage, bend and loose con ystem) GO TO 2.	nection (unit side and con- C
^	ninal and connector. NTINUITY (OPEN CIRCUIT)	
1. Disconnect the connect			F
Occurrent on No.	CAN gateway harness connector		Continuity
Connector No.	4	nal No. 6	Existed
M24	10	12	Existed H
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 	R OPEN CIRCUIT of CAN gateway (Models w tor of steering angle sensor	se (CAN communication circ rith around view monitor syst	tem). J rminals.
Ste	ering angle sensor harness conne	ector	Bosistance (0)
Connector No.	Termi	nal No.	Resistance (Ω)
M77	5	2	Approx. 54 – 66
	within the specification? ering angle sensor branch lir LY AND GROUND CIRCUI		LA
Procedure" <u>Is the inspection result norr</u> YES (Present error)>>Rep YES (Past error)>>Error v	nal?		-
			Ρ

< DTC/CIRCUIT DIAGNOSIS >

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564519

[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).
- 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
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.

Connector No. Te	rminal No.	Resistance (Ω)
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.

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-429.</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-449</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

SONAR BRANCH I	INE CIRCUIT		A
Diagnosis Procedure			INFOID:000000011564520
1.CHECK CONNECTOR			В
 3. Check the following term nector side). Sonar control unit Harness connector M99 Harness connector M15 CAN gateway Is the inspection result norm YES-1 >> Models with arc YES-2 >> Models without 	cable from the negative terr ninals and connectors for d 5 55	lamage, bend and loose co GO TO 2.	onnection (unit side and con- C
2.CHECK HARNESS CON)	F
 Disconnect the connect Check the continuity be 	tor of CAN gateway. Itween the CAN gateway ha	arness connector terminals	G
	CAN gateway harness connector		Continuity
Connector No.	Terminal No.		Н
M24	4 10	6 12	Existed
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 	ess and repair the root caus OPEN CIRCUIT of CAN gateway (Models w	ith around view monitor sy	stem).
S	Conar control unit harness connect	tor	
Connector No.	Termir	nal No.	Resistance (Ω)
M76	5	6	Approx. 54 – 66
4.CHECK POWER SUPPL Check the power supply and UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	ar control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the so	onar control unit. Refer to <u>A</u> Refer to <u>AV-453, "Remova</u> ntrol unit branch line.	N AV-429, "SONAR CONTROL O Il and Installation". P

< DTC/CIRCUIT DIAGNOSIS >

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564521

[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 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	ssis control module harness conr	ector	Continuity
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			Resistance (Ω)
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-397.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-419, "Removal and</u> <u>Installation"</u>.
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

< DTC/CIRCUIT DIAGNOSIS > **CAN COMMUNICATION CIRCUIT 1** А **Diagnosis** Procedure INFOID:000000011564522 **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. ${f 4}$. 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.

LAN-287

< 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** А **Diagnosis** Procedure INFOID:000000011564523 **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) Ε 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.

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< 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 > CHASSIS COMMUNICATION CIRCUIT

Diagnosis Procedure			INFOID:000000011564524
CHECK CAN DIAGNOS	IS		
Check the CAN diagnosis r	results from CONSULT to s	see that the CAN commu	nication circuit 1 and/or CAN
communication circuit 2 hav	ve no malfunction. n 1 and/or CAN communica	tion 2 circuits normal?	
YES >> GO TO 2.			
	air CAN communication circ	uit 1 and/or CAN commur	nication circuit 2.
2.CONNECTOR INSPECT	ION		
 Turn the ignition switch Disconnect the battery 	OFF. cable from the negative terr	minal	
Disconnect all the unit of	connectors on chassis com	munication circuit.	
 Check terminals and co s the inspection result norm 	onnectors for damage, bend	and loose connection.	
YES >> GO TO 3.			
NO >> Repair the term	inal and connector.		
	ITINUITY (SHORT CIRCUI		
Check the continuity betwee	en the chassis control modu	lle harness connector.	
Cha	ssis control module harness conn	ector	Continuity
			- Continuity
Connector No.	Termiı	nal No.	
E22	19	nal No. 7	Not existed
E22 s the inspection result norm YES >> GO TO 4. NO >> Check the harn CHECK HARNESS CON Check the continuity betwee	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a	7 ⁻ shield line or fuse block (T)	Not existed [J/B) is short] the root cause.
E22 <u>s the inspection result norm</u> YES >> GO TO 4. NO >> Check the harn 1 .CHECK HARNESS CON Check the continuity between Chassis control mode	19 ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector	7 ⁻ shield line or fuse block (T)	
E22 <u>s the inspection result norm</u> YES >> GO TO 4. NO >> Check the harn 1 .CHECK HARNESS CON Check the continuity betweet Chassis control mode Connector No.	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a	7 ⁻ shield line or fuse block (T)	J/B) is short] the root cause.
E22 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK HARNESS CON Check the continuity between Chassis control mode	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector Terminal No.	7 ^F shield line or fuse block (T) nd the ground.	J/B) is short] the root cause.
E22 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK HARNESS CON Check the continuity between Chassis control mode Connector No. M22 Is the inspection result norm YES >> GO TO 5. NO >> Check the harn	19 mal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector Terminal No. 19 7 mal? ess and repair or replace [if	7 F shield line or fuse block (T) nd the ground. Ground	J/B) is short] the root cause.
E22 <u>Is the inspection result norm</u> YES >> GO TO 4. NO >> Check the harn 4. CHECK HARNESS CON Check the continuity betwee Chassis control mod Connector No. M22 <u>S the inspection result norm</u> YES >> GO TO 5. NO >> Check the harn 5. CHECK CHASSIS CON	19 mal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector Terminal No. 19 7 mal? ess and repair or replace [if TROL MODULE TERMINA	7 F shield line or fuse block (T) nd the ground. Ground	[J/B) is short] the root cause. Continuity Not existed Not existed
E22E22Is the inspection result normYES >> GO TO 4.NO >> Check the harnCheck the harn ESS CONCheck the continuity betweetChassis control modeConnector No.M22Is the inspection result normYES >> GO TO 5.NO >> Check the harn5.CHECK CHASSIS CON1. Remove the chassis co	19 mal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector Terminal No. 19 7 mal? ess and repair or replace [if TROL MODULE TERMINA	7 F shield line or fuse block (T) nd the ground. Ground F shield line or fuse block (TION CIRCUIT	[J/B) is short] the root cause. Continuity Not existed Not existed
E22 <u>s the inspection result norm</u> YES >> GO TO 4. NO >> Check the harn 4. CHECK HARNESS CON Check the continuity between <u>Chassis control mode</u> <u>Chassis control mode</u> <u>Chassis control mode</u> <u>Chassis control mode</u> <u>Connector No.</u> <u>M22</u> <u>s the inspection result norm</u> YES >> GO TO 5. NO >> Check the harn D. CHECK CHASSIS CON ⁻¹ 1. Remove the chassis co 2. Check the resistance be	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector 19 7 nal? ess and repair or replace [if TROL MODULE TERMINAT ntrol module.	7 F shield line or fuse block (T) nd the ground. Ground F shield line or fuse block (TION CIRCUIT	[J/B) is short] the root cause. Continuity Not existed Not existed
E22 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4.CHECK HARNESS CON Check the continuity between Chassis control mod Connector No. M22 Is the inspection result norm YES >> GO TO 5. NO >> Check the harn 5.CHECK CHASSIS CON 1. Remove the chassis co 2. Check the resistance be Chas	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector 19 7 nal? ess and repair or replace [if TROL MODULE TERMINAT ntrol module. etween the chassis control	7 F shield line or fuse block (T) nd the ground. Ground F shield line or fuse block (TION CIRCUIT	[J/B) is short] the root cause. Continuity Not existed Not existed
E22 Is the inspection result norm YES >> GO TO 4. NO >> Check the harn 4. CHECK HARNESS CON Check the continuity betweed Chassis control mod Connector No. M22 Is the inspection result norm YES >> GO TO 5. NO >> Check the harn 5. CHECK CHASSIS CON 1. Remove the chassis co 2. Check the resistance be Chas	19 nal? ess and repair or replace [if ITINUITY (SHORT CIRCUI ITINUITY (SHORT CIRCUI en the data link connector a ule harness connector 19 7 ITERMINA ITROL MODULE TERMINA ITROL MODULE TERMINA Introl module. etween the chassis control	7 F shield line or fuse block (T) nd the ground. Ground F shield line or fuse block (TION CIRCUIT module terminals.	J/B) is short] the root cause. Continuity Not existed Not existed TJ/B) is short] the root cause.

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.

<pre>dtc/circuit diag</pre>		ETWEEN DLC ANI		「 N SYSTEM (TYPE 6)]
DTC/CIRCU		OSIS	• -	
		AND HVAC CIR	CUIT	
Diagnosis Proced	ure			INFOID:000000011564525
1.CHECK CONNECT				
 Turn the ignition state Disconnect the basis Check the following and harness side) Harness connector Is the inspection result YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS Disconnect the fust 	witch OFF. ttery cable from th ng terminals and r M133 and fuse to normal? terminal and con CONTINUITY (O se block (J/B) harr	PEN CIRCUIT) ness connector M65.		ection (connector side
2. Check the continu	-	se block (J/B) terminals.		
Terminal N			Fuse block (J/B) Continuity	
23C		22C		Existed
5C		4C		Existed
3.CHECK HARNESS 1. Disconnect the co	nnector of A/C aut	PEN CIRCUIT)	onnector and the A/C a	auto amp. harness con-
Fuse block (J/B)	harness connector	A/C auto amp. I	narness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133	22C 4C	M88	1 2	Existed
Is the inspection result			2	Existed
YES (Past error)>>Er amp.	ror was detected	em type decision again. in the main line betwee n the fuse block (J/B) hai		

MAIN LINE BETWEEN HVAC AND AFS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AFS CIRCUIT

Diagnosis Procedure

INFOID:000000011564526

[CAN SYSTEM (TYPE 6)]

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

A/C auto amp. h	A/C auto amp. harness connector		AFS control unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
Moo	1	1M4	1	Existed
M88	21	1014	13	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 AFS control unit.

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

MAIN LINE BETWEEN AFS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AFS 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
- AFS control unit
- Display control unit
- Check the continuity between the AFS control unit harness connector and the display control unit harness connector.

AFS control unit I	narness connector	Display control uni	t harness connector	Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M4	1	M100	29	Existed	F
1014	13	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 AFS control unit and the display control unit.

NO >> Repair the main line between the AFS control unit and the display control unit.

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[CAN SYSTEM (TYPE 6)]

A INFOID:000000011564527

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MAIN LINE BETWEEN ABS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ABS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011564528

[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.

	ctric unit (control unit) connector	Fuse block (J/B) terminals	Continuity
Connector No.	Terminal No.	Terminal No.	
E35	25	6Н	Existed
E33	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	B601	1	Existed
039	4H	BOUT	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 AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	

[CAN SYSTEM (TYPE 6)]

iagnosis Procod	luro			
iagnosis Proced				INFOID:000000011564529
.CHECK CONNECT	TOR			
Check the followin and harness side) Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	attery cable from the ne ng terminals and con ors B62 ors M22 <u>t normal?</u> e terminal and connect 5 CONTINUITY (OPEN	nectors for damage, b or. N CIRCUIT)	end and loose conne	ection (connector side
Around view moni Harness connecto Check the continu connector.	ors B62 and M22		ol unit harness conne	ector and the harness
	onitor control unit connector	Harness of	Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	27	B62	63	Existed
With ICC	28		53	Existed
	onitor control unit connector	Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B50	27	B62	18	Existed
630	28	DOZ	17	Existed
CHECK HARNESS Disconnect the ha	<u>t normal?</u> he body harness. CONTINUITY (OPEN irness connectors M95 ity between the harne monitor, without ICC	5 and M155.		
Harness	connector	Harness of	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	63	MOE	15	Existed
IVIZZ	53	M95	7	Existed
With ICC				

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	18	M95	14	Existed
IVIZZ	17	10190	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.

Harness connectors B600 and B12 ADAS control unit

3. Disconnect the following harness connectors.

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

	Continuity	connector	Harness c	connector	Harness
	Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
_	Existed	1	B1 -	1	B12
_	Existed	2	DI	17	DIZ

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.

Turn the ignition switch OFF.

Diagnosis Procedure 1.CHECK CONNECTOR

CAN gateway

1.

2.

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< DTC/CIRCUIT DIAGNOSIS >

Disconnect the battery cable from the negative terminal.

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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:000000011564531

[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 uni	t harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	1	B37	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	B62	63	Existed
B72	3	D02	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
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 >

[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 DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000011564532

[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 m	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	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.

	SNOSIS >		[CAN	I SYSTEM (TYPE 6)]
IAIN LINE BET	WEEN RDR-L	AND AVM CIRC	CUIT	
Diagnosis Proced	ure			INFOID:000000011564533
.CHECK CONNECT	OR			
 Check the followin and harness side). Harness connector Harness connector <u>s the inspection result</u> YES >> GO TO 2. 	tery cable from the ne og terminals and conr r B3 r B52 normal? terminal and connect	nectors for damage, b or.	end and loose conn	ection (connector side
Disconnect the foll Harness connector Harness connector	owing harness conne rs B87 and B8	ctors.		
Harness	connector	Harness c	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B87	6	B3 –	1	Existed
	5		9	Existed
CHECK HARNESS	nnector of around view	w monitor control unit.	e around view monito	or control unit harness
Harness	connector	Around view mor harness c		Continuity
O a serie a star Ma	Terminal No.	Connector No.	Terminal No.	
Connector No.	·		27	E viete al
B52	1	B50	28	Existed

NO >> Replace the body harness.

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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:0000000011564534

[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 main control module harness connector		Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.		
E26	14	E25	51	Existed	
E20	15	E20	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	M19	74	Existed
10140	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	Harness connector		ADAS control unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

MAIN LINE BETWEEN DAST 1 AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

R18	74	B1	8	Existed	Δ
Бю	75		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:000000011564535

[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	harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B1	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
M19	84	M75	32	Existed
10119	85	WI75	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

agnosis Proced	ure			INFOID:00000001156453
CHECK CONNECT	OR			
Check the followin nector side). ECM	tery cable from the n g terminals and conn			ection (unit side and con
the inspection result (ES >> GO TO 2.	normal?			
	terminal and connec	tor.		
CHECK HARNESS	FOR OPEN CIRCUI	Т		
Disconnect the con Check the resistan		1 harness connector te	erminals.	
	ECM harness	connector		Resistance (Ω)
Connector No.		Terminal No.		
M37	114		113	Approx. 108 – 132
the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the •CHECK HARNESS Disconnect the fus	ly and the ground circ <u>normal?</u> >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPEI e block (J/B) harness	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133.	noval and Installatio	
NO >> GO TO 4. • CHECK POWER SI heck the power supply the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the • CHECK HARNESS Disconnect the fus Check the continui	ly and the ground circ <u>normal?</u> >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPEI e block (J/B) harness	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector an	noval and Installatio	'n". /B) harness connector.
NO >> GO TO 4. • CHECK POWER SI heck the power supply the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the • CHECK HARNESS Disconnect the fus Check the continui	ly and the ground circ normal? >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPEI e block (J/B) harness ty between the ECM	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector an	noval and Installation	<u>n"</u> .
NO >> GO TO 4. • CHECK POWER SI heck the power supple the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the • CHECK HARNESS Disconnect the fus Check the continui ECM harnes	ly and the ground circ <u>normal?</u> >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPEI e block (J/B) harness ty between the ECM	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector an Fuse block (J/B)	noval and Installation	'n". /B) 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 (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000011564537

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 Terminal No.		Resistance (Ω)
Connector 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	
MOS	6	M133	23C	Existed	
M25	14	- 101133	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

INFOID:000000011564538

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and harness side). <u>s the inspection result norn</u> YES >> GO TO 2.	nal?	-	
	inal and connector branch lii ITINUITY (OPEN CIRCUIT)	ne.	
Disconnect the connectCheck the continuity be	tor of CAN gateway. Itween the CAN gateway har	ness connector termina	ls.
	CAN gateway harness connector		Continuity
Connector No.	Termina		
M24	4	6	Existed
YES >> GO TO 3. NO >> Check the harn	ess and repair the root caus	12 e (CAN communication	Existed
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector	nal? ess and repair the root caus OPEN CIRCUIT	e (CAN communication	
 VES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector 	nal? ess and repair the root caus OPEN CIRCUIT of CAN gateway.	e (CAN communication	circuit 2).
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector	nal? ess and repair the root cause OPEN CIRCUIT of CAN gateway. etween the data link connect	e (CAN communication	
NO >> Check the harn CHECK HARNESS FOR Connect the connector Check the resistance b	ess and repair the root cause OPEN CIRCUIT of CAN gateway. etween the data link connect Data link connector Termina 13	e (CAN communication	circuit 2).

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564539

[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.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-37, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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
EIZI	28	E04	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 LINI	ECIRC	UIT			
Diagnosis Procedure					INFOID:000000011564540
1.CHECK CONNECTOR					
nector side). - A/T assembly - Harness connector F12 - Harness connector E10	able from	l connectors for	damage, bend a	and loose con	nection (unit side and con-
- Harness connector E65		block (J/B) side	connector		
Is the inspection result normYES>> GO TO 2.NO>> Repair the term2.CHECK HARNESS FOR	nal and c				
 Disconnect the connect Check the resistance be 	etween the	A/T assembly h		tor terminals.	
Connector No.	A/T assemb	bly harness connecto	or inal No.		Resistance (Ω)
F2		3	8		Approx. 54 – 66
 Remove the joint conne Check the continuity be side of the joint connect 	tween the			or side and th	e TCM harness connector
A/T assembly harness connec	tor side	TCM harne	ess connector		
Terminal No.		Term	inal No.		Continuity
3			3		Existed
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 Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error way NO >> Repair the power 5.CHECK HARNESS CON	It connect Y AND GI I the groun al? lace the chas detected or supply a	ROUND CIRCUI nd circuit of the ⁻ ontrol valve & T(ed in the TCM br and the ground c	TCM. Refer to <u>T</u> CM. Refer to <u>TM</u> anch line. iircuit.		
 Disconnect the harness Check the continuity be 			arness connecto	or and the ha	rness connector.
	a a man a at a r		Harnoss conn	ootor	

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	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 6)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure			INFOID:000000011564541
1. СНЕСК ДТС			
Check DTC of the CAN gatew	vay with CONSULT.		
Is U1010 or B2600 indicated?	<u>></u>		
	osis of the indicated DTC.		
NO >> GO TO 2.			
2.CHECK CONNECTOR			
	able from the negative tern ninals and connectors of C side).	ninal. CAN gateway for damage, b	end and loose connection
YES >> GO TO 3.	—		
NO >> Repair the termin			
3. CHECK HARNESS FOR (OPEN CIRCUIT		
 Disconnect the connecto Check the resistance bet 		arness connector terminals.	
C	CAN gateway harness connector		Posistance (0)
Connector No.	Termir	nal No.	Resistance (Ω)
M24	1	7	Approx. 54 – 66
Is the measurement value with	hin the specification?		
YES >> GO TO 4. NO >> Repair the CAN g	natoway branch ling		
4.CHECK POWER SUPPLY		-	
Check the power supply and <u>dure</u> ".	I the ground circuit of the	e CAN gateway. Refer to LA	N-171, "Diagnosis Proce-
Is the inspection result norma	1)?		
YES (Present error)>>Repla YES (Past error)>>Error wa	ace the CAN gateway. Ref	eway branch line (CAN com	
			I

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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:0000000011564542

[CAN SYSTEM (TYPE 6)]

1. СНЕСК DTC	
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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			Continuity
Connector No.	Termi	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	arness connector	Harness connector Connector No. Terminal No.		Continuity	
Connector No.	Terminal No.			Continuity	
M24	4	N400	13C	Existed	
11/24	10	M133	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)]

Diagnosis Procedure			INFOID:00000001156454
1. CHECK CONNECTOR			
 Check the terminals and side and connector side 	cable from the negative term d connectors of the A/C an).		d and loose connection (un
<u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	inal and connector.		
	etween the A/C auto amp. I		ls.
Connector No.	A/C auto amp. harness connecto	nal No.	Resistance (Ω)
	1	21	Approx. 54 – 66
NO >> Repair the A/C a	auto amp. branch line.		
<u>Diagnosis Procedure"</u> <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error wa	d the ground circuit of the al? lace the A/C auto amp. Re	e A/C auto amp. Refer to fer to <u>HAC-113, "Removal</u> o amp. branch line.	HAC-92, "A/C AUTO AMP. and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564544

[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.

Co	Combination meter harness connector		
Connector No.	Termi	Resistance (Ω)	
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.

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

AFS BRANCH LINE Diagnosis Procedure	CIRCOTI		
			INFOID:000000011564545
1.CHECK CONNECTOR			
 Check the terminals and side and connector side 	able from the negative te connectors of the AFS c		nd and loose connection (unit
s the inspection result norm YES >> GO TO 2.	<u>al?</u>		
NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 		it harness connector termin	nals.
A	FS control unit harness connec	tor	Resistance (Ω)
	_		
Connector No.		inal No.	
M4	1	inal No.	Approx. 54 – 66
M4 Second Stress Stres	1 thin the specification? control unit branch line. Y AND GROUND CIRCU d the ground circuit of the d. al? ace the AFS control unit.	13 IT e AFS control unit. Refer to Refer to <u>EXL-178, "Remov</u> ntrol unit branch line.	Approx. 54 – 66
M4 <u>Is the measurement value w</u> YES >> GO TO 3. NO >> Repair the AFS 3. CHECK POWER SUPPL Check the power supply and <u>UNIT : Diagnosis Procedure</u> <u>Is the inspection result norm</u> YES (Present error)>>Repl YES (Past error)>>Error wa	1 thin the specification? control unit branch line. Y AND GROUND CIRCU the ground circuit of the the ground circuit of the al? ace the AFS control unit.	13 IT e AFS control unit. Refer to Refer to <u>EXL-178, "Remov</u> ntrol unit branch line.	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564546

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-38, "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 6)]

AV BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011564547
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the displa	ninal. y control unit for damage, t	pend and loose connection
$\begin{array}{llllllllllllllllllllllllllllllllllll$	inal and connector.		
	or of display control unit. Stween the display control u	unit harness connector termi	nals.
Di	splay control unit harness connec	tor	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 Check the power supply an TROL UNIT : Diagnosis Pro	ay control unit. Y AND GROUND CIRCUIT d the ground circuit of the		o <u>AV-232, "DISPLAY CON-</u>
Is the inspection result norm			
YES (Present error)>>Rep YES (Past error)>>Error wa	lace the display control unit		al and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

HBA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564548

[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	Resistance (Ω)		
Connector No.	Terminal No.		
R9	12	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-125, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror. Refer to <u>MIR-42, "Removal and Installation"</u> (With automatic drive positioner system) or <u>MIR-68, "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)]

Diagnosis Procedure			INFOID:000000011564545
1. CHECK CONNECTOR			
	DFF. able from the negative termin I connectors of the TCU for		e connection (unit side and
Is the inspection result norma YES >> GO TO 2. NO >> Repair the termir			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connecto Check the resistance bet 	r of TCU. ween the TCU harness conr	nector terminals.	
	TCU harness connector		Resistance (Ω)
Connector No.	Terminal		
M81	9	No. 10	Approx. 54 – 66
M81 Is the measurement value wi YES >> GO TO 3. NO >> Repair the TCU I 3.CHECK POWER SUPPLY Check the power supply and Is the inspection result normal	9 thin the specification? oranch line. Y AND GROUND CIRCUIT the ground circuit of the TCU al?	10 J. Refer to <u>AV-578, "TCU</u>	Approx. 54 – 66
M81 <u>s the measurement value wi</u> YES >> GO TO 3. NO >> Repair the TCU I 3. CHECK POWER SUPPLY Check the power supply and <u>s the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	9 thin the specification? oranch line. ' AND GROUND CIRCUIT the ground circuit of the TCI	10 J. Refer to <u>AV-578, "TCU</u> 6. "Removal and Installat h line.	Approx. 54 – 66
M81 <u>s the measurement value wi</u> YES >> GO TO 3. NO >> Repair the TCU I 3. CHECK POWER SUPPLY Check the power supply and <u>s the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	9 thin the specification? oranch line. Y AND GROUND CIRCUIT the ground circuit of the TCU al? ace the TCU. Refer to <u>AV-58</u> s detected in the TCU branc	10 J. Refer to <u>AV-578, "TCU</u> 6. "Removal and Installat h line.	Approx. 54 – 66
M81 <u>Is the measurement value wi</u> YES >> GO TO 3. NO >> Repair the TCU I 3. CHECK POWER SUPPLY Check the power supply and <u>Is the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	9 thin the specification? oranch line. Y AND GROUND CIRCUIT the ground circuit of the TCU al? ace the TCU. Refer to <u>AV-58</u> s detected in the TCU branc	10 J. Refer to <u>AV-578, "TCU</u> 6. "Removal and Installat h line.	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564550

[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.

	Resistance (Ω)		
Connector No.	Termi		
M14	60 59		Approx. 108 – 132

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	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011564551
1.CHECK CONNECTOR			
 3. Check the following terr nector side). ABS actuator and elect Harness connector E65 Is the inspection result norm YES-1 >> Models with arc YES-2 >> Models without 	cable from the negative terr minals and connectors for d ric unit (control unit) and fuse block (J/B) side c	lamage, bend and loose cor connector GO TO 2.	nnection (unit side and con-
2.CHECK HARNESS CON)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. Itween 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
 Disconnect the connect Check the resistance b nals. 	tor of ABS actuator and elected etween the ABS actuator a	and electric unit (control uni	
	and electric unit (control unit) har		Resistance (Ω)
Connector No.		nal No.	
E35 Is the measurement value w YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPPL		15	Approx. 54 - 66
Check the power supply an BRC-154, "Diagnosis Proce		ABS actuator and electric	
and Installation YES (Past error)>>Error w	lace the ABS actuator and as detected in the ABS actu er supply and the ground ci		
1. Disconnect the connect	or of harness connector E6 etween the ABS actuator a		t) harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

LAN-323

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	ectric unit (control unit) connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.			
E35	25	FGE	6F	Existed	
E30	15	— E65	7F	Existed	

- Without around view monitor system

	ectric unit (control unit) connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.			
E35	25	E65	8F	Existed	
235	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

DP BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011564552
.CHECK CONNECTOR			
	cable from the negative tern als and connectors for dama		ection (unit side and connec-
the inspection result norm			
YES >> GO TO 2. NO >> Repair the termi	inal and connector		
1	TINUITY (OPEN CIRCUIT)		
. Disconnect the connect			3 .
	CAN gateway harness connector		Continuity
	Termin		-
Connector No.			Existed
M24 the inspection result norm YES >> GO TO 3.	ess and repair or replace (if e).	6 12 f shield line is open) the re	Existed Existed
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harne tion circuit 2 side CHECK HARNESS FOR Connect the connector of Disconnect the connector	10 al? ess and repair or replace (if e).	12 f shield line is open) the re rith around view monitor s	Existed oot cause (CAN communica- ystem)
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harne tion circuit 2 side CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	10 aal? ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit	12 f shield line is open) the re rith around view monitor s ol unit harness connector	Existed oot cause (CAN communica- ystem)
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harne tion circuit 2 side CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	10 ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit etween the driver seat contr	12 f shield line is open) the re rith around view monitor s ol unit harness connector	Existed oot cause (CAN communica- ystem)
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harne tion circuit 2 side CHECK HARNESS FOR Connect the connector of Disconnect the connector of Check the resistance be Drive	10 aal? ess and repair or replace (if e). OPEN CIRCUIT of CAN gateway. (Models w or of driver seat control unit etween the driver seat control er seat control unit harness conne Termin 1	12 f shield line is open) the re rith around view monitor s ol unit harness connector	Existed oot cause (CAN communica- ystem) terminals.

< DTC/CIRCUIT DIAGNOSIS >

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564553

[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).
- CAN gateway
- Pre-crash seat belt control unit (driver side)

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	r	Continuity
Connector No.	Termi	nal No.	Continuity
M24	4	6	Existed
11/12/4	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 pre-crash seat belt control unit (driver side).
- Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the pre-crash seat belt control unit (driver side) branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to <u>SBC-62, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the seat belt pre-tensioner retractor (driver side). Refer to <u>SBC-76, "Removal</u> <u>and Installation"</u>.
- YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line.
- NO >> Repair the power supply and the ground circuit.

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

А

agnosis Flocedure			INFOID:000000011564554
CHECK CONNECTOR			
	OFF. cable from the negative termin ninals and connectors for dam		onnection (unit side and con-
the inspection result norm	al?		
'ES >> GO TO 2. IO >> Repair the termi	inal and connector		
	TINUITY (OPEN CIRCUIT)		
Disconnect the connect		ess connector terminals	
	CAN gateway harness connector		Continuity
Connector No.	Terminal N	No.	Continuity
M24	4	6	Existed
	10	12	Existed
the inspection result norm (ES >> GO TO 3. IO >> Check the harned tion circuit 2 side .CHECK HARNESS FOR	al? ess and repair or replace (if sh e). OPEN CIRCUIT	nield line is open) the ro	oot cause (CAN communica-
the inspection result norm (ES >> GO TO 3. IO >> Check the harne tion circuit 2 side .CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	al? ess and repair or replace (if she). OPEN CIRCUIT of CAN gateway. or of ADAS control unit. etween the ADAS control unit h		
the inspection result norm (ES >> GO TO 3. IO >> Check the harned tion circuit 2 side CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be Al	al? ess and repair or replace (if sh e). OPEN CIRCUIT of CAN gateway. or of ADAS control unit.	harness connector term	
the inspection result norm (ES >> GO TO 3. IO >> Check the harne tion circuit 2 side .CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	aal? ess and repair or replace (if she). OPEN CIRCUIT of CAN gateway. or of ADAS control unit. etween the ADAS control unit harness connector	harness connector term	inals.

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011564555

[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).
- 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.

Cha	assis control module harness conr	nector	Continuity
Connector No.	Termi	nal 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).

$\mathbf{3}$. 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.

A	DAS control unit harness connec	tor	Resistance (Ω)
Connector No.	Termi	nal 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-</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 circuit (chassis communication circuit side).
- NO >> Repair the power supply and the ground circuit.

[CAN SYSTEM (TYPE 6)]

EPS/DAST 3 BRAN	_		
Diagnosis Procedure			INFOID:000000011564
1. CHECK CONNECTOR			
 Check the following terr nector side). Steering force control m 	cable from the negative terr minals and connectors for d	amage, bend and loose o	connection (unit side and co
s the inspection result norm	-	(stem)	
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor syster inal and connector.	n: GO TO 3.	
CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. Itween the CAN gateway ha	arness connector termina	ls.
	CAN gateway harness connector		Continuity
Connector No.	Termir		
M24 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid	4 10 nal? ess and repair or replace (i le).	6 12	Existed Existed
M24 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	4 10 ess and repair or replace (i le). COPEN CIRCUIT of CAN gateway (Models w tor of steering force control	6 12 f shield line is open) the ith around view monitor s module.	Existed root cause (CAN communic
M24 s the inspection result norm YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	4 10 nal? ess and repair or replace (i le). COPEN CIRCUIT of CAN gateway (Models w for of steering force control etween the steering force co	6 12 f shield line is open) the ith around view monitor s module. ontrol module harness co	Existed root cause (CAN communic
M24 <u>s the inspection result norm</u> YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steerin	4 10 nal? ess and repair or replace (i le). COPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control g force control module harness co	6 12 f shield line is open) the ith around view monitor s module. ontrol module harness co	Existed root cause (CAN communic
M24 s the inspection result norm YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be	4 10 nal? ess and repair or replace (i le). COPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control g force control module harness co	6 12 f shield line is open) the ith around view monitor s module. ontrol module harness co	Existed root cause (CAN communic system). onnector terminals.
$\begin{array}{r} \text{M24} \\ \hline \\ \hline \\ \text{Is the inspection result norm} \\ \text{YES} >> \text{GO TO 3.} \\ \text{NO} >> \text{Check the harm} \\ \hline \\ \text{tion circuit 2 sid} \\ \hline \\ \textbf{3.CHECK HARNESS FOR} \\ \hline \\ \textbf{1. Connect the connector} \\ \hline \\ \textbf{2. Disconnect the connector} \\ \hline \\ \textbf{2. Disconnect the connector} \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \hline \\ \textbf{3. Check the resistance be} \\ \hline \\ \hline \\ \hline \\ \textbf{4. Check POWER SUPPL} \\ \hline \end{array}$	4 10 nal? ess and repair or replace (i le). COPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force co g force control module harness co Termin 14 vithin the specification? dy harness. Y AND GROUND CIRCUIT	6 12 f shield line is open) the ith around view monitor s module. ontrol module harness co onnector nal No. 15	Existed root cause (CAN communication system). onnector terminals. Resistance (Ω) Approx. 54 – 66
M24 Is the inspection result norm YES >> GO TO 3. NO >> Check the harn tion circuit 2 sid 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance be Steerin Connector No. M71 Is the measurement value v YES >> GO TO 4. NO >> Replace the bo 4. CHECK POWER SUPPL Check the power supply and nosis Procedure". Is the inspection result norm	4 10 nal? ess and repair or replace (i le). COPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control etween the steering force control g force control module harness co Termin 14 vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the s hal?	6 12 f shield line is open) the ith around view monitor s module. ontrol module harness co onnector hal No. 15	Existed root cause (CAN communication system). onnector terminals. Resistance (Ω)

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) RCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011564558

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 connecto	r	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 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	ector	Resistance (Ω)
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.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "Removal and Installation".

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

STRG BRANCH LI	NE CIRCUIT		٥
Diagnosis Procedure			INFOID:000000011564559
1. CHECK CONNECTOR			В
 Check the following ternector side). Steering angle sensor CAN gateway (Models Is the inspection result norr YES-1 >> Models with are YES-2 >> Models without NO >> Repair the term 	cable from the negative terr minals and connectors for d with around view monitor sy <u>nal?</u> ound view monitor system: (around view monitor system ninal and connector.	amage, bend and loose con /stem) GO TO 2. n: GO TO 3.	nection (unit side and con-
	NTINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. atween the CAN gateway ha	arness connector terminals.	F
	CAN gateway harness connector		Continuity
Connector No.		nal No.	-
M24	4	6	Existed H
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 	R OPEN CIRCUIT of CAN gateway (Models w tor of steering angle sensor	se (CAN communication circ ith around view monitor syst	em).
Ste	ering angle sensor harness conne	ector	K
Connector No.	Termi	nal No.	Resistance (Ω)
M77	5	2	Approx. 54 – 66
4.CHECK POWER SUPP	ering angle sensor branch lir LY AND GROUND CIRCUIT	Γ	LA
Procedure" <u>Is the inspection result norr</u> YES (Present error)>>Rep YES (Past error)>>Error w	nal?		-
			Ρ

< DTC/CIRCUIT DIAGNOSIS >

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564560

[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 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 connector	r	Resistance (Ω)
Connector No.	Termir	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-360, "SIDE RADAR LH :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-387, "Removal and Installation".

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

Jiagnacia Dragadura			
Diagnosis Procedure			INFOID:000000011564561
CHECK CONNECTOR			
	able from the negative terr		nnection (unit side and con-
s the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	nal and connector.		
I. Disconnect the connect	or of side radar RH.	arness connector terminals	
	Side radar RH harness connecto	r	Resistance (Ω)
a			
Connector No.		nal No.	
B93	4	nal No. 3	Approx. 54 – 66
B93 s the measurement value w YES >> GO TO 3. NO >> Repair the side 3.CHECK POWER SUPPL Check the power supply and	4 ithin the specification? radar RH branch line. Y AND GROUND CIRCUIT	3	
B93 s the measurement value w YES >> GO TO 3. NO >> Repair the side 3.CHECK POWER SUPPL Check the power supply and Diagnosis Procedure". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	4 ithin the specification? radar RH branch line. Y AND GROUND CIRCUIT d the ground circuit of the s al? lace the side radar RH. Re	3 F side radar RH. Refer to DA fer to <u>DAS-387, "Removal a</u> ar RH branch line.	Approx. 54 – 66 S-361, "SIDE RADAR RH :
B93 s the measurement value w YES >> GO TO 3. NO >> Repair the side 3.CHECK POWER SUPPL Check the power supply and Diagnosis Procedure". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	4 ithin the specification? radar RH branch line. Y AND GROUND CIRCUIT d the ground circuit of the s al? lace the side radar RH. Re- as detected in the side rada	3 F side radar RH. Refer to DA fer to <u>DAS-387, "Removal a</u> ar RH branch line.	Approx. 54 – 66 S-361, "SIDE RADAR RH :

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< DTC/CIRCUIT DIAGNOSIS >

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564562

[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).
- 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
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 monitor control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B50	27	28	Approx. 54 – 66
a magaziramant value with	in the sum of it such as 0		

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-429.</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-449</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 6)]

APA BRANCH LINE	CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000011564563	A
1.CHECK CONNECTOR				В
3. Check the following term nector side).	able from the negative terr ninals and connectors for d tor / accelerator pedal posi 5	amage, bend and loose cor	nnection (unit side and con-	C D
NO >> Repair the termi				
	or of accelerator pedal actu	ator / accelerator pedal pos al actuator harness connect		F
Accelerator pedal actua	tor / accelerator pedal position se	nsor harness connector	Resistance (Ω)	G
Connector No.	Termir			
M124	3	9	Approx. 54 – 66	Н
Is the measurement value wYESYESNO>> Repair the accel 3. CHECK POWER SUPPLY	erator pedal actuator bran			I
Check the power supply and sensor. Refer to <u>DAS-360</u> , "/ Is the inspection result norm	ACCELERATOR PEDAL A			J
YES (Present error)>>Repl <u>TANCE CONTR</u> YES (Past error)>>Error wa	ace the accelerator peda OL ASSIST SYSTEM : Re	moval and Installation". tor pedal actuator branch lir		K
				L
				LAN
				Ν

< DTC/CIRCUIT DIAGNOSIS >

Ο

Ρ

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564564

[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 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			Resistance (Ω)
Connector No.	Terminal 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> 362, "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-390, "Removal and</u> <u>Installation"</u>.

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

< DIC/CIRCUIT DIAGNOSI				
LASER BRANCH LI	NE CIRCUIT			
Diagnosis Procedure			INFOID:00000001156456	
1. CHECK CONNECTOR				
 Check the following term nector side). ICC sensor Harness connector E76 Harness connector E14 Harness connector E25 Harness connector M40 s the inspection result norma YES >> GO TO 2. NO >> Repair the terministic service service	able from the negative terr inals and connectors for d <u>al?</u> nal and connector.		nnection (unit side and con	
2.CHECK HARNESS FOR (Disconnect the connecto				
	tween the ICC sensor harr	ness connector terminals.		
	ICC sensor harness connector		Resistance (Ω)	
Connector No.		nal No.		
E80	3	6	Approx. 108 – 132	
s the measurement value with YES >> GO TO 3. NO >> Repair the ICC s CHECK POWER SUPPLY Check the power supply and s the inspection result normation YES (Present error)>>Replate YES (Past error)>>Error wath NO >> Repair the power	ensor branch line. (AND GROUND CIRCUIT the ground circuit of the IC al? ace the ICC sensor. Refer s detected in the ICC sensor.	CC sensor. Refer to <u>CCS-1</u> to <u>CCS-136, "Removal and</u> sor branch line.		

< DTC/CIRCUIT DIAGNOSIS >

Ρ

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564566

[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).
- 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
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).

 $\mathbf{3}$. 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	Sonar control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
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-429, "SONAR CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-453, "Removal and Installation".

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

Diagnosis Procedure

DAST 1 BRANCH LINE CIRCUIT

1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 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. 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 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. Disconnect the connector of steering angle main control module. 2. Check the resistance between the steering angle main control module harness connector terminals. 3. 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. 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 STC-397. "Diagnosis Procedure" Is the inspection result normal? YES (Present error)>>Replace the steering angle main control module. Refer to STC-419, "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.

INFOID:0000000011564567

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LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564568

[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).
- 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.	Termi	nal 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).

$\mathbf{3.}$ 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	Lane camera unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
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-611, "LANE CAMERA</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-621, "Removal and Installation".

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

< DTC/CIRCUIT DIAGNOSIS > **CAN COMMUNICATION CIRCUIT 1** А **Diagnosis** Procedure INFOID:000000011564569 **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.

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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 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** А **Diagnosis** Procedure INFOID:000000011564570 **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) Ε 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.

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< 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 DIAGNOS	SIS >		[CAN SYSTEM (TYPE 6)]
CHASSIS COMMU	NICATION CIRCUI	Т	
Diagnosis Procedure			INFOID:000000011564571
1.CHECK CAN DIAGNOS	IS		
Check the CAN diagnosis r communication circuit 2 hav		see that the CAN commun	ication circuit 1 and/or CAN
Are the CAN communication	<u>n 1 and/or CAN communica</u>	ation 2 circuits normal?	
YES >> GO TO 2.			
-	air CAN communication circ	cuit 1 and/or CAN communi	cation circuit 2.
2.CONNECTOR INSPECT			
 Disconnect all the unit of Check terminals and co Is the inspection result norm YES >> GO TO 3. 	cable from the negative terr connectors on chassis com nnectors for damage, bend nal?	munication circuit.	
•	inal and connector.		
3.CHECK HARNESS CON	ITINUITY (SHORT CIRCUI	T)	
Check the continuity betwee	en the chassis control modu	le harness connector.	
Cha	ssis control module harness conn	ector	
Connector No.	Terminal No.		Continuity
E22	19	7	Not existed
Is the inspection result norm	nal?		
YES >> GO TO 4. NO >> Check the harn	ess and repair or replace [if	f shield line or fuse block (l	/B) is short] the root cause.
4. CHECK HARNESS CON			
	, ,	,	
Check the continuity betwee		ina me grouna.	
Chassis control mod	ule harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	19	Ground	Not existed
10122	7		Not existed
Is the inspection result norm	nal?		
_		,	/B) is short] the root cause.
5. CHECK CHASSIS CON			_
 Remove the chassis co Check the resistance be 	ntrol module. etween the chassis control	module terminals.	

	Resistance (Ω)	Chassis control module	
D		nal No.	Termir
Г	Approx. 108 – 132	7	19
	Approx. 108 – 132	8	11

Is the measurement value within the specification?

YES >> GO TO 6.

>> Replace the chassis control module. NO

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.

ITS COMMUNICATION CIRCUIT

ITS COMMUNICATION CIRCUIT Diagnosis Procedure 1.CHECK CAN DIAGNOSIS Check the CAN diagnosis results from CONSULT to see that the CAN communic nication circuit 2 and ITS communication circuit have no malfunction. <u>Are the CAN communication 1 and CAN communication 2 circuits normal?</u> YES >> GO TO 2.	INFOID:000000011564572 ation circuit 1, CAN commu-
CHECK CAN DIAGNOSIS Check the CAN diagnosis results from CONSULT to see that the CAN communic nication circuit 2 and ITS communication circuit have no malfunction. Are the CAN communication 1 and CAN communication 2 circuits normal?	
Check the CAN diagnosis results from CONSULT to see that the CAN communic ication circuit 2 and ITS communication circuit have no malfunction. In the CAN communication 1 and CAN communication 2 circuits normal?	ation circuit 1, CAN commu-
check the CAN diagnosis results from CONSULT to see that the CAN communic ication circuit 2 and ITS communication circuit have no malfunction. re the CAN communication 1 and CAN communication 2 circuits normal?	ation circuit 1, CAN commu-
 YES >> GO TO 2. NO >> Check and repair CAN communication circuit 1 and CAN communica CONNECTOR INSPECTION Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the ADAS control unit for damage, (unit side and connector side). the inspection result normal? YES >> GO TO 3. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the following harness connectors. ADAS control unit ICC sensor Check the continuity between the ADAS control unit harness connector and t nector. 	bend and loose connection
ADAS control unit harness connector ICC sensor harness connector	Ocartiavity
Connector No. Terminal No. Connector No. Terminal No	. Continuity
B1 6 E80 3	Existed
7 6 the inspection result normal? 6	Existed
 YES >> GO TO 4. NO >> Repair the harness between the ADAS control unit and the ICC sense. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) 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 Check the continuity between the ADAS control unit harness connector termination 	
ADAS control unit harness connector	
	Continuity
Connector No. Terminal No.	
Connector No.Terminal No.B167	Not existed

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)]

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 Terminal No.		– Resistance (Ω)	

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.

<pre>dtc/circuit diac</pre>		ETWEEN DLC AND		「 N SYSTEM (TYPE 7)]
DTC/CIRCU		OSIS	•	. , , , , , , , , , , , , , , , , , , ,
		AND HVAC CIRC	CUIT	
Diagnosis Proced	ure			INFOID:000000011564372
1.CHECK CONNECT				
 Turn the ignition set Disconnect the base Check the following 	witch OFF. ttery cable from th ng terminals and o	e negative terminal. connectors for damage,	bend and loose conn	ection (connector side
and harness side).Harness connecto		olock (J/B) side connector	r	
Is the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	e terminal and con	nector.		
2.CHECK HARNESS				
		ess connector M65. se block (J/B) terminals.		
	Fuse block (J/B)		Continuity
Terminal No	0.	Terminal No.		Continuity
23C		22C		Existed
5C Is the inspection result		4C		Existed
YES >> GO TO 3. NO >> Replace th 3. CHECK HARNESS 1. Disconnect the co	ne fuse block (J/B) CONTINUITY (O nnector of A/C aut	PEN CIRCUIT)	nnector and the A/C a	auto amp. harness con-
nector.	.,			
Fuse block (J/B)	harness connector	A/C auto amp. h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133	22C	M88	1	Existed
	4C		2	Existed
YES (Past error)>>Er amp.	>Check CAN system rror was detected	em type decision again. in the main line betwee n the fuse block (J/B) han		

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011564373

[CAN SYSTEM (TYPE 7)]

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	M100	29	Existed	
IVIOO	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.

ECM BRANCH LINE CIRCUIT

agnosis Proced	ure			INFOID:00000001156438
.CHECK CONNECT	OR			
 Turn the ignition sy Disconnect the bat Check the followin nector side). ECM Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the cor 	witch OFF. Itery cable from the n g terminals and conn r M133 and fuse bloc <u>normal?</u> terminal and connect FOR OPEN CIRCUI	nectors for damage, bei ck (J/B) side connector ctor.		ection (unit side and con
Uneck the resistan				
Connector No.	ECM harness	Terminal No.		Resistance (Ω)
M37	114		113	Approx. 108 – 132
the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus	JPPLY AND GROUN y and the ground circ normal? >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPE) e block (J/B) harness	ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. he ground circuit. N CIRCUIT) s connector M133.	oval and Installation	<u>1"</u> .
YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continui	JPPLY AND GROUN y and the ground circ normal? >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPE) e block (J/B) harness	ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. he ground circuit. N CIRCUIT) s connector M133. harness connector and	oval and Installation	<u>ı"</u> .
YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continui	JPPLY AND GROUN y and the ground circ normal? >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPE) e block (J/B) harness ty between the ECM	ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. he ground circuit. N CIRCUIT) s connector M133.	oval and Installation	<u>ı"</u> .
YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU the ck the power supples the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the fus Check the continui	JPPLY AND GROUN y and the ground circ normal? >Replace the ECM. F ror was detected in th power supply and th CONTINUITY (OPE) e block (J/B) harness ty between the ECM	ND CIRCUIT cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. he ground circuit. N CIRCUIT) s connector M133. harness connector and Fuse block (J/B) h	oval and Installation d the fuse block (J/I arness connector	<u>י"</u> . 3) 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:000000011564389

[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 (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 (Ω)		
Connector No.	Terminal No.		Resistance (32)
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	Data link connector		Harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M25	6	M133	23C	Existed	
IWI25	14	IVI I SS	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:000000011564392 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) 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. ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-37, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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 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:000000011564393

[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).
- 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 (Ω)		
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 <u>TM-215</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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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	arness connector	Harness	connector	Continuity	
 Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

E2	3	E65	9F	Existed	^
12	8	E05	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:000000011564396

[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 A/C auto amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

A/C auto amp. harness connector			Resistance (Ω)
Connector No.	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.

M&A BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

M&A BRANCH LIN	ECIRCUIT			
Diagnosis Procedure				
1 .CHECK CONNECTOR				
 Check the terminals an (unit side and connector) 	cable from the negative terr d connectors of the combi side).	ninal. Ination meter for damage, l	pend and loose connection	
s the inspection result norm YES >> GO TO 2.	<u>al?</u>			
NO >> Repair the term				
2.CHECK HARNESS FOR	OPEN CIRCUIT			
	or of combination meter. Here the combination me	ter harness connector term	nals.	
Combination meter harness connector		Resistance (Ω)		
Connector No.	Termir	nal No.	· · ·	
M58	41	42	Approx. 54 – 66	
3. CHECK POWER SUPPL	bination meter branch line. Y AND GROUND CIRCUIT			
Check the power supply and				
METER : Diagnosis Procedu	ure".	combination meter. Refer to	<u>MWI-104, "COMBINATION</u>	
METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	<u>ure"</u> . <u>al?</u> lace the combination meter	r. Refer to <u>MWI-126, "Remo</u> tion meter branch line.		
METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	<u>are"</u> . al? lace the combination meter as detected in the combination	r. Refer to <u>MWI-126, "Remo</u> tion meter branch line.		
METER : Diagnosis Procedu Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	<u>are"</u> . al? lace the combination meter as detected in the combination	r. Refer to <u>MWI-126, "Remo</u> tion meter branch line.		

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564399

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-38, "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 7)]

AV BRANCH LINE	CIRCUIT			
Diagnosis Procedure	INFOID:000000011564400			
1. CHECK CONNECTOR				
	cable from the negative terr d connectors of the display		bend and loose connection	
<u>s the inspection result norm</u> YES >> GO TO 2.				
NO >> Repair the term 2.CHECK HARNESS FOR				
1. Disconnect the connect	or of display control unit.	unit harness connector term	inals.	
Display control unit harness connector		Pagiatanga (0)		
Connector No.	Termir	nal No.	Resistance (Ω)	
M100	29	17	Approx. 54 – 66	
s the measurement value w YES >> GO TO 3. NO >> Repair the displ CHECK POWER SUPPL Check the power supply an FROL UNIT : Diagnosis Pro	ay control unit. Y AND GROUND CIRCUIT d the ground circuit of the		o AV-232, "DISPLAY CON-	
YES (Past error)>>Error wa	lace the display control unit		al and Installation".	

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564403

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M14	60	59	Approx. 108 – 132

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			A
1. CHECK CONNECTOR			В
 Check the following terr nector side). ABS actuator and electric Harness connector E65 Is the inspection result norm 	cable from the negative terr ninals and connectors for d ic unit (control unit) and fuse block (J/B) side c	amage, bend and loose con	nection (unit side and con- C
	around view monitor syster inal and connector.	n: GO TO 3.	E
1. Disconnect the connect			F
	CAN gateway harness connector		Gantinuitu
Connector No.	Termir	al No.	Continuity
M24	4	6	Existed H
	10	12	Existed
Disconnect the connect	or of ABS actuator and elec	ith around view monitor syst stric unit (control unit). nd electric unit (control unit)	
	and electric unit (control unit) harr		Resistance (Ω)
E35	Termir 25	15	Approx. 54 - 66
Is the measurement value wYES>> GO TO 4.NO>> GO TO 5.4.CHECK POWER SUPPLCheck the power supply anBRC-154, "Diagnosis ProceIs the inspection result norm	Y AND GROUND CIRCUIT d the ground circuit of the <u>dure"</u> . <u>hal?</u>	ABS actuator and electric u	LAN unit (control unit). Refer to
and InstallationYES (Past error)>>Error wNO>> Repair the power5.CHECK HARNESS CON1.Disconnect the connect2.Check the resistance b	as detected in the ABS actuer supply and the ground cin TINUITY (OPEN CIRCUIT) or of harness connector E6		fer to <u>BRC-178, "Removal</u> of unit) branch line.
nals. - With around view monit	or system		

< DTC/CIRCUIT DIAGNOSIS >

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	ctric unit (control unit) connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.			
E35	25	For	6F	Existed	
E30	15	— E65	7F	Existed	

- Without around view monitor system

	ectric unit (control unit) connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E35	E35 25 E65	8F	Existed		
235	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

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure			INFOID:000000011564410
.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d		onnection (unit side and con-
YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor syster inal and connector.	n: GO TO 3.	
)	
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.	lermir 4	nal No. 6	Existed
M24	10	12	Existed
CHECK HARNESS FOR Connect the connector Disconnect the connect	of CAN gateway (Models w	ith around view monitor sy	
CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	of CAN gateway (Models w or of AWD control unit.	ith around view monitor sy it harness connector termin	nals.
CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be Connector No.	of CAN gateway (Models w or of AWD control unit. etween the AWD control un AWD control unit harness connect Termir	ith around view monitor sy it harness connector termin or nal No.	nals. Resistance (Ω)
CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be Connector No. M42	of CAN gateway (Models w for of AWD control unit. etween the AWD control un AWD control unit harness connect Termir 8	ith around view monitor sy it harness connector termin	nals.
CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance be Connector No. M42 the measurement value w YES >> GO TO 4. NO >> Repair the AWE CHECK POWER SUPPL heck the power supply an ure".	of CAN gateway (Models w for of AWD control unit. etween the AWD control un AWD control unit harness connect Termin 8 within the specification? D control unit branch line. LY AND GROUND CIRCUIT d the ground circuit of the	ith around view monitor sy it harness connector termin or hal No. 16 AWD control unit. Refer to	nals. Resistance (Ω) Approx. 54 – 66

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) RCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011594964

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			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 chassis control module.
- 3. Check the resistance between the chassis control module harness connector terminals.

Chassis control module harness connector			Resistance (Ω)
Connector No.	Terminal 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.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "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:000000011564412
1.CHECK CONNECTOR			
 3. Check the following term nector side). Steering angle sensor CAN gateway (Models <u>Is the inspection result norm</u> YES-1 >> Models with arc 	cable from the negative terr ninals and connectors for d with around view monitor sy <u>nal?</u> ound view monitor system: (lamage, bend and loose con /stem) GO TO 2.	nection (unit side and con-
	around view monitor system inal and connector.	m: GO TO 3.	
2. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. Itween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.		nal No.	·
M24	4	6	Existed
Is the inspection result norn	-		
3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	OPEN CIRCUIT of CAN gateway (Models w or of steering angle sensor	se (CAN communication circ	tem).
Ste	ering angle sensor harness conne	ector	Desistance (0)
Connector No.	Termir	nal No.	Resistance (Ω)
M77	5	2	Approx. 54 – 66
4. CHECK POWER SUPPL	ring angle sensor branch lir Y AND GROUND CIRCUI	Г	L
Procedure". Is the inspection result norm	-	steering angle sensor. Ref	er to <u>BRC-122, "Diagnosis</u>
YES (Present error)>>Rep YES (Past error)>>Error w			moval and Installation".

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011564371

[CAN SYSTEM (TYPE 7)]

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		Continuity
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 linl	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.

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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011564330

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		1	Existed	
101133	4C	M88	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	
IVIOO	21	WITOO	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 8)]

INFOID:000000011564331

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564346

[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).
- 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.

	Resistance (Ω)		
Connector No.	Termin	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-189, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-580, "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	s connector Fuse block (J/B) harness connector		Fuse block (J/B) harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	114	M123	21C	Existed
IVI 37	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 8)]

	NE CIRCUIT			
iagnosis Procedu	re			INFOID:000000011564347
.CHECK CONNECTO	R			
and harness side). Data link connector Harness connector the inspection result r YES >> GO TO 2.	ery cable from the ne terminals and con M133 and fuse bloc ormal? erminal and connec	nectors for damage, k k (J/B) side connector tor.		onnection (connector side
heck the resistance be				
neck the resistance be		connector terminals.		
	Data link cor	nnector		Resistance (Ω)
Connector No.		Terminal No.		
M25 the measurement valu	6		14	Approx. 54 – 66
YES (Present error)>> YES (Past error)>>Erro NO >> GO TO 3.	Check CAN system	type decision again. he data link connector	branch line circuit	
. Disconnect the harr		3. ink connector and the	harness connecto	Dr.
. Disconnect the harr	between the data l	ink connector and the	harness connecto	
Disconnect the harnCheck the continuity	between the data l	ink connector and the		Dr.
Disconnect the harn Check the continuity Data link co	between the data I	ink connector and the Harness	connector	

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:000000011564350

[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).
- 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			Resistance (Ω)
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-37, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E121	29	E64	6E	Existed
EIZI	28	E64	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 8)]

TCM BRANCH LINI	ECIR	CUIT			
Diagnosis Procedure					INFOID:000000011564351
1.CHECK CONNECTOR					
nector side). - A/T assembly - Harness connector F12 - Harness connector E10	cable from ninals an	d connectors for	damage, bend and	d loose con	nection (unit side and con-
- Harness connector E65 Is the inspection result norm		e block (J/B) side	connector		
YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and				
 Disconnect the connect Check the resistance be 	or of A/T	assembly.	harness connector	terminals.	
A/T assembly harness connector Connector No. Terminal No.			Resistance (Ω)		
Connector No.		3	8		Approx. 54 – 66
 CHECK HARNESS FOR Remove the joint conne Check the continuity be side of the joint connect 	ctor. Ref tween th	er to <u>TM-215, "E</u>		side and th	e TCM harness connector
A/T assembly harness connec	tor side	TCM harr	ess connector		
Terminal No.		Terr	ninal No.	_	Continuity
3			3		Existed
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 Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error way NO >> Repair the power 5.CHECK HARNESS CON	at connect Y AND C I the grou al? lace the as detect er supply	BROUND CIRCU und circuit of the control valve & T ted in the TCM b and the ground	TCM. Refer to <u>TM</u> CM. Refer to <u>TM-2</u> ranch line. circuit.	-	
 Disconnect the harness Check the continuity be 	connect	or E65.		and the har	ness connector.
	aannaatar		Horpoon connect	or	

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 8)]

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.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

			INFOID:000000011564354
1.CHECK CONNECTOR			
 Check the terminals and side and connector side) 	able from the negative terr d connectors of the A/C au).		d and loose connection (unit
s the inspection result norma YES >> GO TO 2. NO >> Repair the termin CHECK HARNESS FOR	nal and connector.		
1. Disconnect the connecto		narness connector termina	lls.
	A/C auto amp. harness connector Resistance (Ω) Connector No. Terminal No.		
Connector No. M88	1	21	Approx. 54 – 66
3. CHECK POWER SUPPL' Check the power supply and Diagnosis Procedure". s the inspection result norma	d the ground circuit of the	A/C auto amp. Refer to	HAC-92, "A/C AUTO AMP. :
YES (Past error)>>Error wa	as detected in the A/Ċ auto r supply and the ground ci	amp. branch line.	
YES (Past error)>>Error wa		amp. branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564355

[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 combination meter for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Co	Resistance (Ω)		
Connector No.	Termi	Resistance (32)	
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 8)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000011564357 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-38, "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:000000011564358

[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 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			Resistance (Ω)
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-232, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-270, "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 8)]

connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. 1. Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. Image: transmission of the connector No. Terminal No. 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 AV-578, "TCU : Diagnosis Procedure".	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). s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) M81 9 10 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT	Diagnosis Procedure			INFOID:000000011564360
 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 ar connector side). <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. TCU harness connector terminal No. M81 9 10 Approx. 54 - 66 <u>s the measurement value within the specification?</u> 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-578, "TCU : Diagnosis Procedure"</u>. 	 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). as the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) M81 9 10 Approx.54 - 66 S 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-578</u> , "TCU : Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the TCU. Refer to <u>AV-586</u> , "Removal and Installation". YES (Past error)>>Error was detected in the TCU branch line.	1 .CHECK CONNECTOR			
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 Resistance (Ω) Connector No. TCU harness connector Resistance (Ω) M81 9 10 Approx. 54 - 66 s 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-578, "TCU : Diagnosis Procedure"</u> .	YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. Image: transformed between the TCU harness connector Image: transformed between the TCU harness connector Image: transformed between the transformed between the transformed between terminals. Image: transformed between terminal No. Image: transformed between termin	 Disconnect the battery of Check the terminals an 	able from the negative terr		e connection (unit side and
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. Image: TCU harness connector Connector No. Terminal No. M81 9 10 Approx. 54 – 66 s 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-578, "TCU : Diagnosis Procedure"</u> .	NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) Connector No. Terminal No. M81 9 10 Approx. 54 - 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. 3. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to AV-578, "TCU : Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-586, "Removal and Installation". YES (Past error)>>Error was detected in the TCU branch line. YES (Past error)>>Error was detected in the TCU branch line.		<u>al?</u>		
1. Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) Connector No. Terminal No. M81 9 10 Approx. 54 – 66 S the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to <u>AV-578, "TCU : Diagnosis Procedure"</u> .	. Disconnect the connector of TCU. 2. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) Connector No. M81 9 10 Approx. 54 - 66 s 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-578, "TCU : Diagnosis Procedure".</u> s the inspection result normal? YES (Present error)>>Replace the TCU. Refer to <u>AV-586, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the TCU branch line.		nal and connector.		
2. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) Connector No. Terminal No. M81 9 10 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. B.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to <u>AV-578, "TCU : Diagnosis Procedure"</u> .	2. Check the resistance between the TCU harness connector terminals. TCU harness connector Resistance (Ω) Connector No. Terminal No. M81 9 10 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. S.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to AV-578, "TCU : Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the TCU. Refer to AV-586, "Removal and Installation". YES (Past error)>>Error was detected in the TCU branch line.	2. CHECK HARNESS FOR	OPEN CIRCUIT		
Connector No. Terminal No. Resistance (Ω) M81 9 10 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. YES >> Repair the TCU branch line. Scheck the power supply and the ground circuit of the TCU. Refer to AV-578, "TCU : Diagnosis Procedure".	Connector No. Terminal No. Resistance (Ω) M81 9 10 Approx. 54 – 66 S the measurement value within the specification? YES >> GO TO 3. YES >> GO TO 3. Scheck POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to <u>AV-578, "TCU : Diagnosis Procedure"</u> . Sche inspection result normal? YES (Present error)>>Replace the TCU. Refer to <u>AV-586, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the TCU branch line.			onnector terminals.	
Connector No. Terminal No. M81 9 10 Approx. 54 – 66 Sthe measurement value within the specification? YES >> GO TO 3. YES >> GO TO 3. Sthe measurement the TCU branch line. Sthe measurement the TCU branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Approx. 54 – 66 Sthe measurement the TCU branch line. Check the power supply and the ground circuit of the TCU. Refer to AV-578, "TCU : Diagnosis Procedure".	Connector No. Terminal No. M81 9 10 Approx. 54 – 66 a the measurement value within the specification? YES >> GO TO 3. YES >> GO TO 3. NO >> Repair the TCU branch line. J.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to <u>AV-578, "TCU : Diagnosis Procedure".</u> as the inspection result normal? YES (Present error)>>Replace the TCU. Refer to <u>AV-586, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the TCU branch line. YES (Past error)>>Error was detected in the TCU branch line.		TCU harness connector		Resistance (O)
s 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-578, "TCU : Diagnosis Procedure"</u> .	s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the TCU branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to <u>AV-578, "TCU : Diagnosis Procedure"</u> . <u>s the inspection result normal?</u> YES (Present error)>>Replace the TCU. Refer to <u>AV-586, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the TCU branch line.				. ,
YES >> GO TO 3. NO >> Repair the TCU branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to <u>AV-578, "TCU : Diagnosis Procedure"</u> .	 YES >> GO TO 3. NO >> Repair the TCU branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCU. Refer to <u>AV-578, "TCU : Diagnosis Procedure"</u>. <u>s the inspection result normal?</u> YES (Present error)>>Replace the TCU. Refer to <u>AV-586, "Removal and Installation"</u>. YES (Past error)>>Error was detected in the TCU branch line. 	M81	9	10	Approx $54-66$
YES (Present error)>>Replace the TCU. Refer to <u>AV-586. "Removal and Installation"</u> . YES (Past error)>>Error was detected in the TCU branch line.		-	-	10	Αμριοχ. 54 – 66
		s the measurement value w YES >> GO TO 3. NO >> Repair the TCU CHECK POWER SUPPL Check the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u> as detected in the TCU bra	CU. Refer to <u>AV-578, "TCU</u> 586, "Removal and Installat nch line.	: Diagnosis Procedure"
		s the measurement value w YES >> GO TO 3. NO >> Repair the TCU CHECK POWER SUPPL Check the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the T al? lace the TCU. Refer to <u>AV-</u> as detected in the TCU bra	CU. Refer to <u>AV-578, "TCU</u> 586, "Removal and Installat nch line.	: Diagnosis Procedure"

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564361

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.

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

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M14	60	59	Approx. 108 – 132

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:000000011564362
1.CHECK CONNECTOR			В
 Check the following terr nector side). ABS actuator and electric 	cable from the negative terr minals and connectors for d ric unit (control unit) and fuse block (J/B) side c	lamage, bend and loose con	nection (unit side and con- C
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor syster inal and connector.	m: GO TO 3.	E
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.	F
	CAN gateway harness connector	r	Gantinuitu
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
1012-4	10	12	Existed
Disconnect the connect	or of ABS actuator and elec	vith around view monitor syst ctric unit (control unit). and electric unit (control unit)	
	and electric unit (control unit) har		Resistance (Ω)
Connector No.		nal No.	L
E35	25	15	Approx. 54 - 66
Is the measurement value w YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPPL		r	LA
Check the power supply an BRC-154, "Diagnosis Proce		ABS actuator and electric u	
Is the inspection result norm			0
and Installation YES (Past error)>>Error w NO >> Repair the powe	<u>"</u> . as detected in the ABS actu er supply and the ground ci		
5. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)	
		5. and electric unit (control unit)	harness connector termi-

- With around view monitor system

< DTC/CIRCUIT DIAGNOSIS >

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	FGE	6F	Existed
E30	15 E65		7F	Existed

- Without around view monitor system

	ectric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
E35	25	E65	8F	Existed
235	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

iagnosis Procedure			
-			INFOID:00000001156436
.CHECK CONNECTOR	-		
 Check the following term nector side). AWD control unit CAN gateway 	cable from the negative terr minals and connectors for d	ninal. lamage, bend and loose cor	nnection (unit side and con-
<u>s the inspection result norn</u> YES-1 >> Models with arc	<u>nal?</u> bund view monitor system: (GO TO 2.	
YES-2 >> Models without >> Repair the term	around view monitor system inal and connector.	n: GO TO 3.	
)	
Disconnect the connectCheck the continuity be	tor of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.		nal No.	
M24	4	6	Existed Existed
YES >> GO TO 3.		se (CAN communication cire	cuit 2).
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector Disconnect the connect	ess and repair the root caus COPEN CIRCUIT of CAN gateway (Models w tor of AWD control unit.	se (CAN communication cire ith around view monitor sys it harness connector termina	tem).
NO >> Check the harn CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b	ess and repair the root caus COPEN CIRCUIT of CAN gateway (Models w tor of AWD control unit.	ith around view monitor sys it harness connector termin	tem). als.
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b	ess and repair the root caus COPEN CIRCUIT of CAN gateway (Models w tor of AWD control unit. etween the AWD control un	ith around view monitor sys it harness connector termin	tem).
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b Connector No. M42	ess and repair the root cause COPEN CIRCUIT of CAN gateway (Models w tor of AWD control unit. etween the AWD control un AWD control unit harness connect Termin 8	ith around view monitor sys it harness connector termin	tem). als.
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b Connector No. M42 Connector No. M42 the measurement value v YES >> GO TO 4. NO >> Repair the AWI CHECK POWER SUPPL	ess and repair the root cause COPEN CIRCUIT of CAN gateway (Models w tor of AWD control unit. etween the AWD control un AWD control unit harness connect Termin 8 vithin the specification? D control unit branch line. AND GROUND CIRCUIT	ith around view monitor sys it harness connector termin or nal No. 16	tem). als. Resistance (Ω) Approx. 54 – 66
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance b Check the resistance b Connector No. M42 Connector No. M42 Connector No. M42 Connector No. M42 Connector No. M42 CONNECTOR State measurement value v YES >> GO TO 4. NO >> Repair the AWI CHECK POWER SUPPL heck the power supply an ure".	ess and repair the root cause COPEN CIRCUIT of CAN gateway (Models w tor of AWD control unit. etween the AWD control un AWD control unit harness connect Termin 8 within the specification? D control unit branch line. LY AND GROUND CIRCUIT of the ground circuit of the mal? place the AWD control unit.	ith around view monitor sys it harness connector termina or hal No. 16 AWD control unit. Refer to Refer to <u>DLN-56, "Removal</u>	tem). als. Resistance (Ω) Approx. 54 – 66 DLN-47, "Diagnosis Proce-
YES >> GO TO 3. NO >> Check the harn CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance by Connector No. M42 Connector No. M42 the measurement value v YES >> GO TO 4. NO >> Repair the AWI CHECK POWER SUPPI heck the power supply an ure". the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	ess and repair the root cause COPEN CIRCUIT of CAN gateway (Models w tor of AWD control unit. etween the AWD control un AWD control unit harness connect Termin 8 within the specification? D control unit branch line. AND GROUND CIRCUIT of the ground circuit of the mal?	ith around view monitor sys it harness connector termina or hal No. 16 AWD control unit. Refer to Refer to <u>DLN-56, "Removal</u> ntrol unit branch line.	tem). als. Resistance (Ω) Approx. 54 – 66 DLN-47, "Diagnosis Proce-

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT) RCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011594965

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			Continuity
Connector No.	Termir	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 (Ω)		
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-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "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:000000011564370
1. CHECK CONNECTOR			В
 Check the following tern nector side). Steering angle sensor CAN gateway (Models Is the inspection result norr YES-1 >> Models with an YES-2 >> Models without 	cable from the negative term minals and connectors for c with around view monitor sy nal? ound view monitor system: 0 t around view monitor system	lamage, bend and loose con ystem) GO TO 2.	nection (unit side and con- C
^	ninal and connector. NTINUITY (OPEN CIRCUIT)	
1. Disconnect the connect			F
Connector No	CAN gateway harness connector		Continuity
Connector No.	4	nal No. 6	Existed
M24	10	12	Existed
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 	R OPEN CIRCUIT of CAN gateway (Models w tor of steering angle sensor	se (CAN communication circ rith around view monitor syst sensor harness connector ter	tem). J
Ste	ering angle sensor harness conne	ector	Resistance (Ω)
Connector No.	Termi	nal No.	
M77	5	2	Approx. 54 – 66
	within the specification? ering angle sensor branch lir LY AND GROUND CIRCUI		LA
Procedure" <u>Is the inspection result norr</u> YES (Present error)>>Rep YES (Past error)>>Error v	nal?		
			Ρ

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000011564328

[CAN SYSTEM (TYPE 8)]

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 linl	Data link connector		Continuity
Connector No.	Terminal No.	Ground	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.

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

3. Check the resistance between the BCM terminals.

BO	CM	Resistance (Ω)	
Termir	nal 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. 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 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е Although unit-related error symptoms occur, do not confuse them with other symptoms. Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure. F Non-reproduced>>Replace the unit whose connector was disconnected.

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MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011564287

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. ha	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M133	22C	1400	1	Existed
WI 133	4C	M88	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 EPS/DAST 3 CIRCUIT T DIAGNOSIS > [CAN SYSTEM (TYPE 9)]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND EPS/DAST 3 CIRCUIT

Diagnosis Procedure

INFOID:000000011564289

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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.
- Steering force control module
- Check the continuity between the A/C auto amp. harness connector and the steering force control module harness connector.

A/C auto amp. ha	arness connector	Steering force control m	odule harness connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M88	1	M71	14	Existed	_
10188	21	- IVI / I	15	Existed	_

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the steering force control module.

NO >> Repair the main line between the A/C auto amp. and the steering force control module.

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MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011564290

[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
- Steering force control module
- Display control unit
- 4. Check the continuity between the steering force control module harness connector and the display control unit harness connector.

Steering force control m	Steering force control module harness connector Displa		t harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M71	14 M100	M100	29	Existed
1017	15	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 steering force control module and the display control unit.

NO >> Repair the main line between the steering force control module and the display control unit.

ECM BRANCH LINE CIRCUIT

agnosis Proced	ure			INFOID:00000001156430
CHECK CONNECT	OR			
Check the following nector side). ECM	tery cable from the n g terminals and conn			ection (unit side and con
he inspection result ES >> GO TO 2.				
•	terminal and connec FOR OPEN CIRCUI			
Disconnect the cor Check the resistan		harness connector te	erminals.	
	ECM harness of	connector		Resistance (Ω)
Connector No.		Terminal No.		Resistance (32)
M37	114		113	Approx. 108 – 132
the inspection result YES (Present error)>> YES (Past error)>>Error)>> Repair the .CHECK HARNESS Disconnect the fus	y and the ground circ normal? •Replace the ECM. F ror was detected in th power supply and the CONTINUITY (OPEN e block (J/B) harness	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> the ECM branch line. e ground circuit. N CIRCUIT) is connector M133.	noval and Installatio	
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	y and the ground circ normal? Replace the ECM. For was detected in the power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector an	noval and Installatio	n". /B) harness connector.
NO >> GO TO 4. .CHECK POWER SU heck the power suppl the inspection result YES (Present error)>> YES (Past error)>>Error)>	y and the ground circ normal? Replace the ECM. For was detected in the power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector an	noval and Installation	<u>n"</u> .
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 ECM harnes	y and the ground circ normal? Replace the ECM. For was detected in the power supply and the CONTINUITY (OPEN e block (J/B) harness ty between the ECM	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector an Fuse block (J/B) I	noval and Installation	n". /B) harness connector.

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:000000011564304

[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 (Ω)		
Connector No.	Termi	Resistance (32)	
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	6 M133	23C	Existed
WI25	14	IVI I SS	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.

	LINE CIRCU	IT		
Diagnosis Procedur	e			INFOID:000000011564307
1. СНЕСК СОЛЛЕСТОР	R			
nector side). - IPDM E/R - Harness connector E Is the inspection result no YES >> GO TO 2.	ry cable from the ne erminals and conne 64 and fuse block (ormal? rminal and connecto	ctors for damage, b J/B) side connector	end and loose conr	nection (unit side and con-
 Disconnect the connect Check the resistance 	ector of IPDM E/R.		ector terminals.	
Connector No.		Terminal No.		Resistance (Ω)
E121	29 29 within the specifica		28	Approx. 54 – 66
E121 <u>Is the measurement value</u> YES >> GO TO 3. NO >> GO TO 4.	e within the specifica	ation?	28	Approx. 54 – 66
E121 Is the measurement value YES >> GO TO 3.	e within the specificate	ation?		
E121 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SUP Check the power supply a Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po	e within the specifica PLY AND GROUNE and the ground circu ormal? eplace the IPDM E/ was detected in the ower supply and the	ation? O CIRCUIT uit of the IPDM E/R. R. Refer to <u>PCS-38</u> e IPDM E/R branch ground circuit.	Refer to <u>PCS-37, "</u> , "Removal and Inst	Diagnosis Procedure".
E121 S the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply a Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po	e within the specifica PLY AND GROUNE and the ground circu ormal? eplace the IPDM E/ was detected in the ower supply and the	ation? O CIRCUIT uit of the IPDM E/R. R. Refer to <u>PCS-38</u> e IPDM E/R branch ground circuit.	Refer to <u>PCS-37, "</u> , "Removal and Inst	Diagnosis Procedure".
E121 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply a Is the inspection result no YES (Present error)>>R YES (Past error)>>Error	e within the specifica PLY AND GROUNE and the ground circu ormal? eplace the IPDM E/ was detected in the ower supply and the DR OPEN CIRCUIT ess connector E64.	ation? O CIRCUIT uit of the IPDM E/R. R. Refer to <u>PCS-38</u> e IPDM E/R branch ground circuit.	Refer to <u>PCS-37, "</u> , <u>"Removal and Inst</u> line.	Diagnosis Procedure". tallation".
E121 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply a Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS FO 1. Disconnect the harne 2. Check the continuity	e within the specifica PLY AND GROUNE and the ground circu ormal? eplace the IPDM E/ was detected in the ower supply and the DR OPEN CIRCUIT ess connector E64.	ation? D CIRCUIT uit of the IPDM E/R. R. Refer to <u>PCS-38</u> e IPDM E/R branch ground circuit. E/R harness connect	Refer to <u>PCS-37, "</u> , <u>"Removal and Inst</u> line.	Diagnosis Procedure". tallation".
E121 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply a Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS FO 1. Disconnect the harne 2. Check the continuity	PLY AND GROUNE and the ground circu ormal? eplace the IPDM E/ was detected in the ower supply and the DR OPEN CIRCUIT ess connector E64. between the IPDM I	ation? D CIRCUIT uit of the IPDM E/R. R. Refer to <u>PCS-38</u> e IPDM E/R branch ground circuit. E/R harness connect	Refer to <u>PCS-37, "</u> , <u>"Removal and Inst</u> line. ctor and harness co	Diagnosis Procedure". tallation".
E121 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply a Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS FO 1. Disconnect the harne 2. Check the continuity	e within the specifica PLY AND GROUNE and the ground circu ormal? eplace the IPDM E/ was detected in the ower supply and the DR OPEN CIRCUIT ess connector E64. between the IPDM I	ation? O CIRCUIT uit of the IPDM E/R. R. Refer to <u>PCS-38</u> e IPDM E/R branch ground circuit. E/R harness connect	Refer to <u>PCS-37. "</u> , <u>"Removal and Inst</u> line. ctor and harness co	Diagnosis Procedure". tallation".

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:0000000011564308

[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.

	A/T assembly harness connector			
Connector No.	Termi	Resistance (Ω)		
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-215</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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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	
Co	nnector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

F2	3	E65	9F	Existed	A
12	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:0000000011564311

[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 (Ω)		
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 9)]

Diagnosis Procedure			INFOID:000000011564312
1.CHECK CONNECTOR			
 Check the terminals an (unit side and connector 	able from the negative term d connectors of the combin side).		bend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi			
2.check harness for	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of combination meter. tween the combination mete	r harness connector term	inals.
Co	mbination meter harness connecto	r	Resistance (Ω)
Connector No.	Termina	No.	. ,
M58	41	42	Approx. 54 – 66
s the measurement value w	tann are specification:		
3. CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu	I the ground circuit of the co	mbination meter. Refer to	MWI-104, "COMBINATION
NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Y AND GROUND CIRCUIT I the ground circuit of the co <u>ire"</u> .	Refer to <u>MWI-126, "Remo</u> on meter branch line.	
NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Y AND GROUND CIRCUIT I the ground circuit of the co <u>ire"</u> . <u>al?</u> ace the combination meter. as detected in the combination	Refer to <u>MWI-126, "Remo</u> on meter branch line.	
NO >> Repair the comb 3.CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	Y AND GROUND CIRCUIT I the ground circuit of the co <u>ire"</u> . <u>al?</u> ace the combination meter. as detected in the combination	Refer to <u>MWI-126, "Remo</u> on meter branch line.	

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564314

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-38, "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)]

Diagnosis Procedure			INFOID:000000011564315
.CHECK CONNECTOR			
	able from the negative tern d connectors of the display		pend and loose connection
the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
CHECK HARNESS FOR			
. Disconnect the connect			
		init harness connector term	inals.
Dis	splay control unit harness connect	tor	
Connector No.	Termin	al No.	Resistance (Ω)
M100	29	17	Approx. 54 – 66
the measurement value w	ithin the specification?		
YES >> GO TO 3. NO >> Repair the displa	av control unit		
	Y AND GROUND CIRCUIT		
	d the ground circuit of the o		o <u>AV-232, "DISPLAY CON-</u>
the inspection result norm	10		
•			
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the display control unit as detected in the display c		al and Installation".
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the display control unit	ontrol unit branch line.	al and Installation".
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the display control unit as detected in the display c	ontrol unit branch line.	al and Installation".
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the display control unit as detected in the display c	ontrol unit branch line.	al and Installation".
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the display control unit as detected in the display c	ontrol unit branch line.	al and Installation".
YES (Present error)>>Repl YES (Past error)>>Error wa	ace the display control unit as detected in the display c	ontrol unit branch line.	al and Installation".

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564318

[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		
Connector No.	Terminal No.		Resistance (Ω)
M14	60 59		Approx. 108 – 132

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	ECIRCUIT		
Diagnosis Procedure			INF0/D:000000011564319
1.CHECK CONNECTOR			E
 Check the following term nector side). ABS actuator and elect 	cable from the negative terr minals and connectors for d	lamage, bend and loose con	
Is the inspection result norm			Ε
YES-2 >> Models without	ound view monitor system: (around view monitor syster inal and connector.		E
2. CHECK HARNESS CON	ITINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. htween the CAN gateway ha	arness connector terminals.	F
	CAN gateway harness connector	r	Continuity
Connector No.	Termir	nal No.	Continuity
M24	4	6	Existed
Is the inspection result norm	10	12	Existed
 Disconnect the connect Check the resistance b nals. 	tor of ABS actuator and elected etween the ABS actuator a	and electric unit (control unit)	
	and electric unit (control unit) har		Resistance (Ω)
Connector No.		nal No.	
E35 Is the measurement value v YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUPPL		15	Approx. 54 - 66
BRC-154, "Diagnosis Proce	edure".	ABS actuator and electric u	
and Installation YES (Past error)>>Error w	Place the ABS actuator and 		
1. Disconnect the connect	tor of harness connector E6 etween the ABS actuator a		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		Source And Annual Annua Annual Annual Annua		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	_		
E35	25	E65	6F	Existed		
E33	15	E03	7F	Existed		

- Without around view monitor system

	ectric unit (control unit) connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.			
E35	25	E65	8F	Existed	
235	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)]

EPS/DAST 3 BRAN			
Diagnosis Procedure			INFOID:000000011564414
1. CHECK CONNECTOR			
	cable from the negative terr minals and connectors for d		onnection (unit side and con-
· CAN gateway (Models	with around view monitor sy	/stem)	
YES-2 >> Models without NO >> Repair the term	ound view monitor system: (around view monitor system ninal and connector.	n: GO TO 3.	
)	
 Disconnect the connec Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha	arness connector terminals	
	CAN gateway harness connector		Continuity
		nal No.	-
Connector No.			Eviated
M24 s the inspection result norr YES >> GO TO 3.	4 10 nal? ness and repair or replace (i	6 12	Existed Existed
M24 <u>s the inspection result norr</u> YES >> GO TO 3. NO >> Check the harr tion circuit 2 sid 3. CHECK HARNESS FOF 1. Connect the connector 2. Disconnect the connect	4 10 mal? ness and repair or replace (i de).	6 12 f shield line is open) the ro ith around view monitor sy module.	Existed
M24 S the inspection result norr YES >> GO TO 3. NO >> Check the harr tion circuit 2 sic 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance b	4 10 mal? ness and repair or replace (i de). R OPEN CIRCUIT of CAN gateway (Models w tor of steering force control	6 12 f shield line is open) the ro ith around view monitor sy module. ontrol module harness con	Existed bot cause (CAN communica- stem). nector terminals.
M24 Is the inspection result norr YES >> GO TO 3. NO >> Check the harr tion circuit 2 sid 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance b Steerin Connector No.	4 10 nal? ness and repair or replace (i de). R OPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control and force control module harness control Termin	6 12 f shield line is open) the ro ith around view monitor sy module. ontrol module harness cont onnector hal No.	Existed bot cause (CAN communica- stem). nector terminals. Resistance (Ω)
M24 Is the inspection result norrest of the inspection result norrest of the inspection result norrest of the inspection of the inspectio	4 10 mal? mess and repair or replace (i de). R OPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control and force control module harness control 14	6 12 f shield line is open) the ro ith around view monitor sy module. ontrol module harness cont onnector	Existed bot cause (CAN communica- stem). nector terminals.
$\begin{array}{rrr} M24 \\ \hline \\ \hline \\ Is the inspection result norm \\ YES >> GO TO 3. \\ NO >> Check the harm \\ tion circuit 2 side \\ \hline \\ $	4 10 nal? ness and repair or replace (ide). R OPEN CIRCUIT of CAN gateway (Models watter of steering force control etween the steering force control etween the steering force control nodule harness control to the steering force control module harness control to the steering force cont	6 12 f shield line is open) the ro ith around view monitor sy module. ontrol module harness cont onnector hal No. 15	Existed bot cause (CAN communica- stem). nector terminals. Resistance (Ω)
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	4 10 mal? ness and repair or replace (i de). R OPEN CIRCUIT of CAN gateway (Models w tor of steering force control etween the steering force control etween the steering force control and force control module harness control 14 within the specification? ody harness. LY AND GROUND CIRCUIT	6 12 f shield line is open) the ro ith around view monitor sy module. ontrol module harness com onnector hal No. 15	Existed bot cause (CAN communica- stem). nector terminals. Resistance (Ω)
$\begin{array}{r} \label{eq:measurement value of the second constraints} \\ \begin{tabular}{lllllllllllllllllllllllllllllllllll$	4 10 mal? ness and repair or replace (ide). COPEN CIRCUIT of CAN gateway (Models watter of steering force control etween the steering force control etween the steering force control module harness control force control module harness control to the specification? ng force control module harness. LY AND GROUND CIRCUIT of the spound circuit of the specification?	6 12 f shield line is open) the ro ith around view monitor sy module. ontrol module harness com onnector nal No. 15 teering force control modul	Existed bot cause (CAN communica- stem). nector terminals. Resistance (Ω) Approx. 54 – 66

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011564415

[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.

	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).

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.

Resistance (Ω)	AWD control unit harness connector			
Resistance (22)	inal No.	Terminal No.		
Approx. 54 – 66	8 16		M42	
ł	16		M42	

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-47, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-56, "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)

Diagnosis Procoduro

Diagnosis Procedure			INFOID:000000011564416	
1.CHECK CONNECTOR				В
	cable from the negative terr		onnection (unit side and con-	С
 Chassis control module Harness connectors E4 Harness connectors M3 CAN gateway (Models 	7	vstem)		D
YES-2 >> Models without	nal? ound view monitor system: (around view monitor syster iinal and connector.			E
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT))		F
 Disconnect the connect Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha	rness connector terminals		G
Connector No.	CAN gateway harness connector	nal No.	Continuity	
	4	6	Existed	F
M24	10	12	Existed	
2. Disconnect the connect	of CAN gateway (Models w tor of chassis control modul etween the chassis control	e.		k
Cha	ssis control module harness conn	ector	Resistance (Ω)	L
Connector No.	-	nal No.		
E22 <u>Is the measurement value v</u> YES >> GO TO 4. NO >> Repair the chas 4. CHECK POWER SUPPI	ssis control module branch l		Approx. 54 – 66	LA
			efer to DAS-542, "Diagnosis	

А

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011564417

[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.

	CAN gateway harness connector		
Connector No.	Terminal No.		Continuity
M24	4 6		Existed
11124	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.

Steerin	Resistance (Ω)		
Connector No.	Terminal No.		Resistance (22)
M77	5	2	Approx. 54 – 66

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-122, "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.

DAST 1 BRANCH LINE CIRCUIT

А **Diagnosis** Procedure INFOID:000000011564418 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 3. 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. 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. 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 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. 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 STC-397. N "Diagnosis Procedure" Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to STC-419, "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.

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011564419

[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			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
M25	6	Ground	Not existed
WI25	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-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. 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:000000011564420

[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.

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.	Connector No. Terminal No.		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		Resistance (Ω)	
Termiı	nal 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 "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. 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.		
 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. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 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.	< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 9)]
 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. 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. 		otom (Results from interview with
 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. 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.	Inspection result	
 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. 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>>Start the diagnosis again. Follow the trouble diagnos detected.	is procedure when past error is
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 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. 	7. CHECK UNIT REPRODUCTION	
 Disconnect the battery cable from the negative terminal. 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. 	Perform the reproduction test as per the following procedure for each unit.	
 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. 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. 	 Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of chassis communication circuit. 	
Inspection result Reproduced>>Connect the connector. Check other units as per the above procedure.	 Chassis control module has two termination circuits. Check other units fi 4. Connect the battery cable to the negative terminal. Check if the symp (Results from interview with customer)" are reproduced. 	
	Although unit-related error symptoms occur, do not confuse them with o	ther symptoms.
	Reproduced>>Connect the connector. Check other units as per the above	procedure.

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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:0000000011562136

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	M88	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 EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND EPS/DAST 3 CIRCUIT

Diagnosis Procedure

INFOID:000000011562138

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[CAN SYSTEM (TYPE 10)]

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.
- Steering force control module
- Check the continuity between the A/C auto amp. harness connector and the steering force control module harness connector.

A/C auto amp. h	arness connector	Steering force control mo	odule harness connector	Continuity	E
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M88	1	M71	14	Existed	_
IVIOO	21	- IVI7 I	15	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 steering force control module.

NO >> Repair the main line between the A/C auto amp. and the steering force control module.

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MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011562139

[CAN SYSTEM (TYPE 10)]

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
- Steering force control module
- Display control unit
- 4. Check the continuity between the steering force control module harness connector and the display control unit harness connector.

Steering force control module harness connector		Display control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M71 –	14	M100	29	Existed	
	15	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 steering force control module and the display control unit.

NO >> Repair the main line between the steering force control module and the display control unit.

ECM BRANCH LINE CIRCUIT

agnosis Procedu	ure			INFOID:00000001156215
CHECK CONNECT	OR			
Check the following nector side). ECM	tery cable from the n g terminals and conn	ectors for damage, be		ection (unit side and con
ne inspection result		k (J/B) side connector		
S >> GO TO 2. >> Repair the	terminal and connec			
Disconnect the con				
Check the resistant	ce between the ECN	I harness connector te	erminals.	
	ECM harness	connector		
Connector No.		Terminal No.		Resistance (Ω)
M37	114		113	Approx. 108 – 132
D >> GO TO 4. CHECK POWER SU the power supply the inspection result	normal?	cuit of the ECM. Refer	-	
 >> GO TO 4. CHECK POWER SLeck the power supply the inspection result S (Present error)>> S (Past error)>>Error)>> Repair the 	y and the ground circ normal?	cuit of the ECM. Refer Refer to <u>EC-580, "Ren</u> he ECM branch line. e ground circuit.	-	
 >> GO TO 4. CHECK POWER SL eck the power supply inspection result S (Present error)>> S (Past error)>>Erro >> Repair the CHECK HARNESS Disconnect the fuse Check the continuit 	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	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector ar	noval and Installation	
D >> GO TO 4. CHECK POWER SL eck the power supply the inspection result ES (Present error)>> ES (Past error)>>Err D >> Repair the CHECK HARNESS Disconnect the fuse Check the continuit ECM harnes	y and the ground circ normal? Replace the ECM. For was detected in the power supply and the CONTINUITY (OPEI the block (J/B) harness ty between the ECM	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector ar Fuse block (J/B)	noval and Installation	<u>on"</u> .
D >> GO TO 4. CHECK POWER SL eck the power supply the inspection result ES (Present error)>> ES (Past error)>>Err D >> Repair the CHECK HARNESS Disconnect the fuse Check the continuit	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	cuit of the ECM. Refer Refer to <u>EC-580, "Rem</u> he ECM branch line. e ground circuit. N CIRCUIT) s connector M133. harness connector ar	noval and Installation	/B) harness connector.

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:000000011562153

[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 (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 (Ω)
Connector No.	Terminal No.		Resistance (22)
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	M133	23C	Existed	
IWI25	14	IVI I SS	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:000000011562156 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) 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. ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-37, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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

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

6E

2E

Existed

Existed

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562157

[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).
- 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.		Resistance (Ω)
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-215</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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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	arness connector	Harness	connector	Continuity
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

E2	3	E65	9F	Existed	^
12	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:0000000011562160

[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 A/C auto amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

A/C auto amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		176515tarice (22)
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 10)]

Diagnosis Procedure			INFOID:000000011562161
1.CHECK CONNECTOR			
	able from the negative terr d connectors of the combi		bend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
1. Disconnect the connect	or of combination meter.	ter harness connector term	ninals.
Co	mbination meter harness connec	tor	Resistance (Ω)
Connector No.		nal No.	
M58	41	42	Approx. 54 – 66
B. CHECK POWER SUPPLY	ination meter branch line.		MWI-104. "COMBINATION
	<u>re"</u> .		
<u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	al? ace the combination meter	r. Refer to <u>MWI-126, "Remo</u> tion meter branch line.	
<u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	al? ace the combination meter as detected in the combina	r. Refer to <u>MWI-126, "Remo</u> tion meter branch line.	

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562163

[CAN SYSTEM (TYPE 10)]

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-38, "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 10)]

AV BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INF0ID:000000011562164
1.CHECK CONNECTOR			
	cable from the negative tern d connectors of the display		, bend and loose connection
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
	or of display control unit. etween the display control u	nit harness connector ter	minals.
Di	splay control unit harness connec	tor	Resistance (Ω)
Connector No.	Termin	al No.	
M100	29	17	Approx. 54 – 66
TROL UNIT : Diagnosis Pro Is the inspection result norm YES (Present error)>>Rep	ay control unit. Y AND GROUND CIRCUIT d the ground circuit of the o <u>cedure"</u> .	display control unit. Refer	r to <u>AV-232, "DISPLAY CON-</u> oval and Installation".
	er supply and the ground cir		

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[CAN SYSTEM (TYPE 10)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562166

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			Resistance (Ω)
Connector No.	Terminal No.		
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-578, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-586, "Removal and Installation".

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:000000011562167
1. CHECK CONNECTOR			
	able from the negative term connectors of the BCM fo <u>al?</u> nal and connector.		oose connection (unit side and
 Disconnect the connector Check the resistance bet 	ween the BCM harness co	nnector terminals.	
Connector No.	BCM harness connector		Resistance (Ω)
Connector No. M14	Termin 60	59	Approx. 108 – 132
s the measurement value wi YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPLY	branch line. AND GROUND CIRCUIT		
Check the power supply and <u>Is the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	al? ace the BCM. Refer to <u>BCS</u> s detected in the BCM bra	-98. "Removal and Inst nch line.	
NO >> Repair the powe	supply and the ground cir	cuit.	

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562168

[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).
- 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	r	Continuity
Connector No.	Terminal 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 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		Resistance (Ω)	
Connector No.	Terminal 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> <u>and Installation"</u>.
- YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
- NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

LAN-426

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ABS actuator and electric harness of the second sec	()	Harness o	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
F25	25	For	6F	Existed
E35	15	— E65	7F	Existed
Without around view n	nonitor system			
ABS actuator and electron harness of		Harness of	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
E25	25	E65	8F	Existed
E35 -	15	E00 -	3F	Existed
•		actuator and electric	unit (control unit) h	arness connecto

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< DTC/CIRCUIT DIAGNOSIS >

EPS/DAST 3 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562173

[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 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	r	Continuity
Connector No.	Termi	Terminal No.	
M24	4	6	Existed
11/24	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		Resistance (Ω)
Connector No.	Terminal No.		
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-397, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-418</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

4WD BRANCH LINE CIRCUIT

4WD BRANCH LIN	E CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011562174	A
1.CHECK CONNECTOR				В
	cable from the negative terr	ninal. lamage, bend and loose cor	nnection (unit side and con-	С
Is the inspection result norm	al?			D
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term 2. CHECK HARNESS CON	around view monitor syster inal and connector.	m: GO TO 3.		Е
1. Disconnect the connect	or of CAN gateway.	arness connector terminals.		F
Connector No.	CAN gateway harness connector	nal No.	Continuity	G
	4	6	Existed	
M24	10	12	Existed	Н
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 	OPEN CIRCUIT of CAN gateway (Models w or of AWD control unit.	se (CAN communication circ	tem).	l J
	WD control unit harness connect	or		Κ
Connector No.		nal No.	Resistance (Ω)	
M42	8	16	Approx. 54 – 66	L
Is the measurement value w YES >> GO TO 4. NO >> Repair the AWE 4.CHECK POWER SUPPL	control unit branch line.	Г		LAN
Check the power supply an <u>dure</u> ".	d the ground circuit of the		DLN-47, "Diagnosis Proce-	Ν
YES (Past error)>>Error w	lace the AWD control unit.		and Installation".	0
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CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011562175

[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).
- 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		Continuity
Connector No.	Terminal 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 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	Chassis control module harness connector		- Resistance (Ω)
Connector No.	Terminal 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.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-542</u>, "Diagnosis <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "Removal and Installation".

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

STRG BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011562176
1.CHECK CONNECTOR			
 3. Check the following tern nector side). Steering angle sensor CAN gateway (Models Is the inspection result norm YES-1 >> Models with an YES-2 >> Models without 	cable from the negative terr minals and connectors for d with around view monitor sy	lamage, bend and loose con /stem) GO TO 2.	nection (unit side and con-
^	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		Continuity
Connector No.	4	nal No. 6	Existed
M24	10	12	Existed
2. Disconnect the connect	of CAN gateway (Models w tor of steering angle sensor.	ith around view monitor syst	
Ste	eering angle sensor harness conne	ector	
Connector No.	Termir	nal No.	Resistance (Ω)
M77	5	2	Approx. 54 – 66
· ·	within the specification? ering angle sensor branch lir LY AND GROUND CIRCUIT		L
Procedure". Is the inspection result norr	nal?	steering angle sensor. Ref	-
YES (Past error)>>Error w	place the steering angle sen vas detected in the steering ver supply and the ground ci		noval and Installation".

DAST 1 BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562184

[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 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	ssis control module harness conr	ector	Continuity
Connector No.	Termi	Terminal No.	
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 and	gle main control module harness c	onnector	Resistance (Ω)
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-397.</u> "Diagnosis Procedure".

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle main control module. Refer to <u>STC-419, "Removal and</u> <u>Installation"</u>.
- YES (Past error)>>Error was detected in the steering angle main control module branch line.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 10)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000011562186 **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-433

CAN COMMUNICATION CIRCUIT

< 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.

< DTC/CIRCUIT DIAGNOSIS >

CHASSIS COMMU	NICATION CIRCU	IT		
Diagnosis Procedure			INFOID:000000011562189	
1.CHECK CAN DIAGNOS	S		E	
communication circuit 2 hav	e no malfunction.		ication circuit 1 and/or CAN	
Are the CAN communication YES >> GO TO 2.	n 1 and/or CAN communica	ation 2 circuits normal?	(
NO >> Check and repa		cuit 1 and/or CAN communi	ication circuit 2.	
2.CONNECTOR INSPECT				
3. Disconnect all the unit of	cable from the negative ten connectors on chassis com nnectors for damage, benc <u>hal?</u> inal and connector.	munication circuit. and loose connection.	F	
Check the continuity betwee			(
Cha	ssis control module harness conr	nector	-	
Connector No.		Terminal No.		
E22	19	7	Not existed	
YES >> GO TO 4. NO >> Check the harn 4.CHECK HARNESS CON Check the continuity betwee	ITINUITY (SHORT CIRCUI	T)	J/B) is short] the root cause.	
Chassis control mod	ule harness connector	-		
Connector No.	Terminal No.		Continuity	
M22	19	Ground	Not existed	
	7		Not existed	
5.CHECK CHASSIS CON 1. Remove the chassis co	ess and repair or replace [i IROL MODULE TERMINA	TION CIRCUIT	I/B) is short] the root cause.	
Chas	sis control module			
	Terminal No.	I	Resistance (Ω)	
19	7		oprox. 108 – 132	
11	8	Ap	oprox. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 6.

>> Replace the chassis control module. NO

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.

I < DTC/CIRCUIT DIAC		BETWEEN DLC	AND HVAC CI	RCUIT [CAN SYSTEM (TYPE 11)]
DTC/CIRCU	IT DIAG	NOSIS		
MAIN LINE BET		C AND HVAC C	CIRCUIT	
Diagnosis Proced	ure			INFOID:000000011562080
1.CHECK CONNECT	OR			
 Check the followir and harness side). Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS Disconnect the fus 	ttery cable from ng terminals ar r M133 and fus normal? terminal and c CONTINUITY se block (J/B) h	e block (J/B) side conr connector.	age, bend and loo nector	se connection (connector side
2. Check the continu	-		nais.	
Terminal No.	Fuse blo	ск (J/B) Terminal No.		Continuity
23C		22C Existed		
5C		4C		Existed
3.CHECK HARNESS 1. Disconnect the con	ne fuse block (CONTINUITY	(OPEN CIRCUIT) auto amp.	ess connector and t	ne A/C auto amp. harness con-
Fuse block (J/B)	harness connector	A/C auto	amp. harness connecto	r Ocertinuitu
Connector No.	Terminal N	o. Connector No	o. Terminal	No.
M133	22C	M88	1	Existed
Is the inspection result	4C		2	Existed
YES (Present error)> YES (Past error)>>Er amp.	>Check CAN s ror was detect		etween the data lin	k connector and the A/C auto or M133 and the A/C auto amp.

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011562081

[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.
- 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.			
M88	1	M100	29	Existed
IVIOO	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.

	GNOSIS >		-	IT N SYSTEM (TYPE 11)]
MAIN LINE BE		AND ADP CIR	CUIT	
Diagnosis Proce	dure			INFOID:000000011562086
1.CHECK CONNEC	TOR			
Check the follow and harness side	attery cable from the ing terminals and co). or B39 and fuse bloc <u>It normal?</u>	onnectors for damag		nnection (connector side
• ·	e terminal and conne			
2.CHECK HARNES				
 Fuse block (J/B) ABS actuator and 	Ilowing harness con harness connector B d electric unit (contro uity between the har	39 I unit)	inals.	
	nd electric unit (control ur ness connector	it) Fuse	olock (J/B) terminals	Continuity
Connector No.	Terminal 1	١٥.	Terminal No.	Continuity
E35	25		6H	Existed
200	15		4H	Existed
3.CHECK HARNES	the fuse block (J/B). S CONTINUITY (OP onnector of driver se	at control unit.	the driver seat control	unit harness connector.
Fuse block (J/B) h	arness connector	Driver seat control	l unit harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B39	6H	B601	1	Existed
	4H		17	Existed
unit) and	>Check CAN system Fror was detected in the driver seat control	n the main line betw ol unit.		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:0000000011562087

[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 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	Harness connector		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
B12	1	B37	4	Existed	
DIZ	17		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.			
B72	4	B50	27	Existed	
DIZ	3	- 650 -	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 >								

[CAN SYSTEM (TYPE 11)]

agnosis Proced	lure			INFOID:00000001156208
CHECK CONNECT	OR			
Check the followin and harness side) Harness connecto Harness connecto the inspection result S >> GO TO 2.	ttery cable from the ne ng terminals and coni rs B62 rs M22	nectors for damage, k	pend and loose conr	nection (connector side
Around view moni Harness connecto Check the continu connector.	rs B62 and M22		ol unit harness conr	nector and the harness
	onitor control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	_
B50	27	B62	63	Existed
	28		53	Existed
With ICC				
	onitor control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	27	B62	18	Existed
	28		17	Existed
CHECK HARNESS	ne body harness. CONTINUITY (OPEN rness connectors M95			
Check the continu With around view	ity between the harne monitor, without ICC	ss connectors.		
	connector	Harness		- Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
	63	M95	15 7	Existed
M22	53	1		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:000000011562089

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[CAN SYSTEM (TYPE 11)]

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. 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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[CAN SYSTEM (TYPE 11)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562096

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.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M37	114	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-189, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-580, "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	
M37	114	M133	21C	Existed	
IVIO7	113		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 11)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procoduro

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	vitch OFF. tery cable from the ne g terminals and coni		bend and loose o	connection (connector side	
		(J/B) side connector	r		
Is the inspection result	normal?				
YES >> GO TO 2. NO >> Repair the	terminal and connect	or			
2. CHECK HARNESS					
Check the resistance b					
	Data link cor			Resistance (Ω)	
Connector No. M25					
Is the measurement va	-	ation 2	14	Approx. 54 – 66	
YES (Present error)>: YES (Past error)>>Er cuit 1 side) NO >> GO TO 3. 3.CHECK HARNESS	ror was detected in th	e data link connector	branch line circu	it (CAN communication cir-	
	ness connector M133 ty between the data li	3. Ink connector and the	harness connect	tor.	
Data link			connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
M25	6	M133	23C	Existed	
	14		5C	Existed	
	e fuse block (J/B).	data link connector N	M25 and the harn	ess connector M133.	

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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

INFOID:000000011562099

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		
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.

	Resistance (Ω)		
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.

IPDM-E BRANCH	LINE CIRCU	IT		
Diagnosis Procedure	e			INFOID:000000011562100
1.CHECK CONNECTOR				
nector side). - IPDM E/R - Harness connector E6 Is the inspection result no YES >> GO TO 2.	y cable from the ne erminals and conne 64 and fuse block (. rmal? minal and connecto	ctors for damage, b J/B) side connector	end and loose cor	nection (unit side and con-
 Disconnect the conne Check the resistance 			ector terminals.	
Connector No.		Terminal No.		Resistance (Ω)
E121	29		28	Approx. 54 – 66
· · ·	PLY AND GROUNE nd the ground circu rmal? eplace the IPDM E/ was detected in the wer supply and the	O CIRCUIT uit of the IPDM E/R. R. Refer to <u>PCS-38</u> PIPDM E/R branch	, "Removal and Ins	
 CHECK HARNESS FC Disconnect the harner Check the continuity b 	ss connector E64.	E/R harness connec	ctor and harness c	onnector.
IPDM E/R harn	ess connector	Harness	connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F404	29	E04	6E	Existed
E121 –	28	E64	2F	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:000000011562101

[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).
- 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.	Termi	Resistance (Ω)		
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-215, "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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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 11)]

F2	3	E65	9F	Existed	
12	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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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000011562102

[CAN SYSTEM (TYPE 11)]

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.

	Resistance (Ω)		
Connector No.	Termi		
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 11)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Proced	ure			INFOID:0000000115621
1.снеск отс				
Check DTC of the CAN	J gateway with CONS	ULT.		
ls U1010 or B2600 ind	icated?			
NO >> GO TO 2.	diagnosis of the indic	ated DTC.		
2.CHECK CONNECT	OR			
 Check the followin nector side). CAN gateway 	ttery cable from the ne	ectors for damage, b	end and loose connec	tion (unit side and con
Is the inspection result	normal?			
YES >> GO TO 3.		4a -		
-	terminal and connect			
3.CHECK HARNESS				
	nnector of CAN gatew ity between the CAN g		nnector terminals.	
	CAN gateway harne	ess connector		Continuity
Connector No.		Terminal No.		Continuity
M24	4		6	Existed
	10		12	Existed
Is the inspection result YES >> GO TO 4.				
NO >> GO TO 5. 4.CHECK POWER SI	JPPLI AND GROUN	D CIRCUIT		
4.CHECK POWER SI			teway. Refer to <u>LAN-</u>	71. "Diagnosis Proce
4. CHECK POWER SI Check the power supp dure".	bly and the ground ci		teway. Refer to <u>LAN-1</u>	171, "Diagnosis Proce
4.CHECK POWER SI Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the	bly and the ground ci <u>normal?</u> >Replace the CAN ga ror was detected in th power supply and the	ircuit of the CAN ga ateway. Refer to <u>LAN</u> ne CAN gateway bran e ground circuit.	teway. Refer to <u>LAN-1</u> - <u>172. "Removal and Ir</u> nch line (CAN commur	stallation".
4.CHECK POWER SI Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er	bly and the ground ci <u>normal?</u> >Replace the CAN ga ror was detected in th power supply and the	ircuit of the CAN ga ateway. Refer to <u>LAN</u> ne CAN gateway bran e ground circuit.	-172. "Removal and Ir	stallation".
4.CHECK POWER SI Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5.CHECK HARNESS 1. Disconnect the har	oly and the ground ci normal? >Replace the CAN ga ror was detected in th power supply and the CONTINUITY (OPEN rness connector M133	ircuit of the CAN ga ateway. Refer to <u>LAN</u> he CAN gateway bran e ground circuit. N CIRCUIT) 3.	-172. "Removal and Ir	istallation". nication circuit 2 side).
4.CHECK POWER SI Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5.CHECK HARNESS 1. Disconnect the han 2. Check the continui	oly and the ground ci normal? >Replace the CAN ga ror was detected in th power supply and the CONTINUITY (OPEN mess connector M133 ity between the CAN g	ircuit of the CAN ga ateway. Refer to <u>LAN</u> he CAN gateway bran e ground circuit. N CIRCUIT) 3. gateway harness cor	-172. "Removal and Ir nch line (CAN commur	nstallation". hication circuit 2 side).
4.CHECK POWER SI Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5.CHECK HARNESS 1. Disconnect the han 2. Check the continui	oly and the ground ci normal? >Replace the CAN ga ror was detected in th power supply and the CONTINUITY (OPEN rness connector M133	ircuit of the CAN ga ateway. Refer to <u>LAN</u> he CAN gateway bran e ground circuit. N CIRCUIT) 3. gateway harness cor	I-172, "Removal and Ir nch line (CAN commur nnector and the harnes	istallation". nication circuit 2 side).
4.CHECK POWER SI Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5.CHECK HARNESS 1. Disconnect the han 2. Check the continui	oly and the ground ci normal? >Replace the CAN ga ror was detected in th power supply and the CONTINUITY (OPEN rness connector M133 ty between the CAN ga arness connector	ateway. Refer to <u>LAN</u> the CAN gateway bran e GAN gateway bran e ground circuit. N CIRCUIT) 3. gateway harness cor Harness	-172, "Removal and Ir nch line (CAN commur nnector and the harnes	nstallation". hication 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.

LAN-451

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562104

[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 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 (Ω)		
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 11)]

	E CIRCUIT		
Diagnosis Procedure			INFOID:000000011562105
1.CHECK CONNECTOR			
	cable from the negative terr d connectors of the combi		pend and loose connection
Is the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
	or of combination meter. etween the combination me	ter harness connector term	nals.
Combination meter harness connector Resistance (Ω)			
Connector No.	Terminal No.		
M58	41	42	Approx. 54 – 66
is the measurement value w	ithin the specification?		
YES >> GO TO 3. NO >> Repair the com 3. CHECK POWER SUPPL Check the power supply and METER : Diagnosis Proced	bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the cure".		MWI-104, "COMBINATION
YES >> GO TO 3. NO >> Repair the com 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 w	bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the c ure". hal? lace the combination meter	ombination meter. Refer to . Refer to <u>MWI-126, "Remo</u> tion meter branch line.	
NO >> Repair the com 3. CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	bination meter branch line. Y AND GROUND CIRCUIT d the ground circuit of the c <u>ure"</u> . hal? lace the combination meter as detected in the combina	ombination meter. Refer to . Refer to <u>MWI-126, "Remo</u> tion meter branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562107

[CAN SYSTEM (TYPE 11)]

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-38, "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 11)]

AV BRANCH LINE	CIRCUIT						
Diagnosis Procedure			INFOID:000000011562108				
1. CHECK CONNECTOR							
	cable from the negative term d connectors of the display		e, bend and loose connection				
Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.						
	or of display control unit. Stween the display control u	nit harness connector te	rminals.				
Di	splay control unit harness connect	or	Resistance (Ω)				
Connector No.	Termina	al No.					
M100	29	17	Approx. 54 – 66				
TROL UNIT : Diagnosis Pro Is the inspection result norm YES (Present error)>>Rep	ay control unit. Y AND GROUND CIRCUIT d the ground circuit of the c cedure".	Refer to <u>AV-270, "Rem</u>	er to <u>AV-232, "DISPLAY CON-</u> oval and Installation".				
	er supply and the ground cir						

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< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562110

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 (Ω)		
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-578, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-586, "Removal and Installation".

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

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure			INFOID:000000011562111
1.CHECK CONNECTOR			
	OFF. cable from the negative term d connectors of the BCM fo		e connection (unit side and
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2.CHECK HARNESS FOR			
 Disconnect the connect of Check the resistance be 	or of BCM. etween the BCM harness co	nnector terminals.	
	BCM harness connector		
			Resistance (Ω)
Connector No.	Termina	I No.	Resistance (Ω)
M14	60	Il No. 59	Resistance (Ω) Approx. 108 – 132
M14 Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPL Check the power supply and Is the inspection result norm	60 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the BC	59 CM. Refer to <u>BCS-91, "Dia</u>	Approx. 108 – 132 gnosis Procedure".
M14 Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	60 ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the BC al?	59 CM. Refer to <u>BCS-91, "Dia</u> -98, "Removal and Installa	Approx. 108 – 132 gnosis Procedure".

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562112

[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).
- 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
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).

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	ABS actuator and electric unit (control unit) harness connector			
Connector No.	Termi	Terminal 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.
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.
- With around view monitor system

LAN-458

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

numess c	ctric unit (control unit) connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E25	25	For	6F	Existed
E33	E35 E65	7F	Existed	
Without around view n	nonitor system			
ABS actuator and electron harness c		Harness c	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
	25	EGE	8F	Existed
E35	15	— E65 –	3F	

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562113

[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 follow terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connectors B600 and B12

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
IVIZ4	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.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B601	1	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> 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 <u>ADP-145. "Removal and Installation"</u>.

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

[CAN SYSTEM (TYPE 11)]

EPS/DAST 3 BRAN			
iagnosis Procedure			INFOID:000000011562117
.CHECK CONNECTOR			
 Check the following term nector side). Steering force control n 	cable from the negative tern minals and connectors for dan nodule	amage, bend and loose o	connection (unit side and con-
the inspection result norn	with around view monitor sy nal?	stem)	
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	ound view monitor system: C around view monitor system ninal and connector.	n: GO TO 3.	
CHECK HARNESS CON	NTINUITY (OPEN CIRCUIT)		
Disconnect the connec Check the continuity be	tor of CAN gateway. Stween the CAN gateway ha	rness connector terminal	s.
	CAN gateway harness connector		Continuity
	Terminal No.		Continuity
Connector No.	Iermin		
Connector No. M24	4	6	Existed
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid	4 10 nal? ness and repair or replace (if de).	6 12	Existed Existed
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b	4 10 nal? ness and repair or replace (if de).	6 12 shield line is open) the r th around view monitor s module. ontrol module harness co	Existed root cause (CAN communica- system). nnector terminals.
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b	4 10 nal? ness and repair or replace (if de). R OPEN CIRCUIT of CAN gateway (Models wi tor of steering force control r etween the steering force co	6 12 ⁵ shield line is open) the r th around view monitor s module. ontrol module harness co	Existed root cause (CAN communica-
M24 So the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 side CHECK HARNESS FOR COnnect the connector Disconnect the connector Check the resistance b Steering	4 10 nal? ness and repair or replace (if de). R OPEN CIRCUIT of CAN gateway (Models with tor of steering force control re etween the steering force control re ag force control module harness co	6 12 ⁵ shield line is open) the r th around view monitor s module. ontrol module harness co	Existed root cause (CAN communica- system). nnector terminals.
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b Steerin Connector No. M71 the measurement value w YES >> GO TO 4. NO >> Replace the bo	4 10 nal? ness and repair or replace (if de). R OPEN CIRCUIT of CAN gateway (Models with tor of steering force control in etween the steering force control in a force control module harness control 14 within the specification?	6 12 F shield line is open) the r th around view monitor s module. ontrol module harness co nnector al No. 15	Existed root cause (CAN communica- system). nnector terminals. Resistance (Ω)
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 sides CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance b Steerin Connector No. M71 the measurement value w YES >> GO TO 4. NO >> Replace the bo CHECK POWER SUPPI heck the power supply an	4 10 nal? hess and repair or replace (if de). COPEN CIRCUIT of CAN gateway (Models without of steering force control retween the steering force control retween the steering force control module harness control module harness. LY AND GROUND CIRCUIT	6 12 F shield line is open) the r th around view monitor s module. ontrol module harness co nnector al No. 15	Existed root cause (CAN communica- system). nnector terminals. Resistance (Ω)
M24 the inspection result norm YES >> GO TO 3. NO >> Check the harm tion circuit 2 sid CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance b Steerin Connector No. M71 the measurement value v YES >> GO TO 4. NO >> Replace the bo CHECK POWER SUPPL theck the power supply an osis Procedure".	4 10 nal? ness and repair or replace (if de). R OPEN CIRCUIT of CAN gateway (Models witter of steering force control retween the steering force control retween the steering force control module harness control module harness control ng force control module harness control 14 within the specification? ody harness. LY AND GROUND CIRCUIT d the ground circuit of the stand?	6 12 F shield line is open) the r th around view monitor s module. ontrol module harness co nnector al No. 15	Existed root cause (CAN communica- system). nnector terminals. Resistance (Ω) Approx. 54 – 66

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562118

[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
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).

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.

AWD control unit harness connector			Basistanas (O)
Connector No.	Terminal No.		Resistance (Ω)
M42	8	16	Approx. 54 – 66
a magauramant value with	in the one sification?		

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-47, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-56, "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 11)]

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

А

			INFOID:000000011562119
1.CHECK CONNECTOR			
. Turn the ignition switch	OFF.		
 Disconnect the battery of Check the following term nector side). Chassis control module 	able from the negative term ninals and connectors for da		onnection (unit side and con-
Harness connectors E4 Harness connectors M3 CAN gateway (Models v		stem)	
s the inspection result norm	<u>al?</u>		
YES-2 >> Models without	und view monitor system: G around view monitor system		
NO >> Repair the termi	nal and connector. TINUITY (OPEN CIRCUIT)		
. Disconnect the connect 2. Check the continuity be	or of CAN gateway. ween the CAN gateway har	ness connector terminals	
	CAN gateway harness connector		Continuity
Connector No.	Termina	al No.	Continuity
M24	4	6	Existed
	10	12	Existed
. Connect the connector of 2. Disconnect the connect 3. Check the resistance be	of CAN gateway (Models with or of chassis control module otween the chassis control m	nodule harness connector	
 Disconnect the connect Check the resistance be Chase 	of CAN gateway (Models with or of chassis control module otween the chassis control m ssis control module harness conne	nodule harness connector	
Connect the connector of Disconnect the connect of C. Disconnect the connect of C. Check the resistance be Charter Connector No.	of CAN gateway (Models with or of chassis control module etween the chassis control m ssis control module harness conne Termina	nodule harness connector ctor al No.	terminals. Resistance (Ω)
 Connect the connector of Disconnect the connect Check the resistance be 	of CAN gateway (Models with or of chassis control module etween the chassis control m ssis control module harness conne Termina 4	nodule harness connector	terminals.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562120

[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.	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).

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			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M77	5	2	Approx. 54 – 66

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-122, "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.

AVM BRANCH LIN	E CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011562123	A
1.CHECK CONNECTOR				В
 Check the following term nector side). Around view monitor co CAN gateway (Models Is the inspection result norm YES-1 >> Models without YES-2 >> Models with ICO NO >> Repair the term CHECK HARNESS CON 	cable from the negative term minals and connectors for de without ICC) <u>nal?</u> ICC: GO TO 2. C: GO TO 3. inal and connector. ITINUITY (OPEN CIRCUIT)	amage, bend and loose col	nnection (unit side and con-	C D E
 Disconnect the connect Check the continuity be 	tween the CAN gateway ha	rness connector terminals.		Г
Connector No.	CAN gateway harness connector Termin	al No	Continuity	G
	4	6	Existed	
M24	10	12	Existed	Н
 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 	of CAN gateway (Models w or of around view monitor c	ithout ICC). ontrol unit.		l J
3. Check the resistance b	etween the around view mo	nitor control unit narness co	onnector terminals.	K
Around Connector No.	nd view monitor control unit harness connector Terminal No.		Resistance (Ω)	
B50	27	28	Approx. 54 – 66	L
Is the measurement value v YES >> GO TO 4. NO >> Repair the arou 4.CHECK POWER SUPPL	nd view monitor control unit			LAN
Check the power supply a "AROUND VIEW MONITOR Is the inspection result norm	CONTROL UNIT : Diagno		ntrol unit. Refer to <u>AV-429.</u>	Ν
		or control unit. Refer to AV-	449, "Removal and Installa-	0
<u>tion"</u> . YES (Past error)>>Error w	as detected in the around v er supply and the ground cir	iew monitor control unit bra		Ρ

< DTC/CIRCUIT DIAGNOSIS >

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562127

[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.

CAN gateway harness connector		Continuity	
Connector No.	Termi	Terminal No.	
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).

 $\mathbf{3}$. 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 (Ω)
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-429, "SONAR CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-453, "Removal and Installation".

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

DAST 1 BRANCH L	INE CIRCUIT		
Diagnosis Procedure			A INFOID:0000000011562128
1. CHECK CONNECTOR			В
	cable from the negative tern ninals and connectors for c ntrol module		nnection (unit side and con- C
YES >> GO TO 2.			
NO >> Repair the term 2.CHECK HARNESS CON)	E
1. Disconnect the connect	or of chassis control modul		erminals. F
	ssis control module harness conr		Continuity
Connector No.	Termi 19	nal No. 11	Existed
E22	7	8	Existed
2. Disconnect the connect	of chassis control module. or of steering angle main c	ontrol module. nain control module harnes	J s connector terminals.
Steering a	ngle main control module harnes	s connector	K
Connector No.	-	nal No.	Resistance (Ω)
E26	14	15	Approx. 54 – 66
4.CHECK POWER SUPPL Check the power supply and "Diagnosis Procedure". Is the inspection result norm YES (Present error)>>Rep Installation". YES (Past error)>>Error w	ring angle main control mod Y AND GROUND CIRCUI ⁻ d the ground circuit of the s <u>nal?</u> lace the steering angle m	T steering angle main control ain control module. Refer angle main control module	to <u>STC-419, "Removal and</u> O

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000011562131

[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 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 Not exis	Continuity
M25	6		Not existed
WIZ0	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.

E	СМ	- Resistance (Ω)	
Terminal No.		Resistance (22)	
114	113	Approx. 108 – 132	

3. Check the resistance between the BCM terminals.

BCM		Resistance (Ω)	
Terminal No.		Resistance (22)	
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 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:0000000011562132

[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.	Termi	Continuity	
M25	13	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	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M25	13	Gibunu	Not existed
M25	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-470

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

INFOID:000000011562133

[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.	Termir	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 mode	ule harness connector		Continuity	
Connector No.	Connector No. Terminal No.		Continuity	
M22	19	Ground	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.		- 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 11)]	
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. 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 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: 	Е
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 12)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN DLC AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011562021

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	Fuse block (J/B)	
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	M88	1	Existed	
101133	4C	Ινίοο	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 AFS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND AFS 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.
- AFS control unit
- Check the continuity between the A/C auto amp. harness connector and the AFS control unit harness connector.

E	Continuity	arness connector	AFS control unit h	arness connector	A/C auto amp. ha
	Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
	Existed	1	M4	1	M88
- Г	Existed	13	1014	21	IVIOÓ

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 AFS control unit.

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

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[CAN SYSTEM (TYPE 12)]

INFOID:0000000011562025

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AFS AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011562026

[CAN SYSTEM (TYPE 12)]

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
- AFS control unit
- Display control unit
- 4. Check the continuity between the AFS control unit harness connector and the display control unit harness connector.

AFS control unit I	narness connector	Display control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M4	1	M100	29	Existed
1014	13	- 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 AFS control unit and the display control unit.

NO >> Repair the main line between the AFS control unit and the display control unit.

< DTC/CIRCUIT DIA	AGNOSIS >			-	T N SYSTEM (TYPE 12)]
MAIN LINE BE	TWEEN ABS /	AND ADP	' CIRC	UIT	
Diagnosis Proce	dure				INFOID:000000011562027
1.CHECK CONNEC	TOR				
 Check the follow and harness side Harness connect <u>Is the inspection resu</u> YES >> GO TO 2 	attery cable from the ring terminals and co e). for B39 and fuse bloc <u>lt normal?</u> the terminal and conne	onnectors for k (J/B) side co ector.	damage, onnector	bend and loose cor	nnection (connector side
 Disconnect the for Fuse block (J/B) ABS actuator and Check the contin 	ollowing harness con harness connector B d electric unit (contro uity between the har	nectors. 39 I unit) ness connecto		ıls.	
	nd electric unit (control ur mess connector	iit <i>)</i>	Fuse blo	ck (J/B) terminals	Continuity
Connector No.	Terminal I	No.	Те	rminal No.	
E35	25			6H 4H	Existed
3.CHECK HARNES	8. the fuse block (J/B). S CONTINUITY (OP onnector of driver se	at control unit		e driver seat control u	unit harness connector.
Fuse block (J/B) I	narness connector	Driver se	eat control u	nit harness connector	Continuity
Connector No.	Terminal No.	Connecto	or No.	Terminal No.	Continuity
B39	6H	B601	1	1	Existed
	4H			Existed	
YES (Past error)>>E unit) and	>>Check CAN system	n the main line ol unit.	e betwee		and electric unit (control seat control unit.

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MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:000000011562029

[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

	onitor control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
B50	27	P62	63	Existed
B20	28	B62	53	Existed

With ICC

	onitor control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	27	B62	18	Existed
B20	28		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	Harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	ctor No. Terminal No.	Continuity
Maa	63	M95	15	Existed
M22	53		7	Existed

With ICC

Harness	Harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	18	M95	14	Existed
	17	IVI95	6	Existed

MAIN LINE BETWEEN AVM AND SONAR CIRCUIT

[CAN SYSTEM (TYPE 12)]

< 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.

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MAIN LINE BETWEEN ADP AND ICC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ICC CIRCUIT

Diagnosis Procedure

INFOID:000000011562031

[CAN SYSTEM (TYPE 12)]

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		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
P10	1	B1	1	Existed
B12	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 12)]

< DTC/CIRCUIT DIA	GNOSIS >
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MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

iagnosis Proced	dure			INFOID:000000011562032		
.CHECK CONNEC	TOR					
. Check the followi and harness side) Harness connector	attery cable from the n ng terminals and con). or B37	egative terminal. nectors for damage, b	end and loose conne	ection (connector side		
Harness connector Harness connector Harness connector	or B62					
s the inspection resul YES >> GO TO 2. NO >> Repair the		tor.				
CHECK HARNESS		N CIRCUIT)				
ADAS control unit Harness connecto	ors B37 and B72	ectors. S control unit harness o	connector and the har	ness connector.		
ADAS control uni	t harness connector	Harness o	connector	Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.			
B1	1	B37	4	Existed		
s the inspection resul	2		3	Existed		
YES >> GO TO 3. NO >> Replace t CHECK HARNESS Disconnect the ha		2 and M22.				
Harness	connector	Harness o	connector			
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
	4		63	Existed		
B72	3	B62	53	Existed		
CHECK HARNESS	he body harness. S CONTINUITY (OPEI onnector of steering fo		steering force control	module		
	-					
		Steering force control mo		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	•		

Is the inspection result normal?

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

63

53

M22

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M71

14

15

Existed

Existed

MAIN LINE BETWEEN ICC AND EPS/DAST 3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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 DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN EPS/DAST 3 AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000011562033

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[CAN SYSTEM (TYPE 12)]

- 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
M71	14	M25	13	Existed	
IVI7 I	15	IVI25	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:000000011562034

[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 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		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
B87	6 P2	1	Existed			
B87	5	B3	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		onitor control unit connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal N	Terminal No.	
B52	1	B50	27	Existed
B52	9	B50	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.

		VEEN DAST 1 A		۲ SYSTEM (TYPE 12)]
< DTC/CIRCUIT DIA MAIN LINE BE	TWEEN DAST	1 AND ICC CIF		
Diagnosis Procec	lure			INFOID:000000011562035
	OR			
 Check the followin and harness side) Chassis control m Harness connector Harness connector Harness connector Harness connector Harness connector Chassis control m Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the following Steering angle material Harness connector 	ttery cable from the ne ng terminals and conr odule ors E25 ors M40 or M19 ors B18 odule t normal? e terminal and connect c CONTINUITY (OPEN lowing harness conne in control module ors E25 and M40	tor. N CIRCUIT)		ection (connector side
	ain control module connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E26	14	E25	51	Existed
	15		52	Existed
ness conr	t normal?			ess connector and har-

Check the continuity between the harness connectors.

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Harness	connector	Harness	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M40	51	M19	74	Existed	N
10140	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	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 12)]

B18	74	B1	8	Existed
БТО	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.

DTC/CIRCUIT DIAG				SYSTEM (TYPE 12)]
		ID LANE CIRC	-	
agnosis Proced	ure			INFOID:000000011562036
CHECK CONNECT				
. Turn the ignition sv	-			
. Disconnect the bat	ttery cable from the ne og terminals and con odule r B18		pend and loose conne	ection (connector side
the inspection result YES >> GO TO 2.	normal?			
	terminal and connect			
CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
ADAS control unit Harness connector		ss connector terminal	S.	
ADAS control unit	harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1 .	8	B18	84	Existed
the inspection result	9		85	Existed
YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the har	e body harness.	5 and R3.		
Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M19	84	M75	32	Existed
	85		31	Existed
	normal?	type decision again.		

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[CAN SYSTEM (TYPE 12)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562037

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.

	Resistance (Ω)		
Connector No.	Termina	Resistance (22)	
M37	114	113	Approx. 108 – 132

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 <u>EC-189, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to EC-580, "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	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 COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 12)]

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procoduro

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 Check the followir and harness side). Data link connecto Harness connecto Is the inspection result YES >> GO TO 2. 	vitch OFF. tery cable from the ne of terminals and con r M133 and fuse block <u>normal?</u> terminal and connect	or.		connection (connector side
Check the resistance b				
Connector No	Data link cor		Resistance (Ω)	
Connector No. M25 6		Terminal No.		Approx. 54 – 66
Is the measurement va	Ű	ention?	17	
cuit 1 side NO >> GO TO 3. 3. CHECK HARNESS 1. Disconnect the had	ror was detected in th	e data link connecto I CIRCUIT) 3.	or branch line circu	uit (CAN communication cir-
Data link	connector	Harnes	s connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
MOE	6	M133	23C	Existed
M25	14	WI 155	5C	Existed
	e fuse block (J/B).	data link connector	M25 and the harn	ess connector M133.

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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:000000011562040

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		
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		Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
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:000000011562041 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. ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-37, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-38, "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 har	IPDM E/R harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
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:0000000011562042

[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).
- 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.	Termi	Resistance (Ω)			
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-215</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-178, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-215, "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 12)]

F2	3	F65	9F	Existed	
12	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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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000011562043

[CAN SYSTEM (TYPE 12)]

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 (Ω)
Connector No.	Termir	minal 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 12)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Proced	ure			INFOID:0000000115620
1.снеск отс				
Check DTC of the CAN	J gateway with CONS	SULT.		
Is U1010 or B2600 ind	• •			
NO >> GO TO 2.	diagnosis of the indic	ated DTC.		
2.CHECK CONNECT	OR			
 Check the followin nector side). CAN gateway 	ttery cable from the ne	ectors for damage, k		ction (unit side and con
Is the inspection result	normal?			
YES >> GO TO 3.	termelie et e	1		
- ·	terminal and connect			
3.CHECK HARNESS				
	nnector of CAN gatew ity between the CAN		nnector terminals.	
	CAN gateway harne	ess connector		Continuity
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				
			toway Defer to LAN	171, "Diagnosis Proce
dure".		incuit of the CAN ga	ileway. Relet to <u>LAN-</u>	TTT, Diagnosis Floce
Is the inspection result	normal?			
YES (Past error)>>Er		ne CAN gateway bra	I-172, "Removal and I nch line (CAN commu	nstallation". nication circuit 2 side).
5. CHECK HARNESS		•		
	rness connector M13	3.	nnector and the harne	ss connector.
	ity between the CAN			
2. Check the continu	-			
2. Check the continu CAN gateway ha	arness connector	Harnes	s connector	Continuity
2. Check the continu	arness connector Terminal No.		Terminal No.	· · · · · · · · · · · · · · · · · · ·
2. Check the continu CAN gateway ha	arness connector	Harnes		Continuity Existed 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-495

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562045

[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 A/C auto amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	A/C auto amp. harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

Diagnosis Procedure			INFOID:000000011562046
1 .CHECK CONNECTOR			
	cable from the negative tern d connectors of the combi		pend and loose connection
s the inspection result norm YES >> GO TO 2. NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
	or of combination meter. etween the combination met	er harness connector term	nals.
	Combination meter harness connector Resistance		Resistance (Ω)
Connector No.	Termin		. ,
M58	41	42	Approx. 54 – 66
s the measurement value w YES >> GO TO 3.	·		
NO >> Repair the comb 3.CHECK POWER SUPPL			
3. CHECK POWER SUPPL Check the power supply and METER : Diagnosis Procedu	Y AND GROUND CIRCUIT d the ground circuit of the coure".		MWI-104, "COMBINATION
3.CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	Y AND GROUND CIRCUIT d the ground circuit of the coure".	Description meter. Refer to Refer to <u>MWI-126, "Remo</u> ion meter branch line.	
B. CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error wa	Y AND GROUND CIRCUIT d the ground circuit of the co <u>ure"</u> . al? lace the combination meter. as detected in the combinat	Description meter. Refer to Refer to <u>MWI-126, "Remo</u> ion meter branch line.	
3.CHECK POWER SUPPL Check the power supply and <u>METER : Diagnosis Procedu</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	Y AND GROUND CIRCUIT d the ground circuit of the co <u>ure"</u> . al? lace the combination meter. as detected in the combinat	Description meter. Refer to Refer to <u>MWI-126, "Remo</u> ion meter branch line.	

Revision: 2015 January

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< DTC/CIRCUIT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562047

[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 connected	or	Resistance (Ω)
Connector No.	Termi	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-125, "AFS CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-178, "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.

[CAN SYSTEM (TYPE 12)]

A-BAG BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000011562048 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-38, "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:000000011562049

[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 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	splay control unit harness connec	ctor	Resistance (Ω)
Connector No.	Termi	nal 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-232, "DISPLAY CON-</u> TROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the display control unit. Refer to <u>AV-270, "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.

HBA BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011562050
1. CHECK CONNECTOR			I
3. Check the following term nector side).	cable from the negative terr ninals and connectors for d le mirror (High beam assist	amage, bend and loose co	nnection (unit side and con-
NO >> Repair the termination of termination of the termination of terminatio of terminati			
1. Disconnect the connect	or of auto anti - dazzling ins etween the auto anti - daz		st control module). eam assist control module)
Auto anti - dazzli	ng inside mirror (High beam assis harness connector	t control module)	Resistance (Ω)
Connector No.	Termir	al No.	
R9	12	11	Approx. 54 – 66
Is the measurement value w			
YES >> GO TO 3. NO >> Repair the anti - 3. CHECK POWER SUPPL		-	·
YES >> GO TO 3. NO >> Repair the anti - 3. CHECK POWER SUPPL Check the power supply an	dazzling inside mirror (Hig Y AND GROUND CIRCUIT d the ground circuit of the	anti - dazzling inside mirro	r (High beam assist control
YES >> GO TO 3. NO >> Repair the anti - 3. CHECK POWER SUPPL	dazzling inside mirror (Hig Y AND GROUND CIRCUIT d the ground circuit of the "HIGH BEAM ASSIST COM	anti - dazzling inside mirro	r (High beam assist control sis Procedure".
YES >> GO TO 3. NO >> Repair the anti - 3. CHECK POWER SUPPL Check the power supply an module). Refer to <u>EXL-125.</u> Is the inspection result norm YES (Present error)>>Rep drive positioner	dazzling inside mirror (Hig Y AND GROUND CIRCUIT d the ground circuit of the <u>"HIGH BEAM ASSIST CON al?</u> lace the inside mirror. Refer	anti - dazzling inside mirro NTROL MODULE : Diagnos to <u>MIR-42, "Removal and</u>	r (High beam assist control
YES >> GO TO 3. NO >> Repair the anti - 3. CHECK POWER SUPPL Check the power supply an module). Refer to <u>EXL-125.</u> Is the inspection result norm YES (Present error)>>Rep drive positioner system). YES (Past error)>>Error w	dazzling inside mirror (Hig Y AND GROUND CIRCUIT d the ground circuit of the <u>"HIGH BEAM ASSIST CON al?</u> lace the inside mirror. Refer system) or <u>MIR-68, "Remov</u>	anti - dazzling inside mirro NTROL MODULE : Diagnos to <u>MIR-42, "Removal and val and Installation"</u> (Withou	r (High beam assist control sis Procedure". Installation" (With automatic
YES >> GO TO 3. NO >> Repair the anti - 3. CHECK POWER SUPPL Check the power supply an module). Refer to <u>EXL-125.</u> Is the inspection result norm YES (Present error)>>Rep drive positioner system). YES (Past error)>>Error we branch line.	dazzling inside mirror (Hig Y AND GROUND CIRCUIT d the ground circuit of the <u>"HIGH BEAM ASSIST CON al?</u> lace the inside mirror. Refer system) or <u>MIR-68, "Remov</u>	anti - dazzling inside mirro <u>TROL MODULE : Diagnos</u> to <u>MIR-42, "Removal and val and Installation"</u> (Withou zzling inside mirror (High b	r (High beam assist control sis Procedure". Installation" (With automatic ut automatic drive positioner
YES >> GO TO 3. NO >> Repair the anti - 3. CHECK POWER SUPPL Check the power supply an module). Refer to <u>EXL-125.</u> Is the inspection result norm YES (Present error)>>Rep drive positioner system). YES (Past error)>>Error we branch line.	dazzling inside mirror (Hig Y AND GROUND CIRCUIT d the ground circuit of the <u>"HIGH BEAM ASSIST CON al?</u> lace the inside mirror. Refer system) or <u>MIR-68. "Remo</u> as detected in the anti - da	anti - dazzling inside mirro <u>TROL MODULE : Diagnos</u> to <u>MIR-42, "Removal and val and Installation"</u> (Withou zzling inside mirror (High b	r (High beam assist control sis Procedure". Installation" (With automatic ut automatic drive positioner beam assist control module)

< DTC/CIRCUIT DIAGNOSIS >

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562051

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		Resistance (Ω)
Connector No.	Terminal No.		Resistance (32)
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-578, "TCU : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the TCU. Refer to AV-586, "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 12)]

Diagnosis Procedure			INFOID:000000011562052
1. CHECK CONNECTOR			
	able from the negative termi connectors of the BCM for al? nal and connector.		ese connection (unit side and
. Disconnect the connector. Check the resistance bet	r of BCM. ween the BCM harness cor	nector terminals.	
	BCM harness connector		Resistance (Ω)
Connector No.	Termina		
M14	60	59	Approx. 108 – 132
Is the measurement value wi YES >> GO TO 3. NO >> Repair the BCM			
Check the power supply and	the ground circuit of the BC	M. Refer to <u>BCS-91, "D</u>	agnosis Procedure".
Check the power supply and <u>s the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	the ground circuit of the BC al? ace the BCM. Refer to <u>BCS</u> -	98. "Removal and Insta ch line.	
Check the power supply and <u>Is the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	the ground circuit of the BC <u>al?</u> ace the BCM. Refer to <u>BCS-</u> s detected in the BCM bran	98. "Removal and Insta ch line.	
Check the power supply and <u>Is the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	the ground circuit of the BC <u>al?</u> ace the BCM. Refer to <u>BCS-</u> s detected in the BCM bran	98. "Removal and Insta ch line.	

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562053

[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).
- 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.	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 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 (Ω)		
Connector No.	Terminal No.		176515ta1106 (22)
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

LAN-504

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

E35 E65 TF Existe Without around view monitor system ABS actuator and electric unit (control unit) Harness connector	$\frac{25}{15} + \frac{25}{15} + \frac{25}{15} + \frac{6F}{7F} + \frac{5}{15} + \frac{6F}{15} + \frac{1}{15} + \frac{1}$
E35 E65 E65 Without around view monitor system ABS actuator and electric unit (control unit) harness connector	E35 E65 F7F Existed
15 7F Exister Without around view monitor system ABS actuator and electric unit (control unit) harness connector Harness connector Continue	15 7F Existed
ABS actuator and electric unit (control unit) harness connector Continu	
harness connector Continu	around view monitor system
Connector No. Terminal No. Connector No. Terminal No.	Harness connector
	ctor No. Terminal No. Connector No. Terminal No.
E35 25 E65 8F Existe	

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562054

[CAN SYSTEM (TYPE 12)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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

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	r	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 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.

Driver	seat control unit harness connector		Resistance (Ω)
Connector No.	Terminal No).	
B601	1	17	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> 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 <u>ADP-145</u>, "Removal and Installation".

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

PSB BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:000000011562055
1. CHECK CONNECTOR			E
	cable from the negative tern ninals and connectors for c rrol unit (driver side) nal?	ninal. lamage, bend and loose cor	nnection (unit side and con-
2. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)	L
	tween the CAN gateway ha	arness connector terminals.	F
Connector No.	CAN gateway harness connector	nal No.	Continuity
	4	6	Existed
M24	10	12	Existed
	OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co	ntrol unit (driver side). belt control unit (driver side	e) harness connector termi-
Pro grach coor	t belt control unit (driver side) har	acco connector	
Connector No.	· · ·	nal No.	Resistance (Ω)
B19	14	4	Approx. 54 – 66
	crash seat belt control unit	,	LA
4.CHECK POWER SUPPL Check the power supply an SBC-62, "Diagnosis Proceed	d the ground circuit of the ure".		unit (driver side). Refer to
and Installation	lace the seat belt pre-tensi	oner retractor (driver side). I	
	as detected in the pre-cras er supply and the ground ci	h seat belt control unit (drive rcuit.	er side) branch line. F

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011562056

[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.

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

Resistance (Ω)
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)]

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT (CHASSIS COMMUNICATION CIRCUIT)

А Diagnosis Procedure INFOID:000000011562057 **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? >> 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 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:0000000011562058

[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	r	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 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	g force control module harness co	onnector	Resistance (Ω)
Connector No.	Termi	nal No.	
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-397, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering force control module. Refer to <u>STC-418</u>, "<u>Removal and Installa-</u> <u>tion</u>".

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

4WD BRANCH LINE CIRCUIT

4WD BRANCH LIN	E CIRCUIT			Δ
Diagnosis Procedure			INFOID:000000011562059	A
1.CHECK CONNECTOR				В
	cable from the negative terr	ninal. amage, bend and loose cor	nection (unit side and con-	С
Is the inspection result norm				D
YES-1 >> Models with arc YES-2 >> Models without NO >> Repair the term	around view monitor syster inal and connector.	n: GO TO 3.		Е
2.CHECK HARNESS CON 1. Disconnect the connect 2. Check the continuity be				F
	CAN gateway harness connector			G
Connector No.		nal No.	Continuity	G
M24	4	6	Existed	Ц
	10	12	Existed	Н
3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	OPEN CIRCUIT of CAN gateway (Models w or of AWD control unit.	se (CAN communication circ ith around view monitor sys it harness connector termina	tem).	J
A	WD control unit harness connect	or		Κ
Connector No.		nal No.	Resistance (Ω)	
M42	8	16	Approx. 54 – 66	L
Is the measurement value w YES >> GO TO 4. NO >> Repair the AWE 4.CHECK POWER SUPPL) control unit branch line.	-		LA
Check the power supply an dure".			DLN-47, "Diagnosis Proce-	Ν
Is the inspection result norm	al?			
YES (Past error)>>Error w			and Installation".	С
				Ρ

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

< DTC/CIRCUIT DIAGNOSIS >

CCM BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT)

Diagnosis Procedure

INFOID:0000000011562060

[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		Continuity
Connector No.	Termir	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 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 conn	ector	Resistance (Ω)
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.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the chassis control module. Refer to <u>DAS-542</u>, "<u>Diagnosis</u> <u>Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the chassis control module. Refer to DAS-543, "Removal and Installation".

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

	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011562061
1.CHECK CONNECTOR			
3. Check the following ter nector side).Steering angle sensor	OFF. cable from the negative tern minals and connectors for da with around view monitor sy	amage, bend and loose con	nection (unit side and con-
Is the inspection result norr			
YES-2 >> Models without	ound view monitor system: G around view monitor systen ninal and connector.		
2. CHECK HARNESS COI	NTINUITY (OPEN CIRCUIT)		
 Disconnect the connect Check the continuity be 	tor of CAN gateway. etween the CAN gateway ha	rness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termin	al No.	Continuity
M24	4	6	Existed
Is the inspection result norr	10	12	Existed
YES >> GO TO 3. NO >> Check the harr	ness and repair the root caus	e (CAN communication circ	uit).
NO >> Check the harr 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	•	ith around view monitor syst	em).
NO >> Check the harr 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance b	R OPEN CIRCUIT of CAN gateway (Models wi tor of steering angle sensor.	ith around view monitor syst	rem). minals.
NO >> Check the harr 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance b	R OPEN CIRCUIT of CAN gateway (Models wi tor of steering angle sensor. etween the steering angle se	ith around view monitor syst ensor harness connector ter	em).
NO >> Check the harr 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance b	R OPEN CIRCUIT of CAN gateway (Models witter tor of steering angle sensor. etween the steering angle se sering angle sensor harness connect Termin 5	ith around view monitor syst ensor harness connector ter	rem). minals.

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011562062

[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 connector			Resistance (Ω)
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-360, "SIDE RADAR LH :</u> <u>Diagnosis Procedure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-387, "Removal and Installation".

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

RDR-R BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000011562063
1.CHECK CONNECTOR			
 Turn the ignition switch OFI Disconnect the battery cable Check the following termination nector side). Side radar RH Harness connector B87 Harness connector B8 s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal CHECK HARNESS FOR OP 	e from the negative term ils and connectors for da and connector.		onnection (unit side and con-
 Disconnect the connector of Check the resistance between 	en the side radar RH ha		S.
	radar RH harness connector		Resistance (Ω)
B93	Termin 4	ai no. 3	Approx. 54 – 66
s the measurement value within		5	Approx. 34 – 00
YES >> GO TO 3. NO >> Repair the side rad CHECK POWER SUPPLY A Check the power supply and th	ar RH branch line. ND GROUND CIRCUIT		
Diagnosis Procedure". s the inspection result normal?	e ground circuit of the s	ide fadar KH. Refer to <u>Di</u>	AS-301, SIDE RADAK KH .
YES (Present error)>>Replace YES (Past error)>>Error was o		r RH branch line.	and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562064

[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		
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 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.

		Resistance (Ω)
Connector No. Te	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.

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-429.</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-449</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	CIRCUIT			Λ
Diagnosis Procedure			INFOID:000000011562065	A
1. CHECK CONNECTOR				В
3. Check the following terr nector side).	cable from the negative terr ninals and connectors for d tor / accelerator pedal posi 25	amage, bend and loose con	nection (unit side and con-	C
Is the inspection result norm	ial?			
YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR				E
1. Disconnect the connect	or of accelerator pedal actu	ator / accelerator pedal pos al actuator harness connecto		F
Accelerator pedal actua	ator / accelerator pedal position se		Resistance (Ω)	G
Connector No.	Termir	nal No.	· · ·	
M124	3	9	Approx. 54 – 66	Н
3. CHECK POWER SUPPL Check the power supply an	lerator pedal actuator bran Y AND GROUND CIRCUI d the ground circuit of the	- accelerator pedal actuator /		I
sensor. Refer to <u>DAS-360, "</u>		CTUATOR : Diagnosis Proc	<u>edure"</u> .	J
TANCE CONTR YES (Past error)>>Error w	lace the accelerator peda	tor pedal actuator branch lin		K
				L
				LA
				Ν

< DTC/CIRCUIT DIAGNOSIS >

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BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562066

[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 assistance buzzer control module harness connector			Resistance (Ω)
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> 362, "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-390, "Removal and</u> <u>Installation"</u>.

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

< DTC/CIRCUIT DIAGNOS	S >	[CAN SYSTEM (TYPE 12)]
LASER BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000011562067
1. CHECK CONNECTOR			
 Check the following term nector side). ICC sensor Harness connector E76 Harness connector E14 Harness connector E25 Harness connector M40 Is the inspection result normative YES >> GO TO 2. NO >> Repair the termination of the terminative t	able from the negative termina inals and connectors for dama al? nal and connector. OPEN CIRCUIT	age, bend and loose co	onnection (unit side and con-
	ICC sensor harness connector		
Connector No.	Terminal N	0.	Resistance (Ω)
E80	3	6	Approx. 108 – 132
<u>s the inspection result norma</u> YES (Present error)>>Repla YES (Past error)>>Error wa	ensor branch line. AND GROUND CIRCUIT the ground circuit of the ICC s	CCS-136, "Removal an branch line.	

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SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562068

[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.	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).

 $\mathbf{3}$. 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 (Ω)
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-429, "SONAR CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to AV-453, "Removal and Installation".

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

Diagnosis Procoduro	INE CIRCUIT		
Diagnosis Procedure			INFOID:000000011562069
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d ntrol module		nnection (unit side and con-
NO >> Repair the term			
	or of chassis control module tween the chassis control r	9.	terminals.
Cha	ssis control module harness conn	ector	
Connector No.	Termir	al No.	Continuity
E22	19	11	Existed
	7	8	Existed
3. CHECK HARNESS FOR			
 Connect the connector Disconnect the connect 	of chassis control module. or of steering angle main co etween the steering angle m	ontrol module. nain control module harnes	s connector terminals.
 Connect the connector Disconnect the connect Check the resistance be 	of chassis control module. or of steering angle main co	nain control module harnes	
 Connect the connector Disconnect the connect Check the resistance be 	of chassis control module. or of steering angle main co etween the steering angle m	nain control module harnes	es connector terminals. Resistance (Ω)
 Connect the connector of Disconnect the connect Check the resistance be Steering at	of chassis control module. or of steering angle main co etween the steering angle m ngle main control module harness Termir 14	nain control module harnes	

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011562070

[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.

Chassis control module harness connector			Continuity
Connector No.	Terminal No.		Continuity
Egg	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).

${f 3.}$ 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 (Ω)
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-611, "LANE CAMERA</u> <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-621, "Removal and Installation".

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

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT 1

			INFOID:000000011562072
.CONNECTOR INSPECT			
 Disconnect all the unit c Check terminals and costs the inspection result norm 	cable from the negative term connectors on CAN commu nnectors for damage, benc	nication circuit 1.	
YES >> GO TO 2. NO >> Repair the termi	inal and connector		
2. CHECK HARNESS CON		Т)	
Check the continuity betwee			
	Data link connector		Continuity
Connector No.		nal No. 14	Not aviated
M25 s the inspection result norm	6	14	Not existed
CHECK HARNESS CON Check the continuity betwee			Continuity
Connector No.	Terminal No.	Ground	Continuity
		Ground Not existed	
M25	6		Not existed
M25	14		Not existed Not existed
s the inspection result norm YES >> GO TO 4. NO >> Check the harne CHECK ECM AND BCM 1. Remove the ECM and th	14 aal? ess and repair or replace [i TERMINATION CIRCUIT	f shield line or fuse block (J	Not existed
Is the inspection result norm YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND BCM 1. Remove the ECM and th	14 ess and repair or replace [i TERMINATION CIRCUIT he BCM.	f shield line or fuse block (J	Not existed /B) is short] the root cause.
Is the inspection result norm YES >> GO TO 4. NO >> Check the harne 4. CHECK ECM AND BCM 1. Remove the ECM and th 2. Check the resistance be	14 ess and repair or replace [i TERMINATION CIRCUIT he BCM. etween the ECM terminals.	f shield line or fuse block (J.	Not existed /B) is short] the root cause.
s the inspection result norm YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND BCM 1. Remove the ECM and th 2. Check the resistance be	14 ess and repair or replace [i TERMINATION CIRCUIT he BCM. etween the ECM terminals. ECM Terminal No. 113	f shield line or fuse block (J.	Not existed /B) is short] the root cause.
s the inspection result norm YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND BCM 1. Remove the ECM and th 2. Check the resistance be	14 ess and repair or replace [i TERMINATION CIRCUIT he BCM. etween the ECM terminals. ECM Terminal No.	f shield line or fuse block (J.	Not existed /B) is short] the root cause.
s the inspection result norm YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND BCM 1. Remove the ECM and th 2. Check the resistance be	14 al? ess and repair or replace [i TERMINATION CIRCUIT he BCM. etween the ECM terminals. ECM Terminal No. 113 etween the BCM terminals.	f shield line or fuse block (J.	Not existed /B) is short] the root cause.
Is the inspection result norm YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND BCM 1. Remove the ECM and th 2. Check the resistance be 114 3. Check the resistance be	14 ess and repair or replace [i TERMINATION CIRCUIT he BCM. etween the ECM terminals. ECM Terminal No. 113	f shield line or fuse block (J.	Not existed /B) is short] the root cause.
Is the inspection result norm YES >> GO TO 4. NO >> Check the harne 4.CHECK ECM AND BCM 1. Remove the ECM and th 2. Check the resistance be 114 3. Check the resistance be	14 aal? esss and repair or replace [i TERMINATION CIRCUIT he BCM. etween the ECM terminals. ECM Terminal No. 113 etween the BCM terminals. BCM	f shield line or fuse block (J F Ap	Not existed /B) is short] the root cause. Resistance (Ω) prox. 108 – 132

5. CHECK SYMPTOM

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

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

CAN COMMUNICATIO	ON CIRCUIT 2		
Diagnosis Procedure			INFOID:000000011562073
1.CONNECTOR INSPECTION	١		
 Turn the ignition switch OF Disconnect the battery cab Disconnect all the unit cont Check terminals and conte Is the inspection result normal? 	le from the negative terr nectors on CAN commu ectors for damage, bend	nication circuit 2.	
YES >> GO TO 2. NO >> Repair the terminal 2.CHECK HARNESS CONTIN	and connector.	T)	
Check the continuity between the		-	
	Data link connector		
Connector No.	Termir	nal No.	Continuity
M25	13	12	Not existed
NO >> Check the harness 3.CHECK HARNESS CONTIN Check the continuity between the	UITY (SHORT CIRCUI	T)	/B) is short] the root cause.
Data link con	nector		
Connector No.	Terminal No.	Ground	Continuity
M25	13	Ground	Not existed
	12		Not existed
Is the inspection result normal? YES >> GO TO 4. NO >> Check the harness 4. CHECK CAN GATEWAY TE 1. Remove the CAN gateway. 2. Check the resistance between	and repair or replace [if RMINATION CIRCUIT		/B) is short] the root cause.
CAN	gateway	F	Resistance (Ω)
	ninal No.		
4			prox. 108 – 132
6	12	Ар	prox. 108 – 132
Is the measurement value withi YES >> GO TO 5. NO >> Replace the CAN <u>c</u> 5.CHECK SYMPTOM			
Connect all the connectors. Ch customer)" are reproduced. Inspection result Reproduced>>GO TO 6.	ieck if the symptoms de	escribed in the "Symptom	(Results from interview with

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

LAN-525

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 COMMUI	NICATION CIRCU	IT		
Diagnosis Procedure				INFOID:000000011562074
1.CHECK CAN DIAGNOSI	S			
Check the CAN diagnosis re communication circuit 2 have		see that th	e CAN communi	cation circuit 1 and/or CAN
Are the CAN communication		ation 2 circu	uits normal?	
YES >> GO TO 2. NO >> Check and repa	ir CAN communication circ	wit 1 and/a		nation aircuit 2
2.CONNECTOR INSPECT		uit i anu/u		
 Turn the ignition switch Disconnect the battery of Disconnect all the unit c 	OFF. cable from the negative ten onnectors on chassis com nnectors for damage, benc	munication		
YES >> GO TO 3.				
NO >> Repair the termi				
3.CHECK HARNESS CON				
Check the continuity betwee	n the chassis control modu	ule harness	s connector.	
Chas	ssis control module harness conr	nector		Continuity
Connector No.	Termi	nal No.		Continuity
E22	19		7	Not existed
s the inspection result norm YES >> GO TO 4. NO >> Check the harne CHECK HARNESS CON	ess and repair or replace [i		e or fuse block (J/	B) is short] the root cause.
Check the continuity betwee	n the data link connector a	and the gro	und.	
Chassis control modu	le harness connector			
Connector No.	Terminal No.	-	Ground	Continuity
M22	19 7	Giouna		Not existed Not existed
Is the inspection result norm	-			
YES >> GO TO 5.	ess and repair or replace [i			B) is short] the root cause.
 Remove the chassis cor Check the resistance be 	ntrol module. Hween the chassis control	module ter	minals.	
	sis control module Terminal No.		R	esistance (Ω)
19	7		AD	prox. 108 – 132
. •	· · ·		,	

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Replace the chassis control module.

6.CHECK SYMPTOM

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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

iagnosis Proced	ure			INFOID:0000000115620
CHECK CAN DIAG	NOSIS			
	osis results from CON			n circuit 1, CAN commu
	cation 1 and CAN con			
(ES >> GO TO 2.		insticut sincuit 4 and		
IO >> Check and CONNECTOR INSI	t repair CAN commun בכדוסא	Ication circuit 1 and	CAN communication	circuit 2.
Turn the ignition s				
Disconnect the bar	ttery cable from the ne			
Check the termina (unit side and con		the ADAS control (unit for damage, ber	nd and loose connection
the inspection result	normal?			
YES >> GO TO 3. NO >> Repair the	terminal and connect	or		
1	CONTINUITY (OPEN			
	lowing harness conne			
ADAS control unit				
ADAS control unit ICC sensor	ity between the ADAS	control unit harness	s connector and the l	ICC sensor harness con
ADAS control unit ICC sensor	ity between the ADAS	control unit harness	s connector and the I	ICC sensor harness con
ADAS control unit ICC sensor Check the continu nector.	ity between the ADAS		s connector and the I	
ADAS control unit ICC sensor Check the continu nector.				ICC sensor harness con
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No.	harness connector	ICC sensor ha	arness connector	
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1	harness connector Terminal No. 6 7	ICC sensor h	arness connector Terminal No.	Continuity
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 the inspection result	harness connector Terminal No. 6 7	ICC sensor ha	arness connector Terminal No. 3	Continuity Existed
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 the inspection result 'ES >> GO TO 4.	harness connector Terminal No. 6 7	ICC sensor ha Connector No. E80	arness connector Terminal No. 3 6	Continuity Existed
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 the inspection result (ES >> GO TO 4. IO >> Repair the	harness connector Terminal No. 6 7 normal?	ICC sensor ha Connector No. E80 ADAS control unit a	arness connector Terminal No. 3 6	Continuity Existed
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B1 the inspection result (ES >> GO TO 4. IO >> Repair the CHECK HARNESS Disconnect the foll	harness connector Terminal No. 6 7 normal? harness between the	ICC sensor ha Connector No. E80 ADAS control unit a RT CIRCUIT)	arness connector Terminal No. 3 6	Continuity Existed
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Check the continuity between the ADAS control unit harness connector and the ground.

< DTC/CIRCUIT DIAGNOSIS >

LAN-529

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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)
Termi	nal No.	
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		- Resistance (Ω)
Termi	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.