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AV BRANCH LINE CIRCUIT55 Diagnosis Procedure55	
M&A BRANCH LINE CIRCUIT55 Diagnosis Procedure55	
DLC BRANCH LINE CIRCUIT55 Diagnosis Procedure55	
BCM BRANCH LINE CIRCUIT55 Diagnosis Procedure	
STRG BRANCH LINE CIRCUIT55 Diagnosis Procedure55	-
4WD BRANCH LINE CIRCUIT55 Diagnosis Procedure55	

ABS BRANCH LINE CIRCUIT
AFS BRANCH LINE CIRCUIT
IPDM-E BRANCH LINE CIRCUIT
ADP BRANCH LINE CIRCUIT
ICC BRANCH LINE CIRCUIT
PSB BRANCH LINE CIRCUIT
RDR-L BRANCH LINE CIRCUIT
RDR-R BRANCH LINE CIRCUIT
APA BRANCH LINE CIRCUIT
LANE BRANCH LINE CIRCUIT
LASER BRANCH LINE CIRCUIT
CAN COMMUNICATION CIRCUIT 1
CAN COMMUNICATION CIRCUIT 2
ITS COMMUNICATION CIRCUIT

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PRECAUTIONS

Precautions for Trouble Diagnosis

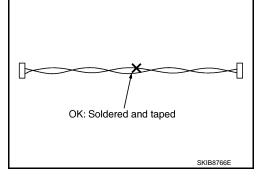
CAUTION:

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

Precautions for Harness Repair

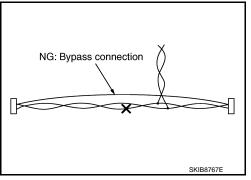
• Solder the repaired area and wrap tape around the soldered area. **NOTE:**

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



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

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



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

INFOID:000000006032376

INFOID:000000006032375

< SYSTEM DESCRIPTION > SYSTEM DESCRIPTION

SYSTEM

CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : System Description

INFOID:000000006032377

INFOID:000000006032378

А

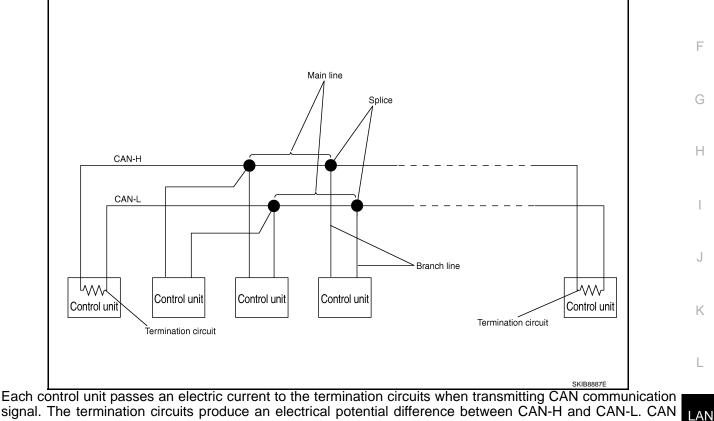
В

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

CAN COMMUNICATION SYSTEM : System Diagram



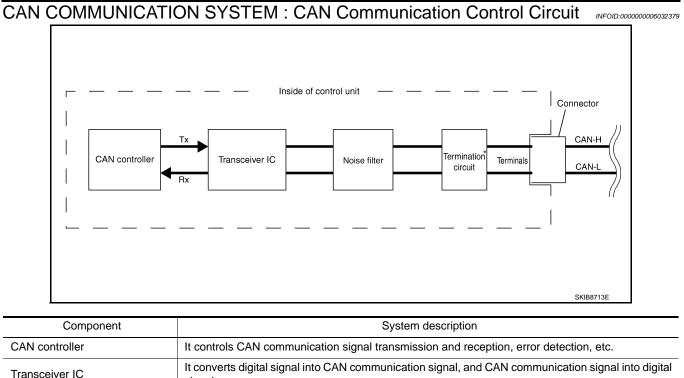
signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

Component	Description	
Main line	CAN communication line between splices	
Branch line	CAN communication line between splice and a control unit	
Splice	A point connecting a branch line with a main line	
Termination circuit	Refer to LAN-16, "CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit".	

SYSTEM

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]



Transceiver IC	signal.
Noise filter	It eliminates noise of CAN communication signal.
Termination circuit [*] (Resistance of approx. 120 Ω)	It produces potential difference.

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

DIAG ON CAN

DIAG ON CAN : Description

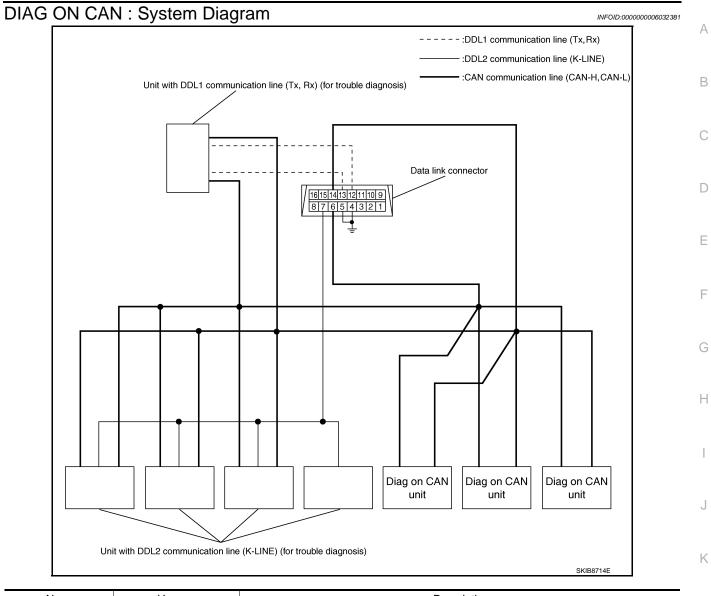
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"Diag on CAN" is a diagnosis using CAN communication instead of previous DDL1 and DDL2 communication lines, between control units and diagnosis unit.

SYSTEM

[CAN FUNDAMENTAL]

< SYSTEM DESCRIPTION >



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

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Condition of Error Detection

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DTC of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT-III if a CAN communication signal is not transmitted or received between units for 2 seconds or more. **NOTE:**

DTCs of CAN communication are as follows:

- U0101
- U0140
- U0164
- U1000
- U1001
- U1507
- U1508

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 switch ON (Depending on the control unit which carries out CAN communication).
- Error may be detected if the power supply circuit of the control unit, which carries out CAN communication, malfunctions (Depending on the control unit which carries out CAN communication).
- Error may be detected if reprogramming is not completed normally.

CAUTION:

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

Symptom When Error Occurs in CAN Communication System

INFOID:000000006032383

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

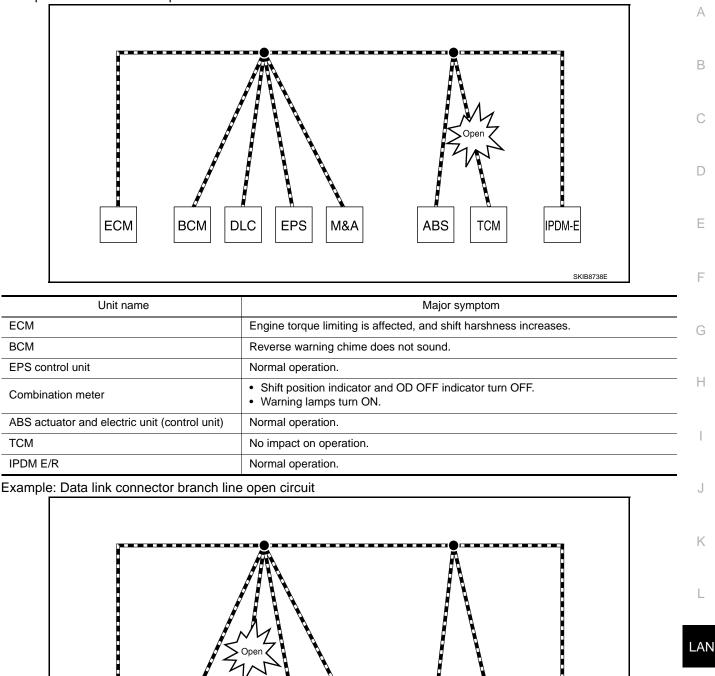
ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to LAN-30, "Abbreviation List" for the unit abbreviation.

< SYSTEM DESCRIPTION >

Example: TCM branch line open circuit



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ECM

BCM

DLC

EPS

M&A

TCM

ABS

IPDM-E

SKIB8739E

< SYSTEM DESCRIPTION >

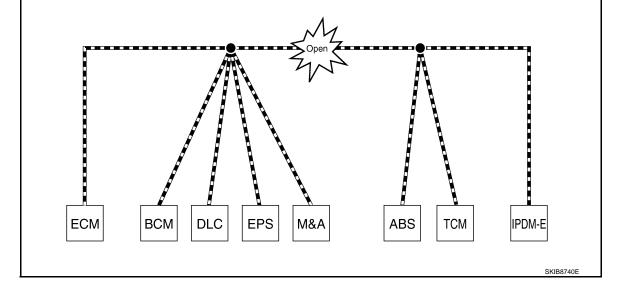
Unit name	Major symptom
ECM	
BCM	
EPS control unit	
Combination meter	Normal operation.
ABS actuator and electric unit (control unit)	
ТСМ	
IPDM E/R	

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

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

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

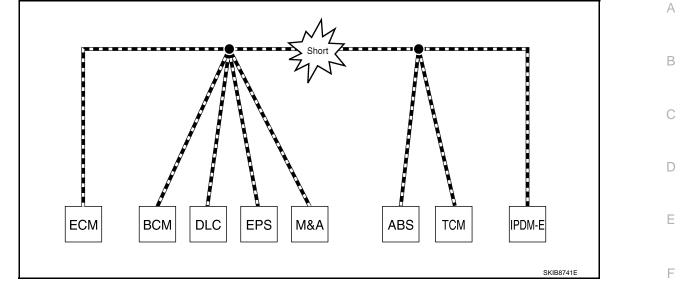


Unit name	Major symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	 Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.
EPS control unit	The steering effort increases.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

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

CAN Diagnosis with CONSULT-III

INFOID:000000006032384

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

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

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< SYSTEM DESCRIPTION >

Self-Diagnosis

INFOID:000000006032385

[CAN FUNDAMENTAL]

DTC	Self-diagnosis item (CONSULT-III indication)		DTC detection condition	Inspection/Action		
U0101	LOST COMM (TCM)	cation sig	CM is not transmitting or receiving CAN communi- gnal of OBD (emission-related diagnosis) from 2 seconds or more.			
U0140	LOST COMM (BCM)	cation sig	CM is not transmitting or receiving CAN communi- nal of OBD (emission-related diagnosis) from 2 seconds or more.			
U0164	LOST COMM (HVAC)	cation sig	CM is not transmitting or receiving CAN communi- inal of OBD (emission-related diagnosis) from A/ np. or unified meter and A/C amp. for 2 seconds	Start the inspection. Re-		
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.	fer to the applicable sec- tion of the indicated control unit.		
01000		Except for ECM	When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.			
U1001	CAN COMM CIRCUIT	cation sig	M is not transmitting or receiving CAN communi- nal other than OBD (emission-related diagnosis) onds or more.			
U1002	SYSTEM COMM		control unit is not transmitting or receiving CAN cation signal for 2 seconds or less.	-		
U1010	CONTROL UNIT(CAN)	When an	error is detected during the initial diagnosis for	Replace the control unit		
P0607	ECM		troller of each control unit.	indicating "U1010" or "P0607".		
U1507	LOST COMM (SIDE RDR R)		DAS control unit is not receiving CAN communica- al from side radar RH for 2 seconds or more.	Start the inspection. Re- fer to the applicable sec-		
U1508	LOST COMM (SIDE RDR L)		AS control unit is not receiving CAN communica- al from side radar LH for 2 seconds or more.	tion of the indicated control unit.		

CAN Diagnostic Support Monitor

INFOID:000000006032386

MONITOR ITEM (CONSULT-III)

Example: CAN DIAG SUPPORT MNTR indication

Withou	t PAST		With	PAST	
EC	М		EC	M	
	PRSNT	PAST		PRSNT	PAS
INITIAL DIAG	OK		TRANSMIT DIAG	¦ OK	OK
TRANSMIT DIAG	l OK		VDC/TCS/ABS		1-
ТСМ	OK		METER/M&A	¦OK	OK
VDC/TCS/ABS	UNKWN		BCM/SEC	ОК	OK
METER/M&A	OK		ICC	¦-	
ICC	UNKWN		HVAC		
BCM/SEC	¦ОК		ТСМ	lок	OK
IPDM E/R	OK		EPS]-
			IPDM E/R	lок	OK
			e4WD	-]-
			AWD/4WD	OK	OK

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

With PAST

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

MONITOR ITEM (ON-BOARD DIAGNOSIS) NOTE:

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

Example: Vehicle Display

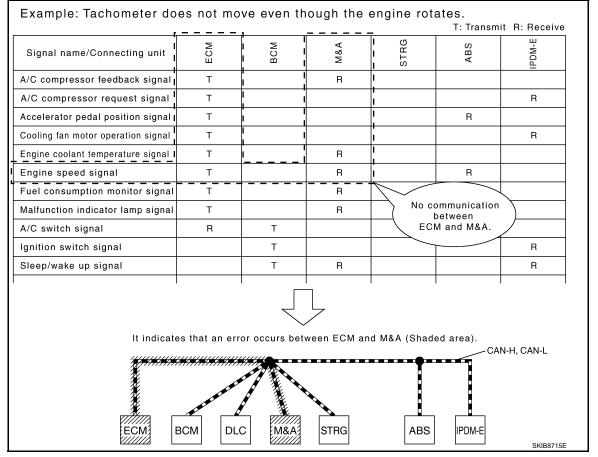
Item	Result indi- cated	Error counter	Description							
	OK	0	Normal at present							
CAN_COMM (Initial diagnosis)	NG	1 – 50	Control unit error (The number indicates how many times diagnosis has been run.)							
	ОК	0	Normal at present							
CAN_CIRC_1 (Transmission diagnosis)	UNKWN	1 – 50	Unable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

< SYSTEM DESCRIPTION >

How to Use CAN Communication Signal Chart

INFOID:000000006032387

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



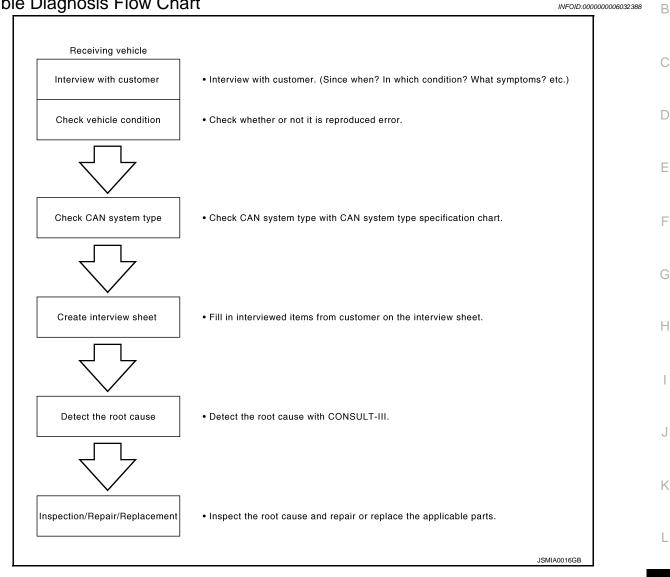
< BASIC INSPECTION >

[CAN FUNDAMENTAL]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart





Trouble Diagnosis Procedure

INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

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

LAN-25

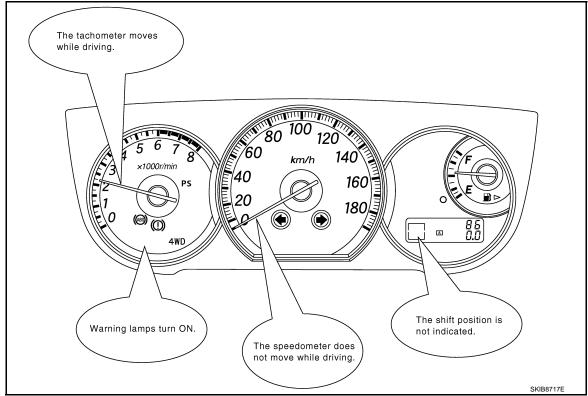
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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

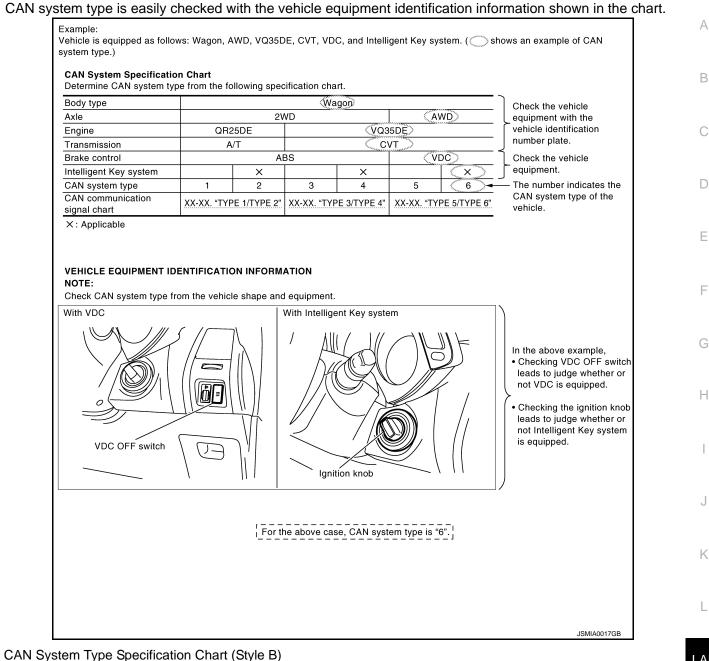
NOTE:

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

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

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

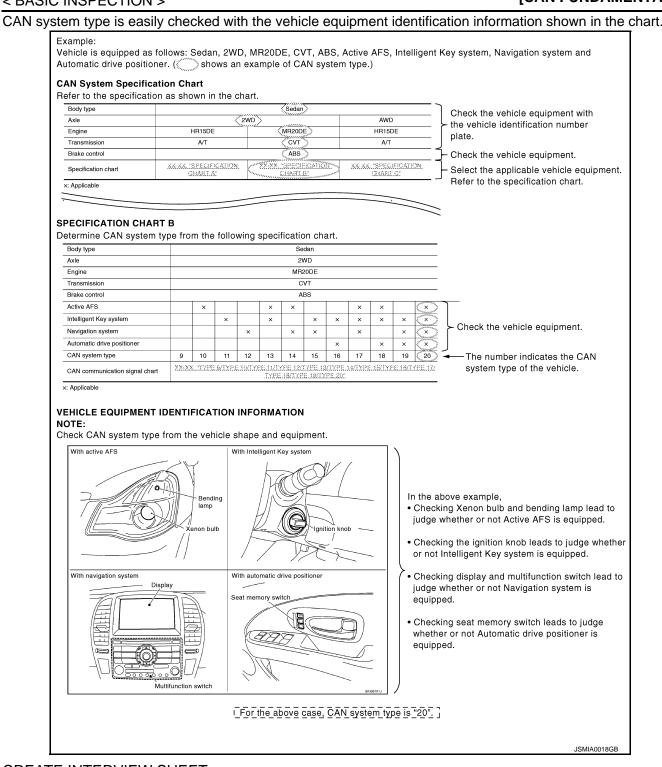


CAN System Type Specification Chart (Style B NOTE:

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< BASIC INSPECTION >



CREATE INTERVIEW SHEET

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

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example) А CAN Communication System Diagnosis Interview Sheet В Date received: 3, Feb. 2006 Type: DBA-KG11 VIN No.: KG11-005040 BDRARGZ397EDA-E-J-Model: D First registration: 10, Jan. 2001 Mileage: 62,140 Е CAN system type: Type 19 Symptom (Results from interview with customer) F ·Headlamps suddenly turn ON while driving the vehicle. •The engine does not restart after stopping the vehicle and turning the ignition switch OFF. ·The cooling fan continues rotating while turning the ignition switch ON. Н Condition at inspection Error Symptom: (Present) / Past The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. Κ • The interior lamp does not turn ON. L JSMIA0019GB

DETECT THE ROOT CAUSE

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

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HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

INFOID:000000006032391

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

• For trouble diagnosis procedure, refer to LAN-25, "Trouble Diagnosis Procedure".

Abbreviation List

INFOID:000000006032392

Unit name abbreviations in CONSULT-III 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)
ADP	Driver seat control unit
AFS	AFS control unit
APA	Accelerator pedal actuator
AV	AV control unit
BCM	BCM
CGW	CAN gateway
DLC	Data link connector
ECM	ECM
HVAC	A/C auto amp.
ICC	ADAS control unit
IPDM-E	IPDM E/R
LANE	Lane camera unit
LASER	ICC sensor
M&A	Combination meter
PSB	Pre-crash seat belt control unit (driver side)
RAS	4WAS main control unit
RDR-L	Side radar LH
RDR-R	Side radar RH
STRG	Steering angle sensor
TCM	ТСМ
TPMS	Low tire pressure warning control unit

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

INFOID:000000006032393

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. D Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision 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 the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

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

Precautions for Trouble Diagnosis

CAUTION:

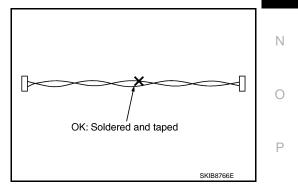
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

LAN-31

Precautions for Harness Repair

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

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





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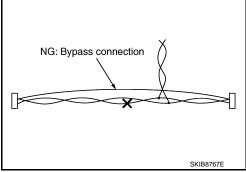
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PRECAUTIONS

< PRECAUTION >

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

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



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

< SYSTEM DESCRIPTION >

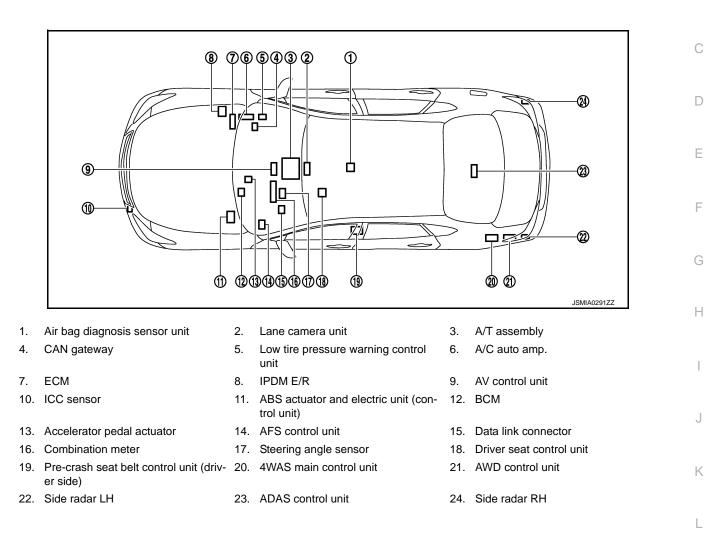
SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000006032400

[CAN]

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SYSTEM 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-25. "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

Body type	Sedan												
Axle	2WD								AWD				
Engine	VQ37VHR					VK5	56VD		VQ3	7VHR	VK56VD		
Transmission					1	A	/T				1		
Brake control						V	DC						
4WAS		×		×		×		×					
Active AFS			×	×			×	×		×		×	
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	
		CAN	l comm	unicatio	n unit	1	1			1	1		
ECM	×	×	×	×	×	×	×	×	×	×	×	×	
Low tire pressure warning control unit	×	×	×	×	×	×	×	×	×	×	×	×	
CAN gateway			×	×			×	×		×		×	
A/C auto amp.	×	×	×	×	×	×	×	×	×	×	×	×	
ТСМ	×	×	×	×	×	×	×	×	×	×	×	×	
Air bag diagnosis sensor unit	×	×	×	×	×	×	×	×	×	×	×	×	
AV control unit	×	×	×	×	×	×	×	×	×	×	×	×	
Combination meter	×	×	×	×	×	×	×	×	×	×	×	×	
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	
BCM	×	×	×	×	×	×	×	×	×	×	×	×	
Steering angle sensor	×	×	×	×	×	×	×	×	×	×	×	×	
AWD control unit									×	×	×	×	
4WAS main control unit		×		×		×		×					
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	
AFS control unit			×	×			×	×		×		×	
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	
Driver seat control unit	×	×	×	×	×	×	×	×	×	×	×	×	
ADAS control unit			×	×			×	×		×		×	
Pre-crash seat belt control unit (driver side)			×	×			×	×		×		×	
I		ITS	commu	unication	n unit						I		
ADAS control unit			×	×			×	×		×		×	
Side radar LH			×	×			×	×		×		×	
Side radar RH			×	×			×	×		×		×	
Accelerator pedal actuator			×	×			×	×		×		×	
Lane camera unit			×	×			×	×		×		×	
ICC sensor			×	×			×	×		×		×	

 \times : Applicable

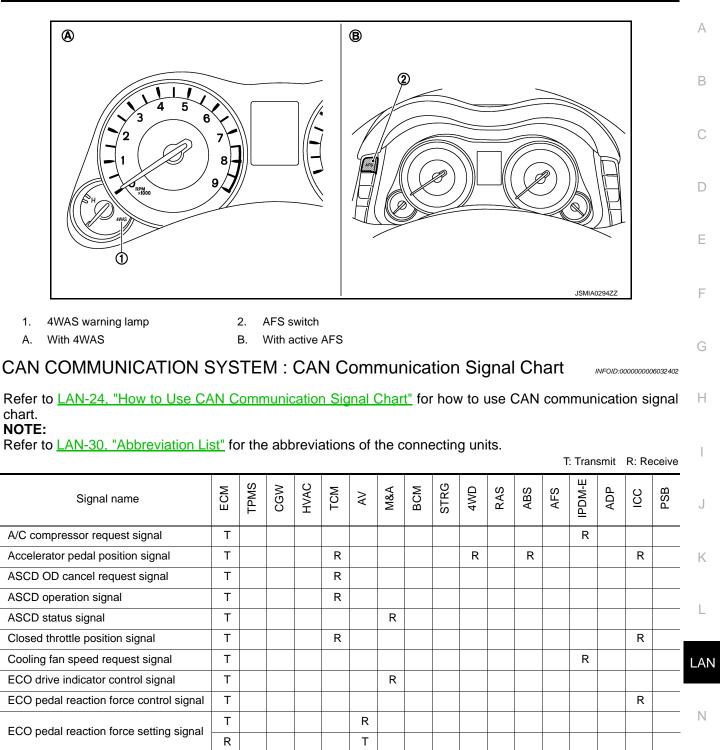
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.

SYSTEM

< SYSTEM DESCRIPTION >



Engine speed signal

Engine status signal

ICC brake switch signal

ICC operation signal

Engine and A/T integrated control signal

Engine coolant temperature signal

Fuel consumption monitor signal

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Signal name	ECM	TPMS	CGW	HVAC	TCM	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB
ICC prohibition signal																R	
ICC steering switch signal	Т															R	
Malfunctioning indicator lamp signal	Т						R										
N idle instruction signal					Т												
					R												
Oil pressure warning lamp signal	Т						R										
Power generation command value sig- nal	Т													R			
Snow mode switch signal	Т											R				R	
	Т															R	
Stop lamp switch signal					R			Т		-		-				1	
Wide open throttle position signal	Т				R					R		Т				R	
Low tire pressure warning lamp signal							R	Т									
		Т				R		R									
Tire pressure data signal		Т				R											
A/C display signal				Т		R											
A/C evaporator temperature signal	R			Т													
A/C ON signal	R			Т													
Ambient sensor signal				Т			R										
Blower fan ON signal	R			Т													
ECO mode signal				Т	R		R									R	
ECO mode signal	R				Т												
SNOW mode signal				Т	R		R									R	
SPORT mode signal				Т	R		R				R					R	
STANDARD mode signal				Т	R		R				R					R	
Target A/C evaporator temperature sig- nal	R			т													
A/T CHECK indicator lamp signal					Т		R						R				
A/T self-diagnosis signal	R				Т												
Current gear position signal	R				Т											R	
Drive mode select signal	R				Т											R	
Input speed signal					Т											R	
Manual mode shift refusal signal					Т		R										
N range signal					Т			R				R					
Next gear position signal	R				Т												
Output shaft revolution signal	R				Т											R	
P range signal					Т			R									
R range signal					Т							R					
Shift position signal					Т		R						R		R	R	
Shift schedule signal	R				Т												
A/C switch operation signal	1			R		Т											
Rear window defogger switch signal						Т		R									

SYSTEM

< SYSTEM DESCRIPTION >

Signal name	ECM	TPMS	CGW	HVAC	TCM	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB	
System selection signal						Т										R		
						Т		R							R			
System setting signal						R		Т										
						R									Т			
Voice recognition signal				R		Т												
Brake fluid level switch signal							Т					R						
Distance to empty signal						R	Т											
Fuel level low warning signal						R	Т											
Fuel level sensor signal	R						Т											
Manual mode shift down signal					R		Т											
Manual mode shift up signal					R		Т											
Manual mode signal					R		Т											
Non-manual mode signal					R		Т											
Odometer signal							Т	R										
Paddle shifter shift down signal [*]					R		Т											
Paddle shifter shift up signal [*]					R		Т											
Parking brake switch signal							Т	R		R		R				R		
Seat belt buckle switch signal (driver side)							т	R										
Sleep-ready signal							Т	R										
Sleep-ready signal								R						Т				
Vehicle speed signal	R			R	R	R	Т	R					R	R	R		R	
		R					R	R		R	R	Т			R	R		
Wake up signal							Т	R										
Blower fan motor switch signal	R							Т										
Buzzer output signal							R R	Т								Т		
Day time running light request signal								Т						R				
Dimmer signal							R	Т								R		
Door switch signal							R	Т						R	R		R	1
Door unlock signal								т							R			
Front fog light request signal							R	Т						R				
Front wiper request signal								Т						R		R		
Handle position signal								Т							R			
High beam request signal							R	Т						R				
Horn reminder signal								Т						R				
Ignition switch ON signal								T R						R T			R	
Ignition switch signal								т							R		R	
Intelligent Key system warning display signal							R	Т										
Interlock/PNP switch signal								T R						R T				

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SYSTEM

< SYSTEM DESCRIPTION >

Signal name	ECM	TPMS	CGW	HVAC	TCM	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB
Key ID signal				R				Т							R		
Low beam request signal								Т						R			
Meter display signal							R	Т									
Meter ring illumination request signal							R R	Т								Т	
Oil pressure switch signal							R	Т									
Position light request signal							R	R T						T R			
Rear window defogger control signal	R					R		Т						R T			
Sleep wake up signal			R				R	Т						R	R		R
Starter control relay signal								Т						R			
Starter relay status signal							R	T R						R T			
Starting mode signal								Т						1	R		
Steering lock relay signal								T R						R T			
Steering lock unit status signal								R						Т	R		
Theft warning horn request signal								T						R	ĸ		
Trunk switch signal							R	Т									
Turn indicator signal					R		R	Т								R	
Steering angle sensor malfunction signal									Т							R	R
Steering angle sensor signal						R			Т		R	R	R			R	R
Steering angle speed signal									Т							R	R
Steering calibration signal									Т								R
AWD signal										Т		R					
AWD warning lamp signal							R			Т							
4WAS signal											Т	R					
4WAS warning lamp signal							R				Т						
A/T shift schedule change demand sig- nal					R							т					
ABS malfunction signal												Т				R	
ABS operation signal					R							Т				R	R
ABS warning lamp signal							R					Т				R	
Brake warning lamp signal							R					Т					
Decel G sensor signal					R							Т					
Pressure sensor signal					R							Т					
Side G sensor signal					R							Т				R	
TCS gear keep request signal					R							Т					
TCS malfunction signal												Т				R	
TCS operation signal												Т				R	
VDC malfunction signal					R							Т				R	

SYSTEM

< SYSTEM DESCRIPTION >

Signal name	ECM	TPMS	CGW	HVAC	TCM	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB	A
VDC OFF indicator lamp signal							R					Т						
VDC OFF switch signal												Т				R		В
VDC operation signal												Т				R		
VDC warning lamp signal							R					Т						С
Yaw rate signal												Т				R		
AFS OFF indicator lamp signal							R						Т					
A/C compressor feedback signal	R			R										Т				D
Front wiper position signal								R						Т				
High beam status signal	R												R	Т				F
Hood switch signal								R						Т				
Low beam status signal	R												R	Т				
Push-button ignition switch status signal								R						Т				F
Active Trace control signal												R				Т		
Brake fluid pressure control signal												R				Т		0
BSI ON indicator signal							R									Т		G
BSW/BSI warning lamp signal							R									Т		
IBA OFF indicator lamp signal							R									Т		Н
IBA operation signal																Т	R	
ICC warning lamp signal							R									Т		
Lane departure warning lamp signal							R									Т		
LDP ON indicator lamp signal							R									Т		
Target yaw moment signal												R				Т		J

*: Models with paddle shifter

NOTE:

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

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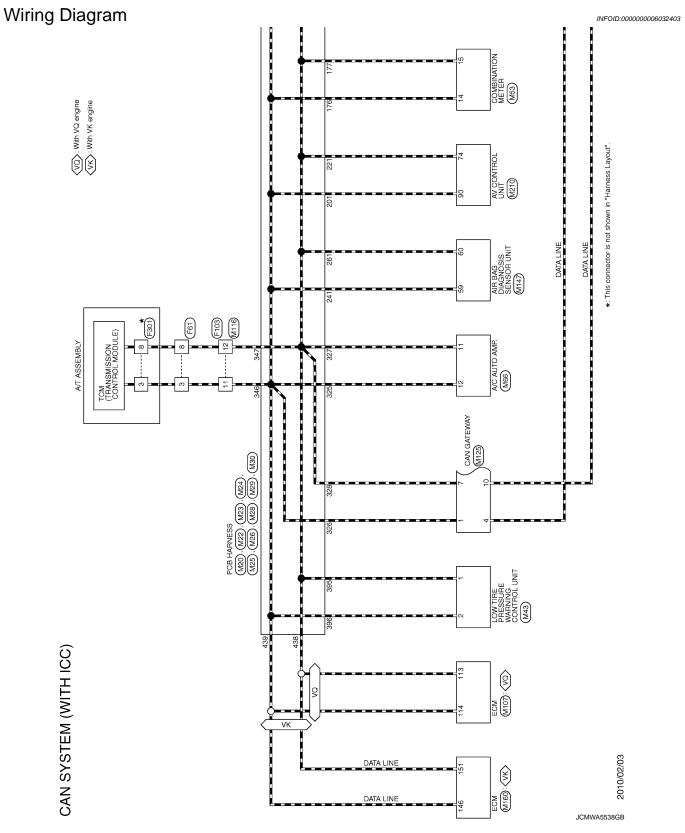
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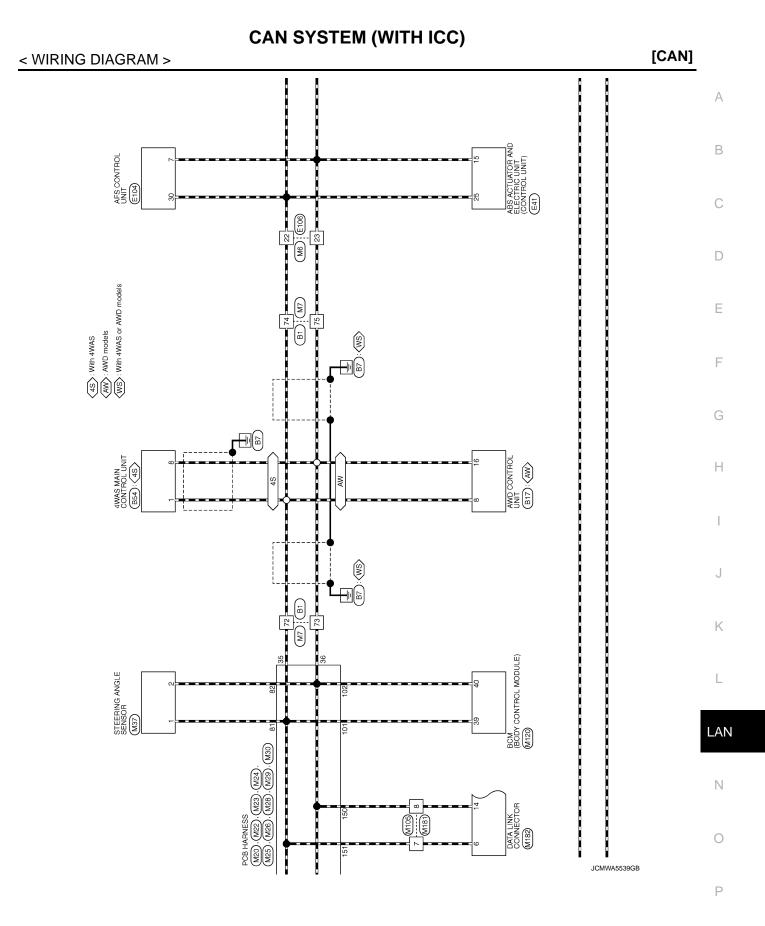
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CAN SYSTEM (WITH ICC)

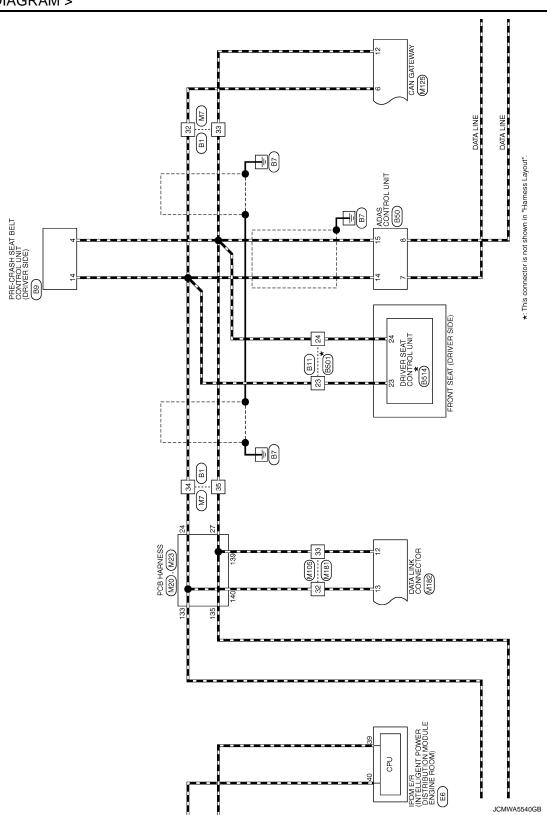


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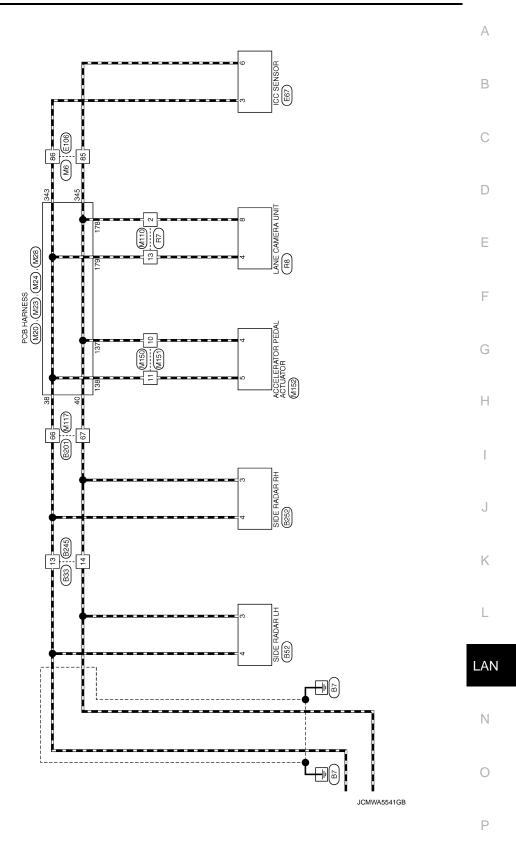
Revision: 2010 June

2011 M37/M56



CAN SYSTEM (WITH ICC)





Convertision 29 0 - <	Connector Type THIEFW-NH	Terminal Color Signal Name [Specification] No. of Wee Signal Name [Specification] 1 2 R AMD SOL (-) 2 R AMD SOL (-) Implementation 3 W OLL TEMP (-) Implementation 7 Y CANH Implementation 8 L CANH Implementation 10 B/Y CANH Implementation 11 B/Y OND Implementation 13 LG OLL TEMP (-) Implementation 13 LG OLL TEMP (-) VB 15 P CANH Implementation	40 40
Connector No. B9 Connector Name Pret count un chever are Connector Type THIEPW-CS2 Connector Type 112 44 6 8 9 19 10 12 14 16 1718 20	Terminal No. Color of Wires Signal Name (Specification) 1 V Signal Name (Specification) 2 G OUT 1 4 P CANLO 6 LO CANLO 8 ER 9 SHELD 10 SHELD 2 SHELD	B - L - L - K - W - W - B - Con B1 Con NITE Con WIRE TO WIRE Con -	Terminal Color Signal 132 Color Signal 432 Edit 40 Terminal Color Signal Name (Specification) Signal Name (Specification) Signal Name (Specification) 1 Signal L - - - 23 L - - - - - 25 L -
37 SB 37 SHELD 40 SHELD 45 W/ 45 W/ 45 W/ 49 BR 50 SB 53 LG 53 C	57 BR 57 BR 57 BR 57 BR 58 C 58		79 79 6 81 81 81 81 82 82 83 83 83 83 83 84 4 83 83 84 83 84 83
CAN SYSTEM (WITH ICC) Cornector Name Mrie TO Write Connector Type HaterW-CSIG-TM4 Connector Type	Color Signal Name (Specification) of Wire Specification) Manual Manuel Specification) Manual Manua Versited Manual Manu Versited Manual Manua	- [With Olimate controlled seat] - [With heated seat] - [With heated seat] - [With heated seat] - [With heated seat]	- (With Pre-cras (Without Pre-cras - (Without Pre-cras - (Without Pre-cras
CAN SYST Connector No. E Connector Type 1 Uconnector Type 1 1.S	of Wire GR < P LG × R	≤ ⋈ ๓ < 0 ⋈ ⅔ ⅔ ㅂ ∟ ⅔ < L ^G	жггжг <mark>б</mark> В В В В В В С С С В В В В В С С С С В В В В В В С С С С С В В В В В

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T (WITH ICC) T WIRE FGY-CS 5 4 3 2	Connector No. B12 Connector Name SIDE RADAR LH Connector Type AAC006FB-WP-SP	Connector No. Connector Name Connector Type	MIRE TO MRE MIRE TO MRE THEOMW-CSIG-TIM4	63 W 66 L 67 V 68 SB 69 B 69 B 76 SHIELD 77 G	
	J		2 4 0	+++	1 1 1
Terminal Color Signal Name [Specification] No. of Wire	e Signal Nam	Terminal Color No. of Wir	Color Signal Name [Specification] of Wire	82 BR 83 GR	т
2 L P	2 B/Y GND 3 Y ITS COMM-L	3	GR	84 < < 85 LG	1
\mathbb{H}	L ITS	H	, ,	\mathbb{H}	
9 GK	5 GR BSW/BSI INDICATOR	19 20 G	GR	8/ 88 √	1 1
H		\mathbb{H}	-	89 BR	1
╈	Connector No. B54	╀		91 ER	1 1
13 L	Connector Name 4WAS MAIN CONTROL UNIT	\vdash	-	\vdash	- [With Climate controlled seat]
	Connector Type A36FW-M4	26 26	M	94 GR	
Γ	Ĥ	$\left \right $	- 0		I
		29		97 P 98 LG	T T
	[1 3]4]5 7]8 W 27 252827	H	- 0	H	1
Connector Type TH16FW-NH	1112 15 15 1 1 N 3132 34 35 01 30 30 44	9 9 9	B/R	100 Y	1
E		+			
HS		H	- w/R		
	Terminal Color Signal Name [Specification]	42	> 0		
16 15 14 12	t	╀	- RB		
	Н	\square	T		
	+	+			
I erminal Color Signal Name [Specification] No. of Wire	2 a	+	GR - [With heate controlled seat]		
Y WAR	M	H			
_	_	49 0	- 0		
E CD WARNING SYSTEMS ON IND		+	~ 6		
	W/I 4WAS COM	+	- 01		
	GR/V		-		
H	5	56 F			
. ∝	BS -	+	-		
15 P CAN-H	- a	200			
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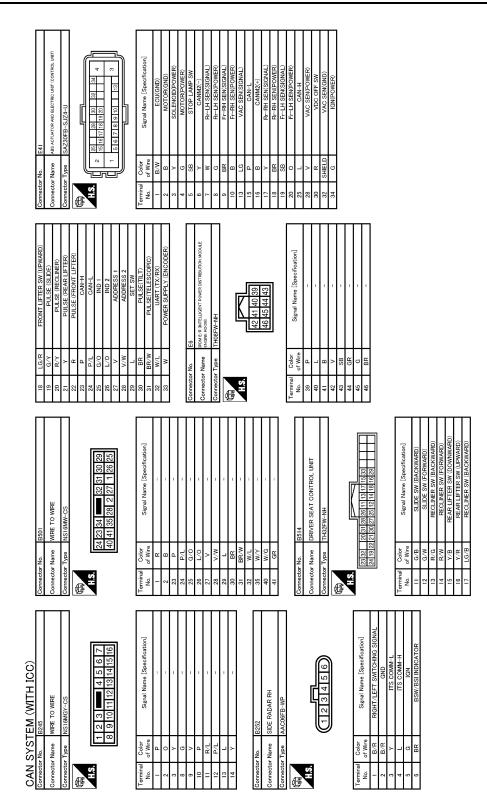
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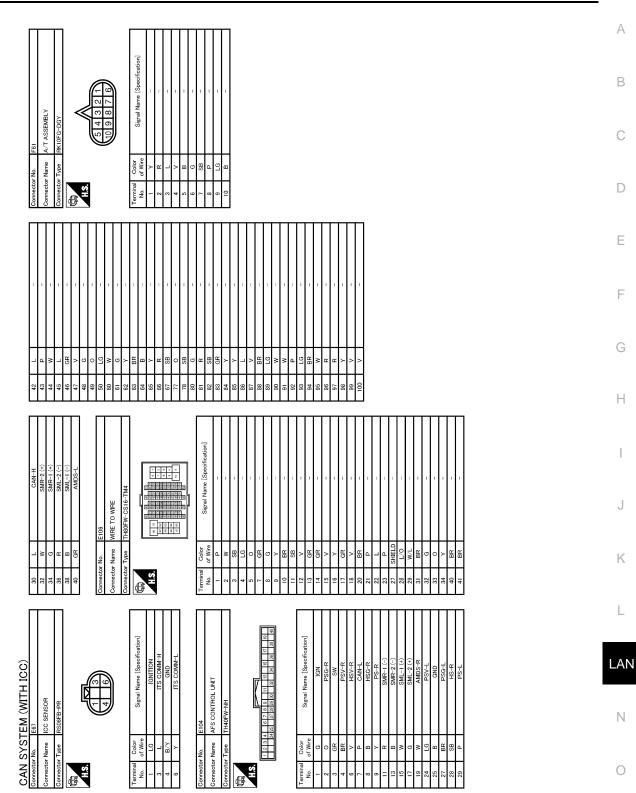
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CAN SYSTEM (WITH ICC)

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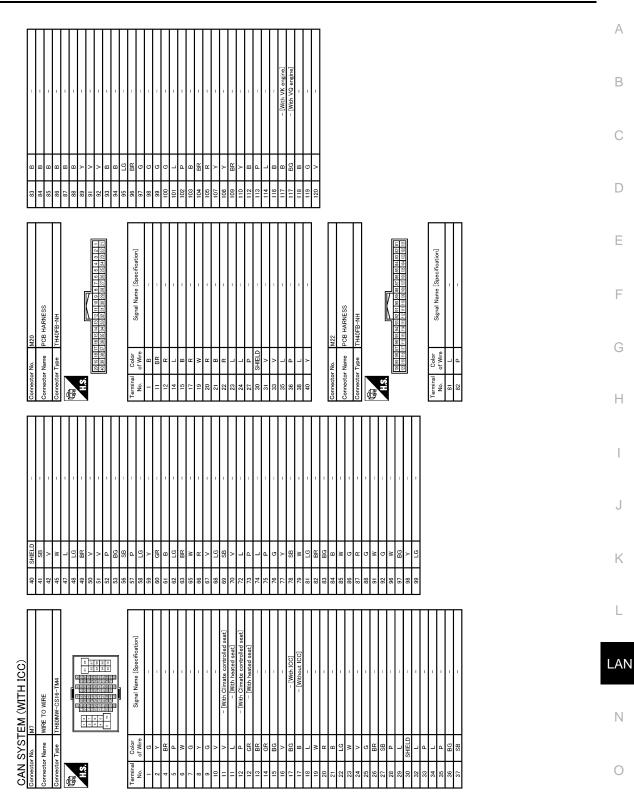
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CAN	_ S	CAN SYSTEM (WITH ICC)										
Connector No.	or No.	5. F103	Conne	Connector No.	F301	14	1	1	95	w	-	
Connector Name	or Nan	MRE TO WIRE	Conne	Connector Name	TCM (TRANSMISSION CONTROL MODULE)	2	\mid	1	96	œ	1	
						=	16 B	1	97	SB	I	
Connect	tor Typ	Connector Type TK36FW–NS10	Conne	Connector Type	SP10FG	1	-		86	α	I	
đ			ą			18	+		66	×	1	
-			Ŧ		~	Ň	+		100	_	1	
H.S.			H.S.	1		17	Щ.					
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						ŭ	╉					
Tauminal		Calar Calar	Touring	vala Calar		29		1 1				
		Signal Name [Specification]		_	Signal Name [Specification]	° (╉					
N0.	5				VIGN	33	1 8	1 1				
~	ľ		c		BATT	10						
, 4	1	R = [With VK ensine]	4 6	+	CAN-H	40	╉					
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÷	1		20	Ä	CAN-L	45	╉					
6	^		6	+	ST	46	-	I				
6	Ś	SB – [With VQ engine]	≘	W/B	GND	47		1				
01	۵	BR – [With VK engine]				48	+	1				
10	1	 [With VQ engine] 				4	9 BG					
11		L –	Conne	Connector No.	M6	50	M 0	-				
12	4		, and a	Connector Name		90	0 GR	1				
13	Ĺ	- A				61	8	1				
14	Ő	SB	Conne	Connector Type	TH80MW-CS16-TM4	62	2 LG	1				
15	Ľ	۰ د	4			63		1				
16		N	ľ		d,	64	┝					
17	Ű	GR -		¢.	11 12 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	65	œ د	1				
18	Ĩ	TG		5	2 7 1000 0005 000 1000 1000 00 00 00 00 00 00 00 00 0	99		1				
21	Ĺ				11日本の	67	-	1				
22	Ľ					12	8	,				
23					1020 0900 0160 7/60 20 20 20 20 20 20	78		1				
24	6	BR -				80	0					
25	ľ		Termine	nal Color		12		,				
24		, ,	Ň	_	Signal Name [Specification]	6	- c	,				
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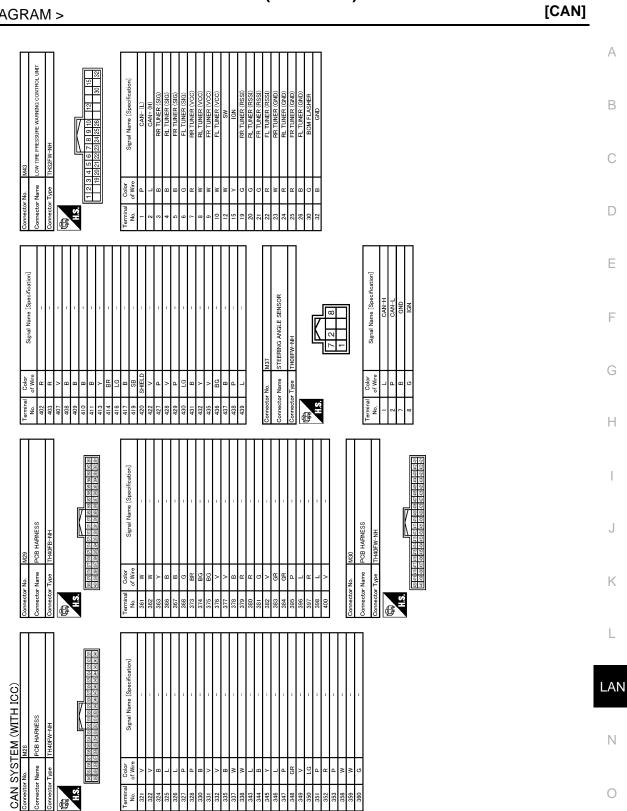


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CAN SYSTEM (WITH ICC)

Connector No. M26 Connector Name PCB HARNESS Connector Type TH40PM-NH		Terminal Color Signal Name [Specification] No. of Wire	Н	243 R –	9		- [Wi	+	249 SHIELD	t	. 🗠	W – [Wi	в		SHIELD	25/ SHIELD - 258 R -	┝	260 BG -	_	269 GR –	+	_	_	4	ĸ	> (+	2// G	╞	œ	280 Y –
				_	_				_	- -					_	_					_		_	_	_		+		- -		
M25 PCB HARNESS TH40FB-NH	· · · · · · · · · · · · · · · · · · ·	Signal Name [Specification]			- [Without BOSE system]	 [With BOSE system] 	 [Without BOSE system] 		- [With BOSE system] - [Mithout BOSE system]	-	-	- [With BOSE system]	 [Without BOSE system] 	 [With BOSE system] 	 [Without BOSE system] 	- [With ROSF evenam]	- [Without BOSE system]	- [With BOSE system]	 [Without BOSE system] 	-		1	1	T	1	t	Ð	-	-	-	-
	220 218 218 217 240 238 238 238	Color of Wire	٦	σ-	- 0	٩	L	SHIELD	۳ B	j œ	SHIELD	>	GR	LG	5	SHIELD	jα	GR	۷	SHIELD	٩	LG	SB	SB	LG	<u>۲</u>	Ηg (99 24	•	٩	ш
Connector No. Connector Name Connector Type	HS.	Ferminal No.	201	208	209	210		+	212	213		215	215	216	+	21/	218	219	219		221	222	223	224	225	226	230	231	233	234	235
M24 POB HARNESS TH40PW-NH		e Signal Name [Specification]		1	1	1	1	1	1 1	,	1	1	Γ	1	I	1 1	1	I	-	-	 [With BOSE system] 	 [Without BOSE system] 	Ţ	I	I	I	I	1 1	1	-	-
or No. or Name or Type	200 (129 (128	Color of Wire	BG	ä	⁵ >	>	٣	5 LG	<u>م</u> 1	: œ	• •	×	ш	-	<u>م</u> :		LG I	H	J	>	۵.	>	٣	-	>	: œ	> <	" a	5	В	æ
Connector No. Connector Name Connector Type	H.S.	Terminal No.	161	162	164	165	166	167	168	170	172	174	175	176	171	1/8	180	182	183	184	185	185	186	187	188	189	190	191	193	194	198
CAN SYSTEM (WITH ICC) Connector No. M23 Connector Name PCB HARNESS Connector Type TH40FW-1NH		Signal Name [Specification]			-	1	1	1				ſ	-	1	1		1	1	-	-	1	1	1	1	1	-					
CAN SYST Connector No. Connector Name Connector Type	140 133 139 158 15	Color of Wire	۳	> 0	BG	BR	8	SB	- רפ		. >		٩	_	N :	۵ م	. «	LG	в	_	œ	٩	_[8	W	N :	N I	≥ 0	: œ		
CAN Connector Connector	H.S.	Terminal No.	121	122		128	130	131	132	T.	Г	138		140	141	142	145	146	147	148	149	150	151	152	153	154	60 L	158	159	1	

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Revision: 2010 June

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Connector No.	- Q	MD3	Connector No.	COL NO.	Mbb	5	n	I,	-	>	IACHU
Connector Name		COMBINATION METER	Connec	Connector Name	A/C AUTO AMP.	2 :	× :	1	112	> (GNDA PDPRES/FTPRES
						=	×	-	113	۹.	VEHCAN-L1
Connector Type		TH40FW-NH	Connec	Connector Type	TH20FW-TB6	12	SB	-	114	L	VEHCAN-H1
ģ			ą			14	SB		117	>	K-LINE
F			F			15	BR	1	121	IJ	CDCV
Sit		[SH			16	>	1	122	Ч	BRAKE
				-	Ļ	18	σ	1	123	•	GND
-18	2345	5 6 7 8 9 10 11 12 13 14 15 16 no po no no no - 20 20 24 25 26 27 20 20 40		-	17 10 10 10 10 10 10 10 10 10 10 10 10 10	19		1	124		GND
2	2 47 52 27			2		20	>	1	125	ß	VBR
						22	BG	1	126	BR	BNC SW
						23		1	127		GND
Terminal	Color	Cinnel Name Consideration	Terminal	al Color	Simel Name [Same	25	w	1	128		GND
No.	of Wire	olgriar Marrie Lopecinication]	No.	of Wire		30	Я	-			
-	W	BATTERY POWER SUPPLY	-	-	BATTERY POWER SUPPLY	31	BR	-			
2	BG	IGNITION SIGNAL	2	W	IGNITION POWER SUPPLY	32	-	-	Connector No.	or No.	M110
9	GR	VEHICLE SPEED SIGNAL (2-PULSE)	9	œ	BLOWER MOTOR F/B SIGNAL	33	٩	-	Connects	Connector Name	WIRE TO WIRE
4	œ	VEHICLE SPEED SIGNAL (8-PULSE)	7	_	POWER TRANSISTOR CONTROL SIGNAL	34	LG	I			
2		ILLUMINATION CONTROL SIGNAL	₽	•	GROUND	35	M	T	Connector Type	or Type	TH24MW-NH
9	в	METER CONTROL SWITCH GROUND	=	٩.	CAN-L	36	ΓG	1	ģ		
7	SB	ENTER SWITCH SIGNAL	12	-	CAN-H	37		1	F		
∞	ГG	SELECT SWITCH SIGNAL	13	>	ACC POWER SUPPLY	38	æ	1	SI		
6	5	ILLUMINATION CONTROL SWITCH SIGNAL (+)	1	ß	ECV CONTROL SIGNAL					ļ	0 1 1 0
10		ILLUMINATION CONTROL SWITCH SIGNAL (=)	20	٣	HUMIDITY SENSOR (SCK) SIGNAL					N -	4 5 6 / 8 9 10 11
=		TRIP RESET SWITCH SIGNAL	21	>	HUMIDITY SENSOR (DATA) SIGNAL	Connector No.		M107		13 14	14 15 16 17 18 19 20 21 22 23 24
12		GROUND	22	•	HUMIDITY SENSOR GROUND	-		Lon			
14	_	CAN-H	23	×	DRIVE MODE SELECT SW (SNOW)	Connect		ECM			
15	Р	CAN-L	24	-	DRIVE MODE SELECT SW (ECO)	Connector Type	or Type	RH24FGY-RZ8-R-RH-Z	Terminal	_	Cinnel Name [Canadification]
16	ж	AIR BAG SIGNAL	25	σ	DRIVE MODE SELECT SW (STANDARD)	ą			No.	of Wire	
23	в	GROUND	26	7	DRIVE MODE SELECT SW (SPORT)	F	4		-	σ	-
24	ш	FUEL LEVEL SENSOR GROUND				H.S.	_	128 124 1118112108104100	2	Y	-
25	×	ALTERNATOR SIGNAL						127 123 119 115 111 107 103 99	e	×	1
26	>	PARKING BRAKE SWITCH SIGNAL	Connec	Connector No.	M105			102	4	ж	1
27	>	BRAKE FLUID LEVEL SWITCH SIGNAL	Conner	Connector Name	WIRE TO WIRE			125 121 117 113 109 105 101 97	7	BR	-
28	9	SECURITY SIGNAL					"		80	æ	-
29	-	WASHER LEVEL SWITCH SIGNAL	Connec	Connector Type	TH40FW-NH	ļ			6	в	
32	IJ	PADDLE SHIFTER SHIFT DOWN SIGNAL	đ			Terminal	Color	Cinnel Name [Canadian]	13	٦	1
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL	F			No.	of Wire		14	8	1
34	σ	FUEL LEVEL SENSOR SIGNAL				67	ď	APSI	15	۲C	1
35	W SE	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)		[86	>	APS2	16	7	1
36	۵ ص	PASSENGER SEAT BELT WARNING SIGNAL		20 19 18	17 16 15 14 13 12 11 10 9	66	σ	AVCC1-APS1	17	×	,
37	9	NON-MANUAL MODE SIGNAL		40 39 38	37/38/39/34/33 32/31/30/29/28/27/29/29	100	M	GNDA-APS1	18	٣	1
38	>	MANUAL MODE SHIFT DOWN SIGNAL				101	SB	ASCD SW	19		1
39		MANUAL MODE SHIFT UP SIGNAL				102	۵.	FTPRES	20	>	1
40	M	MANUAL MODE SIGNAL	Terminal	al Color	- - - - - - - - - - - - - - - - - - -	103		AVCC2-APS2	21	٣	1
			Ň	of Wire	Signal Name [Specification]	104	BR	GND-APS2 [With ICC]	22	σ	1
			2	~	1	104		GND-APS2 [Without ICC]	23	_	1
			e	α	1	105	с -	PUPRES	24	с -	1
				<u> </u>	1	901	3 0	15	5	3	
			9	3 0	,	107	BG	AVCC2 PDPRES/ETPRES			
			Ľ		,	108	} >	GND ASCD SW			
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CAN SYSTEM (WITH ICC)

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CAN SYSTEM (WITH ICC)										
Connector No. M116	Terminal		Signal Name [Specification]	82	BR	1	Н		DONGLE LINK	
Connector Name WIRE TO WIRE	No.	of Wire		83	GR	1	+		NATS ANT AMP.	
Т	ο (+	I	84 or	> -	T	-		I-KEY IDENTIFICATION	
	- :	ŝ	I.	60 60	: ב	1	5 62		HAZARU SW	
	0	╉		8	> (1	+			
	00	6 8		60 88	د >		╀		ARI SW OLITPIT 5	
	10	╉		00	- 8					
1 2 3 4 5 112/213141516171819200 201223814555931203	20	╀		88	5 -		╀			
	1 8	┝	,	91	· >	1	35	COM	COMBI SW OUTPUT 2	
	24		,	63	M	- [With Climate controlled seat]		COM	ABLSW OLITPLIT 1	
	25	╀		8	: "	- [With heated cost]	╀		P POSITION	
	24 ac	╀		6	, ,		+		CAN-H	
No of Wire Signal Name [Specification]	2	╀		10			+			
t	77	+	1	00		1			CAIN-L	
2 SB –	28	+	-	97	>	-				
	29	Т		96	ня	-				
- m	8		I	66	σ	1	Connector No.	M125		
4 SB – [With VQ engine]	31	9	-	100	Y	-	Connector Name	CAN GATEWAY		
5 B -	32		-							
- M 7	40		I				Connector Type	e TH12FW-NH		
8 Y -	41	٣	I	Connector No.	r No. M120		4			
9 W – [With VK engine]	42						F			
	44	N	1	CONTRECTO			S I	ľ	7	
	45	ß	1	Connector Type	Γ	TH40FB-NH			Τ	
	46	_	 [With Climate controlled seat] 	4				ε	4 5 6	
12 P -	46	BG	 [With heated seat] 	F				7 9 1	10 11 12	
>	47	┝	 [With Climate controlled seat] 							
14 R -	47	GR	 [With heated seat] 			K				
7	48	_	1		0.0000000000000000000000000000000000000	7 8 9 10 11 12 13 14 15 16 17 18 19 20 07 00 00 00 01 00 01 02 02 05 05 07 00 00 40	nal			
SB	49	┝	-		21 22 23 24 25 26	128 29 30 31 32 33 34 35 36 37 38 39	No. of Wire		Signal Name [Specification]	
	20	┝	-				-		CAN-H	
ΓC	51	┝	1				3 GR	œ	BATTERY	
ې ۱	5	┝	,	Terminal	Color	,	┝		CAN-H	
+	5	+	1	No	of Wire	Signal Name [Specification]	c.		GND	
	99	┝	1	-	e	BP WINDOW DEEG BLY CONT	┝		CAN-H	
A 3	8 6	╀			5		╀		CAN-H	
	n u	╀		v c	20			. 3	CAN-L ICNITION	
	8	+	I	•	0.	COMBLOW INPUT 4	+	=		
	80 F9	+		+ u	(╀			
Commentant Na 11443	5	2 >			5 a		╀			
Т	29	+		9	;	COMBI SW INPUL 1	12		CAN-L	
Connector Name WIRE TO WIRE	63	+	-		>	POWER WINDOW SW COMM				
Т	99	_	-	6	1	STOP LAMP SW 1				
Connector Type TH80FW-CS16-TM4	67	+	1	=	œ	RAIN SENSOR SERIAL LINK				
đ	68	SB	-	14	W	OPTICAL SENSOR				
	69	в	1	16	SB	DIMMER SIGNAL				
11 11 11 11 11 11 11 11 11 11 11 11 11	70	ч	1	17	Y	SENSOR PWR SPLY				
97 82 88 88 88 88 88 88 88 88 88 88 88 88	76	SHIELD	1	18	۵	RECEIVER / SENSOR GND				
11 (K)	17	σ	I	19	æ	RECEIVER PWR SPLY				
20177 67152 47152 27177 26178 66153 46156 2618	78	~	ı	20	BR	KYLS ENT RECEIVER COMM				
	52	-		21	•	NATS ANT AMP				
h	Uα	ı c	1	20	ag	KVI S ENT DECEIVED DOSI				
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CAN SYSTEM (WITH ICC)

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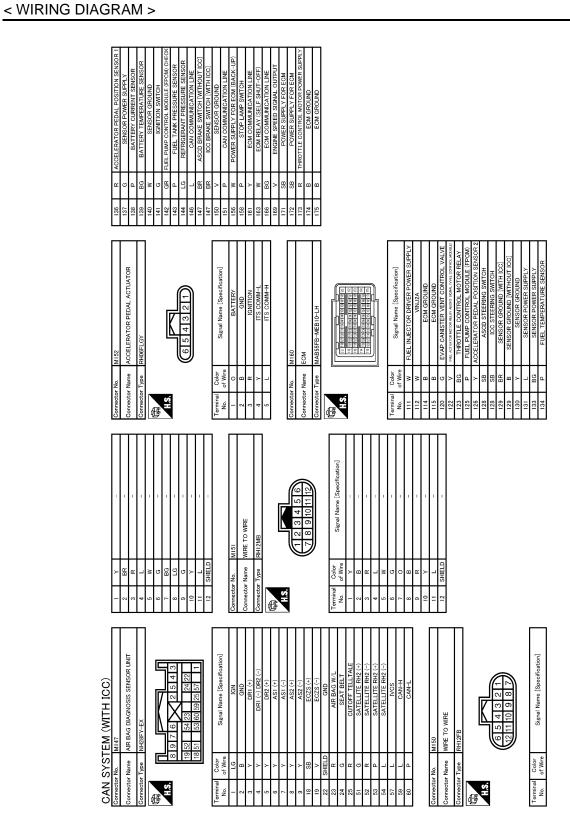
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Ommetor No. Ri Connector Name Anic CAMERA UNIT Connector Name Anic CAMERA UNIT Image: Connector Type Hondon Type Image: Connector Type Empiricani Image: Connector Type Connector Type	
80 W Contrion Stand. 81 BG VEHICLE STERES ISINAL 82 RE VEHICLE STERES ISINAL 83 BE COMPOSITE MARIE SIGNAL STERED 84 BE COMPOSITE MARIE SIGNAL STERED 89 Y MICRAPHORE SIGNAL STERED 90 Y COMPOSITE MARIE SIGNAL STERED 91 Y COMMITIN STERED STERED 101 Oritic Stered Name INE AV COMMITIN 11 T T T T T 11 T T T T T 11 T T T T T 11 T T	
Commenter No. MI82 Connector Name DATA LINK CONNECTOR Connector Name Signal Name (Specification) Connector Name A CONTROL UNIT Connector Name Signal Name (Specification) Connector Name A CONTROL UNIT Connector Name Connector Name Connector Name Connector Name	
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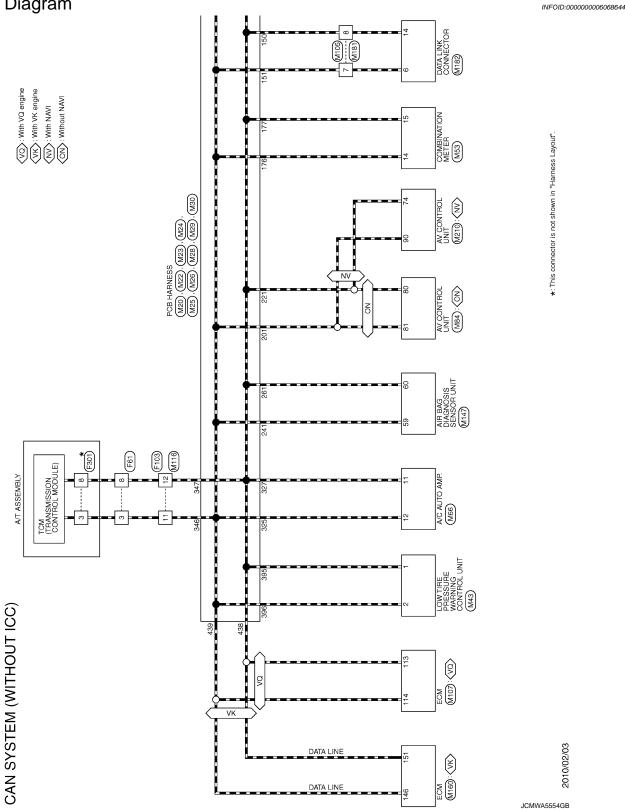
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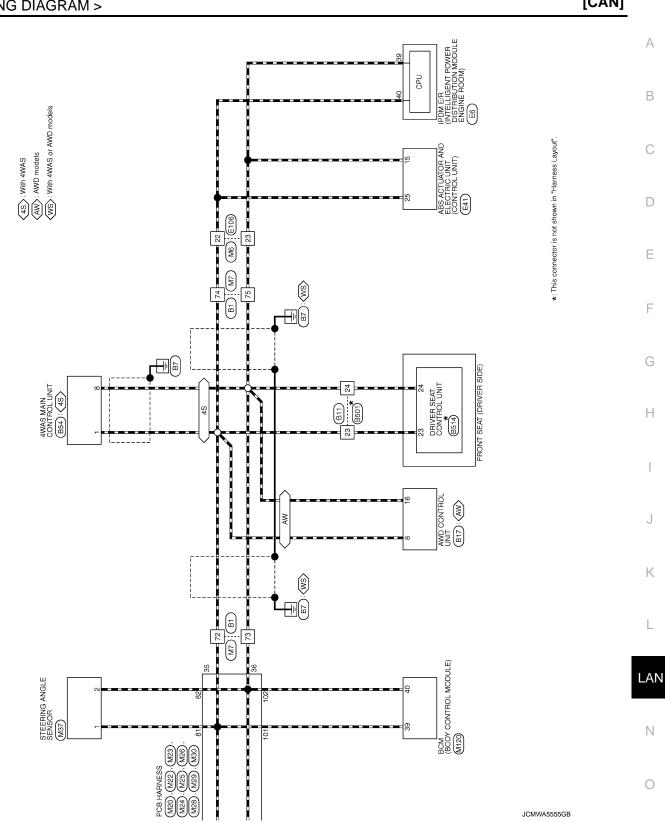




CAN SYSTEM (WITHOUT ICC)







CAN SYSTEM (WITHOUT ICC)

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SB Omnetor Nu Connector Num 0X/V - </th <th>Image: constrained by the constrained b</th> <th>11 B/Y GND 13 LG OILEMP(-) 15 LG VB</th> <th>10 P C 13 12.2 13 41 40 2 228 35 41 40</th> <th>Signal Name [Specification] Line Control <thcont< th=""> Control <thcont< th=""></thcont<></thcont<></th> <th>******</th> <th></th> <th>3 7 8 11 13 15 16 Signal Name [Specification] Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+)</th>	Image: constrained by the constrained b	11 B/Y GND 13 LG OILEMP(-) 15 LG VB	10 P C 13 12.2 13 41 40 2 228 35 41 40	Signal Name [Specification] Line Control Control <thcont< th=""> Control <thcont< th=""></thcont<></thcont<>	******		3 7 8 11 13 15 16 Signal Name [Specification] Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+) Amo SOL (+)
Size	Nithout ICO Nithout ICO Ner To Wire Theorem-cstre-TM4		252				en Color en Color B S R R R R R R R R R R R R R R R R R R
	Signal Name (Sheerfication) Signal Name (Sheerfication) 0 0 0<			- - - - - - - - - - -	- [Without Co and 4MAS system] - [Without Co and 4MAS system] 		
	Image: control of contro of contro of contro of control of control of control of control o		*******	 	++++++++	++++++++++	
	or Name or Na	FEM (WITHOUT ICC) BI MRE TO WRE			- Weh Climate cortrolled seat] - IWeth heated seat] - IWeth heated seat] - IWeth Climate cortrolled seat] - IWeth Fasted seat]		
EM (WITHOUT ICC) BI WRE TO WRE THBOFW-CSIG-TM4 THBOFW-CSIG-TM4 Sterral Name (Specification) Sterral Name (Specification) Sterral Name (Specification) Sterral Name (Specification) - (With Fiber creation set bit system) - (With Fiber creation set bit system)		CAN SYST Connector No. Connector Name	Connector Type	Terminal Color No. of Wire 1 R 2 W 4 LG 5 P 6 V 7 GR	B P L G < L < 4	2 α ο > α α ≥ α α Ω	C C C C C C C C C C C C C C C C C C C

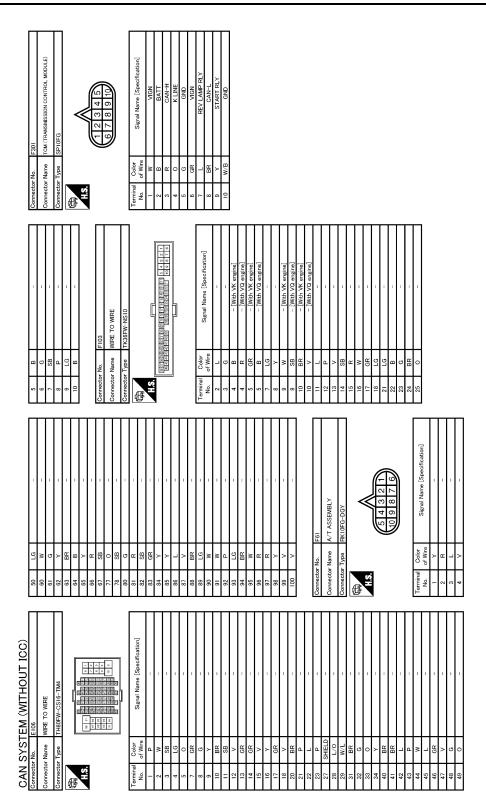
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E41 SA230FB-SJZ4-U SA230FB-SJZ4-U SIZ1819189 SIZ1819189 SIZ1819189 SIZ1819189 SIZ1819189 SIZ1819189 MOTORROWER MOTORROWER MOTORROWER MOTORROWER MOTORROWER SIZ18191814 H RENISORALU F F H RENISORALU F H R R R R R R R R R R R R R R R R R R	F
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FRONT LIFTER SW (UPWARD) FRONT LIFTER SW (UPWARD) PULSE (FRONT LIFTER) PULSE (FRONT LIFTER) PULSE (FRONT LIFTER) PULSE (FRONT LIFTER) ND 2 ADDRESS 1 ADDRESS	J
LG/R LG/R 1 1 </td <td>Κ</td>	Κ
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M (WITHOUT ICC) E TO WIRE BAW-CS BAW-CS BAW-CS 35 281 2 271 26 25 35 281 2 271 26 25 35 281 2 271 26 25 35 281 2 271 126 25 35 281 126 26 35 281 126 26 36 280 126 26 37 2 280 126 26 37 2 280 126 26 38 28 26 38	LAN
SYSTEM (WITHOUT IC No. Signal B501 Name WIE TO WRE PL 222712 PL - Color Signal Name (Specific of Wre R R BR - W/Y - Lu - V/W - MI - Min B514 Min B514 Min B514 Min Color Signal Name (Specific Ocior Signal Name (Specific Color Signal Name (Specific Color Signal Ware (Specific Color Signal Name (Specific	Ν
Connector Name BSU Connector Name WIE TO WIE Connector Name WIE TO WIE Connector Name BSU Connector Name No. Connector Name Signal Name (Specification) Terminal Color Signal Name (Specification) Signal Name (Specification) Connector Name Connector Name Mission Connector Name Signal Name (Specification) Connector Name Signal Name (Specification) Connector Name BR/W Connector Name Connector Name Connector Name BR/W Connector Name	0

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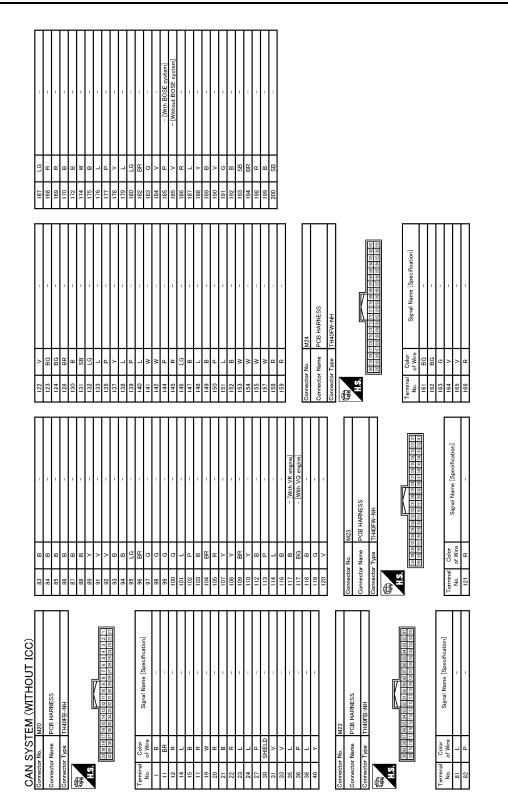


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RING DIAGRAM >		[CAN]
· · · · · · · · · · · · · · · · · · ·	Signal Name (Specification)	A
Corrrector No. M29 Connector Name PCB HARNESS Connector Type TH40FB-NH H43	Terminal No. Color of Ware Starting 361 W 361 W 362 W 363 Y 363 Y Y 363 363 Y Y 363 363 Y Y 363 375 B B 373 373 B R 373 373 B R 373 373 B R 373 373 C V 373 380 R R 373 381 G R 373 383 G R 383 393 F R 393 393 F R 393 393 K H 400	C D
M28 PCB HARNESS TH40PW-MH DEB DEB DEB DEB DEB DEB DEB DEB DEB DEB	Signat Name (Specification)	F
Currector No. M28 Connector Name PCB HAI Connector Type 11440PW	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	G H
● M26 ● PCB HARNESS ● PCB HARNESS ● TH40PW-MH ● TH40PW-MH ● TH40PW-MH ● TH40PW-MH ● TH40PW-MH ● TH40PW-MH	Signal Name (Specification) 	l J
Connector No. Connector Name Connector Type	Terminal Color No. 241 C 241 L 244 L 243 L 244 L 245 L 245 L 245 L 245 L 245 L L 245 245 L 245 L 247 L 245 L 255 L 260 L 256 SHELD 255 L 256 L 256 L 256 L 270 V 270 Q 273 R 270 C 273 R 273 R 273 R 273 R 273 R 273 R 273 R 279 R 279 R 279 R 279 R 279 R 279 R	К
CAN SYSTEM (WITHOUT ICC) Connector Name Connector Name Connector Type Connector Type Connector Type	r Signal Name (Specification) - -	L LAN N
CAN SYS Corrector Nume Connector Nume Connector Type	Terminal No. Color 201 of Wire- 200 of Wire- 2	0

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Revision: 2010 June

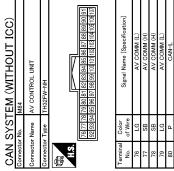
CAN	Х.	GAN SYSTEM (WITHOUT IGC)										
Connector No.	or No.	M30	Conne	Connector No.	M37	25	œ	FR TUNER (GND)	Connector No.	Π	M66	
Connec	Connector Name	ne PCB HARNESS	Connet	Connector Name	STEERING ANGLE SENSOR	20 30	ш с	FL TUNER (GND) RCM EL ASHED	Connector Name		A/C AUTO AMP.	
Connec	Connector Type	De TH40FW-NH	Connec	Connector Type	TH08FW-NH	32) œ	GND	Connector Type	П	TH20FW-TB6	
ß			ſ						ß			
H.S.			Ň	10	K	Connector No.	or No.	M53	H.S.			
	517 (07	415 411		I	7 2 8	Connect	Connector Name	COMBINATION METER		1 2		
	440 438	88 458 450 459 459 450 450 450 501 501 501 501 501 50 451 451 451 450 450 450			-	Connect	Connector Type	TH40FW-NH		13	17 18 20 21 22 23 24 25 26	
]	ſ						
Terminal	al Color of Wire	blor Signal Name [Specification]	Terminal	nal Color of Wire	Signal Name [Specification]	H.S.			Terminal	Color of Wire	Signal Name [Specification]	
402	, ;	-	-	t	CAN-H		1 2 3 4	14 15 16	T	2	BATTERY POWER SUPPLY	
403	٣	-	2	۵.	CAN-L		21 22 23 5	4 25 26 27 28 29 32 33 34 35 36 37 38 39 40	2	N	IGNITION POWER SUPPLY	
407	>	/	7	8	GND				9	æ	BLOWER MOTOR F/B SIGNAL	
408	8		80	5	IGN				7	٦	POWER TRANSISTOR CONTROL SIGNAL	
409	œ					Terminal	_	Signal Name [Snecification]	10	в	GROUND	
410	8					No.	of Wire		11	٩	CAN-L	
411	в		Conner	Connector No.	M43	-	M	BATTERY POWER SUPPLY	12	L	CAN-H	
413	>		Conner	Connector Name	LOW TIRE PRESSURE WARNING CONTROL LINIT	2	BG	IGNITION SIGNAL	13	>	ACC POWER SUPPLY	
414	BR	۲. ۲.				e S	В	VEHICLE SPEED SIGNAL (2-PULSE)	17	BG	ECV CONTROL SIGNAL	
416	_	D1	Connet	Connector Type	TH32FW-NH	4	٣	VEHICLE SPEED SIGNAL (8-PULSE)	20	œ	HUMIDITY SENSOR (SCK) SIGNAL	
417	-	,	ą			ŝ		ILLUMINATION CONTROL SIGNAL	21	>	HUMIDITY SENSOR (DATA) SIGNAL	
419	-	r D				9		METER CONTROL SWITCH GROUND	22		HUMIDITY SENSOR GROUND	
420	SHIELD	- ELD	H.S.	16		2	8	ENTER SWITCH SIGNAL	23	N	DRIVE MODE SELECT SW (SNOW)	
422	_	-		5	2 1 1 5 6 2 1 8 0 1 0 1 1 1 1 1 5	8	P	SELECT SWITCH SIGNAL	24	_	DRIVE MODE SELECT SW (ECO)	
427	4	-		-	20 21 22 23 24	6	σ	ILLUMINATION CONTROL SWITCH SIGNAL (+)	25	σ	DRIVE MODE SELECT SW (STANDARD)	
428	> 0					2 =	- B	ILLUMINATION CONTROL SWITCH SIGNAL (-) TDID DESET SWITCH SIGNAL	26	>	DRIVE MODE SELECT SW (SPORT)	
420	- -					2	-					
431	3 @	1	Terminal	nal Color		1 4	,	CAN-H				
432	>	/	No.	of Wire	Signal Name [Specification]	15	۵.	CAN-L				
435	>	- /	-	٩	CAN- (L)	16	æ	AIR BAG SIGNAL				
436	BG	- 5	2	-	CAN+ (H)	23	8	GROUND				
437	ß	1	ę	8	RR TUNER (SIG)	24	m	FUEL LEVEL SENSOR GROUND				
438	۵	1	4	<u>م</u>	RL TUNER (SIG)	25	>	ALTERNATOR SIGNAL				
439	-	1	ŝ		FR TUNER (SIG)	26	>	PARKING BRAKE SWITCH SIGNAL				
			9	σ	FL TUNER (SIG)	27	>	BRAKE FLUID LEVEL SWITCH SIGNAL				
			2	۳	RR TUNER (VCC)	28	σ	SECURITY SIGNAL				
			ω	>	RL TUNER (VCC)	29	_	WASHER LEVEL SWITCH SIGNAL				
			თ	+	FR TUNER (VCC)	32	ۍ ا	PADDLE SHIFTER SHIFT DOWN SIGNAL				
			2	_	FL TUNER (VCC)	33	g	PADDLE SHIFTER SHIFT UP SIGNAL				
			12	> :	SW	34	σ ;	FUEL LEVEL SENSOR SIGNAL				
			<u>0</u>	ہ <	IGN PR TLINFR (RSSI)	35 98	s c	SEAT BELT BUCKLE SWITCH SIGNAL (URIVER SIDE) PASSENGER SEAT RELT WARNING SIGNAL				
			20	╞	RL TUNER (RSSI)	37	, 0	NON-MANUAL MODE SIGNAL				
			21		FR TUNER (RSSI)	88	>	MANUAL MODE SHIFT DOWN SIGNAL				
			22	я	FL TUNER (RSSI)	39	-	MANUAL MODE SHIFT UP SIGNAL				
			6			\$	•	MANULAL MODE CICNER				

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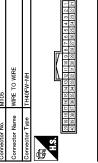
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GRAM >	[CAN]
Mi. M20 Phame BCM (BODY CONTFOL MODULE) Type EM (BODY CONTFOL MODULE) Type EM (BODY CONTFOL MODULE) Cold Regularization Cold Signal Name (Specification) G Regularization G Regularization G Regularization G Regularization G Regularization G Coldition G Coldition F Coldition <th></th>	
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CAN SYSTEM (WITHOUT ICC)



Signal Name [Specification]	AV COMM (L)	AV COMM (H)	AV COMM (H)	AV COMM (L)	CANHL	CAN-H	SW GND	SHIELD	TEL VOICE SIGNAL (+)	TEL VOICE SIGNAL (-)	VEHICLE SPEED (8-PULSE)	PARKING BRAKE	REVERSE	IGNITION	DISK EJECT SIGNAL	
Color of Wire	ΓC	SB	SB	PG	۵.	Γ	BR	SHIELD	٩	٦	ч	>	BG	M	SB	
Terminal No.	76	<i>LL</i>	78	79	80	81	82	86	87	88	92	93	94	95	96	



Signal Name [Specification]	-	I	1	1		1	1	
Color of Wire	ч	ш	5T	٩	L	٩	8	
Terminal No.	2	3	5	9	7	8	6	

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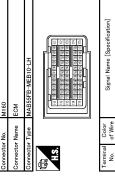
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CAN SYS	CAN SYSTEM (WITHOUT ICC)									
Connector No.	M147	Ξ	×	FUEL INJECTOR DRIVER POWER SUPPLY	Connector No.	M181		Connector No.	lo. M182	
Connector Namo	AID DAG DIAGNOSIS SENSOD LINIT	112	W	VINJ2A	Connoctor Namo			Connoctor Namo		
COLLIGGTON NALLIG		114	8	ECM GROUND	COLLINGCOL IN			COLLIECTOL IN		
Connector Type	NH28FY-EX	115	в	ECM GROUND	Connector Type	pe TH40MW-NH		Connector Type	ype BD16FW	
ą		120	ۍ	EVAP CANISTER VENT CONTROL VALVE	ą			1		
L F		122	>	VVEL ACTUATOR MOTOR RELAY ABORT SIGNAL (VVEL CONTROL MODULE)	A P			No.		
H.S.		123	BG	THROTTLE CONTROL MOTOR RELAY	H.S.			H.S.	IC	
		125	٩	FUEL PUMP CONTROL MODULE (FPCM)					11 12 13 14 16	
	19 52 54 23 24 22	126	≻ ;	ACCELERATOR PEDAL POSITION SENSOR 2	21	2 3 4 5 5 7 8 9 10 11 12 13 14 15 16 17 18 19 20 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	2 8		/ 1345678	
	18 51 53 60 50 55 57 1	128	99	ASCD STEERING SWITCH	J		1			
-	07 60 00 cc	128	8	ICC STEERING SWITCH						
F		671	5		Ŀ		[F		
Terminal Color No. of Wire	. Signal Name [Specification]	129	m >	SENSOR GROUND [WITHOUT ICC] SENSOR GROUND	Terminal o	Color Signal Name [Specification]		Terminal (Color Signal Name [Specification]	
t	IGN	131	-	SENSOR POWER SUPPLY	t		Γ	t		
2		133	g	SENSOR POWER SUPPLY	e			4		
3 <	DR1 (+)	134	٩	FUEL TEMPERATURE SENSOR	2			2		
4 Y	DR1 (-) DR2 (-)	136	٣	ACCELERATOR PEDAL POSITION SENSOR 1	9	BR -		9	· _	
5	DR2 (+)	137	σ	SENSOR POWER SUPPLY	7			7	- >	
9	AS1 (+)	138	۵.	BATTERY CURRENT SENSOR	00	, ,		~~	- 10	
7 Υ	AS1 (=)	139	BG	BATTERY TEMPERATURE SENSOR	6	- 8		=	- R	
8	AS2 (+)	140	×	SENSOR GROUND	10	M		12	۰ ۵	
× 6	AS2 (-)	141	σ	IGNITION SWITCH	11	- I		13		
18 SB	ECZS (+)	142	GR	FUEL PUMP CONTROL MODULE (FPCM) CHECK	12	SB -		14	- -	
7 61	ECZS (-)	143	٩	FUEL TANK PRESSURE SENSOR	14	SB -		16	- M	
22 SHIELD		144	LG	REFRIGERANT PRESSURE SENSOR	15	BR				
23 R	AIR BAG W/L	146	-	CAN COMMUNICATION LINE	16					
24 G	SEAT BELT	147	BR	ASCD BRAKE SWITCH [WITHOUT ICC]	18	G –				
25 R	CUTOFF TELLTALE	147	BR	ICC BRAKE SWITCH [WITH ICC]	19	B -				
51 G	SATELLITE RH2 (+)	150	>	SENSOR GROUND	20	N				
52 R	SATELLITE RH2 (-)	151	٩	CAN COMMUNICATION LINE	22	BG -				
53 P	SATELLITE RH2 (+)	156	M	POWER SUPPLY FOR ECM (BACK-UP)	23	B –				
54 L	SATELLITE RH2 (-)	158	٩	STOP LAMP SWITCH	25	M				
57 L	IVCS	161	۲	ECM COMMUNICATION LINE	30	R -				
29 L	CAN-H	163	M	ECM RELAY (SELF SHUT-OFF)	31	BR –				
60 P	CAN-L	166	BG	ECM COMMUNICATION LINE	32					
		169	^	ENGINE SPEED SIGNAL OUTPUT	33					
		171	SB	POWER SUPPLY FOR ECM	34	TG				
Connector No.	M160	172	SB	POWER SUPPLY FOR ECM	35					
Connector Name	ECM	173	ч	THROTTLE CONTROL MOTOR POWER SUPPLY	36	E				
		174	в	ECM GROUND	37					
Connector Type	MAB55FB-MEB10-LH	175	в	ECM GROUND	38	R –				
ŧ				1						



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< WIRING DIAGRAM >	CAN SYSTEM (WITHOUT ICC)	[CAN]
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MITHOUT ICC) MITHOUT ICC) IROL UNIT AH AM AM AM AM AM AM AM AM AM AM AM AM AM	Parking BRAKE SIGNAL COMPOSITE MAGE SIGNAL COMPOSITE MAGE SIGNAL COMPOSITE MAGE SIGNAL COMMICEOPHONE SHELD MICROPHONE VCC COMMICEOPHONE VCC COMMICEOPHONE VCC COMMICEOPHONE SIGNAL ISTATION SIGNAL AV COMMILL COMPOSITE SIGNAL COMPOSITE SIGNAL COMPOSITE SIGNAL AV COMMILL AV COMMILL	LAN
TEM () M210 TH32FW TH32FW TH32FW		Ν
CAN SYS Connector Name Connector Name Connector Type	No. of Wr. 65 67 7 67 7 7 7 71 7 7 7 73 7 7 7 73 7 7 7 74 7 7 7 75 7 7 7 75 7 7 7 75 7 7 7 75 7 7 7 80 8 8 8 90 8 8 8 91 8 8 8 92 7 7 8 93 8 8 8 94 8 8 8 93 8 8 8 94 7 7 8 95 8 8 8 95 8 8 8 95 8 8 <	JCMWA5565GB
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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

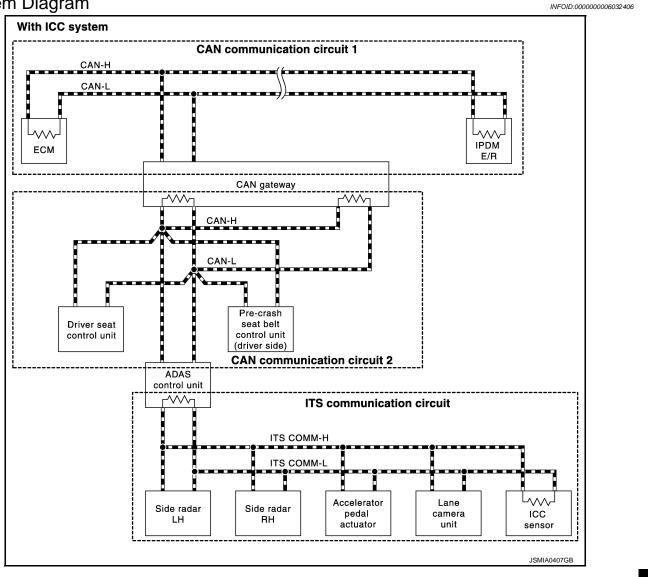
Interview Sheet

w Sneet		INFOID:000000006
CAN Communication S	System Diagnosis Interview Sheet	
	Date received:	
Туре:	VIN No.:	
Model:		
irst registration:	Mileage:	
CAN system type:		
Symptom (Results from interview v	with customer)	
Condition at inspection		
Error symptom : Present / Pa	Ist	
		SKIB8898E

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS MALFUNCTION AREA CHART

System Diagram



CAN Communication Circuit

MAIN LINE

Malfunction area	Reference	
Main line between low tire pressure warning control unit and A/C auto amp.	LAN-72, "Diagnosis Procedure"	C
Main line between A/C auto amp. and air bag diagnosis sensor unit	LAN-73, "Diagnosis Procedure"	
Main line between air bag diagnosis sensor unit and AV control unit	LAN-74, "Diagnosis Procedure"	F
Main line between AV control unit and combination meter	LAN-75, "Diagnosis Procedure"	
Main line between combination meter and data link connector	LAN-76, "Diagnosis Procedure"	
Main line between data link connector and BCM	LAN-77, "Diagnosis Procedure"	
Main line between BCM and ABS actuator and electric unit (con- trol unit)	LAN-78, "Diagnosis Procedure"	

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Revision: 2010 June



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MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
Main line between BCM and AWD control unit	LAN-80, "Diagnosis Procedure"
Main line between BCM and driver seat control unit	LAN-81, "Diagnosis Procedure"
Main line between BCM and 4WAS main control unit	LAN-82, "Diagnosis Procedure"
Main line between AWD control unit and ABS actuator and elec- tric unit (control unit)	LAN-83, "Diagnosis Procedure"
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-85, "Diagnosis Procedure"
Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)	LAN-87, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	LAN-93, "Diagnosis Procedure"
Low tire pressure warning control unit branch line circuit	LAN-95, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-96, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-97, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-99, "Diagnosis Procedure"
TCM branch line circuit	LAN-100, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-101. "Diagnosis Procedure"
AV control unit branch line circuit	LAN-102, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-104, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-105, "Diagnosis Procedure"
BCM branch line circuit	LAN-106, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-107, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-108, "Diagnosis Procedure"
4WAS main control unit branch line circuit	LAN-109, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-110, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-111, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-112, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-113. "Diagnosis Procedure"
ADAS control unit branch line circuit	LAN-114. "Diagnosis Procedure"
Pre-crash seat belt control unit (driver side) branch line circuit	LAN-115, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference	
CAN communication circuit (Without ICC system)	LAN-121, "Diagnosis Procedure"	
CAN communication circuit 1 (With ICC system)	LAN-123, "Diagnosis Procedure"	
CAN communication circuit 2 (With ICC system)	LAN-125, "Diagnosis Procedure"	

ITS Communication Circuit

INFOID:000000006032408

MAIN LINE

Malfunction area	Reference	
Main line between side radar LH and side radar RH	LAN-89, "Diagnosis Procedure"	

LAN-70

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference	^
Main line between side radar RH and accelerator pedal actuator	LAN-90, "Diagnosis Procedure"	А
Main line between accelerator pedal actuator and lane camera unit	LAN-92, "Diagnosis Procedure"	R

BRANCH LINE

Malfunction area	Reference	(
Side radar LH branch line circuit	LAN-116. "Diagnosis Procedure"	
Side radar RH branch line circuit	LAN-117, "Diagnosis Procedure"	
Accelerator pedal actuator branch line circuit	LAN-118, "Diagnosis Procedure"	
Lane camera unit branch line circuit	LAN-119, "Diagnosis Procedure"	
ICC sensor branch line circuit	LAN-120. "Diagnosis Procedure"	

SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference	F
ITS communication circuit	LAN-127, "Diagnosis Procedure"	



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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000006032409

[CAN]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

-	warning control unit connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M66	12	Existed
1	IVIOO	11	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 low tire pressure warning control unit and the A/C auto amp.

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA	IAIN LINE BETW GNOSIS > TWEEN HVAC			IT [CAN]	٨
Diagnosis Procedure					
1. CHECK HARNES		N CIRCUIT)			В
 3. Disconnect the for ECM A/C auto amp. AV control unit 	attery cable from the no llowing harness conne	ectors.	nnector and the AV co	ntrol unit harness con-	C
nector. - Models with navi					E
A/C auto amp.	harness connector	AV control unit h	arness connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	_
M66	12	M210	90	Existed	F
IVIOU	11	IVIZ I U	74	Existed	

Models without navigation system

A/C auto amp. harness connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
MCC	12	M84	81	Existed	
IVIOO	M66 11		80	Existed	

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000006032411

[CAN]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit h	V control unit harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M210	90	Existed
	11	WZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M66	12	N0.4	81	Existed	
	11	M84	80	Existed	

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

				[CAN]
Diagnosis Proced	dure			INFOID:000000006032412
1.CHECK HARNESS		N CIRCUIT)		
 3. Disconnect the fo ECM AV control unit Combination meters 	attery cable from the no llowing harness conne er uity between the AV co	ctors.	nnector and the com	pination meter harness
AV control unit	harness connector	Combination meter harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M53	14	Existed
WIZ TO	74	NICO NICO	15	Existed
- Models without na	avigation system			
AV control unit	harness connector	connector Combination meter harness connector		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	M53	14	Existed
IVIO4	80	IVIDO	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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006032413

[CAN]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M105	7	Existed
IWI33	15	WITU5	8	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 combination meter and the data link connector.
- NO >> Replace the PCB harness.

	MAIN LINE BEI	WEEN DLC ANI	D BCM CIRCUIT		
< DTC/CIRCUIT DIAG	GNOSIS >			[CAN]	
MAIN LINE BET	TWEEN DLC A	ND BCM CIRC	UIT		
Diagnosis Procedure				INFOID:000000006032414	
1.CHECK HARNESS		N CIRCUIT)			
 3. Disconnect the fol ECM Harness connector BCM 	witch OFF. ttery cable from the n lowing harness conne ors M181 and M105 ity between the harne	ectors.	BCM harness conne	ctor.	
Harness	connector	BCM harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity	
	7		39	Existed	

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Is the inspection result normal?

M105

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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 BCM. NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006092436

[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 M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1
- Harness connector M6
- Harness connector E106

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.

- BCM
- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harne	ess connector		
Connector No.	Terminal No.	Terminal No.	Continuity
M120	39	35	Existed
IVI 120	40	36	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
Mao	35	M7	72	Existed	
M20	36	1/17	73	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
	73	75	Existed

Is the inspection result normal?

YES >> GO TO 5.

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector			
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
N 47	74	M6	22 Existed	Existed	
M7	75		23	Existed	_

s the inspection result normal?

YES >> GO TO 6.

NO >> Repair the main line between the harness connectors M7 and M6.

6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity	F
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	22	E41	25	Existed	G
EIUO	23	E 41	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 BCM and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000006032415

[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 M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harne	ss connector	PCB harness connector	Continuity	
Connector No.	Terminal No.	Terminal No.	Continuity	
M120	39	35	Existed	
IVI 120	40	36	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness	Continuity		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M20	35	M7	72	Existed	
WZ0	36	1017	73	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
DI	73	75	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 BCM and the AWD control unit.

NO >> Replace the body harness.

		WEEN BCM AI		ſ [CAN]
	FWEEN BCM A	ND ADP CIR	CUIT	
Diagnosis Proced	lure			INFOID:000000006068657
.снеск соллест	OR			
 Check the following and harness side) Harness connectore <l< td=""><td>attery cable from the ne ng terminals and cont or M20 and PCB harne or M7 or B1 <u>t normal?</u> e terminal and connect s CONTINUITY (OPEN lowing harness conne</td><td>nectors for damage ess side connector tor. N CIRCUIT)</td><td>, bend and loose con</td><td>nection (connector side</td></l<>	attery cable from the ne ng terminals and cont or M20 and PCB harne or M7 or B1 <u>t normal?</u> e terminal and connect s CONTINUITY (OPEN lowing harness conne	nectors for damage ess side connector tor. N CIRCUIT)	, bend and loose con	nection (connector side
		harness connector a	and the PCB harness of	connector.
BCM harne	ess connector	PCB harr	ess connector	Continuity
Connector No.	Terminal No.	Terminal No.		
M120	39		35	Existed
	40		36	Existed
CHECK HARNESS	he PCB harness. CONTINUITY (OPEN Irness connectors M7 ity between the harne	and B1.		
Harness	connector	Harnes	s connector	
	Terminal No.	Connector No.	Terminal No.	- Continuity
Connector No.	reminal NO.			
	35	M7	72	Existed
M20	35 36	M7	72 73	Existed Existed
M20 <u>s the inspection result</u> YES >> GO TO 4. NO >> Repair the I.CHECK HARNESS	35 36	e harness connecto N CIRCUIT)	73	
M20 <u>s the inspection result</u> YES >> GO TO 4. NO >> Repair the I.CHECK HARNESS	35 36 t normal? e main line between th 5 CONTINUITY (OPEN	e harness connecto N CIRCUIT)	73	
M20 <u>s the inspection result</u> YES >> GO TO 4. NO >> Repair the 1 .CHECK HARNESS Check the continuity b	35 36 t normal? e main line between th 5 CONTINUITY (OPEN	e harness connecto N CIRCUIT) onnector terminals.	73	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 BCM and the driver seat control unit.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000006068661

[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 M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harne	ss connector	PCB harness connector	Continuity	
Connector No.	Terminal No.	Terminal No.	Continuity	
M120	39	35	Existed	
WI120	40	36	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness	Continuity		
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M20	35	M7	72	Existed	
WZ0	36	1017	73	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
DI	73	75	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 BCM and the 4WAS main control unit. NO >> Replace the body harness.

DTC/CIRCUIT DIAGNOSIS > MAIN LINE BETWEEN 4WD AND ABS CIRCUIT Diagnosis Procedure	[CAN]
Diagnosis Procedure	
	INFOID:000000006068663
.CHECK CONNECTOR	
Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection and harness side). Harness connector B1 Harness connector M7 Harness connector M6 Harness connector E106 <u>the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. .CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors B1 and M7.	on (connector side
Check the continuity between the harness connector terminals.	
	Continuity
B1 72 74 74 75	Existed
CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106.	
CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors.	
CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106.	Continuity
.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Harness connector Harness connector Connector No. Terminal No. 74	Continuity Existed
.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Harness connector Harness connector No. Terminal No. Connector No. Terminal No. M7 74 M6 22 23	
A CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Harness connector Harness connector Connector No. Terminal No. M7 74 M7 74 M6 22 23 23 the inspection result normal? YES >> GO TO 4. NO >> Repair the main line between the harness connectors M7 and M6. •.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of ABS actuator and electric unit (control unit).	Existed
CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Harness connector Harness connector Harness connector Arreminal No. Connector No. Terminal No. Arreminal No. Terminal No. Arreminal No. Terminal No. Arreminal No. Terminal No. Arreminal No. Terminal No. Connector No. Terminal No. Arreminal No. Arrem	Existed
•.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106. Check the continuity between the harness connectors. Harness connector Harness connector Max Connector No. Terminal No. Connector No. M7 74 M7 74 M6 22 23 23 the inspection result normal? YES >> GO TO 4. NO >> Repair the main line between the harness connectors M7 and M6. •.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of ABS actuator and electric unit (control unit). Check the continuity between the harness connector and the ABS actuator and electric harness connector.	Existed 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 AWD control unit and the ABS actuator and electric unit (control unit).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

< DTC/CIRCUIT DIA(MAIN LINE BET	WEEN A	OP ANI	O ABS CIRCUI	T [CAN]
MAIN LINE BET		ND ABS	CIRCI	JIT	
Diagnosis Proced	lure				INFOID:000000006068655
1.CHECK CONNECT	OR				
	ttery cable from the n ng terminals and con r B1 r M7			pend and loose cor	nnection (connector side
 Harness connecto 					
~ '	e terminal and connec				
2.CHECK HARNESS					
	rness connectors B1 ity between the harne		terminal	S.	
Connector No.		Terminal	l No.		Continuity
B1	72	72 74		Existed	
	73 75		75	Existed	
ness conn 3. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	ector B1.	N CIRCUIT) and E106.	·S.	connector	control unit and the har-
Connector No.	Terminal No.	Connecto	or No.	Terminal No.	Continuity
M7	74	- M6		22	Existed
IVI <i>1</i>	75	IVI6		23	Existed
1. CHECK HARNESS	e main line between th CONTINUITY (OPE) nnector of ABS actua ity between the harne	N CIRCUIT) tor and electr	ric unit (c	ontrol unit).	electric unit (control unit)
Harness	connector	ABS actua		ctric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connecto	or No.	Terminal No.	
E106	22	E41		25	Existed
	23			15	Existed

Is the inspection result normal?

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

LAN-85

< DTC/CIRCUIT DIAGNOSIS >

- YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).
- NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

AIN LINE BET		ND ABS	CIRCL	ЛТ	
Diagnosis Proced	ure				INFOID:000000006068662
1.снеск соллест	OR				
 Check the followir and harness side). Harness connecto Harness connecto Harness connecto Harness connecto Harness connecto Source and the second seco	ttery cable from the n ng terminals and con r B1 r M7 r M6 r E106 <u>normal?</u> terminal and connec	tor. N CIRCUIT) and M7.	damage, b		onnection (connector side
Connector No.		Termin		-	Continuity
B1	72	-		74	Existed
3.CHECK HARNESS	e body harness. CONTINUITY (OPEI mess connectors M6 ty between the harne	and E106.			
	connector		Harness	connector	
Connector No.	Terminal No.	Connec		Terminal No.	Continuity
M7	74 75	- M	6	22 23	Existed Existed
4.CHECK HARNESS	main line between th CONTINUITY (OPEI nnector of ABS actua ty between the harne	N CIRCUIT) tor and elec ess connect	tric unit (co or and the	ontrol unit).	electric unit (control unit)
	connector		harness c	connector	Continuity
Connector No.	Terminal No.	Connec	tor No.	Terminal No.	
	22			25	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 4WAS main control unit and the ABS actuator and electric unit (control unit).

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

MA DTC/CIRCUIT DIAC	AIN LINE BETW GNOSIS >	EEN RDR-L ANI	D RDR-R CIRCU	IT [CAN]
MAIN LINE BET	WEEN RDR-L	AND RDR-R C	IRCUIT	
Diagnosis Proced	ure			INFOID:000000006068659
1.CHECK CONNECT	OR			
3. Check the followir and harness side). Harness connecto Harness connecto s the inspection result YES >> GO TO 2. NO >> Repair the	ttery cable from the ne ng terminals and conr r B33 r B245 normal? terminal and connect	nectors for damage, I	pend and loose conn	ection (connector side
CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
Side radar LH Harness connecto 2. Check the continu	owing harness conne rs B33 and B245 ity between the side ra arness connector	adar LH harness conr	nector and the harnes	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B52	4	B33	13	Existed
032	3	200	14	Existed
CHECK HARNESS	main line between th CONTINUITY (OPEN nector of side radar f ity between the harne	I CIRCUIT) RH.		
Harness	connector	Side radar RH h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
B245	13	B252	4	Existed
	14		3	Existed
s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the	>Check CAN system	e main line between		

Ρ

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000006068660

[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 B201
- Harness connector M117
- Harness connector M20 and PCB harness 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.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

Side radar RH h	arness connector	Harness connector		rness connector Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity		
B252	4	B201	66	Existed		
BZJZ	3	B201	67	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M117	66	M20	38	Existed
	67	WIZ0	40	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

PCB harness connector	Harness of	connector	Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
38	M450	11	Existed
40	M150	10	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 RH and the accelerator pedal actuator.

<pre>< DTC/CIRCUIT DIAGNOSIS > [CAN] NO >> Replace the PCB harness.</pre>		RCUIT [CAN]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000006068658

[CAN]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M150	11	M110	13	Existed
101130	10		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 accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

ECM BRANCH LINE CIRCUIT

		LINE CIRCUIT		
< DTC/CIRCUIT DIAGNOS			[CAN]	
				А
Diagnosis Procedure			INFOID:00000006032416	
1. CHECK CONNECTOR				В
3. Check the following terr nector side).ECM	cable from the negative terr ninals and connectors for d	amage, bend and loose o	connection (unit side and con-	С
 Harness connector M30 <u>Is the inspection result norm</u>) and PCB harness side cor	nnector		D
YES >> GO TO 2.	inal and connector.			E
2. CHECK HARNESS FOR	OPEN CIRCUIT			
 Disconnect the connect Check the resistance be VQ37VHR 	or of ECM. etween the ECM harness co	onnector terminals.		F
	ECM harness connector		Desistance (O)	G
Connector No.	Termir	nal No.	Resistance (Ω)	
M107	114	113	Approx. 108 – 132	Н
- VK56VD				
	ECM harness connector		Resistance (Ω)	
Connector No.	Termir	nal No.		I
M160	146	151	Approx. 108 – 132	
Is the measurement value w YES >> GO TO 3. NO >> GO TO 4.				J
3.CHECK POWER SUPPL				Κ
Check the power supply and • VQ37VHR: <u>EC-180, "Diag</u> • VK56VD: <u>EC-716, "Diagne</u>	nosis Procedure" osis Procedure"	CM. Refer to the following	g.	L
Is the inspection result norm	<u>nal?</u> Iace the ECM. Refer to the	following		
 VQ37VHR: E VK56VD: EC- 	C-535. "Removal and Install 535. "Removal and Installa ras detected in the ECM bra	lation" tion"		LAI
	er supply and the ground ci	rcuit.		Ν
 Disconnect the harness Check the continuity be VQ37VHR 	s connector M30. Itween the ECM harness co	nnector and the harness	connector.	0

ECM harne	ss connector	Harness	connector	Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M107	114	M30	439	Existed	-
WITO7	113	IVI30	438	Existed	-

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ess connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M160	146	M30	439	Existed
IVI TOO	151	10130	438	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure					INFOID:00000000606916
1.CHECK CONNECTOR					
 Turn the ignition switch 0 Disconnect the battery c Check the following term nector side). Low tire pressure warnin Harness connector M29 	able from the ne inals and conne	ectors for damag		onnect	ion (unit side and con-
s the inspection result norma	al?				
YES >> GO TO 2. NO >> Repair the termin CHECK HARNESS FOR					
. Disconnect the connector. Check the resistance be	tween the low ti	re pressure war	ning control unit harn	ess co	onnector terminals.
Low tire pres	ssure warning contr	ol unit harness conr	ector	_	Resistance (Ω)
Connector No.		Terminal No.			
M43	2		1		Approx. 54 – 66
<u>s the measurement value wi</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SUPPLY	·				
Check the power supply and Diagnosis Procedure".	I the ground cire	cuit of the low ti	e pressure warning o	contro	I unit. Refer to <u>WT-53.</u>
s the inspection result norma YES (Present error)>>Repla Installation".		e pressure warn	ing control unit. Refe	er to <u>)</u>	WT-70, "Removal and
YES (Past error)>>Error wa NO >> Repair the powe	r supply and the	e ground circuit.	re warning control ur	nit bra	nch line.
CHECK HARNESS CON					
 Disconnect the harness Check the continuity bet ness connector. 			ning control unit harr	ness c	connector and the har-

	warning control unit connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	_	Ν
M43	2	M29	396	Existed	-
10143	1	11/12/9	395	Existed	
					- 0

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

AN

[CAN]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000006069162

[CAN]

1.CHECK DTO	С
-------------	---

Check DTC of the CAN gateway with CONSULT-III.

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 M28 and PCB harness side connector

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	ſ	Resistance (Ω)	
Connector No.	Terminal No.			
M125	1	7	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 CAN gateway. Refer to <u>LAN-143, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

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
MADE	1	MOO	326	Existed
M125	7	M28	328	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

CGW BRANCH	LINE CIRCUIT		JNICATION CI	RCUITZ)
Diagnosis Proced	lure			INFOID:000000006069163
1.снеск отс				
Check DTC of the CA	N gateway with CONS	ULT-III.		
Is U1010 or B2600 ind				
YES >> Perform a NO >> GO TO 2.	diagnosis of the indic	ated DTC.		
2.CHECK CONNECT	OR			
 Check the followin nector side). CAN gateway Harness connector 	ttery cable from the ne og terminals and conne or M23 and PCB harne or M20 and PCB harne or M7	ectors for damage, be ess side connector	and and loose connec	tion (unit side and con-
Is the inspection result				
YES >> GO TO 3.				
•	e terminal and connect			
3. CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
	nnector of CAN gatew ity between the CAN CAN gateway harne	gateway harness con	nector terminals.	
Connector No.	CAN galeway ham	Terminal No.		Continuity
	4		6	Existed
M125	10		12	Existed
Is the inspection result				
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER S		D CIRCUIT		
			eway, Refer to LAN-1	143, "Diagnosis Proce-
dure". <u>Is the inspection result</u> YES (Present error)> YES (Past error)>>E	<u>t normal?</u> >Replace the CAN ga rror was detected in the power supply and the	nteway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit.	144, "Removal and In	istallation".
	rness connector M23. ity between the CAN		nector and the harnes	ss connector.
CAN gateway h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	4	M23	133	Existed
	10		135	Existed

Is the inspection result normal?

YES >> GO TO 6.

[CAN]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

PCB harness connector	PCB harness connector	Continuity
Terminal No.	Terminal No.	Continuity
133	24	Existed
135	27	Existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

7.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M20	24	M7	34	Existed	
IM20	27	IVI <i>1</i>	35	Existed	

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

8.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	34	32	Existed
וט	35	33	Existed

Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

[CAN]

HVAC BRANCH LINE CIRCUIT

DTC/CIRCUIT DIA		_		[CAN]
IVAC BRANCH	I LINE CIRCUIT	Г		
iagnosis Proced	ure			INFOID:00000006069164
.CHECK CONNECT	OR			
 Check the followin nector side). A/C auto amp. Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the co 	ttery cable from the ne og terminals and conne r M28 and PCB harne	ectors for damage, be ss side connector or. - np.		nection (unit side and con-
	A/C auto amp. harne	-		
Connector No.		Terminal No.		Resistance (Ω)
M66	12		11	Approx. 54 – 66
 YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S 	alue within the specific UPPLY AND GROUN	D CIRCUIT		
agnosis Procedure". the inspection result 'ES (Present error)>>E 'ES (Past error)>>E IO >> Repair the		o amp. Refer to <u>HAC-</u> e A/C auto amp. bran e ground circuit.	201, "Removal ar	<u>C-167. "A/C AUTO AMP. :</u>
Disconnect the ha	rness connector M28. ity between the A/C a	,	nector and the ha	arness connector.
A/C auto amp. h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M28	325	Existed
	11		327	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

11

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

327

Ρ

Ν

Existed

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:00000006032419

- 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 F103
- Harness connector M116
- Harness connector M28 and PCB harness 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	r	Resistance (Ω)
Connector No.	Termi		
F61	3	8	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 TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8</u>, <u>"A/T CONTROL SYSTEM : Component Parts Location"</u>. (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

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

A/T assembly h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F61	3	M28	346	Existed
FUI	8	IVIZO	347	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > [C	AN]
A-BAG BRANCH LINE CIRCUIT	Δ.
Diagnosis Procedure	A
 WARNING: Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 min or more. (To discharge backup capacitor.) Never use unspecified tester or other measuring device. 	nutes C
1.CHECK CONNECTOR	
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and nector side). 	D con-
 Air bag diagnosis sensor unit Harness connector M26 and PCB harness side connector <u>Is the inspection result normal?</u> 	E
YES >> GO TO 2. NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT	F
Check the air bag diagnosis sensor unit. Refer to <u>SRC-32, "Work Flow"</u> .	G
<u>Is the inspection result normal?</u> YES >> Replace the main harness and/or the PCB harness. NO >> Replace parts whose air bag system has a malfunction.	Н

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M210	90	74	Approx. 54 – 66

Models without navigation system

AV control unit harness connector			Posistanaa (O)
Connector No.	Terminal No.		Resistance (Ω)
M84	81	80	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 AV control unit. Refer to the following.

- Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-272, "AV CONTROL UNIT : Diagnosis Procedure"

Is the inspection result normal?

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

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.
- NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M25	201	Existed
101210	74	IVIZO	221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

	arness connector	Harness		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
-	80		221	Existed
e inspection result				
S >> Replace the	e PCB harness.	harmana hatuyaan tha		a connector MO10 a
(with navigation s	s connector M25.	harness between the A	AV control unit names	s connector M210 a
(Without navigatio	n system)>>Repair f	the harness between	the AV control unit ha	arness connector M
and the hai	rness connector M25	5.		

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006032423

[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).
- Combination meter
- Harness connector M24 and PCB harness 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness conne	Resistance (Ω)	
Connector No. Term	Terminal No.	
M53 14	15	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 combination meter Refer to <u>MWI-70. "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M24	176	Existed
IND5	15	10124	177	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS	>		[CAN]
DLC BRANCH LINE (SIRCUIT		
Diagnosis Procedure			INF01D:00000006032422
1.CHECK CONNECTOR			
 Turn the ignition switch OF Disconnect the battery cab Check the following termin nector side). Data link connector Harness connector M181 Harness connector M105 Harness connector M23 ar Is the inspection result normal? YES >> GO TO 2. NO >> Repair the termina CHECK HARNESS FOR OF 	le from the negative ter als and connectors for o nd PCB harness side co	damage, bend and loose	connection (unit side and con-
Check the resistance between		terminals.	
Connector No.	Data link connector	nal No.	Resistance (Ω)
M182	6	14	Approx. 54 – 66
Is the measurement value with YES (Present error)>>Check	•	ion again.	
YES (Past error)>>Error was NO >> GO TO 3.			rcuit.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M23.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness connector		Continuity	ĸ
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	1.
M182	6	M23	151	Existed	-
101102	14	IVIZ3	150	Existed	L

Is the inspection result normal?

YES >> Replace the PCB harness.

>> Repair the harness between the data link connector M182 and the harness connector M23. NO

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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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness 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 BCM.
- 2. Check the resistance between the BCM harness connector terminals.

Connector No. Terminal No. Terminal No. M120 39 40 Approx. 54 – 66		Resistance (Ω)		
M120 39 40 Approx. 54 – 66	Connector No.	Termi		
	M120	39	40	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 BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-79, "Removal and Installation"</u>.

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

BCM harne	ess connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
INT20	40		102	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

INFOID:000000006032421

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAG				[CAN]
SING BRANCE	I LINE CIRCUI	1		
Diagnosis Proced	ure			INFOID:00000000603242-
1. CHECK CONNECT	OR			
 Check the followin nector side). Steering angle ser Harness connecto <u>Is the inspection result</u> YES >> GO TO 2. 	ttery cable from the ne g terminals and conne nsor r M22 and PCB harne <u>normal?</u> terminal and connect	ectors for damage, be ess side connector tor.	end and loose conne	ection (unit side and con-
1. Disconnect the cor	nnector of steering an	ngle sensor.		
2. Check the resistan	ice between the steer	ring angle sensor harr	ness connector term	inals.
	Steering angle sensor harness connector			Resistance (Ω)
Connector No.		Terminal No.		Resistance (22)
M37	1		2	Approx. 54 – 66
Is the measurement va YES >> GO TO 3.	<u>lue within the specific</u>	<u>cation?</u>		
NO >> GO TO 4.				
NO \rightarrow GO TO 4. 3.CHECK POWER SI			ngle sensor Refer	to BBC-54 "Wiring Dia
NO >> GO TO 4. 3.CHECK POWER SI			ngle sensor. Refer	to <u>BRC-54, "Wiring Dia</u> -
NO >> GO TO 4. 3.CHECK POWER SI Check the power supp gram". Is the inspection result YES (Present error)> YES (Past error)>>Er	bly and the ground cir normal? >Replace the steering	rcuit of the steering a g angle sensor. Refer ne steering angle sens	to <u>BRC-144, "Remo</u>	-
NO >> GO TO 4. 3.CHECK POWER SI Check the power supp gram". Is the inspection result YES (Present error)> YES (Past error)>>Er	oly and the ground cir <u>normal?</u> >Replace the steering fror was detected in the power supply and the	rcuit of the steering a g angle sensor. Refer ne steering angle sens e ground circuit.	to <u>BRC-144, "Remo</u>	-
NO >> GO TO 4. 3.CHECK POWER SI Check the power supp gram". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the had	oly and the ground cir normal? >Replace the steering fror was detected in the power supply and the CONTINUITY (OPEN rness connector M22.	rcuit of the steering a g angle sensor. Refer ne steering angle sens e ground circuit. N CIRCUIT)	to <u>BRC-144, "Remo</u> sor branch line.	-
NO >> GO TO 4. 3.CHECK POWER SI Check the power supp gram". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the har 2. Check the continuit	oly and the ground cir normal? >Replace the steering fror was detected in the power supply and the CONTINUITY (OPEN rness connector M22.	rcuit of the steering a g angle sensor. Refer ne steering angle sens e ground circuit. N CIRCUIT) ing angle sensor harm	to <u>BRC-144, "Remo</u> sor branch line.	he harness connector.
NO >> GO TO 4. 3.CHECK POWER SI Check the power supp gram". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the har 2. Check the continuit	oly and the ground cir normal? >Replace the steering ror was detected in the power supply and the CONTINUITY (OPEN rness connector M22. ity between the steeri	rcuit of the steering a g angle sensor. Refer ne steering angle sens e ground circuit. N CIRCUIT) ing angle sensor harm	to <u>BRC-144, "Remo</u> sor branch line.	oval and Installation".
NO >> GO TO 4. 3.CHECK POWER SI Check the power supp gram". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the hal 2. Check the continuit Steering angle sense	oly and the ground cir normal? Replace the steering fror was detected in the power supply and the CONTINUITY (OPEN rness connector M22. ity between the steeri	rcuit of the steering a g angle sensor. Refer he steering angle sens e ground circuit. N CIRCUIT) ing angle sensor harne Harness	to <u>BRC-144, "Remo</u> sor branch line. ess connector and t	he harness connector.

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness Ο connector M22.

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4WD 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 AWD 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 AWD control unit.

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

AWD control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B17	8	16	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.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 <u>DLN-59, "Removal and Installation"</u>.

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

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

INFOID:000000006069167

RAS BRANCH LINE CIRCUIT

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< DTC/CIRCUIT DIAGNOSIS >	>		[CAN]
RAS BRANCH LINE C	IRCUIT		
Diagnosis Procedure			INFOID:000000006069177
1.CHECK CONNECTOR			
· · · · · · · · · · · · · · · · · · ·			
 Turn the ignition switch OFF Disconnect the battery cable Check the terminals and co tion (unit side and connecto 	e from the negative terr nnectors of the 4WAS		e, bend and loose connec-
Is the inspection result normal?	,		
YES >> GO TO 2.			
NO >> Repair the terminal			
2.CHECK HARNESS FOR OP	EN CIRCUIT		
 Disconnect the connector of Check the resistance between 		nit. htrol unit harness connector t	erminals.
4WAS ma	ain control unit harness conn	ector	Resistance (Ω)
Connector No.	Termir	nal No.	
B54	1	8	Approx. 54 – 66
Is the measurement value within YES >> GO TO 3. NO >> Replace the body ha 3. CHECK POWER SUPPLY AN Check the power supply and the Procedure (4WAS Main Control Is the inspection result normal? YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su	arness. ND GROUND CIRCUIT e ground circuit of the <u>Unit)"</u> . the 4WAS main contro etected in the 4WAS m	4WAS main control unit. Ref ol unit. Refer to <u>STC-185, "Re</u> nain control unit branch line.	

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
E41	25 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "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.

AFS BRANCH LINE CIRCUIT

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< DTC/CIRCUIT DIAGNOSI			[CAN]
AFS BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000006032417
1.CHECK CONNECTOR			
	ble from the negative term connectors of the AFS con		and loose connection (unit
Is the inspection result normalYES>> GO TO 2.NO>> Repair the termin2.CHECK HARNESS FOR O	al and connector.		
1. Disconnect the connector		narness connector termina	als.
AF	S control unit harness connector		
Connector No.	Termina	l No.	Resistance (Ω)
E104	30	7	Approx. 54 – 66
3.CHECK POWER SUPPLY	ontrol unit branch line. AND GROUND CIRCUIT		
Check the power supply and UNIT : Diagnosis Procedure". Is the inspection result normal YES (Present error)>>Replat YES (Past error)>>Error was NO >> Repair the power	I? ce the AFS control unit. Re	efer to <u>EXL-126, "Remova</u> ol unit branch line.	

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

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

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

INFOID:000000006032430

ADP BRANCH LINE CIRCUIT

[CAN] < DTC/CIRCUIT DIAGNOSIS > ADP BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:00000006032425 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). Driver seat control unit Harness connector B501 D Harness connector B11 CAN gateway (With ICC system) Is the inspection result normal? E YES (With ICC system)>>GO TO 2. YES (Without ICC system)>>GO TO 3. NO >> Repair the terminal and connector. F 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. Н 4 6 Existed M125 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). **3.**CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway. (With ICC system) 1. Κ 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) Terminal No. Connector No. B514 23 24 Approx. 54 - 66 LAN Is the measurement value within the specification? YES >> GO TO 4. NO >> Repair the driver seat control unit branch line. Ν ${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-146, "Removal and Installation"</u>.

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

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

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ICC 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).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M125	4	6	Existed	
101125	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

ADAS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B50	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 ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

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

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

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

	E CIRCUIT		
Diagnosis Procedure			INFOID:00000006069168
1.CHECK CONNECTOR			
 Check the following ternector side). Pre-crash seat belt corcent can gateway <u>s the inspection result norr</u> YES >> GO TO 2. NO >> Repair the tern CHECK HARNESS COI Disconnect the connect 	cable from the negative tern minals and connectors for c ntrol unit (driver side) <u>nal?</u> ninal and connector. NTINUITY (OPEN CIRCUIT	lamage, bend and loose co	onnection (unit side and con-
	CAN gateway harness connecto		
Connector No.		nal No.	Continuity
M125	4	6	Existed
WIZJ	10	12	Existed
	ness and repair or replace (if shield line is open) the ro	oot cause (CAN communica-
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	R OPEN CIRCUIT of CAN gateway. tor of pre-crash seat belt co	ntrol unit (driver side).	oot cause (CAN communica-
tion circuit 2). 3.CHECK HARNESS FOF 1. Connect the connector 2. Disconnect the connect 3. Check the resistance to nals.	R OPEN CIRCUIT of CAN gateway. tor of pre-crash seat belt co	ntrol unit (driver side). belt control unit (driver sid	e) harness connector termi-
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance to als. Pre-crash sea Connector No.	R OPEN CIRCUIT of CAN gateway. tor of pre-crash seat belt co between the pre-crash seat at belt control unit (driver side) har	ntrol unit (driver side). belt control unit (driver sid	e) harness connector termi- Resistance (Ω)
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connector 3. Check the resistance to nals. Pre-crash sea Connector No. B9	R OPEN CIRCUIT of CAN gateway. tor of pre-crash seat belt co between the pre-crash seat at belt control unit (driver side) har Termin 14	ntrol unit (driver side). belt control unit (driver sid	e) harness connector termi-
tion circuit 2). 3.CHECK HARNESS FOF 1. Connect the connector 2. Disconnect the connector 3. Check the resistance to als. Pre-crash sea Connector No. B9 s the measurement value of YES >> GO TO 4. NO >> Repair the pre- 4.CHECK POWER SUPP	A OPEN CIRCUIT of CAN gateway. tor of pre-crash seat belt co between the pre-crash seat at belt control unit (driver side) har Termin 14 within the specification? crash seat belt control unit LY AND GROUND CIRCUIT and the ground circuit of the bure".	ntrol unit (driver side). belt control unit (driver sid ness connector nal No. 4 (driver side) branch line.	e) harness connector termi- Resistance (Ω)

RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar LH 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 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.		
B52	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

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

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

RDR-R BRANCH LINE CIRCUIT

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< DTC/CIRCUIT DIAGNOSIS >			[CAN]
RDR-R BRANCH LINE	CIRCUIT		
Diagnosis Procedure			INFOID:00000006069169
1.CHECK CONNECTOR			
 Turn the ignition switch OFF Disconnect the battery cable Check the terminals and conside and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and construction of the terminal and construction. 	e from the negative tern nnectors of the side ra and connector.	idar RH for damage, bend	and loose connection (unit
Check the right/left switching sig			"Diagnosis Procedure".
Is the inspection result normal?YES>> GO TO 3.NO>> Repair the root cause			
3.CHECK HARNESS FOR OP	EN CIRCUIT		
 Disconnect the connector of Check the resistance betwe 		arness connector terminals	
Side	radar RH harness connector		Resistance (Ω)
Connector No.	Termin		
B252	4	3	Approx. 54 – 66
Is the measurement value withinYES>> GO TO 4.NO>> Repair the side rada4.CHECK POWER SUPPLY AI	r RH branch line.		
Check the power supply and the Diagnosis Procedure". Is the inspection result normal?			
YES (Present error)>>Replace YES (Past error)>>Error was d NO >> Repair the power su	etected in the side rada	ar RH branch line.	nd Installation".

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APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006069171

[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
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness 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 accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accel	Accelerator pedal actuator harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M152	5	4	Approx. 54 – 66

Is the measurement value within the specification?

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 accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

Accelerator pedal actuator harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M152	5	M23	138	Existed
101132	4	10123	137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

LANE BRANCH LINE CIRCUIT

Diagnosis Procedu	lie				INFOID:00000000606917
	OR				
 Check the following nector side). Lane camera unit Harness connector Harness connector Harness connector sthe inspection result YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS Disconnect the con 	tery cable from the ne g terminals and conne R7 M110 M24 and PCB harne normal? terminal and connect	ectors for da ess side cor tor. r a unit.	amage, bend		nection (unit side and con
. Check the resistant	Lane camera unit har			nnector termina	
Connector No.		Termin	al No.		Resistance (Ω)
R8	4			8	Approx. 54 – 66
		ation?			
YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SL Check the power suppl JNIT : Diagnosis Processing Sthe inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the CHECK HARNESS	JPPLY AND GROUN y and the ground cir <u>edure"</u> . <u>normal?</u> Replace the lane can or was detected in the power supply and the	D CIRCUIT cuit of the la mera unit. F le lane cam e ground cir N CIRCUIT)	ane camera Refer to <u>DAS</u> era unit bran cuit.	-419, "Removal	AS-403, "LANE CAMERA and Installation".
YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SL Check the power suppl JNIT : Diagnosis Proce s the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4.CHECK HARNESS Disconnect the har Check the continuit	JPPLY AND GROUN y and the ground circ edure". normal? Replace the lane can or was detected in th power supply and the CONTINUITY (OPEN ness connector M24. by between the lane c	D CIRCUIT cuit of the la mera unit. F le lane cam e ground cir N CIRCUIT)	ane camera Refer to <u>DAS</u> era unit bran cuit.	-419, "Removal ch line. nector and the	and Installation".
NO >> GO TO 4. 3.CHECK POWER SL Check the power supply INIT : Diagnosis Process s the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4.CHECK HARNESS Disconnect the har	JPPLY AND GROUN y and the ground circ edure". normal? Replace the lane can or was detected in th power supply and the CONTINUITY (OPEN ness connector M24. by between the lane c	D CIRCUIT cuit of the la mera unit. F le lane cam e ground cir N CIRCUIT)	Ane camera Refer to <u>DAS</u> era unit bran cuit. harness con	-419, "Removal ch line. nector and the	and Installation".
YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SL Check the power suppl JNIT : Diagnosis Process the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4.CHECK HARNESS 1. Disconnect the har 2. Check the continuit	JPPLY AND GROUN y and the ground circ edure". Replace the lane can for was detected in the power supply and the CONTINUITY (OPEN ness connector M24. ty between the lane con	D CIRCUIT cuit of the la mera unit. F le lane cam e ground cir N CIRCUIT) camera unit	ane camera Refer to <u>DAS</u> era unit bran cuit. harness con Harness cor tor No.	- <u>419, "Removal</u> ch line. nector and the	and Installation".

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

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[CAN]

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 E106
- Harness connector M6
- Harness connector M28 and PCB harness 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 ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

	ICC sensor harness connector			
Connector No.	Termi	Resistance (Ω)		
E67	3	6	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 ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

ICC sensor ha	rness connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
E67	3	M28	343	Existed
207	6	ινίζο	345	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

< DTC/CIRCUIT DIAGNOS	SIS >		[CAN]			
CAN COMMUNICA	TION CIRCUIT					
Diagnosis Procedure	iagnosis Procedure					
1.CONNECTOR INSPECT	ION					
3. Disconnect all the unit of	cable from the negative terr connectors on CAN commu onnectors for damage, bend	nication system.				
YES >> GO TO 2.						
^	inal and connector.					
2.CHECK HARNESS CON						
Check the continuity betwee	en the data link connector te	erminals.				
	Data link connector		Continuity			
Connector No.	Termir	nal No.	Continuity			
M182 Is the inspection result norm	6	14	Not existed			
Check the continuity betwee	TINUITY (SHORT CIRCUI en the data link connector a		Occtionity			
Connector No.	Terminal No.	Ground	Continuity			
M182	6	Cround	Not existed Not existed			
4. CHECK ECM AND IPDM 1. Remove the ECM and t	ess and repair or replace (if I E/R TERMINATION CIRC		s is short) the root cause.			
	ECM					
	Terminal No.		Resistance (Ω)			
114	113	A	pprox. 108 – 132			
- VK56VD						
	ECM					
	Terminal No.		Resistance (Ω)			
146	151	A	pprox. 108 – 132			
3. Check the resistance be	etween the IPDM E/R termi	nals.				
	IPDM E/R		Posistanco (O)			
	Terminal No.		Resistance (Ω)			

40

39

Approx. 108 – 132

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

NOTE:

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

Inspection result

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

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

< DTC/CIRCUIT DIAGNO			[CAN
	ATION CIRCUIT 1		
Diagnosis Procedure	•		INFOID:0000000060691
1.CONNECTOR INSPEC	TION		
1. Turn the ignition switch			
	cable from the negative ter connectors on CAN communication		
NOTE:			
For identification of CA circuit, refer to LAN-69		CAN communication circu	uit 2, and ITS communication
	connectors for damage, bend	d and loose connection.	
s the inspection result nor	mal?		
YES >> GO TO 2. NO >> Repair the terr	ninal and connector.		
`	NTINUITY (SHORT CIRCU	IT)	
	en the data link connector t		
		<u> </u>	
	Data link connector		Continuity
Connector No.		inal No.	-
M182	6	14	Not existed
YES >> GO TO 3. NO >> Check the ham 3. CHECK HARNESS CO	ness and repair or replace (NTINUITY (SHORT CIRCU	IT)	ss is short) the root cause.
NO >> Check the harr 3.CHECK HARNESS CO Check the continuity between	ness and repair or replace (IT)	
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity betwee	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a	IT) and the ground.	ss is short) the root cause.
YES >> GO TO 3. NO >> Check the harr 3.CHECK HARNESS CO Check the continuity betwee Data lin Connector No.	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a	IT)	
YES >> GO TO 3. NO >> Check the harr 3.CHECK HARNESS CO Check the continuity betwee Data lin Connector No. M182	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector Terminal No. 6 14	IT) and the ground.	Continuity
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity betwee Data lin Connector No. M182 s the inspection result norm YES >> GO TO 4. NO >> Check the ham CHECK ECM AND IPDI 1. Remove the ECM and	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector 6 14 mal? ness and repair or replace (M E/R TERMINATION CIRC	IT) and the ground. Ground if shield line or PCB harnes	Continuity Not existed Not existed
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity betwee Data lin Connector No. M182 s the inspection result norm YES >> GO TO 4. NO >> Check the ham CHECK ECM AND IPDI 1. Remove the ECM and 2. Check the resistance between the section of	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector 6 14 mal? ness and repair or replace (M E/R TERMINATION CIRC the IPDM E/R.	IT) and the ground. Ground if shield line or PCB harnes	Continuity Not existed Not existed Ses is short) the root cause.
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity betwee Data lin Connector No. M182 s the inspection result norm YES >> GO TO 4. NO >> Check the ham CHECK ECM AND IPDI 1. Remove the ECM and 2. Check the resistance between the section of	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector 6 14 mal? ness and repair or replace (M E/R TERMINATION CIRC the IPDM E/R. petween the ECM terminals.	IT) and the ground. Ground if shield line or PCB harnes	Continuity Not existed Not existed
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity betwee Data lin Connector No. M182 s the inspection result norm YES >> GO TO 4. NO >> Check the ham CHECK ECM AND IPDI 1. Remove the ECM and 2. Check the resistance between the section of	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector 6 14 mal? ness and repair or replace (M E/R TERMINATION CIRC the IPDM E/R. between the ECM terminals.	IT) and the ground. Ground if shield line or PCB harnes CUIT	Continuity Not existed Not existed Ses is short) the root cause.
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity between Data lin Connector No. M182 s the inspection result norm YES >> GO TO 4. NO >> Check the ham CHECK ECM AND IPDI 1. Remove the ECM and Check the resistance to VQ37VHR	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector	IT) and the ground. Ground if shield line or PCB harnes CUIT	Continuity Not existed Not existed State State
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity between Data lin Connector No. M182 s the inspection result norm YES >> GO TO 4. NO >> Check the ham CHECK ECM AND IPDI 1. Remove the ECM and 2. Check the resistance to VQ37VHR	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector	IT) and the ground. Ground if shield line or PCB harnes CUIT	Continuity Not existed Not existed Ses is short) the root cause. Resistance (Ω)
YES >> GO TO 3. NO >> Check the ham CHECK HARNESS CO Check the continuity between Data lin Connector No. M182 s the inspection result norm YES >> GO TO 4. NO >> Check the ham CHECK ECM AND IPDI 1. Remove the ECM and 2. Check the resistance to VQ37VHR	ness and repair or replace (NTINUITY (SHORT CIRCU een the data link connector a k connector Terminal No. 6 14 mal? ness and repair or replace (M E/R TERMINATION CIRC the IPDM E/R. between the ECM terminals. ECM Terminal No. 113	IT) and the ground. Ground if shield line or PCB harnes CUIT	Continuity Not existed Not existed State State

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

IPDM E/R		Pasistanas (O)	
Termi	nal No.	Resistance (Ω)	
40	39	Approx. 108 – 132	
Is the measurement value within	the specification?		
YES >> GO TO 5. NO >> Replace the ECM ar	nd/or the IPDM E/R.		
5.CHECK SYMPTOM			
Connect all the connectors. Che customer)" are reproduced. Inspection result	ck if the symptoms described in	the "Symptom (Results from interview with	

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

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

NOTE:

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

Inspection result

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

		JATION		
< DTC/CIRCUIT DIAGNOS CAN COMMUNICA				[CAN]
Diagnosis Procedure				INFOID:00000006069175
1.CONNECTOR INSPECT	ION			
 Turn the ignition switch Disconnect the battery of 	OFF. cable from the negative te	arminal		
3. Disconnect all the unit of	connectors on CAN comm		cuit 2.	
NOTE: For identification of CAI	N communication circuit 1	I, CAN comr	nunication circu	uit 2, and ITS communication
circuit, refer to <u>LAN-69.</u>4. Check terminals and co	<u>"System Diagram"</u> .	nd and loose	connection	
Is the inspection result norm	•		connection.	
YES >> GO TO 2.				
NO >> Repair the term 2.CHECK HARNESS CON		<u>ит</u>)		
Check the continuity betwee				
		terminais.		
	Data link connector			_ Continuity
Connector No.		ninal No.	10	Not evisted
M182 Is the inspection result norm	13		12	Not existed
Data link	connector			Continuity
Connector No.	Terminal No.		Ground	Continuity
M182	13			Not existed
	12			Not existed
4.CHECK CAN GATEWAY	ess and repair or replace TERMINATION CIRCUIT	Г	e or PCB harnes	es is short) the root cause.
(CAN gateway			
	Terminal No.			Resistance (Ω)
4	10			pprox. 108 – 132
6	12		A	pprox. 108 – 132
Is the measurement value w YES >> GO TO 5. NO >> Replace the CA 5 OUTOK OVARTOW	·			
5.CHECK SYMPTOM		da a sult de la	41	
customer)" are reproduced.	Check if the symptoms	aescribed in	tne "Symptom	(Results from interview with
Inspection result				

Revision: 2010 June

Reproduced>>GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

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 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

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

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

	113 001		JINCOTT	
< DTC/CIRCUIT DIAC	GNOSIS >			[CAN]
TS COMMUNI	CATION CIRCL	ЛΤ		
Diagnosis Proced	ure			INFOID:000000006069176
1. CHECK CAN DIAG	NOSIS			
Check the CAN diagn communication circuit			the CAN communica	tion circuit 1 and CAN
For identification of CA suit, refer to LAN-69, "		cuit 1, CAN commun	ication circuit 2, and I	TS communication cir-
Are the CAN communi		nmunication 2 circuits	s normal?	
YES >> GO TO 2. NO >> Check and	d repair CAN commun	ication circuit 1 and/o	r CAN communicatior	n circuit 2.
2.CONNECTOR INSI	•			
 Check the termina (unit side and cont sthe inspection result YES >> GO TO 3. NO >> Repair the 	ttery cable from the ne als and connectors of nector side). normal?	the ADAS control u	nit for damage, bend	and loose connection
3. CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
ADAS control unit ICC sensor			connector and the IC	C sensor harness con-
ADAS control unit	harness connector	ICC sensor ha	rness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
B50	7	E67	3 6	Existed
s the inspection result	J		0	Existed
YES >> GO TO 4. NO >> Replace th	ne body harness. CONTINUITY (SHOF	RT CIRCUIT)		
	lowing harness conne			

- Side radar RH
 Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

Al	ADAS control unit harness connector			
Connector No.	Termi	- Continuity		
B50	7	8	Not existed	Р

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

LAN-127

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.	Ground	Continuity
B50	7	Gibana	Not existed
850	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness 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)
Term	inal No.	
7	8	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC s	ensor	Posistanco (0)	
Terminal No.		Resistance (Ω)	
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 system. **NOTE:**

ADAS control unit and ICC sensor have a termination circuit. Check other units first.

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

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

Inspection result

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

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< PRECAUTION > PRECAUTION PRECAUTIONS

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

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

WARNING:

- 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 the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

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

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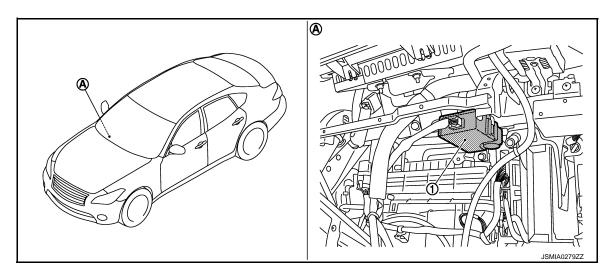
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< SYSTEM DESCRIPTION > SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000005987020

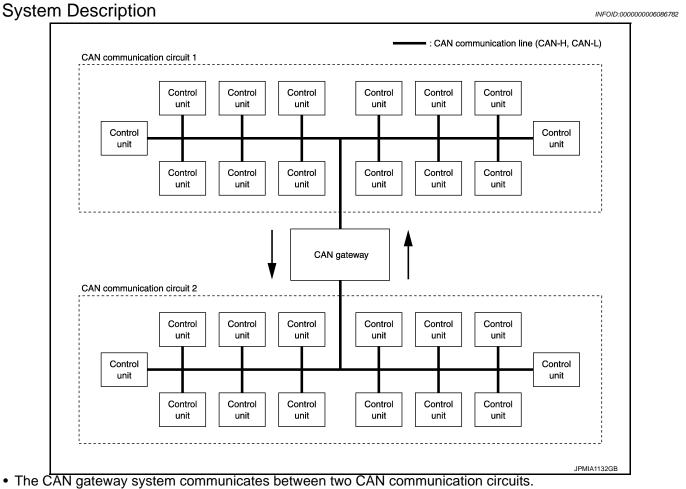


- 1. CAN gateway
- A. Over the glove box

SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM



• This system selects and transmits only necessary information.

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[CAN GATEWAY]

DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (CAN GATEWAY)

CONSULT-III Function

INFOID:000000006086783

[CAN GATEWAY]

APPLICATION ITEM

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

Diagnosis mode	Function Description
Ecu Identification	The CAN gateway part number is displayed.
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.
Configuration	Read and save the vehicle specification.Write the vehicle specification when replacing CAN gateway.

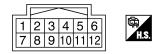
SELF DIAGNOSTIC RESULT

Refer to LAN-133, "DTC Index".

ECU DIAGNOSIS INFORMATION CAN GATEWAY

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	inal No.	Description			Value
(Wire +	e color) –	Signal name	Input/ Output	Condition	(Approx.)
1 (L)	_	CAN-H (CAN commu- nication circuit 1)	Input/ Output	-	_
3 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
4 (L)	_	CAN-H (CAN commu- nication circuit 2)	Input/ Output	_	_
5 (B)	Ground	Ground	_	Ignition switch ON	0 V
6 (L)	_	CAN-H (CAN commu- nication circuit 2)	Input/ Output	_	
7 (P)		CAN-L (CAN commu- nication circuit 1)	Input/ Output	_	_
9 (W)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
10 (P)	_	CAN-L (CAN commu- nication circuit 2)	Input/ Output	_	
11 (B)	Ground	Ground	_	Ignition switch ON	0 V
12 (P)	_	CAN-L (CAN commu- nication circuit 2)	Input/ Output	_	_

DTC Inspection Priority Chart

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

Priority	DTC	Р
1	B2600: CONFIG ERROR U1010: CONTROL UNIT(CAN)	
2	U1000: CAN COMM CIRCUIT	

DTC Index

NOTE:

INFOID:000000006086786

INFOID:000000006086785

JSGIA0023ZZ

INFOID:000000006086784

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CAN GATEWAY

< ECU DIAGNOSIS INFORMATION >

- The details of time display are as follows.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame Data).
- The number is 0 when is detected now
- The number increases like 1 \rightarrow 2 \cdots 38 \rightarrow 39 after returning to the normal condition whenever IGN OFF \rightarrow ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

DTC		Reference
No DTC is detected. Further testing may be require	red.	_
U1000: CAN COMM CIRCUI	Т	<u>LAN-140</u>
U1010: CONTROL UNIT(CA	N)	<u>LAN-141</u>
B2600: CONFIG ERROR	WRONG DATA NOT CONFIGURED	<u>LAN-142</u>

WIRING DIAGRAM CAN GATEWAY SYSTEM

Wiring Diagram

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INFOID:000000006086787

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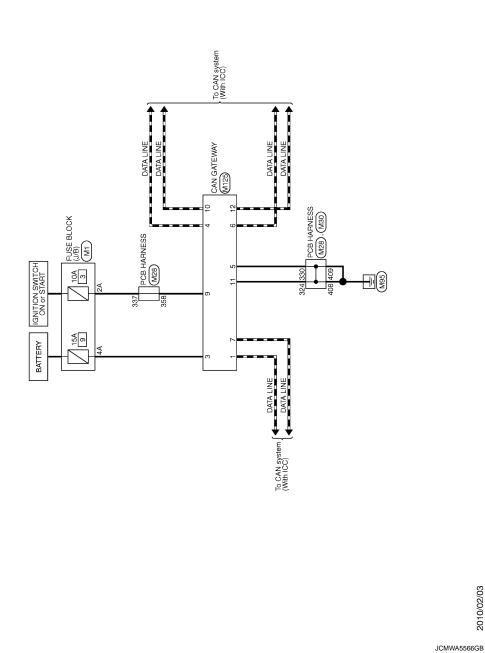
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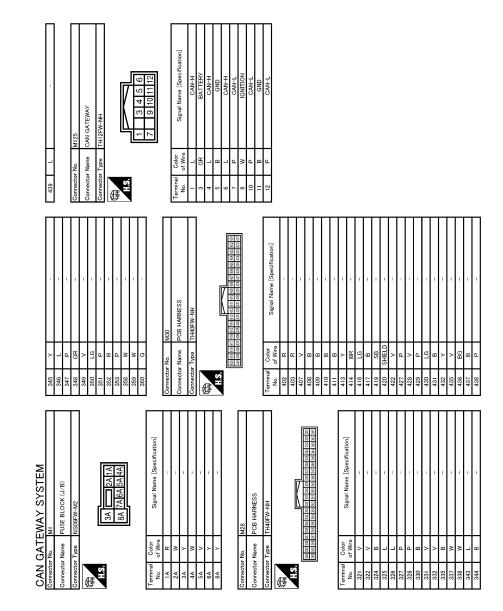
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CAN GATEWAY SYSTEM



JCMWA5567GB

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY < BASIC INSPECTION > [CAN GATEWAY] BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

Description	В
BEFORE REPLACEMENT When replacing CAN gateway, save or print current vehicle specification with CONSULT-III configuration before replacement. NOTE:	С
If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.	D
AFTER REPLACEMENT CAUTION:	Е
 When replacing CAN gateway, you must perform "WRITE CONFIGURATION" with CONSULT-III. Complete the procedure of "WRITE CONFIGURATION" in order. If you set incorrect "WRITE CONFIGURATION", incidents might occur. Configuration is different for each vehicle model. Confirm configuration of each vehicle model. Never perform "WRITE CONFIGURATION" except for new CAN gateway. 	F
Work Procedure	
1.SAVING VEHICLE SPECIFICATION	G
OCNSULT-III Configuration Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>LAN-138</u> , " <u>Descrip-</u> tion".	Η
NOTE: If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.	I
>> GO TO 2.	J
2. REPLACE CAN GATEWAY	
Replace CAN gateway. Refer to LAN-144, "Removal and Installation".	Κ
>> GO TO 3.	
3.WRITING VEHICLE SPECIFICATION	L
CONSULT-III Configuration Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write vehicle specification. Refer to <u>LAN-138</u> , "Work Procedure".	LA
>> WORK END	Ν

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CONFIGURATION (CAN GATEWAY)

< BASIC INSPECTION >

CONFIGURATION (CAN GATEWAY)

Description

INFOID:000000006086790

INFOID:000000006086791

[CAN GATEWAY]

Vehicle specification needs to be written with CONSULT-III because it is not written after replacing CAN gateway.

Configuration has three functions as follows

Function	Description
READ CONFIGURATION	Reads the vehicle configuration of current CAN gateway.Saves the read vehicle configuration.
WRITE CONFIGURATION - Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION - Config file	Writes the vehicle configuration with saved data.

CAUTION:

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

Work Procedure

1.WRITING MODE SELECTION

CONSULT-III Configuration
 Select "CONFIGURATION" of CAN gateway.

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

2. PERFORM "WRITE CONFIGURATION - CONFIG FILE"

CONSULT-III Configuration
 Perform "WRITE CONFIGURATION - Config file".

>> WORK END

 ${f 3.}$ PERFORM "WRITE CONFIGURATION - MANUAL SELECTION"

CONSULT-III Configuration

- 1. Select "WRITE CONFIGURATION Manual selection".
- 2. Select "SETTING".
- 3. When "COMMAND FINISHED", select "End".

>> GO TO 4.

4.CHECK "SELF DIAGNOSTIC RESULT"

- 1. Erase all ECU self-diagnosis results using CONSULT-III.
- 2. Turn the ignition switch OFF.
- 3. Turn the ignition switch ON and wait for 2 seconds or more.
- 4. Perform "All DTC Reading" using CONSULT-III.
- 5. Check that all ECU self-diagnosis results have no DTC of CAN communication. **NOTE:**

DTCs of CAN communication are as follows:

- U0101
- U0140
- U0164
- U1000
- U1001
- U1507

LAN-138

	CONFIGURATION (CAN GATEWAY)		
< BASIC INSPECTION >		[CAN GATEWAY]	
• U1508			^
>> WORK END			А
			В
			С
			D
			E
			F
			G
			Н
			I
			J

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DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000005987022

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and 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-35, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"</u>.

DTC Logic

INFOID:000000005987023

DTC DETECTION LOGIC

DTC	CONSULT-III display de- scription	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When CAN gateway cannot communicate CAN communication signal continuously for 2 seconds or more.	CAN communication system

Diagnosis Procedure

INFOID:000000005987024

1.PERFORM SELF DIAGNOSTIC

- 1. Turn the ignition switch ON and wait for 2 seconds or more.
- 2. Check "Self Diagnostic Result".
- Is "U1000: CAN COMM CIRCUIT" displayed?
- YES >> Refer to LAN-25. "Trouble Diagnosis Flow Chart".
- NO >> Refer to GI-38, "Intermittent Incident".

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and 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-35, "CAN COMMUNICATION SYSTEM : CAN Communication transmission with less to signal Chart".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause	F
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial di- agnosis for CAN controller of CAN gateway.	CAN gateway	_
				0

Diagnosis Procedure

1.REPLACE CAN GATEWAY

When DTC "U1010: CONTROL UNIT(CAN)" is detected, replace CAN gateway.

>> Replace CAN gateway. Refer to LAN-144, "Removal and Installation".

INFOID:000000005987025

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< DTC/CIRCUIT DIAGNOSIS >

B2600 CONFIG ERROR

Description

INFOID:000000005987028

[CAN GATEWAY]

The CAN gateway requires initial settings to judge necessary information, according to a vehicle specification. DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Probable cause
B2600	CONFIG ERROR WRONG DATA	When errors are detected in the configuration data stored in the CAN gateway.	CAN gateway
B2000	CONFIG ERROR NOT CONFIGURED	When no data are stored in the CAN gateway.	CAN galeway

Diagnosis Procedure

INFOID:000000005987030

1.REPLACE CAN GATEWAY

When DTC "B2600: CONFIG ERROR" is detected, replace CAN gateway.

>> Replace CAN gateway. Refer to LAN-144, "Removal and Installation".

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	9	
Ignition power supply	3	D

Is the fuse fusing?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connector of CAN gateway.
- 3. Check voltage between CAN gateway harness connector and ground.

	Terminals		Condition	
(+	-)	(-)	Condition	Voltage
CAN ga	ateway		Ignition	(Approx.)
Connector	Terminal		switch	
M125 -	3	Ground	OFF	Battery voltage
101125	9		ON	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 gateway			Continuity
Connector	Terminal	- Ground	Continuity
M125	5		Existed
	11		

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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[CAN GATEWAY]

INFOID:000000005987031

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REMOVAL AND INSTALLATION CAN GATEWAY

Removal and Installation

INFOID:000000005987038

[CAN GATEWAY]

CAUTION:

Before replacing CAN gateway, perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>LAN-137, "Description"</u>.

REMOVAL

- 1. Remove instrument lower panel RH. 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:

Be sure to perform "WRITE CONFIGURATION" when replacing CAN gateway. Refer to <u>LAN-137</u>, <u>"Description"</u>.

[CAN SYSTEM (TYPE 1)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006093494 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit _ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000006093495

[CAN SYSTEM (TYPE 1)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	A/C auto amp. harness connector		AV control unit harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M66	12	M210	90	Existed
1000	11	WIZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector Connector No. Terminal No.		AV control unit harness connector		Continuity
Connector No.	Terminal No.			Continuity		
MCC	12	M84	81	Existed		
IVIOO	M66 11	11/104	80	Existed		

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIAG	SNOSIS >		[CAN	SYSTEM (TYPE 1)]
MAIN LINE BET	WEEN A-BAG	AND AV CIRC	UIT	
Diagnosis Proced	ure			INFOID:000000006093496
1.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
	vitch OFF. ttery cable from the n owing harness conne			
 AV control unit 		auto amp. harness con	nector and the AV co	ntrol unit harness con-
 AV control unit Check the continuine nector. Models with navigation 		auto amp. harness con AV control unit ha		
 AV control unit Check the continuine nector. Models with naviga 	ation system			ntrol unit harness con-
 AV control unit Check the continuinector. Models with navigative A/C auto amp. https://doi.org/10.1000/100000000000000000000000000000	ation system	AV control unit ha	arness connector	

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

A/C auto amp. harness connector		AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M66	12	M84	81	Existed	
σοινι	11		80	Existed	

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000006093497

[CAN SYSTEM (TYPE 1)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

AV control unit h	AV control unit harness connector		Combination meter harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M210	90	M53	14	Existed
WZ 10	74	MSS	15	Existed

Models without navigation system

AV control unit h	narness connector	Combination meter harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M04	81	ME2	14	Existed
M84	84 M53 —	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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA			-	SYSTEM (TYPE 1)]
MAIN LINE BE	WEEN M&A A	ND DLC CIRCU		
Diagnosis Proced	lure			INFOID:000000006093498
1. CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)		
 Disconnect the fol ECM Combination meteries Harness connector 	ttery cable from the n lowing harness conne er ors M105 and M181		connector and the ha	rness connector.
Combination mete	r harness connector	Harness of	connector	
Combination mete	r harness connector Terminal No.	Harness of Connector No.	connector Terminal No.	Continuity
Connector No.		Connector No.		Continuity
	Terminal No.		Terminal No.	

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000006093499

[CAN SYSTEM (TYPE 1)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

Harness	connector	BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
MAGE	7	M400	39	Existed
M105	8	- M120	40	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 BCM.

NO >> Replace the PCB harness.

	MAIN LINE BET	WEEN E	BCM AND		
CTC/CIRCUIT DIA				-	CAN SYSTEM (TYPE 1)]
MAIN LINE BET	TWEEN BCM A	ND AD	P CIRCL	JIT	
Diagnosis Proced	lure				INFOID:000000006093502
	OR				
Check the following and harness side)	ttery cable from the nang terminals and con or M20 and PCB harne or M7 or B1	nectors for	damage, b	end and loose co	onnection (connector side
YES >> GO TO 2.					
· ·	e terminal and connec				
2.CHECK HARNESS	CONTINUITY (OPEN)		
 BCM Harness connector 	lowing harness conne or M20 ity between the BCM		nnector and	d the PCB harnes	s connector.
BCM harne	ss connector		PCB harness connector		Continuity
Connector No.	Terminal No.		Termin	al No.	Continuity
M120	39		35	-	Existed
s the inspection result	40		36	6	Existed
3. CHECK HARNESS	ne PCB harness. CONTINUITY (OPE) rness connectors M7 ity between the harne	and B1.			
Harness	connector		Harness c	onnector	Continuity
Connector No.	Terminal No.	Conne	ctor No.	Terminal No.	Continuity
M20	35	- N	17	72	Existed
	36			73	Existed
s the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Check the continuity b	e main line between th CONTINUITY (OPE))	M20 and M7.	
Connector No.		Termi	nal No.		Continuity
	72			74	Existed
B1	73			75	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 BCM and the driver seat control unit.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006093505

[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).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
Ы	73	75	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M6 and E106.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector al No. Connector No.		Continuity
Connector No.	Terminal No.			Continuity
M7	74	MG	22	Existed
1017	75	75 M6	23	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	Harness connector ABS actuator and electric unit (control unit) harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	22	E41	25	Existed
EIUO	23		15	Existed

Is the inspection result normal?

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

LAN-152

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

EVETEM (TVDE 4)1

< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 1)]
YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).	I- A
NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric un (control unit).	it
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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093510

[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).
- ECM
- Harness connector M30 and PCB harness 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.

- VQ37VHR

	Resistance (Ω)		
Connector No.	Termi		
M107	114	113	Approx. 108 – 132

VK56VD

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	146	151	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 the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "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 harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

ECM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M107	114	M30	439	Existed
WITO7	113		438	Existed

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ECM harnes	ss connector	Harness connector		Continuity	Α
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M160	146	M30	439	Existed	_
MITOO	151	MSO	438	Existed	В

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093511

[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).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness 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 low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pressure warning control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M43	2 1		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 low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

	warning control unit connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
M43	2	M29	396	Existed
10145	1	WIZ9	395	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

HVAC BRANCH	LINE CIRCUI	I		
Diagnosis Procedu	ure			INFOID:000000006093514
	OR			
 Turn the ignition sw Disconnect the bat Check the following nector side). A/C auto amp. 	tery cable from the n	negative terminal. nectors for damage, be	nd and loose connec	tion (unit side and con-
	M28 and PCB harn	ess side connector		
Is the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	terminal and connec	tor		
2.CHECK HARNESS				
1. Disconnect the cor	nector of A/C auto a		nector terminals.	
	A/C auto amp. harr	ness connector		Popietones (O)
Connector No.		Terminal No.	Resistance (Ω)	
M66	12		11	Approx. 54 – 66
		action?		
s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SL	lue within the specifi	ND CIRCUIT		
s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU	lue within the specifi	ND CIRCUIT		67. "A/C AUTO AMP. :
s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU Check the power supp Diagnosis Procedure".	Iue within the specifi JPPLY AND GROUN ly and the ground ci	ND CIRCUIT		
s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power supp Diagnosis Procedure". s the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the	IUE within the specifi JPPLY AND GROUN Iy and the ground ci normal? Replace the A/C au ror was detected in the power supply and the	ND CIRCUIT rcuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit.	mp. Refer to <u>HAC-1</u> 201. "Removal and I	67. "A/C AUTO AMP. :
s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SL Check the power suppling Diagnosis Procedure". s the inspection result YES (Present error)>> YES (Past error)>>Erron NO >> Repair the 4. CHECK HARNESS	Iue within the specifi JPPLY AND GROUN Iy and the ground ci normal? Replace the A/C au ror was detected in ti power supply and th CONTINUITY (OPE	ND CIRCUIT rcuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and I	67. "A/C AUTO AMP. :
s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SL Check the power supp Diagnosis Procedure". s the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4.CHECK HARNESS 1. Disconnect the har	IUE within the specifi JPPLY AND GROUN Iy and the ground ci Normal? Replace the A/C au ror was detected in the power supply and the CONTINUITY (OPE ness connector M28	ND CIRCUIT rcuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and I ch line.	67. "A/C AUTO AMP. : nstallation".
s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SL Check the power supp Diagnosis Procedure". s the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4.CHECK HARNESS	Iue within the specifi JPPLY AND GROUN ly and the ground ci normal? PReplace the A/C au ror was detected in the power supply and the CONTINUITY (OPE ness connector M28 ty between the A/C a	ND CIRCUIT rcuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and I ch line. nector and the harne	67. "A/C AUTO AMP. : nstallation".
s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU Check the power supp Diagnosis Procedure". S the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the har Check the continuit	Iue within the specifi JPPLY AND GROUN ly and the ground ci normal? PReplace the A/C au ror was detected in the power supply and the CONTINUITY (OPE ness connector M28 ty between the A/C a	ID CIRCUIT rcuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran le ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and I ch line. nector and the harne	67. "A/C AUTO AMP. : nstallation".
s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SU Check the power supp Diagnosis Procedure". s the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har 2. Check the continuit A/C auto amp. ha	Iue within the specifi JPPLY AND GROUN Iy and the ground ci normal? Replace the A/C au ror was detected in th power supply and th CONTINUITY (OPE ness connector M28 ty between the A/C a	ND CIRCUIT rcuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran le ground circuit. N CIRCUIT) auto amp. harness cont Harness c	mp. Refer to <u>HAC-1</u> 201. "Removal and I ch line. hector and the harne	67. "A/C AUTO AMP. : nstallation".

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093515

[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 F103
- Harness connector M116
- Harness connector M28 and PCB harness 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.	Termi		
F61	3	8	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 TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F61	3	M28	346	Existed
1.01	8	IVIZO	347	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

[CAN SYSTEM (TYPE 1)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006093516 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 following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

INFOID:000000006093517

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).
- AV control unit
- Harness connector M25 and PCB harness 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

	Resistance (Ω)		
Connector No.	Termi		
M210	90	74	Approx. 54 – 66

Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M84	81	80	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 AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M25	201	Existed
WIZ 10	74		221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

AV control unit h	narness connector	Harness	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M84	81	M25	201	Existed	
1004	80	M25 221		Existed	
the inspection result	t normal?				
O (Without navigati	ss connector M25. on system)>>Repair t arness connector M25		the AV control unit ha	arness connector M84	

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093518

[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).
- Combination meter
- Harness connector M24 and PCB harness 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M53	14	15	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 combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

Combination meter	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M24	176	Existed
IND5	15	10124	177	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

iagnosis Proced	ure			INFOID:00000000609351	
.CHECK CONNECT	OR				
 Check the followin nector side). Data link connector Harness connector 	ttery cable from the n g terminals and conn r r M181 r M105 r M23 and PCB harne normal? terminal and connect FOR OPEN CIRCUI	ectors for damage, be ess side connector ctor. T	nd and loose co	nnection (unit side and con-	
Connector No.	Data link co	Data link connector Resistance (Ω)			
M182	6		14	Approx. 54 – 66	
the measurement va		cation?			
YES (Present error)	Check CAN system ror was detected in the system	type decision again. he data link connector	branch line circu	uit.	
YES (Past error)>>Er NO >> GO TO 3. CHECK HARNESS	rness connector M23		harness connec	ctor.	
YES (Past error)>>Er NO >> GO TO 3. CHECK HARNESS Disconnect the ha Check the continu	rness connector M23	link connector and the	harness connec		
YES (Past error)>>Er NO >> GO TO 3. CHECK HARNESS Disconnect the ha Check the continu	rness connector M23 ity between the data l	link connector and the		Continuity	
YES (Past error)>>Er NO >> GO TO 3. CHECK HARNESS Disconnect the ha Check the continu	rness connector M23 ity between the data connector	ink connector and the Harness of	connector	Continuity	

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093520

[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).
- BCM
- Harness connector M22 and PCB harness 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 BCM.
- 2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M120	39	40	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 BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

BCM harne	ess connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
IVIT20	40	IVIZZ	102	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

iagnosis Proced	lure			INFOID:000000006093521
.CHECK CONNECT	OR			
 Turn the ignition s Disconnect the ba Check the followin nector side). Steering angle ser 	witch OFF. ttery cable from the ne og terminals and conne	ectors for damage, b	end and loose conne	ction (unit side and con-
the inspection result	t normal?			
YES >> GO TO 2. NO >> Repair the	e terminal and connect	tor.		
	FOR OPEN CIRCUIT			
	nnector of steering an nce between the steer		ness connector termi	nals.
	Steering angle sensor h	arness connector		Resistance (Ω)
Connector No.		Terminal No.		
M37	alue within the specific		2	Approx. 54 – 66
theck the power support ram". the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the CHECK HARNESS Disconnect the ha	<u>normal?</u> >Replace the steering rror was detected in the power supply and the CONTINUITY (OPEN rness connector M22.	rcuit of the steering a g angle sensor. Refer le steering angle sen e ground circuit. N CIRCUIT)	to <u>BRC-144, "Remo</u> sor branch line.	to <u>BRC-54, "Wiring Dia-</u> val and Installation". ne harness connector.
. Check the continu	Steering angle sensor harness connector Harness connector		connector	
	or harness connector			Continuity
	or harness connector Terminal No.	Connector No.	Terminal No.	Continuity
Steering angle sens	1		Terminal No. 81 82	Continuity Existed Existed

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator a	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E41	25	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "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.

Revision: 2010 June

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

< DTC/CIRCUIT DIAGNOS			[CAN SYSTEM (TYPE 1)]
IPDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:0000000609352
1.CHECK CONNECTOR			
 Check the terminals an and connector side). Is the inspection result norm YES >> GO TO 2. 	cable from the negative term nd connectors of the IPDM E nal? ninal and connector.		loose connection (unit side
 Disconnect the connect Check the resistance be 	tor of IPDM E/R. etween the IPDM E/R harne	ss connector terminals.	
	IPDM E/R harness connector		
Connector No.	Termina	al No.	Resistance (Ω)
E6	40	39	Approx. 108 – 132
	M E/R branch line		
Check the power supply and <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w	LY AND GROUND CIRCUIT d the ground circuit of the IPI	PCS-33, "Removal and I R branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093527

[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).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC 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		
M125	4	6	Existed	
IWI125	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Driver seat control unit harness connector		
Connector No.	Termi	Resistance (Ω)	
B514	23	24	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-73, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 1)]

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT А **Diagnosis Procedure** INFOID:000000006093536 **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 system. 3. C 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. M182 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 PCB harness is short) the root cause. **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 M182 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 PCB harness is short) the root cause. ${f 4}$. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. Check the resistance between the ECM terminals. 2. VQ37VHR LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 VK56VD ECM Resistance (Ω) Terminal No. Ρ 146 151 Approx. 108 - 132 Check the resistance between the IPDM E/R terminals. IPDM E/R Resistance (Ω) Terminal No. Approx. 108 - 132 40 39

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

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

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

NOTE:

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

Inspection result

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

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

[CAN SYSTEM (TYPE 2)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094349 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit _ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000006094350

[CAN SYSTEM (TYPE 2)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M210	90	Existed
Wide	11	M210 -	74	Existed

Models without navigation system

A/C auto amp. harness connector		AV control unit harness connector		ness connector AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M66	12	M84	81	Existed		
IVIOO	11	11/104	80	Existed		

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 2					
WEEN A-BAG	AND AV CIRC	UIT			
ure			INFOID:000000006094351		
CONTINUITY (OPEI	N CIRCUIT)				
owing harness conne	ectors.	nector and the AV co	ntrol unit harness con-		
arness connector	AV control unit ha	arness connector	Continuity		
Terminal No.	Connector No.	Terminal No.	Continuity		
12			90		
12	M210	90	Existed		
	WEEN A-BAG ure CONTINUITY (OPEI witch OFF. tery cable from the n owing harness conne ty between the A/C a ation system	WEEN A-BAG AND AV CIRC ure CONTINUITY (OPEN CIRCUIT) witch OFF. tery cable from the negative terminal. owing harness connectors. ty between the A/C auto amp. harness con ation system arness connector AV control unit ha	WEEN A-BAG AND AV CIRCUIT ure CONTINUITY (OPEN CIRCUIT) vitch OFF. tery cable from the negative terminal. owing harness connectors. ty between the A/C auto amp. harness connector and the AV co ation system arness connector AV control unit harness connector		

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

	A/C auto amp. h	arness connector	AV control unit harness connector		Continuity	-
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	Н
_	M66	12 M84	81	Existed	-	
	σοινι	11	10104	80	Existed	

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000006094352

[CAN SYSTEM (TYPE 2)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

AV control unit h	arness connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M53	14	Existed
WZ 10	74	M53	15	Existed

Models without navigation system

AV control unit h	narness connector	Combination meter	harness connector	- Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	MEQ	14	Existed
	80	M53	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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

C/CIRCUIT DIAGI	-	SYSTEM (TYPE 2)]		
N LINE BET	NEEN M&A A	ND DLC CIRCU	JIT	
nosis Procedu	re			INFOID:000000006094353
ECK HARNESS (N CIRCUIT)		
isconnect the follo CM ombination meter arness connectors	ery cable from the n wing harness conne M105 and M181		connector and the ha	rness connector.
Combination meter h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
ME2	14	M105	7	Existed
10100	15		8	Existed
Connector No	14	Connector No. M105	7	Existe

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000006094354

[CAN SYSTEM (TYPE 2)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

Harness	connector	BCM harnes	ss connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
MAGE	7	N420	39	Existed
M105	8	M120	40	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 BCM.

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA	GNOSIS >		[CAI	N SYSTEM (TYPE 2)]
	TWEEN BCM A	ND RAS CIRC	UIT	
Diagnosis Proced	lure			INFOID:000000006094358
1.CHECK CONNECT	TOR			
 Check the followi and harness side) Harness connector 	attery cable from the ne ng terminals and conn or M20 and PCB harne or M7 or B1 <u>t normal?</u> e terminal and connect 5 CONTINUITY (OPEN llowing harness conne	nectors for damage, ess side connector tor. N CIRCUIT)	bend and loose conr	nection (connector side
	lity between the BCM	harness connector ar	nd the PCB harness c	onnector.
	ess connector	PCB harness connector		Continuity
Connector No.	Terminal No.	Terminal No.		
M120	39 40		35 36	Existed
Is the inspection resul YES >> GO TO 3. NO >> Replace t				
3.CHECK HARNESS	CONTINUITY (OPEN Inness connectors M7 ity between the harne	and B1.		
3. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	rness connectors M7 ity between the harne	and B1. ss connectors.	connector	
3. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	rness connectors M7	and B1. ss connectors.	connector Terminal No.	Continuity
3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No.	rness connectors M7 hity between the harne connector	and B1. ss connectors. Harness Connector No.		- Continuity Existed
3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20	connector Terminal No. 35 36	and B1. ss connectors. Harness	Terminal No.	
3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20 Is the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS	rness connectors M7 hity between the harne connector Terminal No. 35 36 t normal?	and B1. ess connectors. Harness Connector No. M7 M7 N CIRCUIT)	Terminal No. 72 73	Existed
3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20 Is the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS Check the continuity b	rness connectors M7 hity between the harne connector Terminal No. 35 36 t normal? e main line between th S CONTINUITY (OPEN	and B1. ess connectors. Harness Connector No. M7 he harness connectors N CIRCUIT) onnector terminals.	Terminal No. 72 73	Existed
3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20 Is the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS	rness connectors M7 hity between the harne connector Terminal No. 35 36 t normal? e main line between th S CONTINUITY (OPEN	and B1. ess connectors. Harness Connector No. M7 M7 N CIRCUIT)	Terminal No. 72 73	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 BCM and the 4WAS main control unit. NO >> Replace the body harness.

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006094361

[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).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	72	74	Existed
Ы	73	75	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 M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	74	M6	22	Existed
1017	75		23	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	22	E41	25	Existed
	23		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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094365

[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).
- ECM
- Harness connector M30 and PCB harness 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.

- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Termi		
M107	114	113	Approx. 108 – 132

VK56VD

ECM harness connector			Posistance (O)
Connector No.	Terminal No.		Resistance (Ω)
M160	146	151	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 the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "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 harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M107	114	- M30	439	Existed
	113		438	Existed

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ECM harnes	ss connector	Harness connector		Continuity	A
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M160	146	M30	439	Existed	-
MITOO	151	MSO	438	Existed	- B

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094366

[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).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness 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 low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pre	Low tire pressure warning control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M43	2 1		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 low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

	Low tire pressure warning control unit harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
10145	1	WIZ9	395	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

HVAC BRANCH I	INE CIRCUI	Г			Δ
Diagnosis Procedur	e			INFOID:000000006094369	A
1.CHECK CONNECTOR	२				В
 Turn the ignition swit Disconnect the batte Check the following the nector side). A/C auto amp. Harness connector M 	ry cable from the ne erminals and conne	ectors for damage, be	end and loose connec	tion (unit side and con-	С
Is the inspection result no	ormal?				D
YES >> GO TO 2. NO >> Repair the te	rminal and connect	or.			Е
2. CHECK HARNESS FOR OPEN CIRCUIT					
 Disconnect the conn Check the resistance 		np. auto amp. harness co	nnector terminals.		F
A/C auto amp. harness connector Resistance (Ω)					
Connector No.		Terminal No.			G
M66	12		11	Approx. 54 – 66	
Is the measurement value YES >> GO TO 3. NO >> GO TO 4.					Η
3. CHECK POWER SUP			amp. Defer to HAC 1		
Check the power supply Diagnosis Procedure".	and the ground ch	cuit of the A/C auto a	amp. Relet to <u>HAC-1</u>	67, A/C AUTO AMP	
Is the inspection result no					J
YES (Present error)>>F YES (Past error)>>Erro NO >> Repair the po		e A/C auto amp. brar		<u>nstallation"</u> .	K
4. CHECK HARNESS C	ONTINUITY (OPEN	I CIRCUIT)			
 Disconnect the harne Check the continuity 		uto amp. harness cor	nector and the harne	ss connector.	L
A/C auto amp. harr	ess connector	Harness	connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	LAN
M66	12	M28	325	Existed	
	11		327	Existed	Ν
Is the inspection result no YES >> Replace the					

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connec-Ο tor M28.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094370

[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 F103
- Harness connector M116
- Harness connector M28 and PCB harness 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.	Termi		
F61	3	8	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 TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	A/T assembly harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F61	3	M28	346	Existed
1.01	8	IVIZO	347	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

[CAN SYSTEM (TYPE 2)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:00000000609437 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 following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

INFOID:000000006094372

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).
- AV control unit
- Harness connector M25 and PCB harness 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

	Resistance (Ω)		
Connector No.	Termi		
M210	90 74		Approx. 54 – 66

Models without navigation system

AV control unit harness connector			Posistance (O)
Connector No.	Terminal No.		Resistance (Ω)
M84	81	80	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 AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector $\overline{M25}$.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

AV control unit h	AV control unit harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M25	201	Existed
IVIZ TO	74		221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

AV control unit h	AV control unit harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	M25	201	Existed
10104	80	IVIZO	221	Existed
he inspection result				
O (With navigation :	he PCB harness. system)>>Repair the l ss connector M25.	harness between the A	AV control unit harnes	s connector M210 and

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094373

[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).
- Combination meter
- Harness connector M24 and PCB harness 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Posistanco (O)
Connector No.	Terminal No.		Resistance (Ω)
M53	14 15		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 combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

Combination meter	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M24	176	Existed
IND5	15		177	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

iagnosis Proced	ure			INFOID:00000006094374
.CHECK CONNECT	OR			
 Check the following nector side). Data link connector Harness connector 	tery cable from the n g terminals and conn M181 M105 M23 and PCB harne normal? terminal and connect FOR OPEN CIRCUI	ectors for damage, be ess side connector tor. T	end and loose co	nnection (unit side and con-
heck the resistance b	etween the data link	connector terminals.		
	Data link co	Data link connector Resistance (Ω)		
Connector No.		Terminal No.		
M182 the measurement va		6 14		Approx. 54 – 66
NO >> GO TO 3. CHECK HARNESS	ror was detected in th CONTINUITY (OPEI ness connector M23	he data link connector N CIRCUIT)		
	connector	Harness	connector	Continuity
Data link			Terminal No.	
Data link Connector No.	Terminal No.	Connector No.	Terriniar No.	
	Terminal No. 6 14	Connector No. M23	151 150	Existed

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094375

[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).
- BCM
- Harness connector M22 and PCB harness 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 BCM.
- 2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		Tresistance (22)
M120	39	40	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 BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

BCM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
101120	40	IVIZZ	102	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

	LINE CIRCUI			
Diagnosis Procedu	re			INFOID:00000006094376
.CHECK CONNECTO	R			
nector side). Steering angle sens	ery cable from the ne terminals and conne	ectors for damage, be	nd and loose conne	ction (unit side and con-
the inspection result n	ormal?			
<pre>/ES >> GO TO 2. NO >> Repair the to .CHECK HARNESS F</pre>	erminal and connect			
Disconnect the conr	nector of steering an		ess connector termi	nals.
Steering angle sensor harness connector		Posistance (0)		
Connector No.		Terminal No.		Resistance (Ω)
M37	1		2	Approx. 54 – 66
am". the inspection result n ES (Present error)>>F ES (Past error)>>Error IO >> Repair the p CHECK HARNESS O Disconnect the harn	and the ground cir <u>cormal?</u> Replace the steering or was detected in the cower supply and the CONTINUITY (OPEN mess connector M22.	cuit of the steering an angle sensor. Refer t e steering angle sens ground circuit.	o <u>BRC-144, "Remov</u> or branch line.	
Steering angle sensor harness connector Harness connector		Harness	connector	
Steering angle sensor				O and it is
Steering angle sensor Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
		Connector No.	Terminal No. 81	Continuity Existed

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< DTC/CIRCUIT DIAGNOSIS >

RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094378

[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 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WA	4WAS main control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
B54	1	8	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 4WAS main control unit. Refer to <u>STC-171, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-185, "Removal and Installation".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

OFF.		INFOID:000000006094379	
OFF			
OFF			
cable from the negative term d connectors of the ABS act unit side and connector side) <u>nal?</u> inal and connector.	tuator and electric unit (co	ontrol unit) for damage, bend	
		nit) harness connector termi-	
ABS actuator and electric unit (control unit) harness connector		Resistance (Ω)	
Termina	al No.		
25	15	Approx. 54 – 66	
Y AND GROUND CIRCUIT nd the ground circuit of the a dure". nal? lace the ABS actuator and e	ABS actuator and electric	Refer to <u>BRC-141, "Removal</u>	
		troi unit) branch line.	
	etween the ABS actuator ar and electric unit (control unit) harm 25 within the specification? S actuator and electric unit (c LY AND GROUND CIRCUIT and the ground circuit of the edure". nal? blace the ABS actuator and e	hinal and connector. COPEN CIRCUIT tor of ABS actuator and electric unit (control unit). between the ABS actuator and electric unit (control unit) and electric unit (control unit) harness connector Terminal No. 25 15 within the specification? S actuator and electric unit (control unit) branch line. LY AND GROUND CIRCUIT and the ground circuit of the ABS actuator and electric adure". nal? blace the ABS actuator and electric unit (control unit). I	

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094381

[CAN SYSTEM (TYPE 2)]

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "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.

Diagnosis Procedure				
_			INFOID:000000006094382	
1.CHECK CONNECTOR				
	cable from the negative tern ninals and connectors for c 1 System) <u>hal?</u> GO TO 2. >>GO TO 2. inal and connector. ITINUITY (OPEN CIRCUIT	lamage, bend and loose co	nnection (unit side and con-	
	tween the CAN gateway ha	arness connector terminals.		
Connector No.	CAN gateway harness connector Continuity		Continuity	
	4	6	Existed	
M125	10	12	Existed	
YES >> GO TO 3. NO >> Check the harn	ess and repair or replace (i			
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat cont	t. rol unit harness connector t		
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat cont er seat control unit harness conn	system) t. rol unit harness connector f ector		
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat cont er seat control unit harness conn	system) t. rol unit harness connector t	erminals.	

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006094391

[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
M182	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 PCB harness 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
M182	6		Not existed
IVI I OZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

- VQ37VHR

ECM		Resistance (Ω)
Termir	nal No.	
114	113	Approx. 108 – 132

VK56VD

ECM		Resistance (Ω)
Termi	nal No.	
146	151	Approx. 108 – 132

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

IPDN	/IE/R	Resistance (Ω)	
Termir	nal No.		
40	39	Approx. 108 – 132	

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 2)]
Is the measurement value within the specification?	
YES >> GO TO 5.	
NO >> Replace the ECM and/or the IPDM E/R.	
5.CHECK SYMPTOM	
Connect all the connectors. Check if the symptoms described in the "Sympto customer)" are reproduced.	m (Results from interview with
Inspection result	
Reproduced>>GO TO 6.	
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	procedure when past error is
6. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit.	
1. Turn the ignition switch OFF.	
2. Disconnect the battery cable from the negative terminal.	
3. Disconnect one of the unit connectors of CAN communication system.	
NOTE: ECM and IPDM E/R have a termination circuit. Check other units first.	
4. Connect the battery cable to the negative terminal. Check if the sympton	ms described in the "Symptom
(Results from interview with customer)" are reproduced.	
NOTE:	
Although unit-related error symptoms occur, do not confuse them with othe	er symptoms.
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above pro Non-reproduced>>Replace the unit whose connector was disconnected.	ocedure.

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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000006094997

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

Low tire pressure warning control unit harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M66	12	Existed
10143	1	ΟΟΙΥΙ	11	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 low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

< DTC/CIRCUIT DIAG	TC/CIRCUIT DIAGNOSIS > [C				
MAIN LINE BET	WEEN HVAC	AND A-BAG CI	RCUIT		
Diagnosis Proced	ure			INFOID:000000006094998	
1.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)			
 3. Disconnect the foll ECM A/C auto amp. AV control unit 	tery cable from the n owing harness conne ty between the A/C a	ectors.	nector and the AV co	ntrol unit harness con-	
A/C auto amp. ha	arness connector	AV control unit h	arness connector	Continuity	
A/C auto amp. ha	arness connector Terminal No.	AV control unit h Connector No.	arness connector Terminal No.	Continuity	
· · ·				Continuity Existed	

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

A/C auto amp. h	arness connector	AV control unit h	arness connector	- Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M66	12	M84	81	Existed	_
IVIOO	11	10104	80	Existed	_

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000006094999

[CAN SYSTEM (TYPE 3)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M210	90	Existed
Wide	11	WIZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M84	81	Existed
IVIOO	11	10104	80	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

DTC/CIRCUIT DIA	GNOSIS >		[CAN	N SYSTEM (TYPE 3)]
MAIN LINE BE	TWEEN AV AN	D M&A CIRCUI	Т	
Diagnosis Proced	dure			INFOID:000000006095000
CHECK HARNES	S CONTINUITY (OPE	N CIRCUIT)		
 Disconnect the fo ECM AV control unit 	attery cable from the n llowing harness conne			
Combination mete Check the contine connector. Models with navig	uity between the AV co	ontrol unit harness cor	nnector and the com	bination meter harness
 Check the continu- connector. Models with navig 	uity between the AV co	ontrol unit harness cor Combination meter		
 Check the continu- connector. Models with navig 	uity between the AV co gation system	1		bination meter harness
 Check the continu- connector. Models with navig AV control unit Connector No. 	uity between the AV co gation system narness connector	Combination meter Connector No.	harness connector	
 Check the continu- connector. Models with navig AV control unit 	uity between the AV co gation system namess connector Terminal No.	Combination meter	harness connector Terminal No.	Continuity
 Check the continu- connector. Models with navig AV control unit Connector No. 	uity between the AV co gation system namess connector Terminal No. 90 74	Combination meter Connector No.	harness connector Terminal No. 14	- Continuity Existed
 Check the continu- connector. Models with navig AV control unit Connector No. M210 Models without na 	uity between the AV co gation system namess connector Terminal No. 90 74	Combination meter Connector No.	harness connector Terminal No. 14 15	Continuity Existed Existed
 Check the continu- connector. Models with navig AV control unit Connector No. M210 Models without na 	uity between the AV co gation system namess connector Terminal No. 90 74 avigation system	Combination meter Connector No. M53	harness connector Terminal No. 14 15	- Continuity Existed
 Check the continu- connector. Models with navig AV control unit Connector No. M210 Models without na AV control unit 	uity between the AV co gation system harness connector Terminal No. 90 74 avigation system	Combination meter Connector No. M53 Combination meter	harness connector Terminal No. 14 15 harness connector	Continuity Existed Existed

MAIN LINE BETWEEN AV AND M&A CIRCUIT

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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006095001

[CAN SYSTEM (TYPE 3)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M105	7	Existed
MISS	15	WITU5	8	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 combination meter and the data link connector.
- NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA		WEEN DLC AN	D BCM CIRCUIT [CAN	SYSTEM (TYPE 3)]	
MAIN LINE BET	WEEN DLC A	ND BCM CIRC	UIT		^
Diagnosis Proced	lure			INFOID:000000006095002	A
1. CHECK HARNESS		N CIRCUIT)			В
 3. Disconnect the fol ECM Harness connector BCM 	ttery cable from the ne lowing harness conne ors M181 and M105	ectors.	BCM harness connec	tor.	C
Harness	connector	BCM harne	ess connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
	7	14400	39	Existed	

Is the inspection result normal?

M105

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

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

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Existed

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006095003

[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).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1
- Harness connector M6
- Harness connector E106

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.

- BCM
- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harne	ss connector	PCB harness connector	Continuity	
Connector No.	Terminal No.	Terminal No.	- Continuity	
M120	39	35	Existed	
W120	40	36	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M20	35	M7	72	Existed
IVIZU	36	1/17	73	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	72	74	Existed
	73	75	Existed

Is the inspection result normal?

YES >> GO TO 5.

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

MAIN LINE BETWEEN BCM AND ABS CIRCUIT GNOSIS > [CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
N/7	74	MC	22	Existed
M7	75	M6	23	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair the main line between the harness connectors M7 and M6.

6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity	F
Connector No.	Terminal No.	Connector No.	Terminal No.		
E106	22	E41	25	Existed	G
EIUO	23	E 41	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 BCM and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000006095010

[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).
- Harness connector B33
- Harness connector B245

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.

- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH I	narness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B52	4	B33	13	Existed
DJZ	3		14	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

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

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

Harness	Harness connector		Side radar RH harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
B245	13	B252	4	Existed
B240	14	BZ3Z	3	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 side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

IAIN LINE BET	WEEN RDR-R	AND APA CIR	CUIT	
agnosis Proced	ure			INFOID:000000006095011
CHECK CONNECT	OR			
Check the followin and harness side) Harness connector Harness connector Harness connector the inspection result (ES >> GO TO 2. IO >> Repair the CHECK HARNESS	ttery cable from the ne ng terminals and conr r B201 r M117 r M20 and PCB harne	nectors for damage, l ess side connector for. N CIRCUIT)	bend and loose conne	ection (connector side
Check the continu	rs B201 and M117 ity between the side ra arness connector		nector and the harnes	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	4			
B252	4	B201	66	Existed
•	3	B201	66 67	Existed
the inspection result ES >> GO TO 3. O >> Repair the CHECK HARNESS Disconnect the ha	3	e side radar RH and t I CIRCUIT)	67	Existed
the inspection result ES >> GO TO 3. O >> Repair the CHECK HARNESS Disconnect the ha Check the continu	3 normal? main line between th CONTINUITY (OPEN rness connector M20.	e side radar RH and t I CIRCUIT) ss connectors.	67	Existed B201.
the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	3 main line between th CONTINUITY (OPEN rness connector M20. ity between the harne	e side radar RH and t I CIRCUIT) ss connectors.	67 he harness connector	Existed
the inspection result ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness	3 main line between th CONTINUITY (OPEN rness connector M20. ity between the harne	e side radar RH and t I CIRCUIT) ss connectors. ^{Harness}	67 he harness connector	Existed B201.
the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M117	3 main line between th CONTINUITY (OPEN rness connector M20. ity between the harne connector Terminal No. 66 67	e side radar RH and t N CIRCUIT) ss connectors. Harness Connector No.	67 he harness connector connector Terminal No.	Existed B201. Continuity
the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M117 the inspection result (ES >> GO TO 4. IO >> Repair the CHECK HARNESS Disconnect the ha	3 main line between th CONTINUITY (OPEN rness connector M20. ity between the harne connector Terminal No. 66 67	e side radar RH and t N CIRCUIT) ss connectors. Harness Connector No. M20 e harness connectors N CIRCUIT) 50 and M151.	67 he harness connector connector Terminal No. 38 40 5 M117 and M20.	Existed B201. Continuity Existed Existed
the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M117 the inspection result (ES >> GO TO 4. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	3 main line between th CONTINUITY (OPEN rness connector M20. ity between the harne connector Terminal No. 66 67 main line between th CONTINUITY (OPEN rness connectors M15 ity between the PCB f	e side radar RH and t N CIRCUIT) ss connectors. Harness Connector No. M20 e harness connectors N CIRCUIT) 50 and M151. harness connector an	67 he harness connector connector Terminal No. 38 40 5 M117 and M20. d the harness connec	Existed B201. Continuity Existed Existed
the inspection result (ES >> GO TO 3. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M117 the inspection result (ES >> GO TO 4. IO >> Repair the CHECK HARNESS Disconnect the ha Check the continu PCB harne	3 main line between th CONTINUITY (OPEN rness connector M20. ity between the harne connector Terminal No. 66 67 normal? main line between th CONTINUITY (OPEN rness connectors M15	e side radar RH and t N CIRCUIT) ss connectors. Harness Connector No. M20 e harness connectors N CIRCUIT) 50 and M151. harness connector an	67 he harness connector connector Terminal No. 38 40 5 M117 and M20.	Existed B201. Continuity Existed Existed
the inspection result (ES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M117 the inspection result (ES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu PCB harne Termi	3 main line between th CONTINUITY (OPEN rness connector M20. ity between the harne connector Terminal No. 66 67 normal? main line between th CONTINUITY (OPEN rness connectors M15 ity between the PCB f	e side radar RH and t N CIRCUIT) ss connectors. Harness Connector No. M20 e harness connectors N CIRCUIT) 50 and M151. harness connector an Harness	67 he harness connector connector Terminal No. 38 40 6 M117 and M20. d the harness connector	Existed B201. Continuity Existed Existed tor.

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

LAN-207

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND	LANE CIRCUIT
AGNOSIS >	[CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
M150	11	M110	13	Existed	-
WI TOU	10	WITTO	2	Existed	F

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane G camera unit.

NO >> Replace the PCB harness.

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095013

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M30 and PCB harness 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.

- VQ37VHR

	ECM harness connector		
Connector No.	Termi	Resistance (Ω)	
M107	114	113	Approx. 108 – 132

VK56VD

	ECM harness connector		Posistanco (O)
Connector No.	Terminal No.		Resistance (Ω)
M160	146	151	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 the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "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 harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M107	114	M30	439	Existed
WITO7	113	MISO	438	Existed

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ECM harnes	ECM harness connector		Harness connector		A
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M160	146	M30	439	Existed	-
MITOO	151	MSO	438	Existed	- B

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095014

[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).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness 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 low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pro	Low tire pressure warning control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M43	2	1	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 low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

-	warning control unit connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
M43	2	M29	396	Existed	
10145	1		395	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

[CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedu	ure			INFOID:00000000609501
1.снеск отс				
Check DTC of the CAN	gateway with CONS	ULT-III.		
<u>Is U1010 or B2600 indi</u>				
YES >> Perform a c NO >> GO TO 2.	diagnosis of the indic	ated DTC.		
2. CHECK CONNECTO	OR			
 Check the following nector side). CAN gateway Harness connector Is the inspection result YES >> GO TO 3. 	tery cable from the ne terminals and conne M28 and PCB harne normal? terminal and connect	ectors for damage, be ess side connector cor.	nd and loose conr	nection (unit side and con-
	nector of CAN gatew ce between the CAN	ay. gateway harness con	nector terminals.	
	CAN gateway harne	ess connector		Resistance (Ω)
Connector No.		Terminal No.		
M125	1		7	Approx. 54 – 66
Is the measurement val YES >> GO TO 4. NO >> GO TO 5. 4. CHECK POWER SU				
dure".		rcuit of the CAN gate	eway. Refer to <u>LA</u>	N-143, "Diagnosis Proce
<u>Is the inspection result</u> YES (Present error)>> YES (Past error)>>Err	Replace the CAN ga	teway. Refer to <u>LAN-</u> e CAN gateway bran		
NO >> Repair the	power supply and the	•		,
		•		· · · · · · · ,
NO >> Repair the 5.CHECK HARNESS 1. Disconnect the har	CONTINUITY (OPEN ness connector M28.	N CIRCUIT)	nector and the har	
NO >> Repair the 5.CHECK HARNESS 1. Disconnect the har	CONTINUITY (OPEN ness connector M28. by between the CAN	ateway harness con	nector and the har	ness connector.
NO >> Repair the 5.CHECK HARNESS 1. Disconnect the har 2. Check the continuit	CONTINUITY (OPEN ness connector M28. by between the CAN	ateway harness con		

Is the inspection result normal?

YES >> Replace the PCB harness.

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NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

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Existed

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000006095016

[CAN SYSTEM (TYPE 3)]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT-III.

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 M23 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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	
M125	4	6	Existed
101123	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-143</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2).

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

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
M125	4	M23	133	Existed
IM125	10		135	Existed

Is the inspection result normal?

YES >> GO TO 6.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 3)]

< DTC/CIRCUIT DIAGNOSIS >

NO	>> Repair the harness between the CAN gateway harness connector M125 and the harness connec-	
	tor M23.	

6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

PCB harness connector	PCB harnes	PCB harness connector
Terminal No.	Termir	Terminal No.
24 Existed	2	133
27 Existed	2	135

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

7.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors.

Harness	Harness connector		Harness connector		_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	G
M20	24	MZ	34	Existed	_
IVIZU	27	M7	35	Existed	H

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

8.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

-	Connector No.	Termi	Continuity	-	
_	B1	34	32	Existed	K
	Ы	35	33	Existed	

Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector L M125.

NO >> Replace the body harness. А

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095017

[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/C auto amp.
- Harness connector M28 and PCB harness 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/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

	A/C auto amp. harness connecto	Resistance (Ω)	
Connector No.	Terminal No.		
M66	12	11	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 A/C auto amp. Refer to <u>HAC-167, "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-201, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M28	325	Existed
MOO	11	IVIZO	327	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

iagnosis Procedure				INFOID:000000006095018
.CHECK CONNECTOR				
Turn the ignition switch Disconnect the battery Check the following ten nector side). A/T assembly Harness connector F1 Harness connector M2 Harness connector M2 the inspection result nor YES >> GO TO 2. NO >> Repair the terr .CHECK HARNESS FOI Disconnect the connect Check the resistance b	r cable from the ne rminals and conne 16 28 and PCB harne <u>mal?</u> ninal and connect R OPEN CIRCUIT ctor of A/T assemb	ectors for damage, ber ss side connector or.		ction (unit side and con-
	A/T assembly harne	-		Resistance (Ω)
Connector No.		Terminal No.		
F61 the measurement value	3 within the specific	ation?	8	Approx. 54 – 66
the measurement value YES >> GO TO 3. NO >> GO TO 4. •CHECK POWER SUPP heck the power supply ar the inspection result nor YES (Present error)>>Re	within the specific PLY AND GROUNI and the ground circu mal? place the control was detected in the ver supply and the NTINUITY (OPEN is connector M28.	D CIRCUIT uit of the TCM. Refer t valve with TCM. Refer e A/T assembly if cont e TCM branch line. ground circuit.	to <u>TM-156, "Diagnos</u> to <u>TM-8, "A/T CON</u> trol valve with TCM	sis Procedure". TROL SYSTEM : Com- is not listed in the latest
the measurement value (ES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SUPP heck the power supply ar the inspection result nor (ES (Present error)>>Re ponent Parts L parts list.) (ES (Past error)>>Error NO >> Repair the pow .CHECK HARNESS CO Disconnect the harnes Check the continuity b	within the specific PLY AND GROUNI and the ground circu mal? place the control v .ocation". (Replace was detected in th ver supply and the NTINUITY (OPEN is connector M28. etween the A/T as	D CIRCUIT uit of the TCM. Refer t valve with TCM. Refer e A/T assembly if cont e TCM branch line. ground circuit. I CIRCUIT)	to <u>TM-156, "Diagnos</u> to <u>TM-8, "A/T CON</u> trol valve with TCM	sis Procedure". TROL SYSTEM : Com- is not listed in the latest
the measurement value (ES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SUPP meck the power supply ar the inspection result nor (ES (Present error)>>Re ponent Parts L parts list.) (ES (Past error)>>Error N NO >> Repair the pow .CHECK HARNESS CO Disconnect the harnes	within the specific PLY AND GROUNI and the ground circu mal? place the control v .ocation". (Replace was detected in th ver supply and the NTINUITY (OPEN is connector M28. etween the A/T as	D CIRCUIT uit of the TCM. Refer t valve with TCM. Refer e A/T assembly if cont e TCM branch line. ground circuit.	to <u>TM-156, "Diagnos</u> to <u>TM-8, "A/T CON</u> trol valve with TCM	sis Procedure". TROL SYSTEM : Com- is not listed in the latest

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095019

[CAN SYSTEM (TYPE 3)]

WARNING:

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

1.CHECK CONNECTOR

- 1. Turn the ignition 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).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

AV BRANCH LI	NE CIRCUIT			٨
Diagnosis Proced	lure			A INFOID:000000006095020
1.CHECK CONNECT	TOR			В
 Check the followir nector side). AV control unit 	ittery cable from the neighborn the neighbor	ectors for damage, be	end and loose connec	tion (unit side and con- C
YES >> GO TO 2. NO >> Repair the	e terminal and connec	tor.		-
2.CHECK HARNESS				E
	nnector of AV control nce between the AV co ation system		onnector terminals.	F
Connector No.	AV control unit harn	ess connector Terminal No.		Resistance (Ω)
M210	90	Terminar NO.	74	Approx. 54 – 66
- Models without na				Н
	AV control unit harn	ess connector		
Connector No.		Terminal No.		Resistance (Ω)
M84	81		80	Approx. 54 – 66
BOSE audio with na Is the inspection result YES (Present error)> Base au BOSE a YES (Past error)>>E NO >> Repair the A.CHECK HARNESS 1. Disconnect the ha	UPPLY AND GROUN by and the ground circ navigation system: AV-2 vigation system: AV-2 >Replace the AV cont udio without navigation udio with navigation s rror was detected in the power supply and the CONTINUITY (OPEN inness connector M25 ity between the AV cont ity betwe	D CIRCUIT cuit of the AV control u -90, "AV CONTROL U 72, "AV CONTROL U trol unit. Refer to the system: <u>AV-120, "Rem</u> be AV control unit bra e ground circuit. N CIRCUIT)	JNIT : Diagnosis Proc NIT : Diagnosis Proce following. emoval and Installation loval and Installation"	Lan
	arness connector	Harpoos	connector	Р
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M25	201	Existed
IVIZ I U	74	IVIZJ	221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV control unit h	AV control unit harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	M25	201	Existed
10104	80	IVIZ5	221	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

iagnosis Proced	lure				INF01D:000000006095021
CHECK CONNECT					
	-				
 Check the followin nector side). Combination mete 	ttery cable from the ne og terminals and conne er r M24 and PCB harne	ectors for dam	nage, bend and	l loose conne	ection (unit side and con-
YES >> GO TO 2.					
	e terminal and connect FOR OPEN CIRCUI				
	nnector of combination nce between the comb		harness conne	ector termina	ls.
	Combination meter ha	arness connector			Resistance (Ω)
	1				Resistance (Q)
Connector No.		Terminal	No.		
M53 s the measurement va YES >> GO TO 3.	14 alue within the specific		No. 15		Approx. 54 – 66
M53 s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S Check the power supp <u>AETER : Diagnosis Pr</u> s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the CHECK HARNESS . Disconnect the ha	UPPLY AND GROUN Oly and the ground cir rocedure". A normal? >Replace the combination of the combination of the combination of the power supply and the	cation? D CIRCUIT rcuit of the co ation meter. R he combination e ground circu N CIRCUIT)	15 mbination mete Refer to <u>MWI-90</u> n meter branch uit.), "Removal a line.	Approx. 54 – 66
M53 s the measurement var YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI Check the power suppression result YES (Present error)> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	UPPLY AND GROUN Oly and the ground cir rocedure". normal? >Replace the combina rror was detected in the power supply and the CONTINUITY (OPEN rness connector M24.	cation? D CIRCUIT rcuit of the co ation meter. R he combination e ground circu N CIRCUIT)	15 mbination mete Refer to <u>MWI-90</u> n meter branch uit.), "Removal a line. ctor and the	Approx. 54 – 66
M53 S the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI Check the power suppression result YES (Present error)> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	UPPLY AND GROUN oly and the ground cir cocedure". Replace the combination ror was detected in the power supply and the CONTINUITY (OPEN rness connector M24. ity between the comb	cation? D CIRCUIT rcuit of the co ation meter. R he combination e ground circu N CIRCUIT)	15 mbination meter Refer to <u>MWI-90</u> n meter branch uit. harness connector), "Removal a line. ctor and the	Approx. 54 – 66
M53 s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S Check the power supp AETER : Diagnosis Pr s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Combination meter	UPPLY AND GROUN oly and the ground cir rocedure". a normal? >Replace the combination ror was detected in the power supply and the CONTINUITY (OPEN rness connector M24. ity between the comb	cation? D CIRCUIT rcuit of the co ation meter. R the combination e ground circu N CIRCUIT) ination meter	15 mbination meter Refer to <u>MWI-90</u> n meter branch uit. harness connector), "Removal a line. ctor and the	Approx. 54 – 66

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095022

[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).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness 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		
Connector No.	Termi	nal No.	Resistance (Ω)
M182	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 M23.

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
M182	6	M23	151	Existed
111102	14	10123	150	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

BCM BRANCH LINE CIRCUIT

BCM BRANCH	LINE CIRCUIT			
Diagnosis Procec	ure			INFOID:000000006095023
1.CHECK CONNECT	OR			
 Check the followin nector side). BCM Harness connector side inspection result YES >> GO TO 2. 	ttery cable from the neig terminals and conne r M22 and PCB harne <u>: normal?</u> e terminal and connect	ectors for damage, be ess side connector tor.	end and loose connec	tion (unit side and con-
. Disconnect the co		harness connector te	erminals.	
Connector No.	DOM namess (Terminal No.		Resistance (Ω)
M120	39		40	Approx. 54 – 66
YES >> GO TO 3. NO >> GO TO 4.	alue within the specific			
	ly and the ground circ		to BCS-73, "Diagnos	is Procedure"
				<u>io i rocodaro</u> .
YES (Present error)> YES (Past error)>>E NO >> Repair the	>Replace the BCM. R ror was detected in the power supply and the	Refer to <u>BCS-79, "Ren</u> ne BCM branch line. e ground circuit.	noval and Installation	
YES (Present error)> YES (Past error)>>E NO >> Repair the 1 .CHECK HARNESS Disconnect the ha	>Replace the BCM. R ror was detected in the power supply and the	Refer to <u>BCS-79, "Ren</u> ne BCM branch line. e ground circuit. N CIRCUIT)		<u>'</u> .
YES (Present error)> YES (Past error)>>E NO >> Repair the 1 .CHECK HARNESS Disconnect the ha Check the continu	Replace the BCM. For was detected in the power supply and the CONTINUITY (OPE) rness connector M22.	Refer to <u>BCS-79, "Ren</u> ne BCM branch line. e ground circuit. N CIRCUIT) harness connector ar		
YES (Present error)> YES (Past error)>>E NO >> Repair the CHECK HARNESS Disconnect the ha	>Replace the BCM. F rror was detected in the power supply and the CONTINUITY (OPEN rness connector M22 ity between the BCM	Refer to <u>BCS-79, "Ren</u> ne BCM branch line. e ground circuit. N CIRCUIT) harness connector ar	nd the harness conne	ctor.
YES (Past error)>>E NO >> Repair the 1 .CHECK HARNESS 1. Disconnect the ha 2. Check the continu BCM harne	>Replace the BCM. F ror was detected in the power supply and the CONTINUITY (OPE) rness connector M22. ity between the BCM	Refer to <u>BCS-79, "Ren</u> ne BCM branch line. e ground circuit. N CIRCUIT) harness connector ar Harness	nd the harness connector	

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>> Replace the PCB harness. NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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Is the inspection result normal?

YES

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095024

[CAN SYSTEM (TYPE 3)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness 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 steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

	Steering angle sensor harness conn	Resistance (Ω)	
Connector No.	Termi	nal No.	
M37	1	2	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 steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

Steering angle sens	Steering angle sensor harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M22	81	Existed
10137	2	IVIZZ	82	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:00000006095027
.CHECK CONNECTOR			
. Check the terminals and	able from the negative termin I connectors of the ABS actua nit side and connector side). al?		itrol unit) for damage, bend
CHECK HARNESS FOR			
. Check the resistance be nals.	or of ABS actuator and electric	electric unit (control uni	t) harness connector termi-
	Ind electric unit (control unit) harness		Resistance (Ω)
Connector No. E41	Terminal I 25		Resistance (Ω) Approx. 54 – 66
Connector No. E41 the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL heck the power supply an RC-119, "Diagnosis Procee	Terminal I 25 ithin the specification? actuator and electric unit (cor Y AND GROUND CIRCUIT d the ground circuit of the AB lure".	No. 15 ntrol unit) branch line.	Approx. 54 – 66
Connector No. E41 the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply and RC-119. "Diagnosis Proceed the inspection result norm YES (Present error)>>Repl and Installation" YES (Past error)>>Error was	Terminal I 25 actuator and electric unit (cor Y AND GROUND CIRCUIT d the ground circuit of the AB lure". al? ace the ABS actuator and ele	No. 15 Itrol unit) branch line. 3S actuator and electric ctric unit (control unit). R or and electric unit (contr	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-141, "Removal</u>

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095028

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

	AFS control unit harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
E104	30	7	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 EXL-84, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-126, "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.

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

 Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminal 	ls.
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damage, bend and connector side). <u>s the inspection result normal?</u> YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminal 	ls.
 Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damage, bend and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminal 	ls.
 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 terminal 	
 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 terminal 	
 CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminal 	
 Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminal 	
2. Check the resistance between the IPDM E/R harness connector terminal	
IPDM E/R harness connector	Resistance (Ω)
Connector No. Terminal No.	
E6 40 39	Approx. 108 – 132
NO >> Repair the IPDM E/R branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PC</u> Is the inspection result permal?	S-32, "Diagnosis Procedure".
<u>Is the inspection result normal?</u> YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-33. "Removal a</u>	and Installation"
YES (Past error)>>Error was detected in the IPDM E/R branch line.	<u>ina motanation</u> .
NO >> Repair the power supply and the ground circuit.	

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095030

[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).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC 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	
M125	4	6	Existed
IWI125	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC 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.	Termi		
B514	23 24		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-73, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

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

	CIRCUIT		
Diagnosis Procedure			INFOID:000000006095031
1.CHECK CONNECTOR			
	cable from the negative terr		nnection (unit side and con-
s the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
`	ITINUITY (OPEN CIRCUIT)	
 Disconnect the connect Check the continuity be 	tor of CAN gateway. Stween the CAN gateway ha	arness connector terminals.	
CAN gateway harness connector Continuity			
Connector No.		nal No.	Existed
M125	4	6	Existed
tion circuit 2).		f shield line is open) the roo	ot cause (CAN communica-
NO >> Check the harn tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	OPEN CIRCUIT of CAN gateway. tor of ADAS control unit.	f shield line is open) the roo	
 NO >> Check the harn tion circuit 2). 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be 	COPEN CIRCUIT of CAN gateway. tor of ADAS control unit. etween the ADAS control u	nit harness connector termi	
 NO >> Check the harn tion circuit 2). 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be 	COPEN CIRCUIT of CAN gateway. tor of ADAS control unit. etween the ADAS control unit ADAS control unit harness connect	nit harness connector termi	
NO >> Check the harn tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	COPEN CIRCUIT of CAN gateway. tor of ADAS control unit. etween the ADAS control unit NDAS control unit harness connect Termin 14	nit harness connector termi	nals.

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095032

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M125	4 6		Existed	
1123	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).

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	Resistance (Ω)		
Connector No.	Termi		
B9	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-47, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to <u>SBC-54, "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.

RDR-L BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

Diagnosis Procedure			INFOID:000000006095033
1.CHECK CONNECTOR			
	cable from the negative terminated connectors of the side rada		and loose connection (unit
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect		ess connector terminals	
	Side radar LH harness connector		Resistance (Ω)
Connector No. B52	Terminal No.		Approx. 54 – 66
Check the power supply an Diagnosis Procedure".	Y AND GROUND CIRCUIT	e radar LH. Refer to <u>D/</u>	AS-575, "SIDE RADAR LH :
Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	lace the side radar LH. Refer t as detected in the side radar L	H branch line.	and Installation".
NO >> Repair the pow		IT.	
	er supply and the ground circu		
	er supply and the ground circu		
	er supply and the ground circu		1

< DTC/CIRCUIT DIAGNOSIS >

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RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095035

[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 side radar RH 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 RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check the right/left switching signal circuit of the side radar RH. Refer to <u>DAS-578</u>, "Diagnosis Procedure". Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the root cause.

3.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.	Termir		
B252	4 3		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the side radar RH branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-576. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-592, "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.

APA BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

	lure			INFOID:000000006095037
.CHECK CONNECT	ŌR			
 Turn the ignition s Disconnect the ba Check the followir nector side). Accelerator pedal Harness connector Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	witch OFF. ttery cable from the ne og terminals and conne actuator or M151 or M150 or M23 and PCB harne	ectors for damage, be ss side connector or. -	nd and loose con	nection (unit side and con-
	nce between the accel		harness connecto	r terminals.
Connector No	Accelerator pedal actuator			Resistance (Ω)
Connector No. M152	5	Terminal No.	4	Approx. 54 – 66
-	alue within the specific		4	700 - 100 -
theck the power supp <u>RATOR PEDAL ACT</u> the inspection result YES (Present error)> <u>TANCE C</u> YES (Past error)>>E NO >> Repair the .CHECK HARNESS . Disconnect the ha	<u>UATOR : Diagnosis P</u> t normal? >Replace the accele <u>ONTROL ASSIST SYS</u> rror was detected in th power supply and the CONTINUITY (OPEN rness connector M23.	uit of the accelerator rocedure". rator pedal assembly STEM : Removal and e accelerator pedal a e ground circuit. I CIRCUIT)	y. Refer to <u>ACC-</u> Installation". ctuator branch line	efer to <u>DAS-203, "ACCEL-</u> 4, "MODELS WITH DIS- e.
	ator harness connector	Harness	connector	Oraștinuitu
Accelerator pedal actu		Connector No.	Terminal No.	Continuity
Accelerator pedal actu Connector No.	Terminal No.			
•	Terminal No. 5	M23	138	Existed

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095036

[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).
- Lane camera unit
- Harness connector R7
- Harness connector M110
- Harness connector M24 and PCB harness 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 lane camera unit.
- 2. Check the resistance between the lane camera unit harness connector terminals.

L	Resistance (Ω)		
Connector No.	Termi		
R8	4 8		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 lane camera unit. Refer to <u>DAS-403</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-419, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the lane camera unit harness connector and the harness connector.

Lane camera unit	Lane camera unit harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R8	4	M24	179	Existed
KO	8	11124	178	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

LASER BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006095038 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). ICC sensor Harness connector E106 D Harness connector M6 Harness connector M28 and PCB harness side connector Is the inspection result normal? E YES >> GO TO 2. >> Repair the terminal and connector. NO 2.check harness for open circuit Disconnect the connector of ICC sensor. 1. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector Resistance (Ω) Connector No. Terminal No. E67 3 6 Approx. 108 - 132 Н 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 ICC sensor. Refer to CCS-162, "ICC SENSOR : Diagno-. [sis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation". Κ YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit. **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT) L 1. Disconnect the harness connector M28. Check the continuity between the ICC sensor harness connector and the harness connector. 2. LAN ICC sensor harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Ν 3 343 Existed E67 M28 6 345 Fxisted Is the inspection result normal? YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

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CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Continuity		
Connector No.	Termi	Continuity	
M182	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 PCB harness 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
M182	6		Not existed
INTO2	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

- VQ37VHR

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

VK56VD

ECM		Resistance (Ω)	
Termi	nal No.		
146	151	Approx. 108 – 132	

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

INFOID:000000006095040

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132
the measurement value within the spec	cification?	
ES >> GO TO 5.		
O >> Replace the ECM and/or the	IPDM E/R.	
CHECK SYMPTOM		
	symptoms described i	n the "Symptom (Results from interview with
stomer)" are reproduced.		
spection result		
eproduced>>GO TO 6.	again Follow the trout	ble diagnosis procedure when past error is
detected.	again. Follow the trou	ble diagnosis procedure when past error is
CHECK UNIT REPRODUCTION		
	following procedure for	anah unit
rform the reproduction test as per the for Turn the ignition switch OFF.	ollowing procedure for	each unit.
Disconnect the battery cable from the		
Disconnect one of the unit connectors	s of CAN communication	on circuit 1.
NOTE: ECM and IPDM E/R have a termination	on circuit. Check other	units first
		if the symptoms described in the "Symptom
(Results from interview with customer		
NOTE:	a agur da nat confuca	them with other exampteme
Although unit-related error symptoms	s occur, do not confuse	
pection result		, ,
$\alpha \alpha \beta \alpha \beta \alpha \beta \beta$	`hook other unite on no	
eproduced>>Connect the connector. C on-reproduced>>Replace the unit who		r the above procedure.

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CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

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
M182	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 PCB harness 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
M182	13	Ground	Not existed
IVI I OZ	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway		Resistance (Ω)	
Termi	nal No.		
4	10	Approx. 108 – 132	
6	12	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

INFOID:000000006095041

	CAN COMMUNICATION CIRCUIT 2
< C	DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 3)]
N	on-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.
6.	CHECK UNIT REPRODUCTION
Pe	form the reproduction test as per the following procedure for each unit.
1.	Turn the ignition switch OFF.
2. 3.	Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication circuit 2.
	NOTE:
4.	CAN gateway has two termination circuits. Check other units first. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
	NOTE: Although unit-related error symptoms occur, do not confuse them with other symptoms.
Ins	pection result
	eproduced>>Connect the connector. Check other units as per the above procedure. on-reproduced>>Replace the unit whose connector was disconnected.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006095042

[CAN SYSTEM (TYPE 3)]

1.CHECK CAN DIAGNOSIS

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

NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

Are the CAN communication 1 and 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. 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 ha	rness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B50	7	E67	3	Existed
630	8	E07	6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

A	DAS control unit harness connec	tor	Continuity
Connector No.	Terminal No.		Continuity
B50	7 8		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

 $\mathbf{5.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

LAN-240

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ADAS control unit l	narness connector		Orantiauitu
Connector No.	Terminal No.	Ground	Continuity
B50	7	Ground	Not existed
500	8		Not existed
Is the inspection result normal YES >> GO TO 6. NO >> Check the harne 6.CHECK TERMINATION C	ess and repair or replace (i	if shield line or PCB harnes	s is short) the root cause.
	rol unit and the ICC senso tween the ADAS control u		
AD	AS control unit		
T	erminal No.		Resistance (Ω)
7	8	A	pprox. 108 – 132
3. Check the resistance be	tween the ICC sensor terr	ninals.	
	ICC sensor		Resistance (Ω)
	Ferminal No.		
3	6	A	pprox. 108 – 132
7. СНЕСК ЗҮМРТОМ	AS control unit and/or the Check if the symptoms d		(Results from interview with
Inspection result			
detected.		<i>i</i> the trouble diagnosis pr	ocedure when past error is
8. CHECK UNIT REPRODU	CTION		
Perform the reproduction tes 1. Turn the ignition switch (2. Disconnect the battery c			
 Disconnect one of the ur NOTE: 	nit connectors of ITS comr	munication system.	
 Connect the battery cat (Results from interview v NOTE: 	ole to the negative termin with customer)" are reprod	uced.	described in the "Symptom
Although unit-related err Inspection result	or symptoms occur, do no	t confuse them with other s	symptoms.
Reproduced>>Connect the Non-reproduced>>Replace			edure.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000006094946

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

-	warning control unit connector	A/C auto amp. h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M66	12	Existed
10143	1	ΟΟΙΥΙ	11	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 low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

< DTC/CIRCUIT DIAG	SNOSIS >		[CAN	I SYSTEM (TYPE 4)]
MAIN LINE BET	WEEN HVAC	AND A-BAG CI	RCUIT	
Diagnosis Proced	ure			INFOID:000000006094947
1. CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)		
 Disconnect the foll ECM A/C auto amp. AV control unit 	tery cable from the n owing harness conne ty between the A/C a	ectors.	nnector and the AV co	ntrol unit harness con-
A/C auto amp. ha	arness connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Connector No.				
M66	12	M210	90	Existed

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity	
M66	12	M84	81	Existed	-
IVIOO	11	10104	80	Existed	-

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000006094948

[CAN SYSTEM (TYPE 4)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M66	12	M210	90	Existed
1000	11	WIZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M66	12	M84	81	Existed
IVIOO	11	10104	80	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

I SYSTEM (TYPE 4)	[CAN		NOSIS >	TC/CIRCUIT DIAG
	Т	D M&A CIRCUI	WEEN AV ANI	AIN LINE BET
INFOID:0000000060945			ıre	agnosis Procedu
		N CIRCUIT)	CONTINUITY (OPEN	CHECK HARNESS
			ery cable from the ne owing harness conne	
pination meter harnes	nnector and the combi	ontrol unit harness con	ty between the AV co	
		ontrol unit harness con	ty between the AV co	Check the continuit connector.
Dination meter harnes			ty between the AV co	Check the continuit connector. Models with naviga
	harness connector	Combination meter Connector No.	ty between the AV co tion system rness connector	Check the continuit connector. Models with naviga AV control unit ha Connector No.
Continuity	harness connector Terminal No.	Combination meter	ty between the AV co tion system rness connector Terminal No.	Check the continuit connector. Models with naviga AV control unit ha
Continuity Existed	harness connector Terminal No. 14	Combination meter Connector No.	ty between the AV co tion system rness connector Terminal No. 90 74	Check the continuit connector. Models with naviga AV control unit ha Connector No.
Continuity Existed Existed	harness connector Terminal No. 14 15	Combination meter Connector No.	ty between the AV co tion system rness connector Terminal No. 90 74 rigation system	Check the continuit connector. Models with naviga AV control unit ha Connector No. M210
Continuity Existed	harness connector Terminal No. 14 15	Combination meter Connector No. M53	ty between the AV co tion system rness connector Terminal No. 90 74 rigation system	Check the continuit connector. Models with naviga AV control unit ha Connector No. M210 Models without nav
Continuity Existed Existed	harness connector Terminal No. 14 15 harness connector	Combination meter Connector No. M53 Combination meter	ty between the AV co tion system rness connector Terminal No. 90 74 rigation system rness connector	Check the continuit connector. Models with naviga AV control unit ha Connector No. M210 Models without nav AV control unit ha

MAIN LINE BETWEEN AV AND M&A CIRCUIT

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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006094950

[CAN SYSTEM (TYPE 4)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M53	14	14 M105	7	Existed
CCIVI	15	COT IVI	8	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 combination meter and the data link connector.
- NO >> Replace the PCB harness.

< [DTC/CIRCUIT DIA		WEEN DLC AN	D BCM CIRCUIT [CAN	SYSTEM (TYPE 4)]	
M	AIN LINE BET	FWEEN DLC AI	ND BCM CIRC	UIT		Δ
Di	Diagnosis Procedure				INFOID:000000006094951	A
1.	1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)					В
1. 2. 3. - - 4.	Disconnect the fol ECM Harness connecto BCM	Ittery cable from the no lowing harness conne ors M181 and M105	ectors.	BCM harness connec	tor.	
	Harness connector BCM harness connector				Continuity	
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
	N405	7	14400	39	Existed	

Is the inspection result normal?

M105

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

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

40

NO >> Replace the PCB harness.

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Existed

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MAIN LINE BETWEEN BCM AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000006094955

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harness connector		ss connector PCB harness connector	
Connector No.	Terminal No.	Terminal No.	Continuity
M120	39	35	Existed
IVI 120	40	36	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M20	35	M7	72	Existed
WZ0	36	1017	73	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
DI	73	75	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 BCM and the 4WAS main control unit. NO >> Replace the body harness.

< DTC/CIRCUIT DIA	GNOSIS >		5 ANI		I N SYSTEM (TYPE 4)	
	TWEEN RAS A	ND ABS (CIRCL	JIT		
Diagnosis Procec	lure				INF01D:00000000609495	
	TOR					
 Check the following and harness side) Harness connectore <l< td=""><td>attery cable from the n ng terminals and con or B1 or M7 or M6 or E106 t normal?</td><td>nectors for da tor. N CIRCUIT)</td><td></td><td>bend and loose cor</td><td>nection (connector side</td></l<>	attery cable from the n ng terminals and con or B1 or M7 or M6 or E106 t normal?	nectors for da tor. N CIRCUIT)		bend and loose cor	nection (connector side	
 Check the continu 	ity between the harne	ess connector		s.		
Connector No.		Terminal No. Continuity				
B1	72			74	Existed Existed	
CHECK HARNESS	he body harness. CONTINUITY (OPE) rness connectors M6 ity between the harne	and E106.	5.			
Harness	connector		Harness	connector		
Connector No.	Terminal No.	Connector	No.	Terminal No.		
 M7	74	M6		22	Existed	
	75			23	Existed	
CHECK HARNESS Disconnect the co Check the continu harness connecto	e main line between the CONTINUITY (OPE) nnector of ABS actua ity between the harne	N CIRCUIT) tor and electri ess connector	c unit (co and the	ontrol unit).	electric unit (control unit	
Connector No.	connector Terminal No.	Connector	harness of	connector Terminal No.	Continuity	
	22			25	Existed	
E106		E41	-			

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

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

23

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

15

Existed

[CAN SYSTEM (TYPE 4)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 4)] MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
- Harness connector B33
- Harness connector B245

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.
- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH h	Side radar LH harness connector		Harness connector		G
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B52	4	B33	13	Existed	Н
002	3	633	14	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

-	Harness	connector	Side radar RH h	arness connector		K
-	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
-	B245	13	B252	4	Existed	L
_	D243	14	DZJZ	3	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 side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

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INFOID:000000006094959

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000006094960

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B201
- Harness connector M117
- Harness connector M20 and PCB harness 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.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

Side radar RH h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B252	4	B201	66	Existed
BZJZ	3	6201	67	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M117	66	M20	38	Existed
	67		40	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

PCB harness connector	Harness connector		Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
38	M150	11	Existed
40		10	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 RH and the accelerator pedal actuator.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

Revision: 2010 June

[CAN SYSTEM (TYPE 4)] А В С D Е F G Н J Κ L LAN Ν Ο Ρ

MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000006094961

[CAN SYSTEM (TYPE 4)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

Harness	connector	Harness connector				Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M150	11	M44.0	13	Existed		
101130	10	M110	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 accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

ECM BRANCH LINE CIRCUIT

DIC/CIRCUIT DIAGNUS	, i o >		
ECM BRANCH LINI	ECIRCUIT		
Diagnosis Procedure			INF01D:000000060949
1. CHECK CONNECTOR			
nector side). - ECM - Harness connector M30 <u>Is the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR 1. Disconnect the connector 2. Check the resistance be	able from the negative ninals and connectors f and PCB harness side al? nal and connector. OPEN CIRCUIT or of ECM.	or damage, bend and loose	connection (unit side and cor
- VQ37VHR	ECM harness connector	r	
Connector No.	Terminal No.		Resistance (Ω)
M107	114	113	Approx. 108 – 132
VK56VD	ECM harness connector	r erminal No.	— Resistance (Ω)
M160	146	151	Approx. 108 – 132
VQ37VHR: <u>EC-180, "Diag</u> VK56VD: <u>EC-716, "Diagno</u>	Y AND GROUND CIRC I the ground circuit of th nosis Procedure" psis Procedure"	CUIT ne ECM. Refer to the followin	ng.
 VK56VD: <u>EC-</u> YES (Past error)>>Error was 	ace the ECM. Refer to C-535, "Removal and In 535, "Removal and Inst as detected in the ECM er supply and the groun	<u>nstallation"</u> t <u>allation"</u> I branch line. Id circuit.	
1. Disconnect the harness	connector M30.	s connector and the harness	s connector.

< DTC/CIRCUIT DIAGNOSIS >

ECM harnes	ss connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M107	114	M00	439	Existed	
WITO7	113	M30	438	Existed	

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M160	146	M30	439	Existed
WINO	151	10130	438	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

TPMS BRANCH	I LINE CIRCUI	Г		
Diagnosis Proced	ure			INFOID:00000006094963
1.CHECK CONNECT	OR			
 Check the followin nector side). Low tire pressure v Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the context 	tery cable from the ne g terminals and conne warning control unit r M29 and PCB harne normal? terminal and connect FOR OPEN CIRCUIT	ectors for damage ss side connecto or. - ssure warning co	r ntrol unit.	onnection (unit side and con-
				ess connector terminals.
Low Connector No.	ire pressure warning contr	ol unit harness conne	ctor	Resistance (Ω)
	2		1	Approx. 54 – 66
Is the measurement va YES >> GO TO 3.	lue within the specific	ation?		
NO >> GO TO 4. 3. CHECK POWER SI Check the power supp "Diagnosis Procedure" Is the inspection result	ly and the ground cire		e pressure warning o	control unit. Refer to <u>WT-53.</u>
YES (Present error)> Installation YES (Past error)>>Er NO >> Repair the	Replace the low tire	e low tire pressure ground circuit.	-	er to <u>WT-70, "Removal and</u> nit branch line.
 Check the continu ness connector. 		re pressure warr	ing control unit harr	ness connector and the har-
harness	varning control unit connector		ness connector	Continuity
Connector No.	Terminal No. 2	Connector No.	Terminal No 396	
M43	1	M29	395	Existed
s the inspection result				

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000006094964

[CAN SYSTEM (TYPE 4)]

1. СНЕСК DTC	
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Check DTC of the CAN gateway with CONSULT-III.

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 M28 and PCB harness side connector

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.	Terminal No.		
M125	1	7	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 CAN gateway. Refer to <u>LAN-143</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

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	
MADE	1	M28	326	Existed	
M125	7		328	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Proced	ure			INFOID:000000006094965
1.снеск ртс				
Check DTC of the CAN Is U1010 or B2600 ind	• •	OLI-III.		
	diagnosis of the indic	ated DTC		
NO >> GO TO 2.	-			
2.CHECK CONNECT	OR			
 3. Check the followin nector side). - CAN gateway - Harness connector 	ttery cable from the ne g terminals and conn r M23 and PCB harne r M20 and PCB harne r M7	ectors for damage, be ess side connector	end and loose connec	tion (unit side and con-
Is the inspection result				
YES >> GO TO 3.				
^	terminal and connec			
3. CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
	nnector of CAN gatew ity between the CAN		nector terminals.	
	CAN gateway harn	ess connector		Continuity
Connector No.		Terminal No.		Continuity
M125	4		6	Existed
	10		12	Existed
Is the inspection resultYES>> GO TO 4.NO>> GO TO 5.4.CHECK POWER S	UPPLY AND GROUN			
Check the power supp dure".	bly and the ground c	ircuit of the CAN gat	eway. Refer to <u>LAN-1</u>	43. "Diagnosis Proce-
<u>ls the inspection result</u>	normal?			L
•	Replace the CAN gate	ateway Refer to LAN.	.1/// "Removal and In	
YES (Past error)>>E	power supply and the	ne CAN gateway bran e ground circuit.	ich line (CAN commur	
YES (Past error)>>E NO >> Repair the 5.CHECK HARNESS 1. Disconnect the ha	power supply and the CONTINUITY (OPEN rness connector M23.	ne CAN gateway bran e ground circuit. N CIRCUIT)		nication circuit 2).
YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	power supply and the CONTINUITY (OPEN rness connector M23.	ne CAN gateway bran e ground circuit. N CIRCUIT) gateway harness con	ich line (CAN commur	nication circuit 2).
YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	Power supply and the CONTINUITY (OPE) rness connector M23 ity between the CAN	ne CAN gateway bran e ground circuit. N CIRCUIT) gateway harness con	nch line (CAN commur	nication circuit 2).
YES (Past error)>>En NO >> Repair the 5.CHECK HARNESS 1. Disconnect the ha 2. Check the continu	power supply and the CONTINUITY (OPEN rness connector M23. ity between the CAN arness connector	ne CAN gateway bran e ground circuit. N CIRCUIT) gateway harness con Harness	nector and the harnes	nication circuit 2).

Is the inspection result normal?

YES >> GO TO 6.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

[CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

PCB harness connector	PCB harness connector	Continuity	
Terminal No.	Terminal No.	Continuity	
133	24	Existed	
135	27	Existed	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

7.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M20	24	M7 -	34	Existed
WIZU	27		35	Existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

8.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	34	32	Existed
וט	35	33	Existed

Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

IVAC BRANCH		-		
Diagnosis Proced	ure			INFOID:000000006094966
	OR			
 Check the following nector side). A/C auto amp. 	tery cable from the r	nectors for damage, be	nd and loose conned	ction (unit side and con-
s the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the CHECK HARNESS	terminal and connect			
	nector of A/C auto a			
		auto amp. harness cor	nnector terminals.	
	A/C auto amp. harr	ness connector		
Connector No.		Terminal No.	Terminal No. Resistance (Ω)	
M66	12		11	Approx. 54 – 66
the measurement va	lue within the specifi	cation?		
YES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SU heck the power supp iagnosis Procedure". the inspection result YES (Present error)>>	JPPLY AND GROUN ly and the ground ci <u>normal?</u> >Replace the A/C au	ND CIRCUIT ircuit of the A/C auto a ito amp. Refer to <u>HAC-</u>	201. "Removal and I	167. "A/C AUTO AMP. : Installation".
YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supp iagnosis Procedure". the inspection result YES (Present error)>> YES (Past error)>>Error)>>Error)>>Error)	JPPLY AND GROUN ly and the ground ci <u>normal?</u> >Replace the A/C au	ND CIRCUIT ircuit of the A/C auto a ito amp. Refer to <u>HAC-</u> he A/C auto amp. bran	201. "Removal and I	
NO >> GO TO 4. CHECK POWER SU theck the power suppling the inspection result YES (Present error)>> YES (Past error)>>Error)>>Error)	JPPLY AND GROUN ly and the ground ci <u>normal?</u> >Replace the A/C au ror was detected in t power supply and th	ND CIRCUIT ircuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit.	201. "Removal and I	
YES >> GO TO 3. NO >> GO TO 4. •CHECK POWER SU heck the power supp iagnosis Procedure". •the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the •CHECK HARNESS Disconnect the har	JPPLY AND GROUN ly and the ground ci <u>normal?</u> Replace the A/C au ror was detected in t power supply and th CONTINUITY (OPE mess connector M28	ND CIRCUIT ircuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT)	201. "Removal and I ch line.	Installation".
YES >> GO TO 3. NO >> GO TO 4. •CHECK POWER SU heck the power supp iagnosis Procedure". • the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the •CHECK HARNESS Disconnect the har	JPPLY AND GROUN ly and the ground ci normal? Replace the A/C au ror was detected in t power supply and th CONTINUITY (OPE mess connector M28 ty between the A/C a	ND CIRCUIT ircuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT)	201, "Removal and I ch line. nector and the harne	Installation". ess connector.
YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supp iagnosis Procedure". the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the har Check the continui	JPPLY AND GROUN ly and the ground ci normal? Replace the A/C au ror was detected in t power supply and th CONTINUITY (OPE mess connector M28 ty between the A/C a arness connector Terminal No.	ND CIRCUIT ircuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT) 3. auto amp. harness con	201, "Removal and I ch line. nector and the harne connector Terminal No.	ess connector.
YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supp iagnosis Procedure". the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the har Check the continui	JPPLY AND GROUN ly and the ground ci <u>normal?</u> Replace the A/C au ror was detected in t power supply and th CONTINUITY (OPE ness connector M28 ty between the A/C a	ND CIRCUIT ircuit of the A/C auto a to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT) B. auto amp. harness con Harness o	201, "Removal and I ch line. nector and the harne	Installation". ess connector.

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

Ρ

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094967

[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).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness 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)	
F61	3	8	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 TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	arness connector	Harness	connector	Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
F61	3	M28	346	Existed	
1.01	8	IVIZO	347	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094968 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 following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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AV BRANCH LINE CIRCUIT

INFOID:000000006094969

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).
- AV control unit
- Harness connector M25 and PCB harness 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi		
M210	90 74		Approx. 54 – 66

Models without navigation system

	AV control unit harness connecto	Resistance (Ω)	
Connector No.	Terminal No.		Resistance (12)
M84	81	80	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 AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

AV control unit h	arness connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M210	90	M25	201	Existed
WIZ 10	74		221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

AV control unit ha	arness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
N04	81	MOE	201	Existed	
M84	80	– M25	221	Existed	
e inspection result	normal?				
(With navigation s	e PCB harness. system)>>Repair the s connector M25.	harness between the A	AV control unit harness	s connector M210 an	

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094970

[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).
- Combination meter
- Harness connector M24 and PCB harness 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	ombination meter harness connect	Resistance (Ω)	
Connector No.	Terminal No.		Resistance (22)
M53	14 15		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 combination meter Refer to <u>MWI-70. "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

Combination meter	r harness connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M53	14	M24	176	Existed
IND5	15	10124	177	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

agnosis Proced				INFOID:00000000609497		
.CHECK CONNECT	OR					
Check the followin nector side). Data link connecto Harness connecto Harness connecto Harness connecto the inspection result (ES >> GO TO 2.	tery cable from the n g terminals and conn M181 M105 M23 and PCB harne normal? terminal and connec FOR OPEN CIRCUI	ectors for damage, be ess side connector tor. T	end and loose co	nnection (unit side and con		
Connector No.		Data link connector Resistance (Ω)				
M182	6		14	Approx. 54 – 66		
the measurement va	•					
/ES (Present error)>: /ES (Past error)>>Er NO >> GO TO 3.	CONTINUITY (OPEI	ne data link connector				
		Harness connector			ctor Harness co	
Disconnect the ha	connector	Harness	connector	Continuity		
Disconnect the har Check the continui	connector Terminal No.	Harness Connector No.	connector Terminal No.	Continuity		
Disconnect the har Check the continui Data link				Continuity Existed Existed		

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094972

[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).
- BCM
- Harness connector M22 and PCB harness 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 BCM.
- 2. Check the resistance between the BCM harness connector terminals.

	BCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M120	39 40		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 BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

BCM harne	ss connector	Harness	Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
101120	40	IVIZZ	102	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

	LINE CIRCUI	•		
Diagnosis Procedu	ure			INFOID:000000006094973
1.CHECK CONNECT	OR			
 Check the following nector side). Steering angle sen 	tery cable from the ne g terminals and conne	ectors for damage, be	nd and loose connec	tion (unit side and con-
Is the inspection result	normal?			
- ·	terminal and connect			
2.CHECK HARNESS	FOR OPEN CIRCUIT	T		
	nnector of steering an ce between the steeri	gle sensor. ing angle sensor harn	ess connector termin	als.
	Steering angle sensor h			Resistance (Ω)
Connector No.		Terminal No.		
M37 Is the measurement va	1		2	Approx. 54 – 66
NO >> GO TO 4. 3.CHECK POWER SL Check the power supp gram ["] .	ly and the ground cir		ngle sensor. Refer to	BRC-54, "Wiring Dia-
4.CHECK HARNESS 1. Disconnect the har	Replace the steering ror was detected in th power supply and the CONTINUITY (OPEN ness connector M22.	e steering angle sens e ground circuit. I CIRCUIT)	or branch line.	
YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har	Replace the steering ror was detected in th power supply and the CONTINUITY (OPEN ness connector M22. ty between the steering	e steering angle sens e ground circuit. I CIRCUIT)	or branch line.	e harness connector.
YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har 2. Check the continuit	Replace the steering ror was detected in th power supply and the CONTINUITY (OPEN ness connector M22. ty between the steering	e steering angle sens e ground circuit. I CIRCUIT) ng angle sensor harne	or branch line.	
YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har 2. Check the continuit	Replace the steering ror was detected in th power supply and the CONTINUITY (OPEN mess connector M22. ty between the steerin	e steering angle sens e ground circuit. I CIRCUIT) ng angle sensor harne Harness	or branch line.	e harness connector.

RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094975

[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 4WAS main 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 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WA	4WAS main control unit harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
B54	1	8	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 4WAS main control unit. Refer to <u>STC-171, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-185, "Removal and Installation".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:00000006094976
.CHECK CONNECTOR			
. Check the terminals and	able from the negative termi connectors of the ABS actu it side and connector side). <u>I?</u> nal and connector.	uator and electric unit (co	ntrol unit) for damage, bend
	r of ABS actuator and elect tween the ABS actuator an		t) harness connector termi-
ABS actuator and electric unit (control unit) harness connector			
ABS actuator at	id electric unit (control unit) name	ss connector	$Resistance\left(\Omega\right)$
ABS actuator an Connector No.	Termina		Resistance (Ω)
Connector No. E41 the measurement value wit	Termina 25		Resistance (Ω) Approx. 54 – 66
Connector No. E41 the measurement value with YES >> GO TO 3. NO >> Repair the ABS a CHECK POWER SUPPLY heck the power supply and RC-119, "Diagnosis Proced the inspection result normal	Termina 25 thin the specification? actuator and electric unit (co 7 AND GROUND CIRCUIT the ground circuit of the A ure". ace the ABS actuator and el	1 No. 15 ontrol unit) branch line. ABS actuator and electric lectric unit (control unit). R	Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-141, "Removal</u>

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< DTC/CIRCUIT DIAGNOSIS >

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094977

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

/	AFS control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E104	30	7	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 EXL-84, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-126, "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.

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

IPDM-E BRANCH LINE CIRCUIT Diagnosis Procedure	
Diagnosis Procedure	
	INFOID:000000006094978
1. CHECK CONNECTOR	
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damage, bend and loose conne and connector side). 	ection (unit side
Is the inspection result normal?	
YES >> GO TO 2.	
NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminals. 	
IPDM E/R harness connector Resist	tance (Ω)
Connector No. Terminal No.	
E6 40 39 Approx.	. 108 – 132
NO >> Repair the IPDM E/R branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis</u> <u>Is the inspection result normal?</u>	Procedure".
YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-33, "Removal and Installation"</u> . YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit.	

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< DTC/CIRCUIT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094979

[CAN SYSTEM (TYPE 4)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC 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
M125	4	6	Existed
IWI125	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Driver seat control unit harness connector		
Connector No.	Termi	Terminal No.	
B514	23	24	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-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

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

Diagnosis Procedure 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. 2. Scheck the following terminals and connectors for damage, bend and loose connection (unit side and connector side). 2. Orbeck the following terminals and connectors for damage, bend and loose connection (unit side and connector side). 3. Orbeck the following terminals and connector. 2. 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 harness connector terminals. Connect the connector of CAN gateway harness connector terminals. M125 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). 3. CHECK HARNESS FOR OPEN CIRCUIT 1 1 Approx.54-66 Is the messurement value within the specification? YES >> GO TO 4. 1 Approx.54-66 Is the messurement value within the specification? YES /> SO TO 4. NO >> Replace the body harness. Acheck the ower supply and the ground circuit of the ADAS				
1. Turn the ignition 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 sthe inspection result normal? YES YES 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. M125 10 12 Image: Sold of the angle state and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). 3. CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of CAN gateway. 2. Otheck the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). 3. CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of ADAS control unit. 3. Check the resistance between the ADAS control unit harness connector terminals. MDAS control unit harness connector Resistance (Ω) 2. Disconnect the connector of ADAS control unit. Approx: 54 - 66 3. the measurement value within the specification? YES YES	Diagnosis Procedure			INFOID:000000006094980
 Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). ADAS control unit CAN gateway Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the connector of CAN gateway. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Connector No. Cannector No. Cannector No. Terminal No. M125 Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). Check the resistance between the ADAS control unit. Connector No. Terminal No. Connect the connector of CAN gateway. Connect the connector of CAN gateway. Connect the connect of ADAS control unit. Connector No. Terminal No. ADAS control unit harness connector Resistance (Ω) Bo0 14 15 Approx: 54 - 66 Is the measurement value within the specification? YES (Paste the body harness. ACHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Procedure.' Is the inspe	1.CHECK CONNECTOR			
YES >> GO TO 2. NO >> Repair the terminal and connector. 2C.HECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. Image: Connector No. Continuity Connector No. Terminal No. M125 4 6 Image: Connector result normal? Existed YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). 3.CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of CAN gateway. 2. Disconnect the connector of ADAS control unit harness connector terminals. Image: Connect the connector of ADAS control unit harness connector terminals. Image: Connect the connector of ADAS control unit harness connector terminals. Image: Connect the connector of ADAS control unit harness connector terminals. Image: Connect No. Terminal No. Resistance (Ω) Encident terminal No. B50 14 15 ADAS control unit harness connector Resistance (Ω) Image: Connector No. Terminal No. B50 14	 Disconnect the battery Check the following tern nector side). ADAS control unit 	cable from the negative terr		nnection (unit side and con-
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. M125 4 6 Existed 10 12 S the inspection result normal? YES YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). 3.CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of CAN gateway. 2. Disconnect the connector of ADAS control unit. 3. CHECK Harness FOR OPEN CIRCUIT 1. Connect the connector of ADAS control unit harness connector terminals. Xonnect the connector of ADAS control unit. B: Check the resistance between the ADAS control unit harness connector terminals. Xonnector No. Terminal No. B: Ste 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 DAS-66. "Diagnosis Proce- ture". S the inspection result normal? YES (Present	YES >> GO TO 2.			
1. Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Continuity M125 4 6 Existed M125 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). 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. 3. Check the resistance between the ADAS control unit. Resistance (Ω) MO Sol 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 ADAS control unit. Refer to DAS-66. "Diagnosis Proce-dure". Ste inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line.)	
Connector No. Terminal No. Continuity M125 4 6 Existed interminal No. 10 12 Existed s the inspection result normal? YES >> GO TO 3. Existed NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). 3.CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway. 2. Disconnect the connector of ADAS control unit. 3. 3. Check the resistance between the ADAS control unit harness connector terminals. Resistance (Ω) Connector No. Terminal No. B50 14 15 Approx. 54 – 66 s 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 DAS-66. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation". YES (Present error)>>Error was detected in the ADAS control unit branch line. YES (Past error)>>Error was detected in the ADAS control unit branch line.	I. Disconnect the connect	tor of CAN gateway.		
M125 4 6 Existed 10 12 Existed s the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). 3. CHECK HARNESS FOR OPEN CIRCUIT 1. Connect the connector of CAN gateway. 2. Disconnect the connector of ADAS control unit. 3. Check the resistance between the ADAS control unit harness connector terminals. ADAS control unit harness connector Resistance (Ω) Connector No. Terminal No. B50 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 ADAS control unit. Refer to DAS-66. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation". YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".				Continuity
M125 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). 3.CHECK HARNESS FOR OPEN CIRCUIT 1 Connect the connector of CAN gateway. 2. Disconnect the connector of ADAS control unit. 3. 3. Check the resistance between the ADAS control unit harness connector terminals. Resistance (Ω) Connector No. Terminal No. B50 14 15 Approx. 54 - 66 Ste 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 DAS-66, "Diagnosis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation". YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation". YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".	Connector No.			Fxisted
s the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). 3.CHECK HARNESS FOR OPEN CIRCUIT I. Connect the connector of CAN gateway. 2. Disconnect the connector of ADAS control unit. 3. Check the resistance between the ADAS control unit harness connector terminals. ADAS control unit harness connector Resistance (Ω) Connector No. Terminal No. B50 14 15 Approx. 54 - 66 s the measurement value within the specification? YES YES ADAS control circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Proce-ture". S the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation". YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line.	M125			
Connector No. Terminal No. Resistance (Ω) B50 14 15 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 4. NO >> Replace the body harness. NO >> Replace the body harness. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66, "Diagnosis Procelure". DAS-66, "Diagnosis Procelure". S the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line.	· · · · · · · · · · · · · · · · · · ·	OPEN CIRCUIT		
Connector No. Terminal No. B50 14 15 Approx. 54 – 66 s 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 DAS-66. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line.	 B.CHECK HARNESS FOR Connect the connector Disconnect the connect 	of CAN gateway. tor of ADAS control unit.	nit harness connector termir	
s 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 DAS-66. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation". YES (Past error)>>Error was detected in the ADAS control unit branch line.	 CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b 	of CAN gateway. tor of ADAS control unit. etween the ADAS control u		nals.
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-66. "Diagnosis Procedure"</u> . Is the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to <u>DAS-67. "Removal and Installation"</u> . YES (Past error)>>Error was detected in the ADAS control unit branch line.	 CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b 	of CAN gateway. tor of ADAS control unit. etween the ADAS control un ADAS control unit harness connect	tor	nals.
	3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance b Connector No. B50	of CAN gateway. tor of ADAS control unit. etween the ADAS control un ADAS control unit harness connect Termir 14	tor nal No.	nals. Resistance (Ω)
	CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance b Connector No. B50 sthe measurement value v YES >> GO TO 4. NO >> Replace the bo CHECK POWER SUPPI Check the power supply an dure". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	of CAN gateway. tor of ADAS control unit. etween the ADAS control unit ADAS control unit harness connect Termin 14 within the specification? dy harness. _Y AND GROUND CIRCUIT d the ground circuit of the A nal? place the ADAS control unit. vas detected in the ADAS co	tor hal No. 15 ADAS control unit. Refer to J Refer to <u>DAS-67, "Remova</u> pontrol unit branch line.	nals. Resistance (Ω) Approx. 54 – 66 DAS-66. "Diagnosis Proce-
	CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance b Connector No. B50 sthe measurement value v YES >> GO TO 4. NO >> Replace the bo CHECK POWER SUPPI Check the power supply an dure". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	of CAN gateway. tor of ADAS control unit. etween the ADAS control unit ADAS control unit harness connect Termin 14 within the specification? dy harness. _Y AND GROUND CIRCUIT d the ground circuit of the A nal? place the ADAS control unit. vas detected in the ADAS co	tor hal No. 15 ADAS control unit. Refer to J Refer to <u>DAS-67, "Remova</u> pontrol unit branch line.	nals. Resistance (Ω) Approx. 54 – 66 DAS-66. "Diagnosis Proce-

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094981

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

	CAN gateway harness connector		
Connector No.	Termi	Terminal No.	
M125	4	6	Existed
123	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).

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	Pre-crash seat belt control unit (driver side) harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
B9	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-47, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to <u>SBC-54, "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.

RDR-L BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

Diagnosis Procedure			INFOID:00000006094982
1.CHECK CONNECTOR			
Check the terminals an side and connector side	cable from the negative termin d connectors of the side rada e).		d and loose connection (unit
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect	or of side radar LH.		
2. Check the resistance be	etween the side radar LH harn	ess connector terminals	S.
Connector No.	Side radar LH harness connector	No	- Resistance (Ω)
B52	4	3	Approx. 54 – 66
Check the power supply an Diagnosis Procedure".	Y AND GROUND CIRCUIT	e radar LH. Refer to <u>D</u>	AS-575, "SIDE RADAR LH :
YES (Present error)>>Rep YES (Past error)>>Error w	lace the side radar LH. Refer as detected in the side radar L	H branch line.	and Installation".
YES (Present error)>>Rep YES (Past error)>>Error w	lace the side radar LH. Refer	H branch line.	and Installation".
YES (Past error)>>Error w	lace the side radar LH. Refer as detected in the side radar L	H branch line.	and Installation".

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RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094984

[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 side radar RH 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 RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check the right/left switching signal circuit of the side radar RH. Refer to <u>DAS-578</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO >> Repair the root cause.

3.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. Termina	Terminal No.	
B252 4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the side radar RH branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-576. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-592, "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.

APA BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

APA BRANCH L	INE CIRCUIT			
Diagnosis Proced	ure			INFOID:0000000006094986
1.снеск соллест	OR			
 Check the followin nector side). Accelerator pedal Harness connecto Harness connecto 	ttery cable from the ne g terminals and conne actuator r M151	ectors for damage, be	end and loose conn	ection (unit side and con-
s the inspection result YES >> GO TO 2.	normal?			
	terminal and connect	or.		
CHECK HARNESS	FOR OPEN CIRCUIT	-		
	nnector of accelerator			
. Check the resistar	ice between the accel	erator pedal actuator	r narness connector	r terminals.
	Accelerator pedal actuator	r harness connector		Resistance (Ω)
Connector No.		Terminal No.		
M152	5 alue within the specific		4	Approx. 54 – 66
heck the power supp RATOR PEDAL ACT the inspection result YES (Present error)>	<u>UATOR : Diagnosis P</u> <u>normal?</u> >Replace the accele	uit of the accelerator rocedure". rator pedal assembl	ly. Refer to <u>ACC-4</u>	fer to <u>DAS-203, "ACCEL-</u>
YES (Past error)>>Er NO >> Repair the	DNTROL ASSIST SYS ror was detected in the power supply and the CONTINUITY (OPEN	e accelerator pedal a e ground circuit.		
	rness connector M23. ity between the accele	erator pedal actuator	harness connector	and the harness connec-
Accelerator pedal actu	ator harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M152	5	M23	138	Existed
	4		137	Existed
NO >> Repair the	e PCB harness.	accelerator pedal ac	ctuator harness con	nector M152 and the har-

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094985

[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).
- Lane camera unit
- Harness connector R7
- Harness connector M110
- Harness connector M24 and PCB harness 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 lane camera unit.
- 2. Check the resistance between the lane camera unit harness connector terminals.

L	Lane camera unit harness connector		
Connector No.	Termi	Terminal No.	
R8	4	8	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 lane camera unit. Refer to <u>DAS-403</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-419, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the lane camera unit harness connector and the harness connector.

Lane camera unit	harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R8	4	M24	179	Existed
KO	8	11124	178	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedu	ire			INFOID:00000000609498
CHECK CONNECTO)R			
 Turn the ignition sw Disconnect the battering Check the following nector side). ICC sensor Harness connector Harness connector Harness connector Sthe inspection result r YES >> GO TO 2. 	itch OFF. ery cable from the n terminals and conn E106 M6 M28 and PCB harn hormal? erminal and connec	nectors for damage, be ess side connector	nd and loose con	nection (unit side and con
 Disconnect the control Check the resistance 		sensor harness conne	ector terminals.	
Connector No.		Terminal No.		Resistance (Ω)
E67 s the measurement valu	3		6	Resistance (Ω) Approx. 108 – 132
E67 s the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU Check the power supply is Procedure". s the inspection result r YES (Present error)>> YES (Past error)>>Error NO >> Repair the p CHECK HARNESS O . Disconnect the harr	3 ue within the specifi PPLY AND GROUN and the ground circ normal? Replace the ICC se or was detected in the power supply and the CONTINUITY (OPE mess connector M28	cation? ND CIRCUIT cuit of the ICC sensor. nsor. Refer to <u>CCS-18</u> he ICC sensor branch he ground circuit. N CIRCUIT)	Refer to <u>CCS-16</u> 0, "Removal and line.	Approx. 108 – 132 2, "ICC SENSOR : Diagno Installation".
E67 s the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU Check the power supply is Procedure". s the inspection result r YES (Present error)>> YES (Past error)>>Error NO >> Repair the p CHECK HARNESS O . Disconnect the harr	3 ue within the specifi PPLY AND GROUN and the ground circ normal? Replace the ICC se or was detected in the power supply and the CONTINUITY (OPE mess connector M28	cation? ND CIRCUIT cuit of the ICC sensor. nsor. Refer to <u>CCS-18</u> he ICC sensor branch he ground circuit. N CIRCUIT)	Refer to <u>CCS-16</u> 0, "Removal and line.	Approx. 108 – 132 2, "ICC SENSOR : Diagno Installation".
E67 s the measurement value YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU Check the power supply is Procedure". s the inspection result r YES (Present error)>> YES (Past error)>>Error NO >> Repair the p CHECK HARNESS O Disconnect the harr Check the continuity ICC sensor harn	3 ue within the specifi PPLY AND GROUN and the ground circ normal? Replace the ICC se or was detected in the continuity (OPE ness connector M28 y between the ICC se ess connector	cation? ND CIRCUIT cuit of the ICC sensor. Insor. Refer to <u>CCS-18</u> the ICC sensor branch the ground circuit. N CIRCUIT) S. sensor harness connect Harness	Refer to <u>CCS-16</u> 0, <u>"Removal and</u> line. ctor and the harne	Approx. 108 – 132 2, "ICC SENSOR : Diagno Installation".
E67 <u>s the measurement value</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SU Check the power supply <u>is Procedure</u> ". <u>s the inspection result r</u> YES (Present error)>> YES (Past error)>>Error NO >> Repair the p 4. CHECK HARNESS (C . Disconnect the harror . Check the continuity)	3 UE within the specifi PPLY AND GROUN and the ground circ normal? Replace the ICC se or was detected in the power supply and the CONTINUITY (OPE) mess connector M28 y between the ICC se	cation? ND CIRCUIT cuit of the ICC sensor. nsor. Refer to <u>CCS-18</u> he ICC sensor branch he ground circuit. N CIRCUIT) S. sensor harness connec	Refer to <u>CCS-16</u> 0, <u>"Removal and</u> line. ctor and the harne	Approx. 108 – 132 2, "ICC SENSOR : Diagno Installation". ess connector.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

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CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

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	nal No.	Continuity
M182	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 PCB harness 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
M182	6	Giouna	Not existed
IVI 1 02	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

- VQ37VHR

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

VK56VD

ECM		Resistance (Ω)	
Termi	nal No.		
146	151	Approx. 108 – 132	

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

INFOID:000000006094989

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

IPDM E/R		Resistance (Ω)
Term	ninal No.	Resistance (12)
40	39	Approx. 108 – 132
s the measurement value within	n the specification?	
YES >> GO TO 5.		
NO >> Replace the ECM a	and/or the IPDM E/R.	
D.CHECK SYMPTOM		
	eck if the symptoms described	in the "Symptom (Results from interview with
customer)" are reproduced.		
nspection result		
Reproduced>>GO TO 6.	iagnosis again Follow the trop	uble diagnosis procedure when past error is
Non-reproduced>>Start the d		
Non-reproduced>>Start the d detected.	agnosis again. Tonow the troo	and allighters preservers when past ener is
detected.	0	and alagheole proceedie when pact offer le
detected. CHECK UNIT REPRODUCT	ION	
detected. CHECK UNIT REPRODUCT	TON s per the following procedure for	
detected. CHECK UNIT REPRODUCT Perform the reproduction test as Turn the ignition switch OF Disconnect the battery cable	TION s per the following procedure for F. e from the negative terminal.	reach unit.
detected. CHECK UNIT REPRODUCT Perform the reproduction test as Turn the ignition switch OF Disconnect the battery cables Disconnect one of the unit of the second se	TON s per the following procedure for F.	reach unit.
detected. CHECK UNIT REPRODUCT Perform the reproduction test as Turn the ignition switch OF Disconnect the battery cables Disconnect one of the unit of NOTE:	TION s per the following procedure for F. e from the negative terminal.	each unit.
detected. D.CHECK UNIT REPRODUCT Perform the reproduction test as 1. Turn the ignition switch OFI 2. Disconnect the battery cable 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have as 4. Connect the battery cable	TION s per the following procedure for F. e from the negative terminal. connectors of CAN communicati a termination circuit. Check other to the negative terminal. Check	each unit.
detected. D .CHECK UNIT REPRODUCT Perform the reproduction test a 1. Turn the ignition switch OF 2. Disconnect the battery cable 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have a 4. Connect the battery cable (Results from interview with	TION s per the following procedure for F. e from the negative terminal. connectors of CAN communication circuit. Check other	r each unit.
detected. D.CHECK UNIT REPRODUCT Perform the reproduction test at 1. Turn the ignition switch OFI 2. Disconnect the battery cable 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have at 4. Connect the battery cable (Results from interview with NOTE:	TION s per the following procedure for F. e from the negative terminal. connectors of CAN communicati a termination circuit. Check other to the negative terminal. Check a customer)" are reproduced.	r each unit. Ion circuit 1. r units first. c if the symptoms described in the "Symptom
detected. D.CHECK UNIT REPRODUCT Perform the reproduction test as 1. Turn the ignition switch OF 2. Disconnect the battery cable 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have as 4. Connect the battery cable (Results from interview with NOTE: Although unit-related error	TION s per the following procedure for F. e from the negative terminal. connectors of CAN communicati a termination circuit. Check other to the negative terminal. Check	r each unit. Ion circuit 1. r units first. c if the symptoms described in the "Symptom
detected. D.CHECK UNIT REPRODUCT Perform the reproduction test at 1. Turn the ignition switch OFI 2. Disconnect the battery cable 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have at 4. Connect the battery cable (Results from interview with NOTE: Although unit-related error at nspection result	TION s per the following procedure for F. e from the negative terminal. connectors of CAN communicati a termination circuit. Check other to the negative terminal. Check a customer)" are reproduced.	e each unit.

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CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

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	nal No.	Continuity
M182	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 PCB harness 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
M182	13	Ground	Not existed
IVI I OZ	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway		Resistance (Ω)	
Termi	nal No.		
4	10	Approx. 108 – 132	
6	12	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

INFOID:000000006094990

CAN COMMUNICATION CIRCUIT 2
< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 4)]
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 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 >

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006094991

[CAN SYSTEM (TYPE 4)]

1.CHECK CAN DIAGNOSIS

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

NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

Are the CAN communication 1 and 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. Check the terminals and connectors of the ADAS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

ADAS control unit harness connector		ICC sensor harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B50	7	- E67	3	Existed	
	8		6	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Termi	Continuity	
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

 $\mathbf{5.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

LAN-286

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ADAS control unit h	arness connector		Continuity	
Connector No.	Terminal No.	Ground	Continuity	
B50	7	Gibunu	Not existed	
200	8		Not existed	
Is the inspection result norma YES >> GO TO 6. NO >> Check the harner 6.CHECK TERMINATION C	ss and repair or replace (i	f shield line or PCB harnes	ss is short) the root cause.	
	ol unit and the ICC senso ween the ADAS control u			
ADA	AS control unit		Desistance (0)	
T	erminal No.	Resistance (Ω)		
7	8	A	Approx. 108 – 132	
Check the resistance bet	ween the ICC sensor terr	ninals.		
	CC sensor		Resistance (Ω)	
	erminal No.			
3 Is the inspection result norma	6	<i>P</i>	Approx. 108 – 132	
7.CHECK SYMPTOM Connect all the connectors. customer)" are reproduced. Inspection result Reproduced>>GO TO 8.		escribed in the "Symptom	(Results from interview with	
8.CHECK UNIT REPRODU		edure for each unit.		
	OFF. able from the negative ter ait connectors of ITS comr			
ADAS control unit and IC 4. Connect the battery cab			hits first. s described in the "Symptom	
Although unit-related erro		t confuse them with other		
Reproduced>>Connect the Non-reproduced>>Replace			edure.	

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000006094400

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

Low tire pressure warning control unit harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43 –	2	M66	12	Existed
	1		11	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 low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

< DTC/CIRCUIT DIAG	NOSIS >		[CAN	SYSTEM (TYPE 5)]
MAIN LINE BET	WEEN HVAC	AND A-BAG CI	RCUIT	
Diagnosis Procedu	lre			INFOID:0000000609440
1.CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)		
	vitch OFF. tery cable from the n owing harness conne			
A/C auto amp. AV control unit		auto amp. harness con	nector and the AV co	ntrol unit harness con-
 A/C auto amp. AV control unit Check the continuit nector. 	tion system	auto amp. harness con AV control unit ha		
 A/C auto amp. AV control unit Check the continuit nector. Models with naviga 	tion system			ntrol unit harness con-
 A/C auto amp. AV control unit Check the continuit nector. Models with naviga 	tion system	AV control unit ha	arness connector	

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

A/C auto amp. h	arness connector	AV control unit harness connector				Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
M66	12	M84	81	Existed	-		
IVIOO	11	1004	80	Existed	-		

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000006094402

[CAN SYSTEM (TYPE 5)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	A/C auto amp. harness connector		AV control unit harness connector	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M66	12	M210	90	Existed
1000	11	WIZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector Connector No. Terminal No.				Continuity
Connector No.	Terminal No.			- Continuity		
M66	12	M9.4	81	Existed		
IVIOO	11	M84	80	Existed		

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

DTC/CIRCUIT DIA	N SYSTEM (TYPE 5)]			
AIN LINE BE	TWEEN AV AN	D M&A CIRCUI	Т	
Diagnosis Proced	dure			INFOID:000000006094403
.CHECK HARNESS		N CIRCUIT)		
 Disconnect the fo ECM AV control unit 	attery cable from the n llowing harness conne			
Combination mete Check the continu connector. Models with navig	uity between the AV c	ontrol unit harness cor	nnector and the com	bination meter harness
 Check the continu connector. Models with navig 	uity between the AV c	ontrol unit harness cor		
 Check the continu connector. Models with navig 	uity between the AV constraints and system			bination meter harness
AV control unit H	uity between the AV co gation system narness connector	Combination meter Connector No.	harness connector	
 Check the continu connector. Models with navig AV control unit h 	uity between the AV contaction system	Combination meter	harness connector Terminal No.	Continuity
AV control unit H	uity between the AV constraints system	Combination meter Connector No.	harness connector Terminal No. 14	- Continuity Existed
Check the continu- connector. Models with navig AV control unit H Connector No. M210 Models without na	uity between the AV constraints system	Combination meter Connector No.	harness connector Terminal No. 14 15	Continuity Existed Existed
Check the continu- connector. Models with navig AV control unit H Connector No. M210 Models without na	uity between the AV constraints system Terminal No. 90 74 Avigation system	Combination meter Connector No. M53	harness connector Terminal No. 14 15	- Continuity Existed
Check the continu- connector. Models with navig AV control unit H Connector No. M210 Models without na AV control unit H	uity between the AV constraints system namess connector Terminal No. 90 74 avigation system	Combination meter Connector No. M53 Combination meter	harness connector Terminal No. 14 15 harness connector	Continuity Existed Existed

MAIN LINE BETWEEN AV AND M&A CIRCUIT

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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006094404

[CAN SYSTEM (TYPE 5)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M105	7	Existed
IVIJJ	15	100	8	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 combination meter and the data link connector.
- NO >> Replace the PCB harness.

< DTC/CIR	I CUIT DIAG		WEEN DLC AN	D BCM CIRCUIT [CAN	SYSTEM (TYPE 5)]	
MAIN L	INE BET	WEEN DLC A	ND BCM CIRC	UIT		Δ
Diagnosi	s Proced	ure			INFOID:000000006094405	A
1. снеск	HARNESS	CONTINUITY (OPEN	I CIRCUIT)			В
 Discon Discon ECM Harnes BCM 	nect the follows connector	ttery cable from the ne owing harness conne rs M181 and M105	ctors.	BCM harness connec	tor.	C
	Harness of	connector	BCM harne	ess connector	Continuity	_
Conne	ector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
	405	7	14400	39	Existed	

Is the inspection result normal?

M105

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

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

40

NO >> Replace the PCB harness.

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Existed

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MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000006094408

[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 M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	Continuity
M120	39	35	Existed
IVI 120	40	36	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness	Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M20	35	M7	72	Existed
WZ0	36	1017	73	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
DI	73	75	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 BCM and the driver seat control unit.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the harness connector B1 and the driver seat control unit.

AIN LINF BF	INFEN ADP A	ND ABS CIRCL	ЛТ	
iagnosis Procec	lure			INFOID:00000000609441
.CHECK CONNECT	ſOR			
Turn the ignition s Disconnect the ba Check the followi and harness side) Harness connecto Harness connecto Harness connecto the inspection resul (ES >> GO TO 2. NO >> Repair the .CHECK HARNESS Disconnect the ha	witch OFF. Ittery cable from the r ng terminals and cor or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connectors B1 or ness connectors B1	nnectors for damage, k ctor. N CIRCUIT) and M7.		nection (connector side
	lity between the harn	ess connector terminal	S.	
Connector No.		Terminal No.	74	Continuity
B1	72		74	Existed
	10			
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mod	S or AWD models: R lels without 4WAS: R	eplace the body harnes	SS.	control unit and the har-
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mod ness conr CHECK HARNESS Disconnect the ha	S or AWD models: R lels without 4WAS: R	epair the main line betw N CIRCUIT) S and E106.	SS.	
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mod ness conr CHECK HARNESS Disconnect the ha Check the continu	S or AWD models: R lels without 4WAS: R nector B1. CONTINUITY (OPE nectors Me	epair the main line betw N CIRCUIT) S and E106.	ss. veen the driver seat	control unit and the har-
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mod ness conr CHECK HARNESS Disconnect the ha Check the continu	S or AWD models: R lels without 4WAS: R nector B1. CONTINUITY (OPE irness connectors Ma nity between the harn	epair the main line betw N CIRCUIT) 6 and E106. ess connectors.	ss. veen the driver seat	
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mod ness conr .CHECK HARNESS Disconnect the ha Check the continu Harness	S or AWD models: R lels without 4WAS: R hector B1. CONTINUITY (OPE arness connectors Me hity between the harn connector Terminal No. 74	epair the main line betw N CIRCUIT) 5 and E106. ess connectors. Harness o	SS. veen the driver seat connector Terminal No. 22	control unit and the har-
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mod ness conr CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7	S or AWD models: R lels without 4WAS: R nector B1. CONTINUITY (OPE rrness connectors Me nity between the harn connector Terminal No. 74 75	epair the main line betw EN CIRCUIT) 5 and E106. ess connectors. Harness of Connector No.	SS. veen the driver seat connector Terminal No.	control unit and the har-
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mode ness conr CHECK HARNESS Disconnect the hat Check the continu Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the co	S or AWD models: R lels without 4WAS: R nector B1. CONTINUITY (OPE arness connectors Me nity between the harn connector Terminal No. 74 75 t normal? e main line between t S CONTINUITY (OPE onnector of ABS actua- nity between the harn	epair the main line betw EN CIRCUIT) 5 and E106. ess connectors. Harness Connector No. M6 he harness connectors EN CIRCUIT) ator and electric unit (co	SS. veen the driver seat connector Terminal No. 22 23 M7 and M6. ontrol unit).	control unit and the har-
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mode ness conrest Output of the continut Harness Connector No. M7 the inspection resul YES >> GO TO 4. NO >> Repair the Output of the continut harness connect of the continut	S or AWD models: R lels without 4WAS: R nector B1. CONTINUITY (OPE arness connectors Ma hity between the harn connector Terminal No. 74 75 t normal? e main line between t S CONTINUITY (OPE annector of ABS actual hity between the harn r.	epair the main line betw N CIRCUIT) S and E106. ess connectors. Harness connectors Connector No. M6 he harness connectors N CIRCUIT) ator and electric unit (consistency of the second	SS. veen the driver seat connector Terminal No. 22 23 M7 and M6. Ontrol unit). ABS actuator and e ctric unit (control unit) connector	control unit and the har- Continuity Existed Existed
YES >> GO TO 3. NO-1 >> With 4WA NO-2 >> 2WD mode ness conress conrects the harness Disconnect the harness connector No. M7 the inspection result YES >> GO TO 4. NO >> Repair the constant of the continue harness connect the continue harness connector the continue harness	S or AWD models: R lels without 4WAS: R hector B1. CONTINUITY (OPE arness connectors Me hity between the harn connector Terminal No. 74 75 t normal? e main line between t S CONTINUITY (OPE onnector of ABS actual hity between the harn r. connector Terminal No.	epair the main line betw EN CIRCUIT) 5 and E106. ess connectors. Harness connectors of Connector No. M6 he harness connectors EN CIRCUIT) ator and electric unit (connector and the ABS actuator and electors)	SS. veen the driver seat connector Terminal No. 22 23 M7 and M6. M7 and M6. chrrol unit). ABS actuator and e ctric unit (control unit) connector Terminal No.	control unit and the har- Continuity Existed Existed electric unit (control unit) Continuity
NO-1 >> With 4WA NO-2 >> 2WD mode ness conrest OCHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7 Sthe inspection resul YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the continu harness connector Harness	S or AWD models: R lels without 4WAS: R nector B1. CONTINUITY (OPE arness connectors Ma hity between the harn connector Terminal No. 74 75 t normal? e main line between t S CONTINUITY (OPE annector of ABS actual hity between the harn r.	epair the main line betw N CIRCUIT) S and E106. ess connectors. Harness connectors Connector No. M6 he harness connectors N CIRCUIT) ator and electric unit (consistency of the second	SS. veen the driver seat connector Terminal No. 22 23 M7 and M6. Ontrol unit). ABS actuator and e ctric unit (control unit) connector	control unit and the har- Continuity Existed Existed

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Is the inspection result normal?

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

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< DTC/CIRCUIT DIAGNOSIS >

- YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).
- NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

DIC/CIRCUIT DIAGNUS	NG >		
CM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:0000000669441
CHECK CONNECTOR			
I. Turn the ignition switch	OFF		
. Disconnect the battery of	cable from the negative te		connection (unit side and con
nector side).		r damage, bend and loose	
ECM	and PCB harness side o	aanaatar	
s the inspection result norm		Connector	
YES >> GO TO 2.			
NO >> Repair the term			
2.CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be VQ37VHR 	or of ECM. htween the ECM harness	connector terminals.	
	ECM harness connector		Posistance (0)
Connector No.	Terr	minal No.	Resistance (Ω)
M107	114	113	Approx. 108 – 132
VK56VD			
	ECM harness connector		
Connector No.	Terr	minal No.	Resistance (Ω)
M160	146	151	Approx. 108 – 132
s the measurement value w	ithin the specification?		
YES >> GO TO 3. NO >> GO TO 4.			
B. CHECK POWER SUPPL		ШΤ	
Check the power supply and			
VQ37VHR: <u>EC-180, "Diag</u>			ıg.
VK56VD: <u>EC-716, "Diagno</u>			
s the inspection result norm			
YES (Present error)>>Rep • VQ37VHR: F(lace the ECM. Refer to th C-535, "Removal and Ins		
 VK56VD: <u>EC-</u> 	535, "Removal and Insta	llation"	
YES (Past error)>>Error wa	as detected in the ECM b er supply and the ground		
1. CHECK HARNESS CON			
		11)	
 Disconnect the harness Check the continuity between the continuit		connector and the harness	connector.
- VQ37VHR			

- VQ37VHR

< DTC/CIRCUIT DIAGNOSIS >

ECM harnes	ss connector	Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M107	114	M30	439	Existed		
WITO7	113	IVI30	438	Existed		

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ss connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M160	146	M30	439	Existed
MITOO	151	10130	438	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

	I LINE CIRCUI	1		
Diagnosis Proced	lure			INFOID:00000006094417
1. снеск соллест	OR			
 Check the followin nector side). Low tire pressure Harness connector Is the inspection result YES >> GO TO 2. 	attery cable from the neighbor terminals and conner warning control unit or M29 and PCB harned t normal?	ectors for damage, be ess side connector tor.	end and loose connec	ction (unit side and con-
 Disconnect the co Check the resistar 	nnector of low tire pre nce between the low ti tire pressure warning contr	ssure warning control re pressure warning c		onnector terminals.
Connector No.		Terminal No.		Resistance (Ω)
M43	2		1	Approx. 54 – 66
	UPPLY AND GROUN		essure warning contro	ol unit. Refer to WT-53.
Is the inspection result YES (Present error)> Installation YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS	->Replace the low tire <u>n"</u> . rror was detected in the power supply and the CONTINUITY (OPEN	e low tire pressure wa e ground circuit. N CIRCUIT)		WT-70, "Removal and
Is the inspection result YES (Present error)> Installation YES (Past error)>>E NO >> Repair the A.CHECK HARNESS 1. Disconnect the ha 2. Check the continu- ness connector.	->Replace the low tire n". rror was detected in the power supply and the CONTINUITY (OPEN urness connector M29. uity between the low t warning control unit connector	e low tire pressure wa e ground circuit. N CIRCUIT) ire pressure warning Harness	arning control unit bra control unit harness	WT-70, "Removal and
Is the inspection result YES (Present error)> Installation YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continu- ness connector.	 Replace the low tire <u>n</u>". rror was detected in the power supply and the control was connector M29. uity between the low t warning control unit 	e low tire pressure wa e ground circuit. N CIRCUIT) ire pressure warning	arning control unit bra control unit harness	WT-70, "Removal and anch line. connector and the har-

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094420

[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/C auto amp.
- Harness connector M28 and PCB harness 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/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. Termina	Terminal No.		
M66 12	12 11		

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 A/C auto amp. Refer to <u>HAC-167, "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-201, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M28	325	Existed
MOO	11	IVIZO	327	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

iagnosis Proced	ure			INFOID:0000000060944
	OR			
 Check the followin nector side). A/T assembly Harness connector Harness connector Harness connector Harness connector Source and the second se	ttery cable from the ne g terminals and conne r F103 r M116 r M28 and PCB harne normal? terminal and connect FOR OPEN CIRCUIT	ectors for damage, be ss side connector or. - bly.		ction (unit side and con
. Check the resistar	nce between the A/T a	-	nector terminals.	
	A/T assembly harne	A/T assembly harness connector		
Connector No.	A/T assembly harne	Terminal No.		Resistance (Ω)
F61 s the measurement va	3	Terminal No.	8	Resistance (Ω) Approx. 54 – 66
F61 $F61$	3 alue within the specific UPPLY AND GROUNI ly and the ground circ normal? >Replace the control v rts Location". (Replac fror was detected in the power supply and the CONTINUITY (OPEN rness connector M28.	Terminal No. ation? D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if cor e TCM branch line. ground circuit. I CIRCUIT)	to <u>TM-156, "Diagno</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 $s the measurement value of the value of the second second$	3 alue within the specific UPPLY AND GROUN ly and the ground circ normal? >Replace the control v rts Location". (Replace fror was detected in the power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/T as	Terminal No. ation? D CIRCUIT uit of the TCM. Refer valve with TCM. Refe e A/T assembly if cor e TCM branch line. e ground circuit. I CIRCUIT) ssembly harness conr	to <u>TM-156, "Diagno</u> r r to <u>TM-8, "A/T CON</u> htrol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S Check the power supp s the inspection result YES (Present error)> ponent Pa parts list.) YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	3 alue within the specific UPPLY AND GROUNI ly and the ground circ normal? >Replace the control v rts Location". (Replac fror was detected in the power supply and the CONTINUITY (OPEN rness connector M28.	Terminal No. ation? D CIRCUIT uit of the TCM. Refer valve with TCM. Refe e A/T assembly if cor e TCM branch line. e ground circuit. I CIRCUIT) ssembly harness conr	to <u>TM-156, "Diagno</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 $s the measurement value of the value of the second second$	3 alue within the specific UPPLY AND GROUNI ly and the ground circe normal? >Replace the control v rts Location". (Replace the power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/T as	Terminal No. ation? D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if cor e TCM branch line. e ground circuit. I CIRCUIT) ssembly harness conr Harness	to <u>TM-156, "Diagno</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094422

[CAN SYSTEM (TYPE 5)]

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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

AV BRANCH LI	NE CIRCUIT			
Diagnosis Proced	lure			A INFOID:000000006094423
1.CHECK CONNECT	OR			В
 Check the followin nector side). AV control unit 	ttery cable from the ne	ectors for damage, be	and and loose connec	tion (unit side and con- C
Is the inspection result	t normal?			D
2.CHECK HARNESS 1. Disconnect the co	e terminal and connect FOR OPEN CIRCUIT nnector of AV control nce between the AV co	Г unit.	nnector terminals	E F
 Models with navig 				
	AV control unit harn	ess connector		Resistance (Ω)
Connector No.		Terminal No.		
M210	90		74	Approx. 54 – 66
 Models without na 	ivigation system			
	AV control unit harn	ess connector		Posistance (0)
Connector No.		Terminal No.		Resistance (Ω)
M84	81		80	Approx. 54 – 66
Is the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER S Check the power supp • Base audio without r • BOSE audio with na Is the inspection result	UPPLY AND GROUN Ily and the ground circ navigation system: <u>AV</u> vigation system: <u>AV-2</u>	D CIRCUIT cuit of the AV control u -90, "AV CONTROL U	JNIT : Diagnosis Proc	edure"
YES (Present error)> • Base au • BOSE a YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha	Replace the AV control of t	n system: <u>AV-120, "Re</u> ystem: <u>AV-298, "Rem</u> ne AV control unit bran e ground circuit. N CIRCUIT)	moval and Installation oval and Installation" nch line.	N
- Models with navig				
	arness connector		connector	P
Connector No.	Terminal No. 90	Connector No.	Terminal No. 201	Existed
M210	74	M25	201	Existed

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	M25	201	Existed
10104	80	IVIZ5	221	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

M&A BRANCH I				
Diagnosis Procedu	ure			INFOID:00000006094424
1.CHECK CONNECT	OR			
 Check the following nector side). Combination meter 	tery cable from the ne g terminals and conne	ectors for damage, b	end and loose cor	nnection (unit side and con-
s the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	terminal and connect	for		
2. CHECK HARNESS				
	nnector of combination ce between the comb		ss connector termi	nals.
		races connector		
	Combination meter ha			Resistance (Ω)
Connector No.		Terminal No.	45	Resistance (Ω)
M53 s the measurement va	14	Terminal No.	15	Resistance (Ω) Approx. 54 – 66
M53 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SL Check the power supp METER : Diagnosis Pro- <u>s the inspection result</u> YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har	14 Iue within the specific JPPLY AND GROUN ly and the ground cir <u>pocedure"</u> . <u>normal?</u> Replace the combination ror was detected in the power supply and the CONTINUITY (OPEN mess connector M24.	Terminal No.	ion meter Refer to <u>MWI-90, "Remova</u> r branch line.	Approx. 54 – 66 MWI-70. "COMBINATION al and Installation".
M53 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SL Check the power supp METER : Diagnosis Pro- <u>s the inspection result</u> YES (Present error)>> YES (Past error)>>Erron NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har 2. Check the continuit	14 Iue within the specific JPPLY AND GROUN Iy and the ground cir Decedure". normal? >Replace the combinator was detected in the power supply and the control of the power supply and the control of the contro	Terminal No.	ion meter Refer to <u>MWI-90, "Remova</u> r branch line. s connector and th	Approx. 54 – 66
M53 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SL Check the power supp METER : Diagnosis Pro- <u>s the inspection result</u> YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har	14 Iue within the specific JPPLY AND GROUN Iy and the ground cir Decedure". normal? >Replace the combinator was detected in the power supply and the control of the power supply and the control of the contro	Terminal No.	ion meter Refer to <u>MWI-90, "Remova</u> r branch line.	Approx. 54 – 66 MWI-70. "COMBINATION al and Installation".
M53 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SL Check the power supp METER : Diagnosis Pro- s the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har 2. Check the continuit Combination meter	14 Iue within the specific JPPLY AND GROUN Iy and the ground cir <u>ocedure"</u> . <u>normal?</u> Replace the combination ror was detected in the power supply and the CONTINUITY (OPEN mess connector M24. ty between the combination harness connector	Terminal No. cation? D CIRCUIT cuit of the combinat ation meter. Refer to be combination meter a ground circuit. N CIRCUIT) ination meter harnes Harness	ion meter Refer to <u>MWI-90, "Remova</u> r branch line. s connector and th	Approx. 54 – 66 MWI-70. "COMBINATION al and Installation". he harness connector.

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094425

[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).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness 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	nal No.	
M182	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 M23.

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
M182	6	M23	151	Existed
IVI I OZ	14	IVIZ5	150	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

BCM BRANCH LINE CIRCUIT

BCM BRANCH	LINE CIRCUIT			
Diagnosis Proced	lure			INFOID:000000006094426
1.CHECK CONNECT	OR			
 Check the followin nector side). BCM Harness connector Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the co 	ttery cable from the neig terminals and connect or M22 and PCB harnes to normal? terminal and connect FOR OPEN CIRCUI	ectors for damage, b ess side connector tor. T		tion (unit side and con-
	BCM harness of			
Connector No.		Terminal No.		Resistance (Ω)
M120	39		40	Approx. 54 – 66
s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER S Check the power supp	UPPLY AND GROUN	D CIRCUIT	r to <u>BCS-73, "Diagnos</u>	sis Procedure".
s the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the	<u>normal?</u> >Replace the BCM. R rror was detected in the power supply and the	Refer to <u>BCS-79, "Re</u> ne BCM branch line. e ground circuit.	moval and Installation	
	rness connector M22.	,	nd the harness conne	ctor.
BCM harne	ss connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
	40		102	Existed

Ν

<u>Is the inspection result normal?</u> YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094427

[CAN SYSTEM (TYPE 5)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness 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 steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	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 steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-144, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

Steering angle sens	or harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M37	1	M22	81	Existed
WIS7	2	IVIZZ	82	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

ABS BRANCH LINE CIRCUIT

[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 ABS actuator and electric unit (control unit) for damage and loose connection (unit side and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ABS actuator and electric unit (control unit). 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector E41 25 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to BRC-141. "Real and installation". YES (Pesent error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141. "Real and installation". YES (Past error)>>Replace the ABS actuator and electric unit (control unit) branch line. NO >> Replare the ABS actuator and electric unit (control unit) branch line.	Procedure	INFOID:000000006094430
 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage and loose connection (unit side and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ABS actuator and electric unit (control unit). 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector Resistance (Ω) E41 25 15 Approx.54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Real of an Installation".</u> YES (Pesent error)>> Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Real of an Installation".</u> YES (Past error)>> Error was detected in the ABS actuator and electric unit (control unit) branch line.	ONNECTOR	
YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect the connector of ABS actuator and electric unit (control unit). 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector Resistance (Ω) Connector No. E41 25 15 Approx. 54 - 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R BRC-119. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Real And Installation".</u> YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.	ect the battery cable from the negative terminal. he terminals and connectors of the ABS actuator and electric unit (contro e connection (unit side and connector side).	rol unit) for damage, bend
1. Disconnect the connector of ABS actuator and electric unit (control unit). 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector Resistance (Ω) Connector No. E41 25 15 Approx. 54 - 66 s the measurement value within the specification? YES > GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R BRC-119. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Re and Installation". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.	GO TO 2. Repair the terminal and connector.	
Connector No. Terminal No. Resistance (Ω) E41 25 15 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. Output 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 unit). Refer to unit (control unit). Reference Sthe inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Reference YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.		harness connector termi-
Connector No. Terminal No. E41 25 15 Approx. 54 – 66 is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. J.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R RC-119. "Diagnosis Procedure". is the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Real and Installation". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.	ABS actuator and electric unit (control unit) harness connector	
 <u>s the measurement value within the specification?</u> YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R <u>SRC-119. "Diagnosis Procedure"</u>. <u>S the inspection result normal?</u> YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Reand Installation"</u>. YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. 	ector No. Terminal No.	Resistance (Ω)
 YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R RC-119. "Diagnosis Procedure". S the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Reand Installation". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. 	E41 25 15	Approx. 54 – 66
	Repair the ABS actuator and electric unit (control unit) branch line. POWER SUPPLY AND GROUND CIRCUIT ower supply and the ground circuit of the ABS actuator and electric uni iagnosis Procedure".	
	ent error)>>Replace the ABS actuator and electric unit (control unit). Refe	fer to <u>BRC-141, "Remova</u>

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094432

[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 IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40 39		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "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.

iagnosis Procedure			INFOID:000000006094433
.CHECK CONNECTOR			
 Check the following terr nector side). Driver seat control unit Harness connector B50 Harness connector B11 CAN gateway (With ICC sthe inspection result norm YES (With ICC system)>>0 YES (Without ICC system) NO >> Repair the term 	cable from the negative terr ninals and connectors for d 1 System) hal? GO TO 2. >>GO TO 3.	amage, bend and loose cor	nnection (unit side and con-
Disconnect the connect	or of CAN gateway.	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.		nal No.	· · · · · · · · · · · · · · · · · · ·
M125	4 10	6 12	Existed
YES >> GO TO 3.	ess and repair or replace (i	f shield line is open) the red	ot cause (CAN communica-
NO >> Check the harn tion circuit 2). CHECK HARNESS FOR Connect the connector Disconnect the connect	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni	system)	
 NO >> Check the harm tion circuit 2). CHECK HARNESS FOR Connect the connect of Disconnect the connect Check the resistance be 	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat control	system) t. rol unit harness connector to	
NO >> Check the harm tion circuit 2). 3.CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat control er seat control unit harness conne	system) t. rol unit harness connector to	
NO >> Check the harm tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat control er seat control unit harness conne Termin 23	system) t. rol unit harness connector to ector	erminals.

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006094442

[CAN SYSTEM (TYPE 5)]

1.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication 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
M182	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 PCB harness 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	
M182	6	Ground	Not existed	
WITO2	14		Not existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

- VQ37VHR

EC	CM	Resistance (Ω)	
Terminal No.			
114	113	Approx. 108 – 132	

VK56VD

ECM		Resistance (Ω)	
Terminal No.			
146 151		Approx. 108 – 132	

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

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 5)]
Is the measurement value within the specification?	
YES >> GO TO 5.	
NO >> Replace the ECM and/or the IPDM E/R.	
5. CHECK SYMPTOM	
Connect all the connectors. Check if the symptoms described in the "Symptocustomer)" are reproduced.	om (Results from interview with
Inspection result	
Reproduced>>GO TO 6.	
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	procedure when past error is
6. CHECK UNIT REPRODUCTION	
Perform the reproduction test as per the following procedure for each unit.	
1. Turn the ignition switch OFF.	
2. Disconnect the battery cable from the negative terminal.	
3. Disconnect one of the unit connectors of CAN communication system.	
NOTE: ECM and IPDM E/R have a termination circuit. Check other units first.	
4. Connect the battery cable to the negative terminal. Check if the sympto	ms described in the "Symptom
(Results from interview with customer)" are reproduced.	
NOTE:	
Although unit-related error symptoms occur, do not confuse them with othe	er symptoms.
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above pro Non-reproduced>>Replace the unit whose connector was disconnected.	ocedure.

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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000006094451

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

	warning control unit connector	A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		
M43	2	M66	12	Existed
10143	1	ΟΟΙΥΙ	11	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 low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

S >			-	N SYSTEM (TYPE 6)]
EN H	IVAC	AND A-BAG C	IRCUIT	
				INFOID:00000006094452
ידוטאו		N CIRCUIT)		
	om the ness conne	egative terminal. ectors.		
veen th vstem	he A/C a	auto amp. harness coi	nnector and the AV c	control unit harness con-
			nnector and the AV c	
vstem	or			control unit harness con-
v stem onnecto	or	AV control unit h	arness connector	

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity	ŀ
M66	12	M84	81	Existed	_
IVIOO	11	1004	80	Existed	_

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000006094453

[CAN SYSTEM (TYPE 6)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Continuity	
M66	12	M210	90	Existed
1000	11	WIZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector Connector No. Terminal No.		Continuity	
Connector No.	Terminal No.				
M66	12	M84	81	Existed	
IVIOO	11	10104	80	Existed	

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

N SYSTEM (TYPE 6)	[CAN		NOSIS >	DTC/CIRCUIT DIAG
	Т	D M&A CIRCUI	WEEN AV ANI	AIN LINE BET
INFOID:0000000060944			ure	agnosis Proced
		I CIRCUIT)	CONTINUITY (OPEN	CHECK HARNESS
			tery cable from the ne owing harness conne	Disconnect the follo ECM AV control unit Combination meter
bination meter harnes	nnector and the combi	ontrol unit harness con		Check the continui connector. Models with naviga
		ontrol unit harness con	tion system	connector.
bination meter harnes			tion system	connector. Models with naviga
	harness connector	Combination meter h	ation system	Connector. Models with naviga AV control unit ha Connector No.
Continuity	harness connector Terminal No.	Combination meter h	ation system arness connector Terminal No.	connector. Models with naviga AV control unit ha
- Continuity Existed	harness connector Terminal No. 14	Combination meter h	ation system arness connector Terminal No. 90 74	Connector. Models with naviga AV control unit ha Connector No.
Continuity Existed Existed	harness connector Terminal No. 14 15	Combination meter h	ation system arness connector Terminal No. 90 74 Vigation system	Connector. Models with naviga AV control unit ha Connector No. M210
- Continuity Existed	harness connector Terminal No. 14 15	Combination meter h Connector No. M53	ation system arness connector Terminal No. 90 74 Vigation system	Connector. Models with naviga AV control unit ha Connector No. M210 Models without nav
Continuity Existed Existed	harness connector Terminal No. 14 15 harness connector	Combination meter h Connector No. M53 Combination meter h	ation system arness connector Terminal No. 90 74 Vigation system	Connector. Models with naviga AV control unit ha Connector No. M210 Models without nav AV control unit ha

MAIN LINE BETWEEN AV AND M&A CIRCUIT

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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006094455

[CAN SYSTEM (TYPE 6)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M53	14	M105	7	Existed
CCIVI	15	COT IVI	8	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 combination meter and the data link connector.
- NO >> Replace the PCB harness.

< [DTC/CIRCUIT DIA		WEEN DLC AN	D BCM CIRCUIT [CAN	SYSTEM (TYPE 6)]	
M	AIN LINE BET	FWEEN DLC A	ND BCM CIRC	UIT		٨
Di	agnosis Proced	lure			INFOID:000000006094456	A
1.	CHECK HARNESS		N CIRCUIT)			В
1. 2. 3. - - 4.	Disconnect the fol ECM Harness connecto BCM	Ittery cable from the n lowing harness conne ors M181 and M105	ectors.	BCM harness connec	tor.	C
	Harness	connector	BCM harne	ess connector	Continuity	_
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
	14.05	7		39	Existed	

Is the inspection result normal?

M105

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

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

40

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000006094460

[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 M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harne	ss connector	PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	Continuity
M120	39	35	Existed
IVI 120	40	36	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector Connector No. Terminal No.		nnector Harness connector		Continuity
Connector No.	Terminal No.			Continuity		
M20	35	M7	72	Existed		
WZ0	36	1017	73	Existed		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
DI	73	75	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 BCM and the 4WAS main control unit. NO >> Replace the body harness.

< DTC/CIRCUIT DIA	GNOSIS >		3 ANI		I I AN SYSTEM (TYPE 6)
	TWEEN RAS A	ND ABS C	CIRCL	-	
Diagnosis Proced	lure				INFOID:00000000609446
	OR				
 Turn the ignition s Disconnect the ba Check the followin and harness side) Harness connector Harness connector Harness connector Harness connector Sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the ha 	witch OFF. Ittery cable from the n ng terminals and con or B1 or M6 or E106 <u>t normal?</u> e terminal and connec 5 CONTINUITY (OPE) orness connectors B1	tor. N CIRCUIT) and M7.	mage, t		nnection (connector side
	ity between the harne			S.	
Connector No.		Terminal N	NO.		Continuity
B1	72			74	Existed
CHECK HARNESS	he body harness. CONTINUITY (OPEI Irness connectors M6 ity between the harne	and E106.			
Harness	connector		Harness	connector	
Connector No.	Terminal No.	Connector		Terminal No.	Continuity
	74			22	Existed
M7	75	- M6	ł	23	Existed
CHECK HARNESS Disconnect the co Check the continu harness connecto	e main line between th CONTINUITY (OPEI nnector of ABS actua ity between the harne	N CIRCUIT) tor and electric ess connector	c unit (co and the	ontrol unit). ABS actuator and ctric unit (control unit)	electric unit (control unit
Connector No.	Terminal No.	Connector	harness o No.	connector Terminal No.	Continuity
	22			25	Existed
E106		E41	-		

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

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

23

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

15

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

DIC/CIRCUIT DIAGNUS	>>>		
CM BRANCH LIN	E CIRCUIT		
iagnosis Procedure			INFOID:00000006094467
CHECK CONNECTOR			
 Check the following terr nector side). ECM Harness connector M30 	cable from the negative tern ninals and connectors for c) and PCB harness side co	lamage, bend and loose cor	nnection (unit side and con-
the inspection result norm (ES >> GO TO 2. NO >> Repair the term .CHECK HARNESS FOR	inal and connector.		
Disconnect the connect		onnector terminals.	
	ECM harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
M107	114	113	Approx. 108 – 132
VK56VD	ECM harness connector		Resistance (Ω)
Connector No.		nal No.	Approx 100 122
M160 the measurement value w	146	151	Approx. 108 – 132
YES >> GO TO 3. NO >> GO TO 4. •CHECK POWER SUPPL	Y AND GROUND CIRCUI	T CM. Refer to the following.	
VQ37VHR: <u>EC-180, "Diag</u> VK56VD: <u>EC-716, "Diagno the inspection result norm</u>	nosis Procedure" osis Procedure"	-	
YES (Present error)>>Rep • VQ37VHR: <u>E(</u> • VK56VD: <u>EC-</u> YES (Past error)>>Error w	lace the ECM. Refer to the C-535, "Removal and Insta 535, "Removal and Installa as detected in the ECM bra er supply and the ground ci	<u>llation"</u> <u>ition"</u> anch line.	
	ITINUITY (OPEN CIRCUIT)	
 Disconnect the harness Check the continuity be VQ37VHR 		onnector and the harness co	unnector.

< DTC/CIRCUIT DIAGNOSIS >

ECM harness connector		Harness connector		Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M107	114	M30	439	Existed	-
	113		438	Existed	-

VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ECM harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M160	146	- M30	439	Existed	
	151		438	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

TPMS BRANCH	LINE CIRCUI	Т		
Diagnosis Proced	ure			INFOID:000000006094468
1. СНЕСК СОЛЛЕСТ	OR			
 3. Check the followin nector side). - Low tire pressure - Harness connector Is the inspection result YES >> GO TO 2. NO >> Repair the 	ttery cable from the ne og terminals and conne warning control unit r M29 and PCB harne <u>c normal?</u> e terminal and connect	ectors for damage, b ess side connector tor.	pend and loose con	nection (unit side and con-
2.CHECK HARNESS 1. Disconnect the co	nnector of low tire pre		ol unit.	
				ss connector terminals.
	tire pressure warning contr		or	Resistance (Ω)
Connector No.		Terminal No.		
M43 Is the measurement va	2		1	Approx. 54 – 66
"Diagnosis Procedure" Is the inspection result	bly and the ground cire <u>normal?</u>	cuit of the low tire p	-	ontrol unit. Refer to <u>WT-53.</u> r to <u>WT-70, "Removal and</u>
Installation YES (Past error)>>E		e low tire pressure		
	CONTINUITY (OPEN	•		
4.CHECK HARNESS 1. Disconnect the ha	CONTINUITY (OPEN rness connector M29.	N CIRCUIT)	g control unit harne	ess connector and the har-
 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continuous connector. Low tire pressure 	CONTINUITY (OPEN rness connector M29.	N CIRCUIT)	g control unit harne	
 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continuous connector. Low tire pressure 	CONTINUITY (OPEN rness connector M29. hity between the low the warning control unit	N CIRCUIT)	-	
 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continuness connector. Low tire pressure harness 	CONTINUITY (OPEN rness connector M29. ity between the low the warning control unit connector	N CIRCUIT) ire pressure warning Harnes	s connector	

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094471

[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).
- A/C auto amp.
- Harness connector M28 and PCB harness 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/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

1	A/C auto amp. harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M66	12	11	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 A/C auto amp. Refer to <u>HAC-167, "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-201, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M28	325	Existed
MOO	11	IVIZO	327	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

iagnosis Proced	ure			INFOID:00000000609447
.CHECK CONNECT	OR			
 Check the followin nector side). A/T assembly Harness connecto Harness connecto Harness connecto Source the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the co 	ttery cable from the ne og terminals and conne r F103 r M116 r M28 and PCB harne	ectors for damage, bei ss side connector or. - bly.		ction (unit side and con
		-		
	A/T assembly harne	ess connector		Posistanco(0)
Connector No.		Terminal No.		Resistance (Ω)
F61 s the measurement va	A/T assembly harne	Terminal No.	8	Resistance (Ω) Approx. 54 – 66
F61 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER S Check the power supp <u>s the inspection result</u> YES (Present error)> <u>ponent Pa</u> parts list.) YES (Past error)>>En NO >> Repair the 4. CHECK HARNESS 1. Disconnect the ha	3 alue within the specific UPPLY AND GROUN ly and the ground circ normal? >Replace the control v rts Location". (Replac fror was detected in the power supply and the CONTINUITY (OPEN rness connector M28.	Terminal No. ation? D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. I CIRCUIT)	to <u>TM-156, "Diagnor</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 $s the measurement values of the measurement values of the measurement values of the measurement values of the measurement of the measurement values of the measurement of the me$	3 alue within the specific UPPLY AND GROUN ly and the ground circ normal? >Replace the control v rts Location". (Replace fror was detected in the power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/T as	Terminal No. ation? D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. I CIRCUIT) ssembly harness conn	to <u>TM-156, "Diagnor</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 s the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER S Check the power supp s the inspection result YES (Present error)> ponent Pa parts list.) YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS Disconnect the ha Check the continu	3 alue within the specific UPPLY AND GROUNI ly and the ground circe normal? >Replace the control v rts Location". (Replace fror was detected in the power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/T as	Terminal No. ation? D CIRCUIT uit of the TCM. Refer to valve with TCM. Refer e A/T assembly if cont e TCM branch line. e ground circuit. I CIRCUIT) ssembly harness conn Harness con	to <u>TM-156, "Diagnor</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM nector and the harne	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 $s the measurement values of the measurement of the matrix of the measurement of the$	3 alue within the specific UPPLY AND GROUN ly and the ground circ normal? >Replace the control v rts Location". (Replace fror was detected in the power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/T as	Terminal No. ation? D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. I CIRCUIT) ssembly harness conn	to <u>TM-156, "Diagnor</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094473

[CAN SYSTEM (TYPE 6)]

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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

AV BRANCH LI	NE CIRCUIT			٨
Diagnosis Proced	lure			A
1.CHECK CONNECT	OR			В
 Check the followin nector side). AV control unit 	ttery cable from the ne	ectors for damage, be	and and loose connec	tion (unit side and con- C
Is the inspection result				D
2.CHECK HARNESS 1. Disconnect the co	e terminal and connect FOR OPEN CIRCUIT nnector of AV control nce between the AV co	Г unit.	nnector terminals.	E F
 Models with navig 	ation system			
	AV control unit harn			Resistance (Ω)
Connector No. M210	90	Terminal No.	74	Approx. 54 – 66
- Models without na				H
	AV control unit harn	ess connector		
Connector No.		Terminal No.		Resistance (Ω)
M84	81		80	Approx. 54 – 66
 BOSE audio with na Is the inspection result YES (Present error)> Base au BOSE a YES (Past error)>>E 	UPPLY AND GROUN Ily and the ground circ navigation system: <u>AV</u> vigation system: <u>AV-2</u>	D CIRCUIT suit of the AV control u -90, "AV CONTROL U 72, "AV CONTROL U trol unit. Refer to the f system: <u>AV-120, "Re</u> ystem: <u>AV-298, "Rem</u> ne AV control unit brar	JNIT : Diagnosis Proce NIT : Diagnosis Proce following. moval and Installation oval and Installation	edure" L
4.CHECK HARNESS	,	,		
	Irness connector M25. ity between the AV co ation system		nnector and the harne	ss connector.
	arness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
M210	90 74	M25	201 221	Existed Existed
	ΓT		<i>LL</i> 1	EXISTON

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	M25	201	Existed
10104	80	IVIZ5	221	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

< DTC/CIRCUIT DIAGNOSIS >

iagnosis Proced	lure			INFOID:0000000609447	
-				IN CID.000000000000000000000000000000000000	
.CHECK CONNECT					
. Check the followin nector side). Combination mete Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the	ttery cable from the ne og terminals and conne er r M24 and PCB harne	ectors for damag ess side connecto tor.		onnection (unit side and con-	
	nnector of combinatio				
	nce between the comb		arness connector terr	ninals.	
	Combination meter ha	irness connector			
	Connector No. Terminal No. Resistance (Ω)				
Connector No.					
M53 the measurement va YES >> GO TO 3.	14 alue within the specific		15	Approx. 54 – 66	
M53 the measurement var YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S theck the power supple TETER : Diagnosis Pro- the inspection result YES (Present error)> YES (Past error)>>En NO >> Repair the CHECK HARNESS Disconnect the ha	UPPLY AND GROUN Oly and the ground cir rocedure". normal? >Replace the combina rror was detected in the power supply and the CONTINUITY (OPEN rness connector M24.	D CIRCUIT rouit of the comb ation meter. Refe the combination m e ground circuit. N CIRCUIT)	ination meter Refer er to <u>MWI-90, "Remo</u> neter branch line.	to <u>MWI-70. "COMBINATION</u>	
M53 S the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S Check the power suppression result S the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	UPPLY AND GROUN oly and the ground cir cocedure". Replace the combination ror was detected in the power supply and the CONTINUITY (OPEN rness connector M24. ity between the comb	cation? D CIRCUIT reuit of the comb ation meter. Refe the combination m e ground circuit. N CIRCUIT)	ination meter Refer er to <u>MWI-90, "Remo</u> neter branch line. rness connector and	to <u>MWI-70, "COMBINATION</u> val and Installation".	
M53 S the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S CHECK POWER S CHECK POWER S CHECK POWER S TETER : Diagnosis Prison S the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	UPPLY AND GROUN Oly and the ground cir rocedure". normal? >Replace the combina rror was detected in the power supply and the CONTINUITY (OPEN rness connector M24.	cation? D CIRCUIT reuit of the comb ation meter. Refe the combination m e ground circuit. N CIRCUIT)	ination meter Refer er to <u>MWI-90, "Remo</u> neter branch line. rness connector and	to <u>MWI-70. "COMBINATION</u> val and Installation". the harness connector.	
M53 s the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S Check the power supp <u>AETER : Diagnosis Pr</u> s the inspection result YES (Present error)> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Combination mete	UPPLY AND GROUN oly and the ground cir rocedure". a normal? >Replace the combination ror was detected in the power supply and the CONTINUITY (OPEN rness connector M24. ity between the comb	Cation? D CIRCUIT Trouit of the comb ation meter. Reference or combination meter or ground circuit. N CIRCUIT) Transition meter han Ha	ination meter Refer er to <u>MWI-90, "Remo</u> neter branch line. rness connector and	to <u>MWI-70. "COMBINATION</u> val and Installation". the harness connector.	

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

Ρ

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094476

[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).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness 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			
Connector No.	Termi	Terminal No.		
M182	6	6 14		

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 M23.

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
M182	6	M23	151	Existed
IVI 102	14	WIZ5	150	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

BCM BRANCH LINE CIRCUIT

BCM BRANCH	LINE CIRCUIT			
Diagnosis Procec	lure			INFOID:00000006094477
1.CHECK CONNECT	OR			
 Check the followir nector side). BCM Harness connector lis the inspection result YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS Disconnect the co 	ttery cable from the neig terminals and connect or M22 and PCB harnes t normal? terminal and connect FOR OPEN CIRCUI	ectors for damage, be ess side connector tor. Γ		tion (unit side and con-
	BCM harness of			
Connector No.		Terminal No.		Resistance (Ω)
M120	39		40	Approx. 54 – 66
Is the measurement va YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER S	UPPLY AND GROUN	D CIRCUIT		
		uit of the BCM. Refe	r to <u>BCS-73, "Diagnos</u>	<u>is Procedure"</u> .
YES (Past error)>>E		e BCM branch line.	noval and Installation	<u>.</u>
4.CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
	rness connector M22. ity between the BCM		nd the harness connect	ctor.
BCM harne	ss connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M120	39	M22	101	Existed

Ν

Is the inspection result normal? YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

0

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094478

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness 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 steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

	Steering angle sensor harness connector			
Connector No.	Termi	Terminal No.		
M37	1	1 2		

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 steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-144, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

Steering angle sens	or harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M22	81	Existed
10137	2	IVIZZ	82	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

RAS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

	ECIRCUIT		
Diagnosis Procedure			INFOID:00000006094480
1 .CHECK CONNECTOR			
 Check the terminals and tion (unit side and conning s the inspection result norm 	cable from the negative terr d connectors of the 4WAS ector side).		age, bend and loose connec-
YES >> GO TO 2. NO >> Repair the term	inal and connector		
2. CHECK HARNESS FOR			
2. Check the resistance be	or of 4WAS main control ur etween the 4WAS main con	trol unit harness connecto	or terminals.
	S main control unit harness conn		Resistance (Ω)
Connector No.	Termir		
		0	Approx 54 66
B54	1 vithin the specification?	8	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Replace the boo CHECK POWER SUPPL	vithin the specification?		Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Replace the boo CHECK POWER SUPPL Check the power supply and Procedure (4WAS Main Cor	vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the 4 htrol Unit)".		Approx. 54 – 66 Refer to <u>STC-171, "Diagnosis</u>
s the measurement value w YES >> GO TO 3. NO >> Replace the boo CHECK POWER SUPPL Check the power supply and Procedure (4WAS Main Cor s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the 4 htrol Unit)".	WAS main control unit. F I unit. Refer to <u>STC-185,</u> ain control unit branch line	Refer to <u>STC-171, "Diagnosis</u> "Removal and Installation".
s the measurement value w YES >> GO TO 3. NO >> Replace the boo CHECK POWER SUPPL Check the power supply and Procedure (4WAS Main Cor s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	vithin the specification? dy harness. Y AND GROUND CIRCUIT d the ground circuit of the 4 <u>htrol Unit)"</u> . <u>hal?</u> lace the 4WAS main control as detected in the 4WAS m	WAS main control unit. F I unit. Refer to <u>STC-185,</u> ain control unit branch line	Refer to <u>STC-171, "Diagnosis</u> "Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
E41	25 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "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.

Revision: 2010 June

INFOID:000000006094481

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

	SIS >		[CAN SYSTEM (TYPE 6)]
PDM-E BRANCH L	INE CIRCUIT		
Diagnosis Procedure			INFOID:00000006094483
1 .CHECK CONNECTOR			
	cable from the negative terr		nd loose connection (unit side
· ·	inal and connector.		
CHECK HARNESS FOR			
. Disconnect the connect . Check the resistance be	tor of IPDM_E/R. etween the IPDM_E/R harn	ess connector terminals.	
	IDDM E/D barnage connector		
Connector No.	IPDM E/R harness connector Terminal No.		Resistance (Ω)
E6	40	39	Approx. 108 – 132
	within the specification?		
the measurement value v			
YES >> GO TO 3.			
YES >> GO TO 3. NO >> Repair the IPDI	M E/R branch line.	_	
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL	M E/R branch line. _Y AND GROUND CIRCUIT		
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL	M E/R branch line. -Y AND GROUND CIRCUIT d the ground circuit of the IF		32, "Diagnosis Procedure".
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL Check the power supply and the inspection result norm	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF nal?	PDM E/R. Refer to PCS-	
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL check the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF <u>nal?</u> blace the IPDM E/R. Refer t vas detected in the IPDM E/	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-33. "Removal and</u> /R branch line.	
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL theck the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF nal? blace the IPDM E/R. Refer t	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-33. "Removal and</u> /R branch line.	
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL check the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF <u>nal?</u> blace the IPDM E/R. Refer t vas detected in the IPDM E/	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-33. "Removal and</u> /R branch line.	
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL Check the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF <u>nal?</u> blace the IPDM E/R. Refer t vas detected in the IPDM E/	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-33. "Removal and</u> /R branch line.	
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL Check the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF <u>nal?</u> blace the IPDM E/R. Refer t vas detected in the IPDM E/	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-33. "Removal and</u> /R branch line.	
YES >> GO TO 3. NO >> Repair the IPDI CHECK POWER SUPPL Check the power supply and the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF <u>nal?</u> blace the IPDM E/R. Refer t vas detected in the IPDM E/	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-33. "Removal and</u> /R branch line.	
NO >> Repair the IPDI 3.CHECK POWER SUPPL Check the power supply and <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w	M E/R branch line. _Y AND GROUND CIRCUIT d the ground circuit of the IF <u>nal?</u> blace the IPDM E/R. Refer t vas detected in the IPDM E/	PDM E/R. Refer to <u>PCS-</u> o <u>PCS-33. "Removal and</u> /R branch line.	

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< DTC/CIRCUIT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094484

[CAN SYSTEM (TYPE 6)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC 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		
M125	4	6	Existed		
WT25	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Driver seat control unit harness connector			
Connector No.	Terminal No.		Resistance (Ω)	
B514	23 24		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-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT А **Diagnosis Procedure** INFOID:000000006094493 **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 system. 3. C 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. M182 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 PCB harness is short) the root cause. **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 M182 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 PCB harness is short) the root cause. ${f 4}$. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. Check the resistance between the ECM terminals. 2. VQ37VHR LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 VK56VD ECM Resistance (Ω) Terminal No. Ρ 146 151 Approx. 108 - 132 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. Approx. 108 - 132 40 39

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

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

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

NOTE:

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

Inspection result

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

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

[CAN SYSTEM (TYPE 7)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094895 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM _ D Low tire pressure warning control unit _ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000006094896

[CAN SYSTEM (TYPE 7)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M210	90	Existed
1000	11	M210	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit ha	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Mee	12	M84	81	Existed
IVIOO	M66 11	11/104	80	Existed

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

SNOSIS >		[CAN	I SYSTEM (TYPE 7)]
WEEN A-BAG	AND AV CIRC	UIT	
ure			INFOID:000000006094897
CONTINUITY (OPEI	N CIRCUIT)		
tery cable from the n owing harness conne	ectors.	nector and the AV co	ntrol unit harness con-
arness connector	AV control unit ha	arness connector	Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
12	M240	90	Existed
	– M210		
	WEEN A-BAG ure CONTINUITY (OPE vitch OFF. tery cable from the n owing harness conne ty between the A/C a ation system arness connector Terminal No.	WEEN A-BAG AND AV CIRC ure CONTINUITY (OPEN CIRCUIT) vitch OFF. tery cable from the negative terminal. owing harness connectors. ty between the A/C auto amp. harness connectors. ation system arness connector AV control unit harness connector No.	WEEN A-BAG AND AV CIRCUIT ure CONTINUITY (OPEN CIRCUIT) vitch OFF. tery cable from the negative terminal. owing harness connectors. ty between the A/C auto amp. harness connector and the AV control unit harness connector ation system arness connector AV control unit harness connector Terminal No.

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

A/C auto amp. h	arness connector	AV control unit h	arness connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	Н
M66	12	M84	81	Existed	-
IVIOO	11	1004	80	Existed	-

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000006094898

[CAN SYSTEM (TYPE 7)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

AV control unit h	arness connector	Combination meter	harness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M53	14	Existed
WZ 10	74	M53	15	Existed

Models without navigation system

AV control unit h	narness connector	Combination meter	harness connector	- Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M94	81	M53	14	Existed
M84 80	80	CCIVI	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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

DTC/CIRCUIT DIAC			-	SYSTEM (TYPE 7)]
Diagnosis Proced				INFOID:000000006094899
.CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)		
 Disconnect the foll ECM Combination mete Harness connecto 	ttery cable from the n lowing harness conne r rs M105 and M181		connector and the ha	rness connector.
Combination meter	r harness connector	Harness	connector	.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	N405	7	Existed
1/10.3		M105	8	
Wibb	15		0	Existed

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000006094900

[CAN SYSTEM (TYPE 7)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

Harness	connector	BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M405	7	M400	39	Existed
M105	8	- M120	40	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 BCM.

NO >> Replace the PCB harness.

AIN LINE BET	WEEN BCM A	ND ABS CIRCL	JIT	
agnosis Proced	ure			INFOID:0000000060945
.CHECK CONNECT	OR			
. Check the followir and harness side) Harness connecto Harness connecto Harness connecto Harness connecto Harness connecto	ttery cable from the ne ng terminals and conr r M20 and PCB harne r M7 r B1 r M6 r E106	nectors for damage, b	pend and loose conn	ection (connector sid
<u>s the inspection result</u> YES >> GO TO 2.	<u>normal?</u>			
	terminal and connect	tor.		
CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
BCM Harness connecto		ctors. harness connector and	d the PCB harness c	onnector.
. Check the continu				
	ss connector	PCB harnes	s connector	Continuity
	ss connector Terminal No.	Termin	al No.	Continuity
BCM harne	ss connector Terminal No. 39	Termin 31	al No. 5	Existed
BCM harne Connector No. M120	ss connector Terminal No. 39 40	Termin	al No. 5	-
BCM harne Connector No. M120 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS . Disconnect the ha	ss connector Terminal No. 39 40	Termin 39 30 N CIRCUIT) and B1.	al No. 5	Existed
BCM harne Connector No. M120 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS . Disconnect the ha . Check the continu	ss connector Terminal No. 39 40 anormal? ne PCB harness. CONTINUITY (OPEN rness connectors M7	Termin 39 30 N CIRCUIT) and B1.	nal No. 5 6	Existed
BCM harne Connector No. M120 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS . Disconnect the ha . Check the continu	ss connector Terminal No. 39 40 anormal? ne PCB harness. CONTINUITY (OPEN rness connectors M7 ity between the harne	Termin 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3:	nal No. 5 6	Existed
BCM harne Connector No. M120 Sthe inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS . Disconnect the ha . Check the continu Harness	ss connector Terminal No. 39 40 normal? ne PCB harness. CONTINUITY (OPEN rness connectors M7 ity between the harne connector Terminal No. 35	Termin 33 30 N CIRCUIT) and B1. ss connectors. Harness c	connector Terminal No. 72	Existed Existed Continuity Existed
BCM harne Connector No. M120 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M20	ss connector Terminal No. 39 40 anormal? ne PCB harness. CONTINUITY (OPEN rness connectors M7 ity between the harne connector Terminal No. 35 36	Termin 33 30 N CIRCUIT) and B1. ss connectors. Harness of Connector No.	connector Terminal No.	Existed Existed
BCM harne Connector No. M120 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M20 the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS	ss connector Terminal No. 39 40 normal? ne PCB harness. CONTINUITY (OPEN rness connectors M7 ity between the harne connector Terminal No. 35 36 normal?	Termin 33 30 N CIRCUIT) and B1. ss connectors. Harness connectors M7 e harness connectors N CIRCUIT)	connector Terminal No. 72 73	Existed Existed Continuity Existed
BCM harne Connector No. M120 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M20 the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS	ss connector Terminal No. 39 40 anormal? ne PCB harness. CONTINUITY (OPEN rness connectors M7 ity between the harne connector Terminal No. 35 36 anormal? e main line between the CONTINUITY (OPEN	Termin 33 30 N CIRCUIT) and B1. ss connectors. Harness connectors M7 e harness connectors N CIRCUIT)	connector Terminal No. 72 73	Existed Existed Continuity Existed
BCM harne Connector No. M120 the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M20 the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Check the continuity b	ss connector Terminal No. 39 40 anormal? ne PCB harness. CONTINUITY (OPEN rness connectors M7 ity between the harne connector Terminal No. 35 36 anormal? e main line between the CONTINUITY (OPEN	Termin 33 34 34 35 36 36 36 37 36 37 36 37 37 37 37 37 37 37 37 37 37 37 37 37	connector Terminal No. 72 73	Existed Existed Continuity Existed Existed

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- 1. Disconnect the harness connectors M6 and E106.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	74	M6	22	Existed
1417	75		23	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair the main line between the harness connectors M7 and M6.

6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector		ectric unit (control unit) connector	Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.			
E106	E41		25	Existed	
ETUO	23	E 41	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 BCM and the ABS actuator and electric unit (control unit).
- NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 7)] MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
- Harness connector B33
 Harness connector B245
- Hamess connector B245

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.
- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH h	arness connector	Harness	connector	Continuity	G
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B52	4	B33	13	Existed	Н
002	3	633	14	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

Harness c	onnector	Side radar RH h	arness connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B245	13	B252	4	Existed	L
D240	14	B202	3	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 side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

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INFOID:000000006094908

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MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000006094909

[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).
- Harness connector B201
- Harness connector M117
- Harness connector M20 and PCB harness 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.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

Side radar RH h	Side radar RH harness connector Harness		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B252	4		66	Existed
BZJZ	3	B201	67	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M117	66	M20	38	Existed
	67	IVI20	40	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

PCB harness connector	Harness connector		Continuity
Terminal No.	Connector No.	Connector No. Terminal No.	
38	N450	11	Existed
40	M150	10	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 RH and the accelerator pedal actuator.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT AGNOSIS > [CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000006094910

[CAN SYSTEM (TYPE 7)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M150	11	M110	13	Existed
101150	10	- WITO	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 accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

ECM BRANCH LINE CIRCUIT

DIC/CIRCUIT DIAGNUS	00 >		
CM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:00000006094911
.CHECK CONNECTOR			
 Check the following term nector side). ECM 	able from the negative terr	amage, bend and loose co	onnection (unit side and con-
the inspection result norm		Inector	
YES >> GO TO 2. NO >> Repair the term	nal and connector.		
Disconnect the connect Check the resistance be VQ37VHR	or of ECM. Stween the ECM harness co	onnector terminals.	
	ECM harness connector		Posistanco (O)
Connector No.	Termir	nal No.	Resistance (Ω)
M107	114	113	Approx. 108 – 132
VK56VD			
	ECM harness connector		
Connector No.	Termir	nal No.	- Resistance (Ω)
M160	146	151	Approx. 108 – 132
heck the power supply and VQ37VHR: <u>EC-180, "Diag</u>	Y AND GROUND CIRCUIT I the ground circuit of the E		
VK56VD: <u>EC-716, "Diagno</u> the inspection result norm			
YES (Present error)>>Rep • VQ37VHR: E(• VK56VD: EC- YES (Past error)>>Error way NO >> Repair the powe	ace the ECM. Refer to the C-535, "Removal and Instal 535, "Removal and Installa as detected in the ECM bra er supply and the ground ci TINUITY (OPEN CIRCUIT)	lation" tion" Inch line. rcuit.	
Disconnect the harness			onnector.

< DTC/CIRCUIT DIAGNOSIS >

ECM harnes	ss connector	Harness	connector	- Continuity	-
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M107	114	1400	439	Existed	_
WITO7	113	M30	438	Existed	_

VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M160	146	M30	439	Existed
MITOO	151	10130	438	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

FPMS BRANCH	I LINE CIRCUI	Γ		
Diagnosis Proced	ure			INFOID:000000006094912
1 .CHECK CONNECT	OR			
 Check the followin nector side). Low tire pressure of Harness connectors <u>s the inspection result</u> YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the context 	tery cable from the ne g terminals and conne warning control unit r M29 and PCB harne normal? terminal and connect FOR OPEN CIRCUIT	ectors for damage, ess side connector tor. Γ ssure warning con	rol unit.	nnection (unit side and con-
	tire pressure warning contr		-	
Connector No.		Terminal No.		Resistance (Ω)
M43	2		1	Approx. 54 – 66
Diagnosis Procedure" s the inspection result YES (Present error)> <u>Installation</u> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the ha	ly and the ground cire normal? >Replace the low tire <u>"</u> . ror was detected in the power supply and the CONTINUITY (OPEN rness connector M29.	cuit of the low tire e pressure warning le low tire pressure e ground circuit. N CIRCUIT)	g control unit. Refe	
ness connector.	varning control unit		ng control unit harne	ess connector and the har-
harness Connector No.	Terminal No.	Connector No.	Terminal No.	
		Connector No. M29	Terminal No. 396 395	Existed Existed

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000006094913

1. СНЕСК DTC	
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Check DTC of the CAN gateway with CONSULT-III.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

- Turn the ignition switch OFF. 1.
- Disconnect the battery cable from the negative terminal. 2.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side).
- CAN gateway
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

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

	CAN gateway harness connector			
Connector No.	Termi	Resistance (Ω)		
M125	1	7	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 CAN gateway. Refer to LAN-143, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

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

CAN gateway h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
MADE	1	1400	326	Existed
M125	7	M28	328	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

>> Repair the harness between the CAN gateway harness connector M125 and the harness connec-NO tor M28.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

	ure			INFOID:000000006094914
Diagnosis Proced 1.снеск отс				
Check DTC of the CAN Is U1010 or B2600 indi	o ,			
	diagnosis of the indic	ated DTC		
NO $>>$ GO TO 2.				
2. CHECK CONNECT	OR			
 Check the following nector side). CAN gateway Harness connector 	tery cable from the ne g terminals and conn M23 and PCB harne M20 and PCB harne M7	ectors for damage, b ess side connector	end and loose connec	tion (unit side and con-
Is the inspection result				
YES >> GO TO 3.				
NO >> Repair the	terminal and connec			
3.CHECK HARNESS	CONTINUITY (OPEN	N CIRCUIT)		
	nector of CAN gatew ty between the CAN	vay. gateway harness cor	nector terminals.	
	CAN gateway harn	ess connector		Continuity
Connector No.		Terminal No.		
M125 4 6		6		
M125				Existed
	10		12	Existed
M125 Is the inspection result YES $>>$ GO TO 4. NO $>>$ GO TO 5. 4.CHECK POWER SU	normal?			
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU	normal? JPPLY AND GROUN		12	
$\begin{tabular}{ls the inspection result} \hline YES >> GO TO 4. \\ NO >> GO TO 5. \\ \end{tabular}$	normal? JPPLY AND GROUN ly and the ground ci		12	Existed
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the	normal? JPPLY AND GROUN ly and the ground c normal? •Replace the CAN ga •or was detected in th power supply and the	ircuit of the CAN gat ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit.	12 reway. Refer to <u>LAN-1</u>	Existed
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5.CHECK HARNESS	normal? JPPLY AND GROUN ly and the ground c normal? Replace the CAN ga or was detected in th power supply and the CONTINUITY (OPEN	ircuit of the CAN gat ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit. N CIRCUIT)	12 reway. Refer to <u>LAN-1</u>	Existed
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU 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	normal? JPPLY AND GROUN ly and the ground c normal? Replace the CAN ga or was detected in th power supply and the CONTINUITY (OPEN ness connector M23	ircuit of the CAN gat ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit. N CIRCUIT)	12 reway. Refer to <u>LAN-1</u>	Existed 43. "Diagnosis Proce- stallation". nication circuit 2).
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU 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	normal? JPPLY AND GROUN ly and the ground ci normal? Replace the CAN ga or was detected in the power supply and the CONTINUITY (OPEN ness connector M23 ty between the CAN	ircuit of the CAN gat ateway. Refer to <u>LAN</u> he CAN gateway brar e ground circuit. N CIRCUIT) gateway harness cor	12 reway. Refer to <u>LAN-1</u> -144. "Removal and In high line (CAN commun	Existed
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU 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 2. Check the continui	normal? JPPLY AND GROUN ly and the ground ci normal? Replace the CAN ga or was detected in the power supply and the CONTINUITY (OPEN ness connector M23 ty between the CAN	ircuit of the CAN gat ateway. Refer to <u>LAN</u> he CAN gateway brar e ground circuit. N CIRCUIT) gateway harness cor	12 reway. Refer to <u>LAN-1</u> -144. "Removal and In the line (CAN commun	Existed 43. "Diagnosis Proce- stallation". nication circuit 2).
Is the inspection result YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU 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 2. Check the continui	IPPLY AND GROUN ly and the ground control Prormal? Replace the CAN gate for was detected in the power supply and the CONTINUITY (OPEN ness connector M23 ty between the CAN rness connector	ircuit of the CAN gat ateway. Refer to <u>LAN</u> ne CAN gateway brar e ground circuit. N CIRCUIT) gateway harness cor	12 reway. Refer to <u>LAN-1</u> -144. "Removal and Ir inch line (CAN commun	Existed

Is the inspection result normal?

YES >> GO TO 6.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- Check the continuity between the PCB harness connectors. 2.

PCB harness connector	PCB harness connector	Continuity
Terminal No.	Terminal No.	Continuity
133	24	Existed
135	27	Existed

Is the inspection result normal?

>> GO TO 7. YES

>> Replace the PCB harness. NO

7.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors. 2.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M20	24	147	34	Existed	
WIZU	27	M7	35	Existed	

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

8.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	34	32	Existed
DI	35	33	Existed

Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

IVAC BRANCH		1		
Diagnosis Procedu	ure			INFOID:000000006094915
CHECK CONNECT	OR			
 Check the following nector side). A/C auto amp. 	tery cable from the n	nectors for damage, bei	nd and loose connec	tion (unit side and con-
the inspection result				
YES >> GO TO 2. NO >> Repair the CHECK HARNESS	terminal and connec			
	nector of A/C auto a			
		auto amp. harness cor	nector terminals.	
	A/C auto amp. harr	ness connector		
Connector No.		Terminal No.		Resistance (Ω)
M66	12		11	Approx. 54 – 66
<u>s the measurement va</u> YES >> GO TO 3.				
CHECK POWER SU				
• CHECK POWER SU heck the power supp iagnosis Procedure".	ly and the ground ci		mp. Refer to <u>HAC-1</u>	<u>67. "A/C AUTO AMP. :</u>
CHECK POWER SU check the power supp biagnosis Procedure". the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the	ly and the ground ci <u>normal?</u> •Replace the A/C au ror was detected in th power supply and th	to amp. Refer to <u>HAC-</u> he A/C auto amp. bran	<u>201. "Removal and I</u>	
CHECK POWER SU Check the power suppliagnosis Procedure". the inspection result YES (Present error)>> YES (Past error)>>Erron NO >> Repair the CHECK HARNESS Disconnect the har	ly and the ground ci normal? Replace the A/C au ror was detected in th power supply and th CONTINUITY (OPEI ness connector M28	to amp. Refer to <u>HAC-</u> he A/C auto amp. bran he ground circuit. N CIRCUIT)	201. "Removal and I ch line.	nstallation".
CHECK POWER SU check the power supp biagnosis Procedure". the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the .CHECK HARNESS Disconnect the har Check the continuit	ly and the ground ci normal? Replace the A/C au ror was detected in th power supply and th CONTINUITY (OPE ness connector M28 ty between the A/C a	to amp. Refer to <u>HAC-3</u> he A/C auto amp. bran he ground circuit. N CIRCUIT) auto amp. harness cont Harness c	201, "Removal and I ch line. nector and the harne	nstallation".
CHECK POWER SU Check the power supp Diagnosis Procedure". Sthe inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the har Check the continuit	ly and the ground ci <u>normal?</u> Replace the A/C au- ror was detected in the power supply and the CONTINUITY (OPE) ness connector M28 ty between the A/C and arness connector Terminal No.	ircuit of the A/C auto a to amp. Refer to <u>HAC-3</u> he A/C auto amp. bran le ground circuit. N CIRCUIT) auto amp. harness coni	201. "Removal and I ch line. nector and the harne connector Terminal No.	nstallation". ss connector.
CHECK POWER SU Check the power supp Diagnosis Procedure". Sthe inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the har Check the continuit	ly and the ground ci normal? Replace the A/C au ror was detected in th power supply and th CONTINUITY (OPE ness connector M28 ty between the A/C a	to amp. Refer to <u>HAC-3</u> he A/C auto amp. bran he ground circuit. N CIRCUIT) auto amp. harness cont Harness c	201, "Removal and I ch line. nector and the harne	nstallation". ss connector.

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094916

[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 F103
- Harness connector M116
- Harness connector M28 and PCB harness 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.	Termi		
F61	3	8	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 TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 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
F61	3	M28	346	Existed
	8		347	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

[CAN SYSTEM (TYPE 7)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094917 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 following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

INFOID:000000006094918

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).
- AV control unit
- Harness connector M25 and PCB harness 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

	AV control unit harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
M210	90	74	Approx. 54 – 66

Models without navigation system

AV control unit harness connecto	r	Resistance (Ω)
Termi	nal No.	
81	80	Approx. 54 – 66
	Termi	AV control unit harness connector Terminal No. 81 80

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 AV control unit. Refer to the following.

- Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-272, "AV CONTROL UNIT : Diagnosis Procedure"

Is the inspection result normal?

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

- Base audio without navigation system: <u>AV-120, "Removal and Installation"</u>
- BOSE audio with navigation system: <u>AV-298, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.
- NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M25	201	Existed
MZ 10	74	WIZ5	221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
			ienninal NO.	
M84	81	M25	201	Existed
104	80	IVI25	221	Existed
ne inspection result no	ormal?			
the harness O (Without navigation	stem)>>Repair the connector M25.	harness between the A the harness between t 5.		

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094919

[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).
- Combination meter
- Harness connector M24 and PCB harness 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	ombination meter harness connect	ctor	Resistance (Ω)
Connector No.	Termi	nal No.	
M53	14	15	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 combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

Combination meter	r harness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M24	176	Existed
IND5	15	10124	177	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

.CHECK CONNECTOR	9			INFOID:00000006094920
 Turn the ignition switc Disconnect the battery Check the following tenector side). Data link connector Harness connector M Harness connector M Harness connector M Harness connector M 	y cable from the ne erminals and conne 181 105 23 and PCB harne	ectors for damage, be	nd and loose cor	nection (unit side and con-
	minal and connect			
CHECK HARNESS FO				
heck the resistance betw	veen the data link o	connector terminals.		
	Data link con	nector		Resistance (Ω)
Connector No.		Terminal No.		
M182	6		14	Approx. 54 – 66
	within the specific	ation?		
the measurement value YES (Present error)>>Ch YES (Past error)>>Error NO >> GO TO 3. CHECK HARNESS CC Disconnect the harnes Check the continuity b	neck CAN system t was detected in th ONTINUITY (OPEN ss connector M23.	type decision again. e data link connector I CIRCUIT)		
the measurement value YES (Present error)>>Ch YES (Past error)>>Error NO >> GO TO 3. CHECK HARNESS CC Disconnect the harnes	neck CAN system t was detected in th ONTINUITY (OPEN ss connector M23. Detween the data li	type decision again. e data link connector I CIRCUIT)	harness connect	or.
the measurement value YES (Present error)>>Ch YES (Past error)>>Error NO >> GO TO 3. CHECK HARNESS CC Disconnect the harnes Check the continuity b	neck CAN system t was detected in th ONTINUITY (OPEN ss connector M23. Detween the data li	type decision again. e data link connector I CIRCUIT) nk connector and the	harness connect	
the measurement value YES (Present error)>>Ch YES (Past error)>>Error NO >> GO TO 3. CHECK HARNESS CC Disconnect the harnes Check the continuity to Data link cont	neck CAN system t was detected in th ONTINUITY (OPEN ass connector M23. Detween the data li	type decision again. e data link connector I CIRCUIT) nk connector and the Harness o	harness connect	or.

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094921

[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).
- BCM
- Harness connector M22 and PCB harness 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 BCM.
- 2. Check the resistance between the BCM harness connector terminals.

	BCM harness connector		Resistance (Ω)
Connector No.	Termin	al No.	
M120	39	40	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 BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

BCM harne	ess connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
IVIT20	40	IVIZZ	102	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

		Г		
Diagnosis Procedu	re			INFOID:000000006094922
1. снеск соллестс	IR			
 Check the following nector side). Steering angle sens 	ery cable from the ne terminals and conne	ectors for damage, ber	nd and loose conne	ction (unit side and con-
s the inspection result n	ormal?			
· ·	erminal and connect			
2.CHECK HARNESS F				
	nector of steering and e between the steeri	ng angle sensor harne	ess connector termi	nals.
	Steering angle sensor ha			Resistance (Ω)
Connector No.		Terminal No.	-	
M37 s the measurement valu	1		2	Approx. 54 – 66
<u>aram"</u> . <u>s the inspection result n</u> YES (Present error)>>I YES (Past error)>>Erro NO >> Repair the p	y and the ground cire ormal? Replace the steering	cuit of the steering an angle sensor. Refer to e steering angle senso ground circuit.	D <u>BRC-144, "Remo</u> v	o <u>BRC-54, "Wiring Dia-</u> val and Installation".
I. Disconnect the harn	ess connector M22. / between the steerin	ng angle sensor harne	ss connector and th	e harness connector.
. Disconnect the harn	/ between the steerin	ng angle sensor harne Harness c		
Disconnect the harn Check the continuity	/ between the steerin			e harness connector.
Disconnect the harn Check the continuity Steering angle sensor	/ between the steerin harness connector	Harness c	onnector	

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator a	and electric unit (control unit) har	ness connector	Resistance (Ω)
Connector No.	Termi	nal No.	
E41	25	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

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

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "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.

Revision: 2010 June

INFOID:000000006094925

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

Diagnosis Procedure			INFOID:000000006094926
1.CHECK CONNECTOR			
	cable from the negative termi		and loose connection (unit
Is the inspection result norm	al?		
YES >> GO TO 2. NO >> Repair the termi	inal and connector.		
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of AFS control unit. Stween the AFS control unit h	arness connector termina	als.
A	AFS control unit harness connector		Resistance (Ω)
Connector No.	Termina		
E104	30	No. 7	Approx. 54 – 66
E104 Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an	30 vithin the specification? control unit branch line. Y AND GROUND CIRCUIT ind the ground circuit of the <i>i</i>	7	Approx. 54 – 66
E104 Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure	30 vithin the specification? control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the v	7	Approx. 54 – 66
E104 Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	30 vithin the specification? control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the v	7 NFS control unit. Refer to fer to <u>EXL-126, "Remova</u> of unit branch line.	Approx. 54 – 66
E104 Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error was	30 <u>vithin the specification?</u> control unit branch line. Y AND GROUND CIRCUIT id the ground circuit of the <i>n</i> <u>"</u> . <u>hal?</u> lace the AFS control unit. Re as detected in the AFS control	7 NFS control unit. Refer to fer to <u>EXL-126, "Remova</u> of unit branch line.	Approx. 54 – 66
E104 Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	30 <u>vithin the specification?</u> control unit branch line. Y AND GROUND CIRCUIT id the ground circuit of the <i>n</i> <u>"</u> . <u>hal?</u> lace the AFS control unit. Re as detected in the AFS control	7 NFS control unit. Refer to fer to <u>EXL-126, "Remova</u> of unit branch line.	Approx. 54 – 66

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094927

[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 IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector			
Connector No.	Termi	Resistance (Ω)		
E6	40	39	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "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.

ADP BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:00000006094928
1.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d 1 System) <u>al?</u> GO TO 2. >>GO TO 2. inal and connector. TINUITY (OPEN CIRCUIT	amage, bend and loose c	connection (unit side and con-
	tween the CAN gateway ha		s.
Connector No.	CAN gateway harness connector	nal No.	Continuity
	4	6	Existed
M125	10	12	Existed
tion circuit 2). 3.CHECK HARNESS FOR . Connect the connector 2. Disconnect the connect 3. Check the resistance be		system) t. rol unit harness connector	
Connector No.	Termir	nal No.	Resistance (Ω)
B514	23	24	Approx. 54 – 66
4.CHECK POWER SUPPL Check the power supply and CONTROL UNIT : Diagnosis Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w	r seat control unit branch li Y AND GROUND CIRCUIT I the ground circuit of the dr <u>s Procedure"</u> . hal? lace the driver seat control	iver seat control unit. Refe unit. Refer to <u>ADP-146. "</u> at control unit branch line	

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094929

[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).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

	CAN gateway harness connector				
Connector No.	Termi	Continuity			
M125	4	6	Existed		
11120	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).

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.

AD/	Resistance (Ω)		
Connector No.	Termir		
B50	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 ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

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

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

CHECK CONNECTOR			INFOID:00000006094930
Check the following term nector side). Pre-crash seat belt con CAN gateway the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS CON	cable from the negative tern minals and connectors for c trol unit (driver side) <u>mal?</u> inal and connector. ITINUITY (OPEN CIRCUIT	lamage, bend and loose co	nnection (unit side and con-
		arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.		nal No.	Evictoria
M125	4	6	Existed
the inspection result norn		12	Existed
	of CAN gateway. or of pre-crash seat belt co		e) harness connector termi-
Pre-crash sea	t belt control unit (driver side) har	ness connector	Resistance (Ω)
Connector No.	Termi	nal No.	
B9	14	4	Approx. 54 – 66
	vitnin the specification?		
CHECK POWER SUPPL		Γ	I unit (driver side). Refer to

< DTC/CIRCUIT DIAGNOSIS >

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094931

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

	Resistance (Ω)		
Connector No.	Termi	nal No.	
B52	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

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

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

RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >		[CAN SYSTEM (TYPE 7)]
RDR-R BRANCH LINE CIRCUIT		
Diagnosis Procedure		INFOID:00000006094933
1.CHECK CONNECTOR		
 Turn the ignition switch OFF. Disconnect the battery cable from the negative terminals. Check the terminals and connectors of the side radal side and connector side). Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT 		d and loose connection (unit
Check the right/left switching signal circuit of the side rada	RH. Refer to DAS-578	3, "Diagnosis Procedure".
Is the inspection result normal? YES >> GO TO 3. NO >> Repair the root cause. 3. CHECK HARNESS FOR OPEN CIRCUIT		
 Disconnect the connector of side radar RH. Check the resistance between the side radar RH harm 	ess connector terminals	S.
Side radar RH harness connector		- Resistance (Ω)
Connector No. Terminal N B252 4	3	Approx. 54 – 66
Is the measurement value within the specification? YES >> GO TO 4. NO >> Repair the side radar RH branch line. 4.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the side	radar RH. Refer to D/	AS-576, "SIDE RADAR RH :
Diagnosis Procedure". Is the inspection result normal?		
YES (Present error)>>Replace the side radar RH. Refer to YES (Past error)>>Error was detected in the side radar R NO >> Repair the power supply and the ground circuited in th	H branch line.	and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094935

[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).
- Accelerator pedal actuator
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness 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 accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accel	Accelerator pedal actuator harness connector				
Connector No.	Termi	nal No.	Resistance (Ω)		
M152	5	4	Approx. 54 – 66		

Is the measurement value within the specification?

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 accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

Accelerator pedal actu	ator harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M152	5	M23	138	Existed
101132	4	10123	137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

iagnosis Procedu	ure			INFOID:00000000609493
.CHECK CONNECT	OR			
Check the following nector side). Lane camera unit Harness connector Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	tery cable from the ne g terminals and conne M110 M24 and PCB harne normal? terminal and connect FOR OPEN CIRCUIT	ectors for damage, be ss side connector or.	nd and loose conne	ection (unit side and con
	nnector of lane camer ce between the lane o	a unit. camera unit harness c	connector terminals	
	Lano camora unit har	ness connector		
Connector No.	Lane camera unit har	ness connector Terminal No.		Resistance (Ω)
R8 the measurement va 'ES >> GO TO 3.	4	Terminal No.	8	Resistance (Ω) Approx. 54 – 66
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power suppled NIT : Diagnosis Procession the inspection result YES (Present error)>> YES (Past error)>>Error NO >> Repair the CHECK HARNESS Disconnect the har	4 Iue within the specific JPPLY AND GROUNI ly and the ground circ edure". normal? Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN rness connector M24.	Terminal No. ation? D CIRCUIT cuit of the lane camer mera unit. Refer to <u>DA</u> e lane camera unit bra e ground circuit. I CIRCUIT)	a unit. Refer to <u>DA</u> <u>S-419, "Removal a</u> anch line.	Approx. 54 – 66
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supple NIT : Diagnosis Proce the inspection result YES (Present error)>> YES (Past error)>>En NO >> Repair the CHECK HARNESS Disconnect the har Check the continuit	4 <u>Iue within the specific</u> JPPLY AND GROUN ly and the ground circ <u>adure</u> ". <u>normal?</u> Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24. ty between the lane c	Terminal No. ation? D CIRCUIT cuit of the lane camer mera unit. Refer to DA e lane camera unit bra e ground circuit. I CIRCUIT) amera unit harness co	a unit. Refer to <u>DA</u> <u>S-419, "Removal a</u> anch line.	Approx. 54 – 66
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SU heck the power supply NIT : Diagnosis Process the inspection result YES (Present error)>> YES (Past error)>>Erron NO >> Repair the .CHECK HARNESS Disconnect the har Check the continuit Lane camera unit h	4 <u>Iue within the specific</u> JPPLY AND GROUNI ly and the ground circ <u>adure"</u> . <u>normal?</u> Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN rness connector M24. ty between the lane c	Terminal No. ation? D CIRCUIT cuit of the lane camer mera unit. Refer to DA e lane camera unit bra e ground circuit. I CIRCUIT) amera unit harness co Harness co	a unit. Refer to DA <u>S-419, "Removal a</u> anch line. connector and the ha	Approx. 54 – 66
R8 the measurement va (ES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SU heck the power suppled NIT : Diagnosis Proce the inspection result (ES (Present error)>> (ES (Past error)>>En NO >> Repair the .CHECK HARNESS Disconnect the har Check the continuit	4 <u>Iue within the specific</u> JPPLY AND GROUN ly and the ground circ <u>adure</u> ". <u>normal?</u> Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24. ty between the lane c	Terminal No. ation? D CIRCUIT cuit of the lane camer mera unit. Refer to DA e lane camera unit bra e ground circuit. I CIRCUIT) amera unit harness co	a unit. Refer to <u>DA</u> <u>S-419, "Removal a</u> anch line.	Approx. 54 – 66 S-403, "LANE CAMERA and Installation".

< DTC/CIRCUIT DIAGNOSIS >

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094936

[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).
- ICC sensor
- Harness connector E106
- Harness connector M6
- Harness connector M28 and PCB harness 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 ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

	Resistance (Ω)		
Connector No.	Termi	nal No.	
E67	3	6	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 ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

ICC sensor ha	rness connector	Harness connector		ector Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
E67	3	M28	343	Existed		
207	6	ινίζο	345	Existed		

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DIC/CIRCUIT DIAGNUS	>0.5		
AN COMMUNICA	TION CIRCUIT 1		
iagnosis Procedure			INFOID:00000006094938
CONNECTOR INSPECT	ION		
Disconnect all the unit c NOTE:	cable from the negative term connectors on CAN commur N communication circuit 1, 0	nication circuit 1.	cuit 2, and ITS communication
	onnectors for damage, bend	and loose connection.	
the inspection result norm	<u>nal?</u>		
'ES >> GO TO 2. IO >> Repair the termi	inal and connector.		
	ITINUITY (SHORT CIRCUIT	Г)	
neck the continuity betwee	en the data link connector te	rminals.	
	Data link connector		
Connector No.	Termin	al No.	Continuity
M182	6	14	Not existed
the inspection result norm ES >> GO TO 3. IO >> Check the harne	ess and repair or replace (if	shield line or PCB harne	ess is short) the root cause.
the inspection result norm (ES >> GO TO 3. NO >> Check the harne CHECK HARNESS CON heck the continuity between	nal?	shield line or PCB harne	·
the inspection result norm (ES >> GO TO 3. NO >> Check the harne CHECK HARNESS CON heck the continuity between	nal? ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar	shield line or PCB harne	ess is short) the root cause.
the inspection result norm (ES >> GO TO 3. NO >> Check the harne CHECK HARNESS CON heck the continuity between Data link	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6	shield line or PCB harne r) nd the ground.	Continuity Not existed
the inspection result norm (ES >> GO TO 3. NO >> Check the harne .CHECK HARNESS CON heck the continuity between Data link Connector No.	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14	shield line or PCB harne r) nd the ground.	Continuity
the inspection result norm (ES >> GO TO 3. NO >> Check the harne .CHECK HARNESS CON heck the continuity between Data link Connector No. M182 the inspection result norm (ES >> GO TO 4. NO >> Check the harne .CHECK ECM AND IPDM Remove the ECM and the content of the tech and	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14 14 nal? ess and repair or replace (if I E/R TERMINATION CIRCU	shield line or PCB harne T) nd the ground. Ground shield line or PCB harne	Continuity Not existed Not existed
the inspection result norm (ES >> GO TO 3. NO >> Check the harne CHECK HARNESS CON heck the continuity between Data link Connector No. M182 the inspection result norm (ES >> GO TO 4. NO >> Check the harne CHECK ECM AND IPDM Remove the ECM and the Check the resistance be	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14 nal? ess and repair or replace (if I E/R TERMINATION CIRCU	shield line or PCB harne T) nd the ground. Ground shield line or PCB harne	Continuity Not existed Not existed ess is short) the root cause.
the inspection result norm (ES >> GO TO 3. IO >> Check the harne CHECK HARNESS CON heck the continuity between Data link Connector No. M182 the inspection result norm (ES >> GO TO 4. IO >> Check the harne CHECK ECM AND IPDM Remove the ECM and the Check the resistance be VQ37VHR	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14 nal? ess and repair or replace (if I E/R TERMINATION CIRCU the IPDM E/R. etween the ECM terminals.	shield line or PCB harne T) Ind the ground. Ground Shield line or PCB harne UIT	Continuity Not existed Not existed ess is short) the root cause. Resistance (Ω)
the inspection result norm (ES >> GO TO 3. NO >> Check the harne .CHECK HARNESS CON heck the continuity between Data link Connector No. M182 the inspection result norm (ES >> GO TO 4. NO >> Check the harne .CHECK ECM AND IPDM Remove the ECM and the Check the resistance be VQ37VHR 114	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14 nal? ess and repair or replace (if M E/R TERMINATION CIRCU the IPDM E/R. etween the ECM terminals.	shield line or PCB harne T) Ind the ground. Ground Shield line or PCB harne UIT	Continuity Not existed Not existed ess is short) the root cause.
the inspection result norm (ES >> GO TO 3. NO >> Check the harne CHECK HARNESS CON heck the continuity between Data link Connector No. M182 the inspection result norm (ES >> GO TO 4. NO >> Check the harne CHECK ECM AND IPDM Remove the ECM and th Check the resistance be VQ37VHR	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14 nal? ess and repair or replace (if M E/R TERMINATION CIRCU the IPDM E/R. etween the ECM terminals.	shield line or PCB harne T) Ind the ground. Ground Shield line or PCB harne UIT	Continuity Not existed Not existed ess is short) the root cause. Resistance (Ω)
the inspection result norm (ES >> GO TO 3. NO >> Check the harne .CHECK HARNESS CON heck the continuity between Data link Connector No. M182 the inspection result norm (ES >> GO TO 4. NO >> Check the harne .CHECK ECM AND IPDM Remove the ECM and the Check the resistance be VQ37VHR 114	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14 nal? ess and repair or replace (if M E/R TERMINATION CIRCU the IPDM E/R. etween the ECM terminals.	shield line or PCB harne T) Ind the ground. Ground Shield line or PCB harne UIT	Continuity Not existed Not existed ess is short) the root cause. Resistance (Ω) Approx. 108 – 132
the inspection result norm (ES >> GO TO 3. NO >> Check the harne .CHECK HARNESS CON heck the continuity between Data link Connector No. M182 the inspection result norm (ES >> GO TO 4. NO >> Check the harne .CHECK ECM AND IPDM Remove the ECM and th Check the resistance be VQ37VHR 114 VK56VD	ess and repair or replace (if ITINUITY (SHORT CIRCUIT en the data link connector ar connector Terminal No. 6 14 nal? ess and repair or replace (if M E/R TERMINATION CIRCU the IPDM E/R. etween the ECM terminals. ECM Terminal No. 113	shield line or PCB harne T) Ind the ground. Ground Shield line or PCB harne UIT	Continuity Not existed Not existed ess is short) the root cause. Resistance (Ω)

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

IPDM	Posistance (0)	
Termina	Resistance (Ω)	
40	Approx. 108 – 132	
Is the measurement value within the	ne specification?	
YES >> GO TO 5.		

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

5.CHECK SYMPTOM

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

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

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

NOTE:

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

Inspection result

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

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

< DTC/CIRCUIT DIAGNOSIS	S >		[CAN SYSTEM (TYPE 7)]
CAN COMMUNICATI	ON CIRCUIT 2		ļ
Diagnosis Procedure			INFCID:00000006094939
1.CONNECTOR INSPECTIO	N		E
 Turn the ignition switch OF Disconnect the battery cat Disconnect all the unit corning of CAN of Content of CAN of Canadian of C	ble from the negative ter inectors on CAN communication circuit 1, <u>ystem Diagram</u> ". ectors for damage, ben	unication circuit 2. , CAN communication circu	it 2, and ITS communication
YES >> GO TO 2. NO >> Repair the termina			E
2.CHECK HARNESS CONTI		IT)	
Check the continuity between			F
	Data link connector		
Connector No.		inal No.	Continuity
M182	13	12	Not existed
3.CHECK HARNESS CONTI Check the continuity between	the data link connector a		Continuity
Connector No.	Terminal No.	- Ground	
M182	13	_	Not existed
Is the inspection result normal			NOT EXISTED
YES >> GO TO 4. NO >> Check the harness 4.CHECK CAN GATEWAY TH 1. Remove the CAN gateway 2. Check the resistance betw	ERMINATION CIRCUIT		
	N gateway		Resistance (Ω)
Ter	minal No.	٨٢	DECOV 109 122
6	10		oprox. 108 – 132 oprox. 108 – 132
Is the measurement value with YES >> GO TO 5. NO >> Replace the CAN 5. CHECK SYMPTOM Connect all the connectors. C customer)" are reproduced. Inspection result	gateway.	lescribed in the "Symptom	Results from interview with

Revision: 2010 June

< DTC/CIRCUIT DIAGNOSIS >

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 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

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

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

	GNOSIS >			I SYSTEM (TYPE 7)]
FS COMMUNI	CATION CIRCL	ЛТ		
iagnosis Proced	lure			INFOID:000000006094940
.CHECK CAN DIAG	NOSIS			
		NSULT-III to see that t	the CAN communica	tion circuit 1 and CAN
	2 have no malfunctior			
		cuit 1, CAN communic	cation circuit 2, and I	TS communication cir-
		nmunication 2 circuits	normal?	
YES >> GO TO 2.		inction circuit 1 and/or		
NO >> Check and CONNECTOR INS		ication circuit 1 and/or	CAN communication	1 CIFCUIT 2.
Disconnect the ba Check the termina (unit side and con the inspection result	ttery cable from the ne als and connectors of nector side).		it for damage, bend	and loose connection
YES >> GO TO 3. NO >> Repair the	e terminal and connect	or		
	lowing harness conne			
ADAS control unit ICC sensor	-	ctors.	connector and the IC	C sensor harness con-
ADAS control unit ICC sensor Check the continu nector.	-	ctors.		
ADAS control unit ICC sensor . Check the continu nector.	ity between the ADAS	ctors. S control unit harness o		C sensor harness con- Continuity
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No.	ity between the ADAS	ctors. Control unit harness of ICC sensor harr Connector No.	ness connector	
ADAS control unit ICC sensor . Check the continu nector. ADAS control unit	ity between the ADAS harness connector Terminal No.	ctors. S control unit harness of ICC sensor harr	ness connector Terminal No.	Continuity
ADAS control unit ICC sensor . Check the continu nector. ADAS control unit Connector No. B50 s the inspection result YES >> GO TO 4. NO >> Replace th	ity between the ADAS harness connector Terminal No. 7 8 t normal?	ctors. S control unit harness of ICC sensor harr Connector No. E67	ness connector Terminal No. 3	Continuity Existed
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace the CHECK HARNESS Disconnect the foll Side radar LH Side radar RH Lane camera unit Accelerator pedal	ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator	Ctors. Control unit harness of ICC sensor harr Connector No. E67	ness connector Terminal No. 3 6	Continuity Existed
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the foll Side radar LH Side radar RH Lane camera unit Accelerator pedal	ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator ity between the ADAS	ctors. Control unit harness of ICC sensor harr Connector No. E67 CT CIRCUIT) Ctors. Control unit harness of Control unit harne	ness connector Terminal No. 3 6	Continuity Existed
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 Sthe inspection result YES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the foll Side radar LH Side radar LH Side radar RH Lane camera unit Accelerator pedal Check the continu	ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator	ctors. Control unit harness of ICC sensor harr Connector No. E67 CORCUIT) Ctors. Control unit harness of Thess connector	ness connector Terminal No. 3 6	Continuity Existed
ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the foll Side radar LH Side radar RH Lane camera unit Accelerator pedal	ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator ity between the ADAS	ctors. Control unit harness of ICC sensor harr Connector No. E67 CT CIRCUIT) Ctors. Control unit harness of Control unit harne	ness connector Terminal No. 3 6	Continuity Existed Existed

YES >> GO TO 5. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. NO

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

LAN-383

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ADAS control unit	harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
B50	7	Ground	Not existed
600	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness 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.	
7 8		Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC s	sensor	Resistance (Ω)
Termi	nal 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 system. **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.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT [CAN SYSTEM (TYPE 8)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094668 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit _ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000006094669

[CAN SYSTEM (TYPE 8)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M66	12 M210	M210	90	Existed
1000	11	WIZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
Mee	12	2	81	Existed	
M66	11	M84	80	Existed	

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA	GNOSIS >		[CAI	N SYSTEM (TYPE 8)]
MAIN LINE BET	WEEN A-BAG	AND AV CIRC	UIT	
Diagnosis Proced	lure			INFOID:000000006094670
1. CHECK HARNESS		N CIRCUIT)		
 Disconnect the fol ECM A/C auto amp. AV control unit 	ttery cable from the n lowing harness conne ity between the A/C a	ectors.	nnector and the AV co	ontrol unit harness con-
A/C auto amp. h	arness connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	- M210	90	Existed
IVIOO	11	- IVIZ I U	74	Existed
- Models without na	vigation system			
A/C outo omn h	ornoon connoctor	AV control unit b	ornoon connector	

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

	A/C auto amp. h	arness connector	AV control unit harness connector		AV control unit harness connector Continuity		Continuity	-
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	Н		
_	M66	12	M84	81	Existed	-		
	σοινι	11	10104	80	Existed			

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000006094671

[CAN SYSTEM (TYPE 8)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

AV control unit h	arness connector	Combination meter harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M210	90	M53	14	Existed
WZ 10	74	MSS	15	Existed

Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	MED	14	Existed
	80	M53	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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

	SNOSIS >	-	SYSTEM (TYPE 8)]	
IN LINE BET	WEEN M&A A	ND DLC CIRCU	JIT	
gnosis Proced	ure			INFOID:000000006094672
HECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
Disconnect the foll ECM Combination mete Harness connecto	ttery cable from the n owing harness conne r rs M105 and M181		connector and the ha	rness connector.
Combination meter	harness connector	Harness of	connector	Continuity
0 / N	Terminal No.	Connector No.	Terminal No.	Continuity
Connector No.		7		
Connector No. M53	14	M105	7	Existed
Connector No.				

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000006094673

[CAN SYSTEM (TYPE 8)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

Harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M105 -	7	M120	39	Existed
	8		40	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 BCM.

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA(MAIN LINE BET	WEEN BCI	M AND RAS CIF	RCUIT [CAN SYSTEM (TYPE 8)]		
MAIN LINE BET		ND RAS (CIRCUIT			
Diagnosis Proced	lure			INFOID:000000006094677		
1.снеск соллест	OR					
 Check the followin and harness side) Harness connecto Harness connecto Harness connecto Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the fol BCM Harness connecto 	ttery cable from the n ng terminals and con or M20 and PCB harned or M7 or B1 <u>a normal?</u> e terminal and connect of CONTINUITY (OPEN lowing harness connect	nectors for dat ess side conne tor. N CIRCUIT) ectors.	mage, bend and loo ctor	se connection (connector side		
	ss connector	1	B harness connector			
Connector No.	Terminal No.		Terminal No.	Continuity		
M120	39	35		Existed		
10120	40		36	Existed		
3. CHECK HARNESS	ne PCB harness. CONTINUITY (OPE) rness connectors M7	and B1.				
Harness	connector		Harness connector			
Connector No.	Terminal No.	Connector	No. Terminal	Continuity No.		
M20	35	M7	72	Existed		
	36		73	Existed		
the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Check the continuity b	e main line between th CONTINUITY (OPE)	N CIRCUIT)				
		Terminal No. Continuity				
Connector No.						
Connector No.	72		74	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 BCM and the 4WAS main control unit. NO >> Replace the body harness.

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006094680

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Termi	nal No.	Continuity
B1	72	74	Existed
Ы	73	75	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 M6 and E106.

2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	74	M6	22	Existed
IVI 7	75		23	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
F400	22	E 44	25	Existed
E106	23	E41	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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000006094681

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B33
- Harness connector B245

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.

- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH I	Side radar LH harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B52	4	B33	13	Existed
D02	3		14	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

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

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

Harness connector		Side radar RH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B245 13	13	B252	4	Existed
	14	- DZJZ	3	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 side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

	GNOSIS >		-	SYSTEM (TYPE 8)]
MAIN LINE BE	WEEN RDR-R	AND APA CIRC	CUIT	
Diagnosis Proced	lure			INFOID:000000006094682
1.CHECK CONNECT	OR			
 Check the followi and harness side) Harness connector 	attery cable from the ne ng terminals and conr or B201 or M117 or M20 and PCB harne <u>t normal?</u>	nectors for damage, b ess side connector tor. N CIRCUIT)	end and loose conne	ection (connector side
Side radar RH Harness connecto	ors B201 and M117	adar RH harness conn	ector and the harnes	s connector.
	arness connector	Harness c		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Eviated
B252	4	B201	66 67	Existed
	CONTINUITY (OPEN arness connector M20.		ne harness connector	B201.
I. Disconnect the ha	lity between the harne			
 Disconnect the ha Check the continu Harness 	connector	Harness c		Continuity
 Disconnect the hat Check the continution 	connector Terminal No.		Terminal No.	Continuity
Disconnect the ha Check the continu Harness	connector	Harness c		Continuity Existed Existed
1. Disconnect the ha 2. Check the continu Harness Connector No. M117 S the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha	connector Terminal No. 66 67 t normal? e main line between th 5 CONTINUITY (OPEN trness connectors M15	Harness c Connector No. M20 e harness connectors N CIRCUIT)	Terminal No. 38 40 M117 and M20.	Existed
 Disconnect the ha Check the continuer Harness Connector No. M117 s the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continuer 	connector Terminal No. 66 67 t normal? e main line between th 5 CONTINUITY (OPEN trness connectors M15	Harness c Connector No. M20 e harness connectors N CIRCUIT) 50 and M151.	Terminal No. 38 40 M117 and M20. I the harness connect	Existed Existed
1. Disconnect the ha 2. Check the continu Harness Connector No. M117 S the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continu PCB harne	connector Terminal No. 66 67 t normal? e main line between th S CONTINUITY (OPEN trness connectors M15 ity between the PCB h	Harness c Connector No. M20 e harness connectors N CIRCUIT) 50 and M151. harness connector and	Terminal No. 38 40 M117 and M20. I the harness connect	Existed
Disconnect the ha Check the continu Harness Connector No. M117 s the inspection result YES >> GO TO 4. NO >> Repair the A.CHECK HARNESS Disconnect the ha Check the continu PCB harne Termi	connector Terminal No. 66 67 t normal? e main line between th 5 CONTINUITY (OPEN trness connectors M15 bity between the PCB to ss connector	Harness c Connector No. M20 e harness connectors N CIRCUIT) 50 and M151. harness connector and Harness c	Terminal No. 38 40 M117 and M20. I the harness connect	Existed Existed

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

LAN-395

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LAN	
AGNOSIS >	[CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
M150	11	M110	13	Existed	-
	10	WITTO	2	Existed	F

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane G camera unit.

NO >> Replace the PCB harness.

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INFOID:000000006094683

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094684

[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 M30 and PCB harness 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.

- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Termi		
M107	114	113	Approx. 108 – 132

VK56VD

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	146 151		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 the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "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 harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

ECM harness connector		Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M107	114	M30	439	Existed
	113	10130	438	Existed

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ECM harness connector		Harness connector		Continuity	Α
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M160 146 151	146	M20	439	Existed	_
	M30	438	Existed	В	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094685

[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).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness 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 low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pressure warning control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M43	2 1		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 low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
10145	1	10129	395	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

[CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedu				
2.39.100101.100000	lre			INFOID:00000000609468
1.снеск отс				
Check DTC of the CAN	gateway with CONS	SULT-III.		
ls U1010 or B2600 indi				
NO >> GO TO 2.	diagnosis of the indic	ated DTC.		
2.CHECK CONNECT)R			
 Check the following nector side). CAN gateway Harness connector ls the inspection result YES >> GO TO 3. 	tery cable from the ne terminals and conne M28 and PCB harne normal? terminal and connect	ectors for damage, be ess side connector tor.	end and loose conne	ction (unit side and con
	nector of CAN gatew	vay. gateway harness cor	nector terminals	
		galoria) harriooo oor		
	CAN gateway harne	ess connector		Resistance (Ω)
Connector No.		Terminal No.		· · ·
M125	1		7	Approx. 54 – 66
	ue within the specific	nation?		
<u>s the measurement va</u> YES >> GO TO 4. NO >> GO TO 5. 4. CHECK POWER SU	IPPLY AND GROUN			
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU		D CIRCUIT	eway. Refer to <u>LAN</u>	-143, "Diagnosis Proce
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SL	ly and the ground ci	D CIRCUIT	eway. Refer to <u>LAN</u>	-143, "Diagnosis Proce
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Err	ly and the ground ci normal? Replace the CAN ga or was detected in th	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ne CAN gateway bran	144, "Removal and I	nstallation".
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SL Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the	ly and the ground ci normal? Replace the CAN ga or was detected in th power supply and the	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit.	144, "Removal and I	nstallation".
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SL Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 5.CHECK HARNESS	ly and the ground ci normal? Replace the CAN ga or was detected in th power supply and the CONTINUITY (OPEN	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit. N CIRCUIT)	144, "Removal and I	nstallation".
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 5.CHECK HARNESS 1. Disconnect the har	ly and the ground ci normal? Replace the CAN ga or was detected in th power supply and the CONTINUITY (OPEN ness connector M28.	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit. N CIRCUIT)	144, "Removal and I ch line (CAN commu	Installation". unication circuit 1).
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 5.CHECK HARNESS 1. Disconnect the har	ly and the ground ci normal? Replace the CAN ga or was detected in th power supply and the CONTINUITY (OPEN ness connector M28. by between the CAN g	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit. N CIRCUIT) gateway harness con	144, "Removal and I ch line (CAN commu	Installation". unication circuit 1). ess connector.
YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SU Check the power supp dure". Is the inspection result YES (Present error)>> YES (Past error)>>Err NO >> Repair the 5.CHECK HARNESS 1. Disconnect the har 2. Check the continuit	ly and the ground ci normal? Replace the CAN ga or was detected in th power supply and the CONTINUITY (OPEN ness connector M28. by between the CAN g	D CIRCUIT ircuit of the CAN gate ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit. N CIRCUIT) gateway harness con	144, "Removal and I ch line (CAN commu nector and the harne	Installation". unication circuit 1).

Is the inspection result normal?

YES >> Replace the PCB harness.

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NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

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Existed

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000006094687

[CAN SYSTEM (TYPE 8)]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT-III.

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 M23 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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	
M125	4	6	Existed
	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-143</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2).

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

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
M125	4	M23	133	Existed
1123	10	IVIZ5	135	Existed

Is the inspection result normal?

YES >> GO TO 6.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS >

NO	>> Repair the harness between the CAN gateway harness connector M125 and the harness connec-	
	tor M23.	

6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

PCB harness connector	PCB harness connector
Terminal No.	Terminal No.
24 Existed	133
27 Existed	135

Is the inspection result normal?

>> GO TO 7. YES

NO >> Replace the PCB harness.

7.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors.

Harness	connector	Harness	connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	G
M20	24	MZ	34	Existed	_
IVIZU	27	M7	35	Existed	H

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

8.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No).	Termiı	nal No.	Continuity	•
B1		34	32	Existed	ĸ
DI		35	33	Existed	

Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector L M125.

NO >> Replace the body harness. А

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HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094688

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/C auto amp.
- Harness connector M28 and PCB harness 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/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. Termina	al No.	
M66 12	11	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 A/C auto amp. Refer to <u>HAC-167, "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-201, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M28	325	Existed
MOO	11	IVIZO	327	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

iagnosis Procedure				INFOID:00000000609468
.CHECK CONNECTOR				
 Turn the ignition switch Disconnect the battery Check the following ternector side). A/T assembly Harness connector F10 Harness connector M1 Harness connector M2 the inspection result norr YES >> GO TO 2. NO >> Repair the tern CHECK HARNESS FOF Disconnect the connector 	cable from the ne rminals and conne 03 16 8 and PCB harnes <u>mal?</u> ninal and connecto R OPEN CIRCUIT ctor of A/T assemb	ctors for damage, be as side connector or.		ction (unit side and con
		-		
	A/T assembly harnes	ss connector		Resistance (Ω)
Connector No.		ss connector Terminal No.	0	Resistance (Ω)
F61 s the measurement value	3	Terminal No.	8	Resistance (Ω) Approx. 54 – 66
F61 <u>s the measurement value v</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SUPP Check the power supply an <u>s the inspection result norr</u> YES (Present error)>>Rej	3 within the specifica LY AND GROUNE ad the ground circu mal? place the control v ocation". (Replace vas detected in the ver supply and the NTINUITY (OPEN s connector M28.	Terminal No.	to <u>TM-156, "Diagno</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 <u>s the measurement value v</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SUPP Check the power supply an <u>s the inspection result norr</u> YES (Present error)>>Reponent Parts L parts list.) YES (Past error)>>Error v NO >> Repair the power 1. CHECK HARNESS COI . Disconnect the harness 2. Check the continuity be	3 within the specifica LY AND GROUNE ad the ground circu mal? place the control v ocation". (Replace vas detected in the ver supply and the NTINUITY (OPEN s connector M28. etween the A/T as	Terminal No. ation? O CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. CIRCUIT) sembly harness conr	to <u>TM-156, "Diagno</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates
F61 <u>s the measurement value v</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SUPP Check the power supply and <u>s the inspection result norresult norr</u>	3 within the specifica LY AND GROUNE ad the ground circu mal? place the control v ocation". (Replace vas detected in the ver supply and the NTINUITY (OPEN s connector M28. etween the A/T as	Terminal No. ation? O CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. CIRCUIT) sembly harness conr	to <u>TM-156, "Diagno</u> r to <u>TM-8, "A/T CON</u> trol valve with TCM	Approx. 54 – 66 sis Procedure". ITROL SYSTEM : Com is not listed in the lates

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094690

[CAN SYSTEM (TYPE 8)]

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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

AV BRANCH LI	NE CIRCUIT				
Diagnosis Proced	lure			A	
1.CHECK CONNECT	OR			В	
 Check the followin nector side). AV control unit 	ttery cable from the ne	ectors for damage, be	and and loose connec	tion (unit side and con- C	
Is the inspection result	t normal?			D	
2.CHECK HARNESS 1. Disconnect the co	e terminal and connec FOR OPEN CIRCUI nnector of AV control nce between the AV co	T unit.	nnector terminals.	F	
- Models with navig					
	AV control unit harn	ess connector		Resistance (Ω)	į
Connector No.		Terminal No.			
M210	90		74	Approx. 54 – 66	
- Models without na	ivigation system				
	AV control unit harn	ess connector		Resistance (Ω)	
Connector No.		Terminal No.			
M84	81		80	Approx. 54 – 66	
 BOSE audio with nat 	UPPLY AND GROUN Ily and the ground circ navigation system: <u>AV</u> vigation system: <u>AV-2</u>	D CIRCUIT cuit of the AV control u -90, "AV CONTROL U	JNIT : Diagnosis Proc	edure"	
• Base au • BOSE a YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS	Replace the AV cont dio without navigation udio with navigation s rror was detected in the power supply and the	n system: <u>AV-120, "Re</u> ystem: <u>AV-298, "Rem</u> ne AV control unit brar e ground circuit. N CIRCUIT)	moval and Installation	N	
 Models with navig 	-				
AV control unit r	arness connector Terminal No.	Connector No.	connector Terminal No.	Continuity	
	90		201	Existed	
M210	74	M25	221	Existed	

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M84	81	M25	201	Existed
10104	80	IVI25	221	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

< DTC/CIRCUIT DIAGNOSIS >

agnosis Proced	lure			INFOID:000000006094692
-				114-012.00000000000094692
.CHECK CONNECT	OR			
Check the followin nector side). Combination meter Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the co	ittery cable from the ne ng terminals and conne er or M24 and PCB harne	ectors for damage, ess side connector cor. r n meter.		nnection (unit side and con-
	Combination meter ha			
		Terminal No.		Resistance (Ω)
Connector No.				
M53 the measurement va YES >> GO TO 3.	14 alue within the specific		15	Approx. 54 – 66
M53 The measurement var YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S CHECK POWER S CHECK POWER S The inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the CHECK HARNESS Disconnect the ha	UPPLY AND GROUNI alue within the specific UPPLY AND GROUNI oly and the ground circ	ation? D CIRCUIT cuit of the combin ation meter. Refer e combination meter ground circuit.	ation meter Refer to to <u>MWI-90, "Remov</u> ter branch line.	Approx. 54 – 66 D <u>MWI-70. "COMBINATION</u> ral and Installation".
M53 the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	alue within the specific UPPLY AND GROUNI oly and the ground cire rocedure". thormal? >Replace the combinator ror was detected in the power supply and the CONTINUITY (OPEN urness connector M24.	ation? D CIRCUIT cuit of the combin ation meter. Refer e combination meter ground circuit. N CIRCUIT)	ation meter Refer to to <u>MWI-90, "Remov</u> ter branch line.	Approx. 54 – 66 D MWI-70. "COMBINATION ral and Installation". he harness connector.
M53 the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S heck the power supplement the inspection result YES (Present error)> YES (Past error)>>EN YES (Past error)>>EN YES (Past error)>>EN NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	alue within the specific UPPLY AND GROUNI oly and the ground circ rocedure". Normal? Normal? Normal? Normal? SCONTINUITY (OPEN Inness connector M24. Normal Scommetter M24.	ation? D CIRCUIT cuit of the combin ation meter. Refer e combination meter ground circuit. N CIRCUIT)	ation meter Refer to to <u>MWI-90, "Remov</u> ter branch line. ess connector and t	Approx. 54 – 66 D <u>MWI-70. "COMBINATION</u> ral and Installation".
M53 S the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER S Check the power supple METER : Diagnosis Pro- S the inspection result YES (Present error)> YES (Past error)>>End NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Combination mete	UPPLY AND GROUNI oly and the ground cire rocedure". t normal? >Replace the combinator of contrinuity and the contrinuity (OPEN inters connector M24. ity between the combinator r harness connector	ation? D CIRCUIT cuit of the combin ation meter. Refer e combination mere ground circuit. N CIRCUIT) ination meter harne	ation meter Refer to to <u>MWI-90, "Remov</u> ter branch line. ess connector and t	Approx. 54 – 66 D MWI-70. "COMBINATION ral and Installation". he harness connector.

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094693

[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).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness 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		
Connector No.	Termi	nal No.	Resistance (Ω)
M182	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 M23.

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
M182	6	M23	151	Existed
IVI I OZ	14	IVIZ5	150	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

BCM BRANCH LINE CIRCUIT

BCM BRANCH	LINE CIRCUIT			
Diagnosis Procec	ure			INFOID:000000006094694
1.CHECK CONNECT	OR			
 Check the followir nector side). BCM Harness connector sthe inspection result YES >> GO TO 2. NO >> Repair the 	ttery cable from the ne og terminals and conne or M22 and PCB harne	ectors for damage, be ess side connector tor.	end and loose connec	tion (unit side and con-
Disconnect the co Check the resistan	nnector of BCM. nce between the BCM BCM harness of		erminals.	
Connector No.		Terminal No.		Resistance (Ω)
M120	39		40	Approx. 54 – 66
YES >> GO TO 3. NO >> GO TO 4.	alue within the specific UPPLY AND GROUN			
heck the power supp	ly and the ground circ	uit of the BCM. Refer	to BCS-73, "Diagnos	is Procedure".
<u>s the inspection resul</u> YES (Present error)>	<u>normal?</u> >Replace the BCM. R rror was detected in th	efer to <u>BCS-79, "Rer</u> le BCM branch line.	-	
NO >> Repair the	power supply and the	•		
NO >> Repair the 1. CHECK HARNESS Disconnect the ha	a power supply and the CONTINUITY (OPEN rness connector M22. ity between the BCM	N CIRCUIT)	nd the harness connec	ctor.
NO >> Repair the 1 .CHECK HARNESS Disconnect the ha Check the continu	CONTINUITY (OPEN rness connector M22.	NCIRCUIT)	nd the harness connector	
NO >> Repair the CHECK HARNESS Disconnect the ha	CONTINUITY (OPEN rness connector M22. ity between the BCM	NCIRCUIT)		Continuity
NO >> Repair the 1 .CHECK HARNESS 1. Disconnect the ha 2. Check the continu BCM harne	CONTINUITY (OPEN rness connector M22. ity between the BCM ss connector	N CIRCUIT) harness connector ar Harness	connector	

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<u>Is the inspection result normal?</u> YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094695

[CAN SYSTEM (TYPE 8)]

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness 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 steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1 2		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 steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M22.
- 2. Check the continuity between the steering angle sensor harness connector and the harness connector.

Steering angle sens	or harness connector	Harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M37	1	M22	81	Existed
W37	2	IVIZZ	82	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

RAS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

RAS BRANCH LINE	ECIRCUIT		
Diagnosis Procedure			INFOID:000000006094697
1. CHECK CONNECTOR			
3. Check the terminals and tion (unit side and connection)	cable from the negative terr d connectors of the 4WAS ector side).	ninal. main control unit for damag	e, bend and loose connec-
Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect	or of 4WAS main control ur	nit. trol unit harness connector	terminals.
	S main control unit harness conn	ector	Basistanas (O)
Connector No.	Termir	nal No.	Resistance (Ω)
B54	1	8	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Replace the boo 3.CHECK POWER SUPPL Check the power supply and Procedure (4WAS Main Cor	dy harness. Y AND GROUND CIRCUIT d the ground circuit of the 4 <u>htrol Unit)"</u> .		fer to <u>STC-171, "Diagnosis</u>
YES (Past error)>>Error w	lace the 4WAS main contro	ol unit. Refer to <u>STC-185, "R</u> ain control unit branch line. rcuit.	emoval and Installation".

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	25 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "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.

INFOID:000000006094698

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

Diagnosis Procedure			INFOID:00000006094699
1.CHECK CONNECTOR			
	able from the negative te I connectors of the AFS c).	rminal. ontrol unit for damage, benc	and loose connection (unit
YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	nal and connector.		
 Disconnect the connector Check the resistance be 		it harness connector termina	als.
	FS control unit harness connec		Resistance (Ω)
Connector No.	30	inal No.	54_00
E104 s the measurement value w YES >> GO TO 3.		1	Approx. 54 – 66
Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure	ithin the specification? control unit branch line. Y AND GROUND CIRCU d the ground circuit of th	T	
Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? control unit branch line. Y AND GROUND CIRCU d the ground circuit of th al? ace the AFS control unit.	T e AFS control unit. Refer to Refer to <u>EXL-126, "Remova</u> ntrol unit branch line.	D <u>EXL-84, "AFS CONTROL</u>
Is the measurement value w YES >> GO TO 3. NO >> Repair the AFS 3.CHECK POWER SUPPL Check the power supply an UNIT : Diagnosis Procedure Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	ithin the specification? control unit branch line. Y AND GROUND CIRCU d the ground circuit of th <u>-</u> . al? ace the AFS control unit. as detected in the AFS co	T e AFS control unit. Refer to Refer to <u>EXL-126, "Remova</u> ntrol unit branch line.	D <u>EXL-84, "AFS CONTROL</u>

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094700

[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 IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "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.

iagnosis Procedure			INFOID:00000006094701
.CHECK CONNECTOR			
 Check the following term nector side). Driver seat control unit Harness connector B50 Harness connector B11 CAN gateway (With ICC sthe inspection result norm YES (With ICC system)>>0 YES (Without ICC system): NO >> Repair the termination of term	cable from the negative terr ninals and connectors for d 1 System) al? GO TO 2. >>GO TO 2. inal and connector. TINUITY (OPEN CIRCUIT	amage, bend and loose co	nnection (unit side and con-
-	tween the CAN gateway ha		
Connector No.	Termir		Continuity
	4	6	Existed
M125	10	12	Eviated
	al?	.2	Existed
 YES >> GO TO 3. NO >> Check the harned tion circuit 2). CHECK HARNESS FOR Connect the connector of Disconnect the connect 	ess and repair or replace (i	f shield line is open) the ro system)	oot cause (CAN communica-
YES >> GO TO 3. NO >> Check the harne tion circuit 2). •CHECK HARNESS FOR • Connect the connector of • Disconnect the connector • Check the resistance be	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni- etween the driver seat control er seat control unit harness conne	f shield line is open) the ro system) ol unit harness connector t	oot cause (CAN communica-
YES >> GO TO 3. NO >> Check the harne tion circuit 2). • CHECK HARNESS FOR • Connect the connector of Disconnect the connector • Check the resistance be • Drive Connector No.	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control unit etween the driver seat control er seat control unit harness conno Termin	f shield line is open) the ro system) ol unit harness connector t ector	oot cause (CAN communica- terminals. Resistance (Ω)
NO >> Check the harne tion circuit 2). CHECK HARNESS FOR Connect the connector of Disconnect the connector Check the resistance be	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control unit etween the driver seat control er seat control unit harness connor Termin 23	f shield line is open) the ro system) ol unit harness connector t	oot cause (CAN communica-

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094702

[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).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

	CAN gateway harness connector		
Connector No.	Termi	Continuity	
M125	4 6		Existed
123	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

ADAS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B50	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 ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

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

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

	ECIRCUIT		
agnosis Procedure			INFOID:000000006094703
-			
CHECK CONNECTOR			
Check the following terr nector side). Pre-crash seat belt con CAN gateway	cable from the negative tern minals and connectors for c trol unit (driver side)		nnection (unit side and con-
the inspection result norm	<u>nal?</u>		
ES >> GO TO 2. O >> Repair the term	inal and connector.		
•	ITINUITY (OPEN CIRCUIT	.)	
Disconnect the connect Check the continuity be		arness connector terminals.	
	CAN gateway harness connector	r	Continuity
Connector No.		nal No.	· · · · · · · · · · · · · · · · · · ·
M125	4	6	Existed
	10	12	Existed
'ES >> GO TO 3.		if shield line is open) the ro	ot cause (CAN communica-
ES >> GO TO 3. IO >> Check the harn tion circuit 2). CHECK HARNESS FOR Connect the connector Disconnect the connect	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co	ontrol unit (driver side).	
 YES >> GO TO 3. NO >> Check the harn tion circuit 2). CHECK HARNESS FOR Connect the connect or Disconnect the connect check the resistance b nals. 	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co	ontrol unit (driver side). belt control unit (driver side	e) harness connector termi-
ES >> GO TO 3. O >> Check the harn tion circuit 2). CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance b nals.	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat t belt control unit (driver side) har	ontrol unit (driver side). belt control unit (driver side	
YES >> GO TO 3. NO >> Check the harn tion circuit 2). .CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b nals. Pre-crash sea Connector No. B9	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. for of pre-crash seat belt co etween the pre-crash seat t belt control unit (driver side) har Termin	ontrol unit (driver side). belt control unit (driver side	e) harness connector termi-
YES >> GO TO 3. NO >> Check the harn tion circuit 2). •CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Check the resistance b nals. Pre-crash sea Connector No. B9 the measurement value w YES >> GO TO 4. NO >> Repair the pre-or •CHECK POWER SUPPL	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. for of pre-crash seat belt co etween the pre-crash seat t belt control unit (driver side) har Termin 14 vithin the specification? crash seat belt control unit LY AND GROUND CIRCUIT	ontrol unit (driver side). belt control unit (driver side ness connector nal No. 4 (driver side) branch line. T	e) harness connector termi- Resistance (Ω) Approx. 54 – 66
NO >> Check the harn tion circuit 2). • CHECK HARNESS FOR Connect the connector Disconnect the connector Check the resistance b nals. Pre-crash sea Connector No. B9 the measurement value w YES >> GO TO 4. NO >> Repair the pre-co- • CHECK POWER SUPPL	ess and repair or replace (i OPEN CIRCUIT of CAN gateway. or of pre-crash seat belt co etween the pre-crash seat t belt control unit (driver side) har Termin 14 vithin the specification? crash seat belt control unit AND GROUND CIRCUIT of the ground circuit of the ure".	ontrol unit (driver side). belt control unit (driver side ness connector nal No. 4 (driver side) branch line. T	e) harness connector termi- Resistance (Ω)
YES >> GO TO 3. NO >> Check the harn tion circuit 2). .CHECK HARNESS FOR Connect the connector Disconnect the connector Disconnect the connector Disconnect the connector Check the resistance b nals. Pre-crash sea Connector No. B9 the measurement value w YES >> GO TO 4. NO >> Repair the pre-construction .CHECK POWER SUPPL heck the power supply an BC-47, "Diagnosis Proced the inspection result norm YES (Present error)>>Rep and Installation	ess and repair or replace (i COPEN CIRCUIT of CAN gateway. for of pre-crash seat belt co etween the pre-crash seat t belt control unit (driver side) har t belt control unit (driver side) har 14 vithin the specification? Crash seat belt control unit 14 vithin the specification?	ontrol unit (driver side). belt control unit (driver side ness connector nal No. 4 (driver side) branch line. T e pre-crash seat belt contro	e) harness connector termi- Resistance (Ω) Approx. 54 – 66

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094704

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

	Side radar LH harness connector		
Connector No.	Termi	Resistance (Ω)	
B52	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

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

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

RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOS	ilS >		[CAN SYSTEM (TYPE 8)]
RDR-R BRANCH LI	NE CIRCUIT		
Diagnosis Procedure			INFOID:000000006094706
1. CHECK CONNECTOR			
 Check the terminals and side and connector side is the inspection result norm YES >> GO TO 2. NO >> Repair the termination of terminati	able from the negative terr d connectors of the side ra). <u>al?</u> nal and connector. VITCHING SIGNAL CIRCU	adar RH for damage, bend JIT	and loose connection (unit
Check the right/left switching Is the inspection result norm YES >> GO TO 3. NO >> Repair the root of	al?	adar RH. Refer to <u>DAS-578</u>	<u>, "Diagnosis Procedure"</u> .
3. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 		arness connector terminals	
	Side radar RH harness connecto	r	Resistance (Ω)
Connector No.		nal No.	
B252 Is the measurement value w	4	3	Approx. 54 – 66
YES >> GO TO 4. NO >> Repair the side 4.CHECK POWER SUPPL Check the power supply and Diagnosis Procedure". Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	radar RH branch line. Y AND GROUND CIRCUIT d the ground circuit of the s al? ace the side radar RH. Re	side radar RH. Refer to <u>DA</u> fer to <u>DAS-592. "Removal a</u> ar RH branch line.	

< DTC/CIRCUIT DIAGNOSIS >

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094708

[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).
- Accelerator pedal actuator
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness 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 accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accel	Accelerator pedal actuator harness connector		
Connector No.	Termi	Resistance (Ω)	
M152	5 4		Approx. 54 – 66

Is the measurement value within the specification?

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 accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

Accelerator pedal actu	ator harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M152	5	5 M23	138	Existed
101132	4		137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

iagnosis Procedu	ure			INFOID:00000000609470
CHECK CONNECT	OR			
Check the following nector side). Lane camera unit Harness connector Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS	tery cable from the ne g terminals and conne M110 M24 and PCB harne normal? terminal and connect FOR OPEN CIRCUIT	ectors for damage, be ss side connector or. -	nd and loose conne	ection (unit side and con
	nnector of lane camer ce between the lane of	camera unit harness c	connector terminals	
	Long comoro unit hor	ane camera unit harness connector Resistance (Ω)		
Connector No.	Lane camera unit har	Terminal No.		Resistance (Ω)
R8 the measurement va YES >> GO TO 3.	4	Terminal No.	8	Resistance (Ω) Approx. 54 – 66
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supple NIT : Diagnosis Procession the inspection result YES (Present error)>> YES (Past error)>>Erron NO >> Repair the CHECK HARNESS Disconnect the har	4 <u>Iue within the specific</u> JPPLY AND GROUNI ly and the ground circ <u>adure"</u> . <u>normal?</u> Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN rness connector M24.	Terminal No. Eation? D CIRCUIT cuit of the lane camer mera unit. Refer to DA e lane camera unit bra e ground circuit. I CIRCUIT)	a unit. Refer to <u>DA</u> <u>S-419, "Removal a</u> anch line.	Approx. 54 – 66 S-403, "LANE CAMERA
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supple NIT : Diagnosis Proce the inspection result YES (Present error)>> YES (Past error)>>En NO >> Repair the CHECK HARNESS Disconnect the har Check the continuit	4 <u>Iue within the specific</u> JPPLY AND GROUN ly and the ground circ <u>adure</u> ". <u>normal?</u> Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24. ty between the lane c	Terminal No.	a unit. Refer to <u>DA</u> <u>S-419, "Removal a</u> anch line.	Approx. 54 – 66 S-403, "LANE CAMERA
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supple NIT : Diagnosis Process the inspection result YES (Present error)>> YES (Past error)>>Error NO >> Repair the CHECK HARNESS Disconnect the har Check the continuit Lane camera unit h	4 <u>Iue within the specific</u> JPPLY AND GROUNI ly and the ground circ <u>adure"</u> . <u>normal?</u> Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN rness connector M24. ty between the lane c	Terminal No. ation? D CIRCUIT cuit of the lane camer mera unit. Refer to DA e lane camera unit bra e ground circuit. I CIRCUIT) amera unit harness con Harness con	a unit. Refer to DA <u>S-419, "Removal a</u> anch line. connector and the ha	Approx. 54 – 66 S-403, "LANE CAMERA
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supple NIT : Diagnosis Proce the inspection result YES (Present error)>> YES (Past error)>> YES (Past error)>> YES (Past error)>> CHECK HARNESS Disconnect the har Check the continuit	4 <u>Iue within the specific</u> JPPLY AND GROUN ly and the ground circ <u>adure</u> ". <u>normal?</u> Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24. ty between the lane c	Terminal No.	a unit. Refer to <u>DA</u> <u>S-419, "Removal a</u> anch line.	Approx. 54 – 66 S-403, "LANE CAMERA and Installation".

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094709

[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).
- ICC sensor
- Harness connector E106
- Harness connector M6
- Harness connector M28 and PCB harness 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 ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

	Resistance (Ω)		
Connector No.	Termi		
E67	3 6		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 ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

ICC sensor ha	rness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
E67	3	M28	343	Existed	
207	6	ινίζο	345	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

[CAN SYSTEM (TYPE 8)]

CAN COMMUNICA	TION CIRCUIT 1		
Diagnosis Procedure			INFOID:000000006094711
1.CONNECTOR INSPECT	ION		
 Disconnect all the unit of NOTE: For identification of CAI circuit, refer to <u>LAN-69</u>. Check terminals and co <u>Is the inspection result norm</u> YES >> GO TO 2. NO >> Repair the term 	cable from the negative ter connectors on CAN communication circuit 1, <u>"System Diagram"</u> . nnectors for damage, bench nal? inal and connector.	unication circuit 1. , CAN communication circui d and loose connection.	it 2, and ITS communication
2.CHECK HARNESS CON			
Check the continuity betwee	en the data link connector t	terminals.	
	Data link connector		Continuity
Connector No.	Term	inal No.	-
M182	6	14	Not existed
Check the continuity betwee	connector Terminal No.	- Ground	Continuity
M182	6	_	Not existed
4.CHECK ECM AND IPDM 1. Remove the ECM and t	ess and repair or replace (I E/R TERMINATION CIRC		s is short) the root cause.
	ECM		
	Terminal No.	I	Resistance (Ω)
114	113	Ap	oprox. 108 – 132
- VK56VD			
	ECM Terminal No.		Resistance (Ω)
146	151	Ar	oprox. 108 – 132
	etween the IPDM E/R term		·

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

IPDM	Begistange (O)		
Terminal No.		– Resistance (Ω)	
40	Approx. 108 – 132		
Is the measurement value within the	he specification?		

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

5.CHECK SYMPTOM

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

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

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

NOTE:

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

Inspection result

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

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

[CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT 2 А **Diagnosis** Procedure INFOID:000000006094712 **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. NOTE: For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to LAN-69, "System Diagram". D 4. Check terminals and connectors for damage, bend and loose connection. Is the inspection result normal? YES >> GO TO 2. Е NO >> Repair the terminal and connector. **2.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) F Check the continuity between the data link connector terminals. Data link connector Continuity Connector No. Terminal No. M182 13 12 Not existed Is the inspection result normal? Н YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. ${\it 3.}$ check harness continuity (short circuit) Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 13 Not existed M182 Κ 12 Not existed Is the inspection result normal? YES >> GO TO 4. L NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. ${f 4}$. CHECK CAN GATEWAY TERMINATION CIRCUIT LAN Remove the CAN gateway. 1. 2. Check the resistance between the CAN gateway terminals. Ν CAN gateway Resistance (Ω) Terminal No. 4 10 Approx. 108 - 132 6 12 Approx. 108 - 132 Is the measurement value within the specification? Ρ 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.

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< DTC/CIRCUIT DIAGNOSIS >

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 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

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

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

[CAN SYSTEM (TYPE 8)]

ITS COMMUNIC	CATION CIRCU	ΠT		
Diagnosis Procedu	ure			INFOID:000000006094713
1.CHECK CAN DIAG	NOSIS			
Check the CAN diagno communication circuit 2 NOTE: For identification of CA cuit, refer to <u>LAN-69</u> , "S	2 have no malfunction N communication cire			
Are the CAN communic	cation 1 and CAN con	nmunication 2 circuits	s normal?	
YES >> GO TO 2. NO >> Check and	repair CAN commun	ication circuit 1 and/o	r CAN communicatior	n circuit 2.
2.CONNECTOR INSP	PECTION			
 Check the termina (unit side and conn <u>Is the inspection result</u> YES >> GO TO 3. 	tery cable from the ne ls and connectors of nector side).	the ADAS control u	nit for damage, bend	and loose connection
3.CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
nector. ADAS control unit l	harness connector	ICC sensor ha	rness connector	C sensor harness con-
Connector No.	Terminal No. 7	Connector No.	Terminal No.	Existed
B50	8	E67	6	Existed
 4.CHECK HARNESS 1. Disconnect the follo - Side radar LH - Side radar RH - Lane camera unit - Accelerator pedal a 	e body harness. CONTINUITY (SHOF owing harness conne	ctors.	connector terminals.	
	ADAS control unit har	noss connector		
Connector No.		Terminal No.		Continuity
B50	7		8	Not existed
Is the inspection resultYES>> GO TO 5.NO>> Check theF		replace (if shield line	e or PCB harness is sl	hort) the root cause.

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

< DTC/CIRCUIT DIAGNOSIS >

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ADAS control unit	harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
B50	7	Ground	Not existed
830	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness 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.			
7 8		Approx. 108 – 132	

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)	
Terminal No.			
3	6	Approx. 108 – 132	

Is the inspection result normal?

YES >> GO TO 7.

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

7.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.

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

8. CHECK UNIT REPRODUCTION

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

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

[CAN SYSTEM (TYPE 9)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094502 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM _ D Low tire pressure warning control unit _ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000006094503

[CAN SYSTEM (TYPE 9)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M66	12	M210	90	Existed
	11	M210	74	Existed

Models without navigation system

A/C auto amp. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M84	81	Existed
	11		80	Existed

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

DTC/CIRCUIT DIAG	SNOSIS >		[CAN	SYSTEM (TYPE 9)]
1AIN LINE BET	WEEN A-BAG	AND AV CIRC	UIT	
agnosis Proced	ure			INFOID:000000006094504
.CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)		
. Disconnect the foll	witch OFF. ttery cable from the n owing harness conne			
ECM A/C auto amp. AV control unit . Check the continui nector. Models with naviga		auto amp. harness con	nector and the AV co	ntrol unit harness con-
 A/C auto amp. AV control unit Check the continuinector. Models with navigation 		auto amp. harness con AV control unit ha		
 A/C auto amp. AV control unit Check the continuinector. Models with navigation 	ation system			ntrol unit harness con-
A/C auto amp. AV control unit . Check the continui nector. Models with naviga	ation system	AV control unit ha	arness connector	

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

	A/C auto amp. h	arness connector	or AV control unit harness connector		Continuity	-
	Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	Н
_	M66	12	M84	81	Existed	-
	σοινι	11	10104	80	Existed	

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000006094505

[CAN SYSTEM (TYPE 9)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

AV control unit h	AV control unit harness connector		Combination meter harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M53	14	Existed
WZ 10	74	MSS	15	Existed

Models without navigation system

AV control unit h	narness connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
1404	81	MED	14	Existed
M84	80	M53	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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

	GNOSIS >		-	SYSTEM (TYPE 9)]
AIN LINE BET	WEEN M&A A	ND DLC CIRCU	JIT	
agnosis Proced	ure			INFOID:000000006094506
CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
Disconnect the fol ECM Combination meter Harness connector	rs M105 and M181		connector and the ha	rness connector.
Combination mete	r harness connector	Harness connector		Continuitu
O a una a sta a Nia	Terminal No.	Connector No.	Terminal No.	Continuity
Connector No.				
M53	14	M105	7	Existed
Connector No.	1			

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000006094507

[CAN SYSTEM (TYPE 9)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

Harness connector BCM harness connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M405	7	M400	39	Existed
M105	8	- M120	40	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 BCM.

NO >> Replace the PCB harness.

				AN SYSTEM (TYPE 9)]
DTC/CIRCUIT DIA	TWEEN BCM A	ND 4WD CIR	-	
	_		0011	
Diagnosis Proced	lure			INFOID:000000006094509
.CHECK CONNECT	FOR			
 Check the following and harness side) 	attery cable from the ne ng terminals and coni i. or M20 and PCB harne or M7	nectors for damage	, bend and loose co	nnection (connector side
s the inspection result	t normal?			
YES >> GO TO 2.				
	e terminal and connect			
BCM Harness connecto	llowing harness conne or M20 lity between the BCM		and the PCB harness	connector.
BCM harne	ess connector	PCB harr	ness connector	Continuity
a				
Connector No.	Terminal No.	Terr	minal No.	Continuity
	Terminal No. 39	Terr	ninal No. 35	Existed
M120	39 40	Terr		-
M120 s the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS . Disconnect the ha	39 40 t normal?	I CIRCUIT) and B1.	35	Existed
M120 s the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu	39 40 t normal? he PCB harness. S CONTINUITY (OPEN arness connectors M7	N CIRCUIT) and B1. ss connectors.	35	Existed
M120 s the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu	39 40 t normal? he PCB harness. S CONTINUITY (OPEN arness connectors M7 hity between the harne	N CIRCUIT) and B1. ss connectors.	35 36	Existed
M120 s the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS . Disconnect the ha . Check the continu Harness Connector No.	39 40 t normal? he PCB harness. S CONTINUITY (OPEN arness connectors M7 hity between the harne	I CIRCUIT) and B1. ss connectors. Harnes Connector No.	35 36 ss connector	Existed
M120 s the inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu Harness	39 40 t normal? he PCB harness. S CONTINUITY (OPEN arness connectors M7 ity between the harne connector Terminal No. 35 36	I CIRCUIT) and B1. ss connectors. Harnes	35 36 ss connector Terminal No.	Existed Existed
M120 Sthe inspection result YES >> GO TO 3. NO >> Replace th CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M20 Sthe inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Check the continuity b	39 40 t normal? he PCB harness. S CONTINUITY (OPEN arness connectors M7 hity between the harne connector Terminal No. 35 36 t normal?	N CIRCUIT) and B1. ss connectors. Connector No. M7 e harness connecto N CIRCUIT) onnector terminals.	35 36 ss connector Terminal No. 72 73	Existed Existed Continuity Existed Existed
M120 Solution the inspection result YES >> GO TO 3. NO >> Replace the CHECK HARNESS Disconnect the hall Check the continue Harness Connector No. M20 Solution the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS	39 40 t normal? he PCB harness. S CONTINUITY (OPEN arness connectors M7 ity between the harne connector Terminal No. 35 36 t normal? e main line between th S CONTINUITY (OPEN	N CIRCUIT) and B1. ss connectors. Harnes Connector No. M7 e harness connector N CIRCUIT)	35 36 ss connector Terminal No. 72 73	Existed 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 BCM and the AWD control unit. NO >> Replace the body harness.

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006094512

[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).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	72	74	Existed
Ы	73	75	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 M6 and E106.

2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	74	M6	22	Existed
IVI 7	75		23	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
F100	22	Γ.44	25	Existed
E106	23	E41	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 AWD control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094518

[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).
- ECM
- Harness connector M30 and PCB harness 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.

- VQ37VHR

	ECM harness connector		
Connector No.	Termi	Resistance (Ω)	
M107	114 113		Approx. 108 – 132

VK56VD

ECM harness connector			Resistance (Ω)
Connector No.	Termi	Terminal No.	
M160	146 151		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 the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "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 harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

ECM harne	ss connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M107	114	M30	439	Existed
WITO7	113	MISO	438	Existed

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ECM harnes	ss connector	Harness	connector	Continuity	A
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M160	146	M30	439	Existed	-
MITOO	151	MSO	438	Existed	- B

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094519

[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).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness 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 low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pre	essure warning control unit harness connector Terminal No.		Resistance (Ω)	
Connector No.				
M43	2	1	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 low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

	warning control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
10145	1	10129	395	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

HVAC BRANCH	LINE CIRCUI	Γ			Λ
Diagnosis Proced	ure			INFOID:000000006094522	A
1.CHECK CONNECT	OR				В
 3. Check the following nector side). A/C auto amp. Harness connector Is the inspection result YES >> GO TO 2. 	tery cable from the ne g terminals and conne M28 and PCB harne normal?	ectors for damage, ber	nd and loose conned	ction (unit side and con-	C
NO >> Repair the 2.CHECK HARNESS	terminal and connect				E
1. Disconnect the cor	nector of A/C auto a		nector terminals.		F
	A/C auto amp. harn	ess connector		Resistance (Ω)	
Connector No.		Terminal No.			0
					G
M66	12		11	Approx. 54 – 66	G
M66 Is the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU	lue within the specific		11	Approx. 54 – 66	H
Is the measurement vaYES>> GO TO 3.NO>> GO TO 4. 3. CHECK POWER SUCheck the power supp	lue within the specific	D CIRCUIT		Approx. 54 – 66 67. "A/C AUTO AMP. :	
Is the measurement vaYES>> GO TO 3.NO>> GO TO 4. 3. CHECK POWER SU	Iue within the specific JPPLY AND GROUN ly and the ground cir	D CIRCUIT			
Is the measurement valueYES>> GO TO 3.NO>> GO TO 4. 3. CHECK POWER SUCheck the power suppDiagnosis Procedure".Is the inspection resultYES (Present error)>>YES (Past error)>>ErNO>> Repair the	IVE WITHIN THE SPECIFIC UPPLY AND GROUN IV and the ground cir Normal? Replace the A/C aut For was detected in the power supply and the	D CIRCUIT cuit of the A/C auto a o amp. Refer to <u>HAC-2</u> ie A/C auto amp. branc e ground circuit.	mp. Refer to <u>HAC-1</u> 201. "Removal and I	67. "A/C AUTO AMP. :	
Is the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power supp Diagnosis Procedure". Is the inspection result YES (Present error)>> YES (Past error)>>Er	IVE WITHIN THE SPECIFIC UPPLY AND GROUN IV and the ground cir Normal? Replace the A/C aut For was detected in the power supply and the	D CIRCUIT cuit of the A/C auto a o amp. Refer to <u>HAC-2</u> ie A/C auto amp. branc e ground circuit.	mp. Refer to <u>HAC-1</u> 201. "Removal and I	67. "A/C AUTO AMP. :	H J
Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SU Check the power supp Diagnosis Procedure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har	IVE WITHIN THE SPECIFIC IVE WITHIN THE SPECIFIC IVE AND GROUN IVE AND GROUN I	D CIRCUIT rcuit of the A/C auto a o amp. Refer to <u>HAC-2</u> ie A/C auto amp. branc e ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and I ch line.	67. "A/C AUTO AMP. : nstallation".	H J
Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SU Check the power supp Diagnosis Procedure". Is the inspection result YES (Present error)> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har	IVE WITHIN THE SPECIFIC UPPLY AND GROUN IV and the ground cir normal? PReplace the A/C aut or was detected in th power supply and the CONTINUITY (OPEN ness connector M28. ty between the A/C a	D CIRCUIT rcuit of the A/C auto a o amp. Refer to <u>HAC-2</u> ie A/C auto amp. branc e ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and I ch line. nector and the harne	67. "A/C AUTO AMP. : nstallation".	H J K L
Is the measurement va YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power supp Diagnosis Procedure". Is the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the 4.CHECK HARNESS 1. Disconnect the har 2. Check the continui	IVE WITHIN THE SPECIFIC UPPLY AND GROUN IV and the ground cir normal? PReplace the A/C aut or was detected in th power supply and the CONTINUITY (OPEN ness connector M28. ty between the A/C a	D CIRCUIT cuit of the A/C auto a o amp. Refer to <u>HAC-2</u> ie A/C auto amp. branc e ground circuit. N CIRCUIT) uto amp. harness conr	mp. Refer to <u>HAC-1</u> 201. "Removal and I ch line. nector and the harne	67. "A/C AUTO AMP. : nstallation".	H J
Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SU Check the power supp Diagnosis Procedure". Is the inspection result YES (Present error)> YES (Past error)>>Err NO >> Repair the 4. CHECK HARNESS 1. Disconnect the har 2. Check the continui	IVE WITHIN THE SPECIFIC JPPLY AND GROUN IV and the ground cir normal? Replace the A/C aut ror was detected in th power supply and the CONTINUITY (OPEN ness connector M28. ty between the A/C a	D CIRCUIT cuit of the A/C auto a o amp. Refer to <u>HAC-2</u> he A/C auto amp. branc e ground circuit. N CIRCUIT) uto amp. harness conr	mp. Refer to <u>HAC-1</u> 201, "Removal and I ch line. hector and the harne	67. "A/C AUTO AMP. : nstallation".	H J K L

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connec-Ο tor M28.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094523

[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 F103
- Harness connector M116
- Harness connector M28 and PCB harness 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.		
F61	3	8	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 TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F61	3	M28	346	Existed
1.01	8	IVIZO	347	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

[CAN SYSTEM (TYPE 9)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094524 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 following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

INFOID:000000006094525

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).
- AV control unit
- Harness connector M25 and PCB harness 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

	AV control unit harness connecto	Resistance (Ω)	
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Models without navigation system

	AV control unit harness connector Terminal No.		Resistance (Ω)
Connector No.			
M84	81	80	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 AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector $\overline{M25}$.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

AV control unit h	arness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M25	201	Existed
WIZ 10	74	WIZ5	221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

Connector No. Terminal No. Connector No. Terminal No. Continuity M84 81 M25 201 Existed M84 80 M25 221 Existed he inspection result normal? ES >> Replace the PCB harness. ES >> Replace the PCB harness. O (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25. O (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.	M84	81			· · · · · · · · · · · · · · · · · · ·
M84 M25 Z21 Existed he inspection result normal? ES >> Replace the PCB harness. D (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25. D (Without navigation system)>>Repair the harness between the AV control unit harness connector M25. D (Without navigation system)>>Repair the harness between the AV control unit harness connector M84			M25	201	Existed
80 221 Existed he inspection result normal? ES >> Replace the PCB harness. D (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25. D (Without navigation system)>>Repair the harness between the AV control unit harness connector M84		80	IVIZ5		
ES >> Replace the PCB harness. O (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25. O (Without navigation system)>>Repair the harness between the AV control unit harness connector M84	the increation result he			221	Existed
D (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25. D (Without navigation system)>>Repair the harness between the AV control unit harness connector M84		ormal?			
	O (With navigation sys the harness o O (Without navigation	tem)>>Repair the connector M25. system)>>Repair t	he harness between t		

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094526

[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).
- Combination meter
- Harness connector M24 and PCB harness 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	ombination meter harness connector Terminal No.		Resistance (Ω)
Connector No.			Resistance (32)
M53	14	15	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 combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M24	176	Existed
IVISS	15	10124	177	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

iagnosis Proced	Jre			INFOID:0000000609452	
.CHECK CONNECT	OR				
 Check the following nector side). Data link connector Harness connector Harness connector Harness connector Harness connector the inspection result YES >> GO TO 2. 	tery cable from the n g terminals and conn [•] M181 • M105 • M23 and PCB harne normal? terminal and connec FOR OPEN CIRCUI	ectors for damage, be ess side connector tor. T	nd and loose co	nnection (unit side and con-	
neck the resistance b					
Connector No	Data link cor	Data link connector Resistance (Ω)			
Connector No. M182	6	Terminal No.	14	Approx. 54 – 66	
the measurement va		cation?	17		
NO >> GO TO 3. CHECK HARNESS	ror was detected in th CONTINUITY (OPEI mess connector M23	ne data link connector N CIRCUIT)			
. Check the continui		Harness connector			
. Check the continui Data link	connector	Harness		Continuity	
	connector Terminal No.	Connector No.	Terminal No.	Continuity	
Data link				Existed	

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< DTC/CIRCUIT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094528

[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).
- BCM
- Harness connector M22 and PCB harness 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 BCM.
- 2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Termin	1(ESISIAIICE (22)	
M120	39	40	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 BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

BCM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
101120	40	IVIZZ	102	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

	LINE CIRCUI	l		
Diagnosis Procedu	ire			INFOID:000000006094529
1.CHECK CONNECTO	DR			
 Check the following nector side). Steering angle sens 	ery cable from the ne terminals and conne	ectors for damage, ber	nd and loose conne	ction (unit side and con-
s the inspection result r	normal?			
YES >> GO TO 2. NO >> Repair the t 2.CHECK HARNESS F	erminal and connect			
1. Disconnect the con	nector of steering an		ess connector termi	nals.
	Steering angle sensor h	ng angle sensor harness connector		Resistance (Ω)
Connector No.		Terminal No.		
M37 s the measurement val	1		2	Approx. 54 – 66
gram". Is the inspection result r YES (Present error)>> YES (Past error)>>Erro NO >> Repair the p 4.CHECK HARNESS (y and the ground cir normal? Replace the steering or was detected in th power supply and the CONTINUITY (OPEN ness connector M22.	cuit of the steering ar angle sensor. Refer t e steering angle sense ground circuit. I CIRCUIT)	o <u>BRC-144, "Remo</u> or branch line.	to BRC-54, "Wiring Dia- val and Installation".
	y between the steen	ng angle sensor narne	ss connector and tr	ne harness connector.
		Harness c		
 Check the continuity 				Continuity
2. Check the continuity Steering angle sensor	harness connector	Harness c	connector	

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< DTC/CIRCUIT DIAGNOSIS >

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094530

[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 AWD 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 AWD control unit.

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

A	AWD control unit harness connector			
Connector No.	Termi	Resistance (Ω)		
B17	8	16	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.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 <u>DLN-59, "Removal and Installation"</u>.

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

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 9)]

Diagnosis Procedure			INFOID:00000006094532
1.CHECK CONNECTOR			
3. Check the terminals and	able from the negative termin a connectors of the ABS actunit side and connector side). al? nal and connector.		ntrol unit) for damage, bend
	or of ABS actuator and electrice the sector and electrice the ABS actuator and actuator and the ABS actuator and the sector actuator and the sector actuator actu		it) harness connector termi-
ABS actuator and electric unit (control unit) harness connector		Posistance (O)	
Connector No.	Terminal	No.	Resistance (Ω)
E41	25	15	Approx. 54 – 66
· ·	actuator and electric unit (co Y AND GROUND CIRCUIT	ntrol unit) branch line.	
Check the power supply an <u>BRC-119, "Diagnosis Proceed</u> <u>s the inspection result norm</u> YES (Present error)>>Repl <u>and Installation</u> "	al? ace the ABS actuator and ele	ectric unit (control unit). F	Refer to <u>BRC-141, "Removal</u>

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094534

[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 IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "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.

iagnosis Procedure			INFOID:000000006094535
.CHECK CONNECTOR			
	cable from the negative terr ninals and connectors for d 1 System) <u>hal?</u> GO TO 2. >>GO TO 3. inal and connector.	lamage, bend and loose cor	nnection (unit side and con-
Disconnect the connect	or of CAN gateway.	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.		nal No.	· · · · · · · · · · · · · · · · · · ·
M125	4 10	6 12	Existed Existed
	ess and renair or replace (i	febield line is energy the res	t cause (CAN communica-
. Connect the connector	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni	system)	
 NO >> Check the harm tion circuit 2). CHECK HARNESS FOR Connect the connect or 2. Disconnect the connect Check the resistance be 	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni	system) t. rol unit harness connector te	
 NO >> Check the harm tion circuit 2). CHECK HARNESS FOR Connect the connect or 2. Disconnect the connect Check the resistance be 	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat control er seat control unit harness conne	system) t. rol unit harness connector te	
NO >> Check the harm tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat control er seat control unit harness conne Termin 23	system) t. rol unit harness connector te ector	erminals.

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006094544

[CAN SYSTEM (TYPE 9)]

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector			
Connector No.	Termi	Continuity		
M182	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 PCB harness 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
M182	6	Ground	Not existed
WITO2	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

- VQ37VHR

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

VK56VD

E	CM Resistance (Ω)	
Termi	nal No.	
146	151	Approx. 108 – 132

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

IPDN	/IE/R	Resistance (Ω)	
Termir	nal No.		
40	39	Approx. 108 – 132	

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[CAN SYSTEM (TYPE 9)]
Is the measurement value within the specification?	
YES >> GO TO 5.	
NO >> Replace the ECM and/or the IPDM E/R.	
5. СНЕСК ЅҮМРТОМ	
Connect all the connectors. Check if the symptoms described in the "Sympt customer)" are reproduced.	om (Results from interview with
Inspection result	
Reproduced>>GO TO 6.	
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.	s procedure when past error is
$\mathfrak{d}.$ 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.	
 Disconnect one of the unit connectors of CAN communication system. NOTE: 	
ECM and IPDM E/R have a termination circuit. Check other units first.	
4. Connect the battery cable to the negative terminal. Check if the sympto	oms described in the "Symptom
(Results from interview with customer)" are reproduced.	2 1
NOTE:	
Although unit-related error symptoms occur, do not confuse them with oth	ner symptoms.
Inspection result	
Reproduced>>Connect the connector. Check other units as per the above p Non-reproduced>>Replace the unit whose connector was disconnected.	rocedure.

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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000006094617

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

Low tire pressure warning control unit harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M66	12	Existed
10143	1	ΟΟΙΥΙ	11	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 low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

< DTC/CIRCUIT DIAG	SNOSIS >		[CAN	SYSTEM (TYPE 10)]
MAIN LINE BET	WEEN HVAC	AND A-BAG CI	RCUIT	
Diagnosis Proced	ure			INFOID:000000006094618
1.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
 Disconnect the follor ECM A/C auto amp. AV control unit 	tery cable from the n owing harness conne ty between the A/C a	ectors.	nnector and the AV co	ntrol unit harness con-
A/C auto amp. ha	arness connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	12	M210	90	Existed
M66				

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

A/C auto amp. harness connector		AV control unit harness connector		rness connector AV control unit harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
M66	12	M84	81	Existed	_		
IVIOO	11	10184	80	Existed	_		

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000006094619

[CAN SYSTEM (TYPE 10)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M210	90	Existed
1000	11	WIZ TO	74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		- Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M84	81	Existed
IVIOO	11	104	80	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA		TWEEN AV AND		SYSTEM (TYPE 10)]
		D M&A CIRCUI	-	
Diagnosis Proced	lure			INFOID:000000006094620
1.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
 Disconnect the fol ECM 	littery cable from the r llowing harness conne			
 AV control unit Combination meter Check the continuconnector. Models with navig 	uity between the AV c	control unit harness cor	nector and the com	bination meter harness
 Combination meter Check the continuconnector. Models with navig 	uity between the AV c	control unit harness cor		
 Combination meter Check the continuconnector. Models with navig 	uity between the AV c			bination meter harness
 Combination meter Check the continuconnector. Models with navig AV control unit h Connector No. 	uity between the AV c nation system narness connector	Combination meter Connector No.	harness connector	
 Combination meter Check the continuconnector. Models with navig AV control unit h 	uity between the AV c nation system narness connector Terminal No.	Combination meter	harness connector Terminal No.	Continuity
 Combination meter Check the continuconnector. Models with navig AV control unit h Connector No. 	aity between the AV c nation system narness connector Terminal No. 90 74	Combination meter Connector No.	harness connector Terminal No. 14	- Continuity Existed
Combination meter Check the continu- connector. Models with navig AV control unit h Connector No. M210 Models without na	aity between the AV c nation system narness connector Terminal No. 90 74	Combination meter Connector No.	harness connector Terminal No. 14 15	Continuity Existed Existed
Combination meter Check the continu- connector. Models with navig AV control unit h Connector No. M210 Models without na	uity between the AV c nation system namess connector Terminal No. 90 74 avigation system	Combination meter Connector No. M53	harness connector Terminal No. 14 15	- Continuity Existed
 Combination meter Check the continuconnector. Models with navig AV control unit h Connector No. M210 Models without na AV control unit h 	aity between the AV contains system harness connector Terminal No. 90 74 Avigation system harness connector	Combination meter Connector No. M53 Combination meter	harness connector Terminal No. 14 15 harness connector	Continuity Existed 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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006094621

[CAN SYSTEM (TYPE 10)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	r harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M105	7	Existed
CCIVI	15	COT IVI	8	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 combination meter and the data link connector.
- NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA	MAIN LINE BET GNOSIS >	WEEN DLC ANI		SYSTEM (TYPE 10)]	
MAIN LINE BET	WEEN DLC A	ND BCM CIRC	UIT		Δ
Diagnosis Proced	lure			INFOID:000000006094622	A
1. CHECK HARNESS		N CIRCUIT)			В
3. Disconnect the folECM	witch OFF. ittery cable from the ne lowing harness conne ors M181 and M105				С
- BCM	ity between the harne	ss connector and the	BCM harness connec	ctor.	D
Harness connector BCM harness connector Continuity					
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	

Is the inspection result normal?

M105

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

7

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YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

39

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NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000006094624

[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).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harne	ss connector	PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	Continuity
M120	39	35	Existed
IVI 120	40	36	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness connector Harness connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M20	35	M7	72	Existed
IVI20	36	1017	73	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	72	74	Existed
DI	73	75	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 BCM and the AWD control unit.

NO >> Replace the body harness.

		WEEN 4WD A		· SYSTEM (TYPE 10)]
< DTC/CIRCUIT DIA		ND ABS CIR	-	STSTEM (TTPE TO)]
Diagnosis Procec	lure			INFOID:000000006094627
	ΓOR			
 Check the followi and harness side) Harness connector Harness connector Harness connector Harness connector Sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the hard 	attery cable from the non- ng terminals and con- or B1 or M7 or M6 or E106 <u>t normal?</u> e terminal and connect S CONTINUITY (OPEN arness connectors B1	nectors for damage tor. N CIRCUIT) and M7.		nection (connector side
2. Check the continu	uity between the harne	ess connector termir	als.	Continuity
	72	Terminar No.	74	Existed
B1	73		75	Existed
CHECK HARNESS	he body harness. S CONTINUITY (OPEN arness connectors M6 uity between the harne	and E106.		
	-			
Connector No.	connector Terminal No.	Harne: Connector No.	Terminal No.	- Continuity
	74		22	Existed
M7	75	- M6	23	Existed
LCHECK HARNESS	e main line between th S CONTINUITY (OPEN onnector of ABS actua uity between the harne	N CIRCUIT) tor and electric unit	(control unit).	lectric unit (control unit)
	connector	harnes	electric unit (control unit) s connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Eviatod
E106	22	E41	25	Existed

AIN LINE DETWEEN AND AND ARE CIRCUIT

Is the inspection result normal?

23

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the AWD control unit and the ABS actuator and electric unit (control unit).

15

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 10)] MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure	Diagnosis	Procedure
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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).
- Harness connector B33
 Harness connector B245
- Hamess connector B245

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.
- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH h	Side radar LH harness connector Harness connector Continuity		Continuity	G	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B52	4	B33	13	Existed	Н
D02	3	635	14	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

ness connec	ctor	Side radar RH h	arness connector	Continuity	
	Terminal No.	Connector No.	Terminal No.	Continuity	
	13	B252	4	Existed	L
	14	B232	3	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 side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

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INFOID:000000006094630

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MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000006094631

[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).
- Harness connector B201
- Harness connector M117
- Harness connector M20 and PCB harness 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.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

Side radar RH h	Side radar RH harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B252	4	B201	66	Existed
BZJZ	3	B201	67	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

Harness connector Harness connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M117	66	M20	38	Existed
	67	IVI20	40	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

PCB harness connector	Harness connector		Continuity
Terminal No.	Connector No.	Terminal No.	Continuity
38	M450	11	Existed
40	M150	10	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 RH and the accelerator pedal actuator.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT GNOSIS > [CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000006094632

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

Harness connector		Harness connector		nector Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M150	11	11	13	Existed		
101130	10	M110	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 accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

DIC/CIRCUIT DIAGNO	515 >	L	
CM BRANCH LIN	E CIRCUIT		
agnosis Procedure			INFOID:00000000609463.
CHECK CONNECTOR			
Turn the ignition switch Disconnect the battery Check the following terr nector side). ECM Harness connector M30 the inspection result norm (ES >> GO TO 2. IO >> Repair the term CHECK HARNESS FOR Disconnect the connect	cable from the negative ter minals and connectors for o 0 and PCB harness side co <u>nal?</u> inal and connector.	damage, bend and loose co	onnection (unit side and con-
VQ37VHR			
Connector No	ECM harness connector		Resistance (Ω)
Connector No. M107		inal No.	Approv 400 - 400
VK56VD	114	113	Approx. 108 – 132
VIGUVD			
	ECM harness connector		Resistance (Ω)
Connector No.	Term	inal No.	
M160	146	151	Approx. 108 – 132
	Y AND GROUND CIRCUI	T ECM. Refer to the following	
VK56VD: <u>EC-716</u> , "Diagn the inspection result norm	osis Procedure"		
ES (Present error)>>Rep • VQ37VHR: E • VK56VD: EC- ES (Past error)>>Error w IO >> Repair the pow	Alace the ECM. Refer to the <u>C-535, "Removal and Insta</u> <u>535, "Removal and Installa</u> as detected in the ECM br er supply and the ground c ITINUITY (OPEN CIRCUIT	<u>allation"</u> ation" anch line. ircuit.	
Disconnect the harness Check the continuity be VQ37VHR		onnector and the harness c	onnector.

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ss connector	Harness connector				Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
M107	114	M30	439	Existed	_		
MIO7	113	WISO	438	Existed	_		

VK56VD -

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M160	146	M30	439	Existed
WITOO	151	10130	438	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

	H LINE CIRCUI	I		
Diagnosis Proced	lure			INFOID:000000006094634
	ſOR			
 Check the followin nector side). Low tire pressure Harness connectors in the inspection result YES >> GO TO 2. NO >> Repair the 2.CHECK HARNESS 	attery cable from the neighborn the neighborn terminals and conneighborn warning control unit or M29 and PCB harned the terminal termin	ectors for damage, be ess side connector tor. Γ		nnection (unit side and con-
2. Check the resistar		re pressure warning	control unit harne	ess connector terminals.
Connector No.		Terminal No.		Resistance (Ω)
M43	2		1	Approx. 54 – 66
Check the power supp <u>Diagnosis Procedure</u> <u>s the inspection result</u> YES (Present error)> <u>Installation</u> YES (Past error)>>E	UPPLY AND GROUN bly and the ground circ <u>.</u> . <u>t normal?</u> >Replace the low tire	cuit of the low tire protection of the low tire protection of the low tire pressure warning of the low tire pressure warning t	control unit. Refe	ontrol unit. Refer to <u>WT-53,</u> er to <u>WT-70, "Removal and</u> it branch line.
CHECK HARNESS	CONTINUITY (OPEN arness connector M29.	N CIRCUIT)		
 CHECK HARNESS Disconnect the ha Check the continuous connector. Low tire pressure harness 	CONTINUITY (OPEN arness connector M29. uity between the low the warning control unit connector	N CIRCUIT) ire pressure warning Harness	connector	ess connector and the har-
Low tire pressure	CONTINUITY (OPEN arness connector M29. uity between the low to warning control unit	N CIRCUIT)		

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000006094635

1. СНЕСК DTC	
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Check DTC of the CAN gateway with CONSULT-III.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

- Turn the ignition switch OFF. 1.
- Disconnect the battery cable from the negative terminal. 2.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side).
- CAN gateway
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

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

	CAN gateway harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M125	1	7	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 CAN gateway. Refer to LAN-143, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

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

CAN gateway harness connector Harness connector			Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
MADE	1	MOO	326	Existed	
M125 7	M28	328	Existed		

Is the inspection result normal?

YES >> Replace the PCB harness.

>> Repair the harness between the CAN gateway harness connector M125 and the harness connec-NO tor M28.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedur				INFOID:000000000094636
1.снеск отс				В
Check DTC of the CAN g	ateway with CONS	SULT-III.		
s Is U1010 or B2600 indica	-			
	agnosis of the indic	ated DTC.		С
NO >> GO TO 2.	_			
2.CHECK CONNECTOR	२			D
 Turn the ignition swite Disconnect the batter Check the following to nector side). CAN gateway Harness connector N Harness connector N Harness connector N Harness connector B 	ry cable from the net erminals and conne 123 and PCB harne 120 and PCB harne 17	ectors for damage, be ess side connector	and and loose connec	tion (unit side and con- $_{\textstyle{\vdash}}$
Is the inspection result no	ormal?			G
YES >> GO TO 3.				
-	rminal and connect			Н
3.CHECK HARNESS CO				
 Disconnect the connect Check the continuity 		/ay. gateway harness con	nector terminals.	
,		5 ,		
	CAN gateway harne			Continuity
Connector No.				Continuity
		ess connector	6	Continuity Existed
Connector No. M125	CAN gateway harne	ess connector		J
Connector No. M125 Is the inspection result no	CAN gateway harne	ess connector	6	Existed
Connector No. M125	CAN gateway harne	ess connector	6	Existed J
Connector No. M125 Is the inspection result no YES >> GO TO 4.	CAN gateway harne 4 10 ormal?	ess connector Terminal No.	6	Existed J
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUP Check the power supply	CAN gateway harne 4 10 prmal? PPLY AND GROUN	D CIRCUIT	6 12	Existed Existed K L 43. "Diagnosis Proce-
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUP	CAN gateway harned 4 10 2000 2000 2000 2000 2000 2000 2000	D CIRCUIT	6 12	Existed K
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4. CHECK POWER SUP Check the power supply dure". Is the inspection result no YES (Present error)>>R YES (Present error)>>R YES (Past error)>>R NO	CAN gateway harned 4 10 2000 2000 2000 2000 2000 2000 2000	D CIRCUIT Terminal No.	6 12 eway. Refer to <u>LAN-1</u>	Existed J Existed K L 43. "Diagnosis Proce- LAN stallation".
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUP Check the power supply dure". Is the inspection result no YES (Present error)>>R YES (Past error)>>Error	CAN gateway harned 4 10 20rmal? 2PLY AND GROUN and the ground ci 20rmal? 2eplace the CAN gate r was detected in the 20rmal of the construction of of the construction of the construction of the 20rmal of the construction of the construction of the construction of the 20rmal of the construction of the constr	D CIRCUIT Terminal No.	6 12 eway. Refer to <u>LAN-1</u>	Existed Existed K L 143. "Diagnosis Proce- LAN stallation". hication circuit 2).
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4. CHECK POWER SUP Check the power supply dure". Is the inspection result no YES (Present error)>>R YES (Present error)>>R YES (Past error)>>R YES (Past error)>>R YES (Past error)>>R S.CHECK HARNESS CO	CAN gateway harned 4 10 2PLY AND GROUN and the ground ci 2 2 2 2 2 2 2 2 2 2 2 2 2	D CIRCUIT Terminal No. D CIRCUIT Trcuit of the CAN gate the CAN gateway bran a ground circuit. N CIRCUIT)	6 12 eway. Refer to <u>LAN-1</u> 144. "Removal and In ch line (CAN commur	Existed Existed K L 43. "Diagnosis Proce- IAN Stallation". nication circuit 2).
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4. CHECK POWER SUP Check the power supply Qure". Is the inspection result no YES (Present error)>>R YES (Present error)>>R YES (Past error)>>R YES (Past error)>>R YES (Past error)>>R S.CHECK HARNESS CO 1. Disconnect the harne	CAN gateway harned 4 10 2PLY AND GROUN and the ground ci 2rmal? 2eplace the CAN gate r was detected in the cormal? Corma	D CIRCUIT Terminal No. D CIRCUIT Trouit of the CAN gate teway. Refer to LAN- te CAN gateway bran e ground circuit. N CIRCUIT) gateway harness con	6 12 eway. Refer to <u>LAN-1</u> 144. "Removal and In ch line (CAN commur	Existed K Existed K L L 143. "Diagnosis Proce- LAN stallation". N nication circuit 2). N oss connector. O
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUP Check the power supply dure". Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 5.CHECK HARNESS CO 1. Disconnect the harne 2. Check the continuity	CAN gateway harned 4 10 2PLY AND GROUN and the ground ci 2rmal? 2eplace the CAN gate r was detected in the cormal? Corma	D CIRCUIT Terminal No. D CIRCUIT Trouit of the CAN gate teway. Refer to LAN- te CAN gateway bran e ground circuit. N CIRCUIT) gateway harness con	6 12 eway. Refer to LAN-1 144. "Removal and In ch line (CAN commur nector and the harnes	Existed K Existed K L L 143. "Diagnosis Proce- LAN Istallation". N nication circuit 2). N es connector. O
Connector No. M125 Is the inspection result no YES >> GO TO 4. NO >> GO TO 5. 4.CHECK POWER SUP Check the power supply dure". Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 5.CHECK HARNESS CO 1. Disconnect the harne 2. Check the continuity	CAN gateway harned 4 10 2PLY AND GROUN and the ground ci 2Place the CAN gat r was detected in the cormal? 2eplace the CAN gat r was detected in the cormal of the ground the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat r was detected in the cormal of the ground ci 2eplace the CAN gat cormal of the ground ci 2eplace the cormal of the ground ci 2eplace the cormal of the ground ci 2eplace the gro	D CIRCUIT Terminal No. D CIRCUIT Trouit of the CAN gate teway. Refer to LAN- te CAN gateway bran te ground circuit. N CIRCUIT) gateway harness cont Harness	6 12 eway. Refer to LAN-1 144. "Removal and In ch line (CAN commur nector and the harnes connector	Existed K Existed K L L 143. "Diagnosis Proce- LAN stallation". N nication circuit 2). N oss connector. O

Is the inspection result normal?

YES >> GO TO 6.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2) [CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- Check the continuity between the PCB harness connectors. 2.

PCB harness connector	PCB harness connector	Continuity
Terminal No.	Terminal No.	Continuity
133	24	Existed
135	27	Existed

Is the inspection result normal?

>> GO TO 7. YES

>> Replace the PCB harness. NO

7.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors. 2.

Harness	connector	Harness connector				Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M20	24	MZ	34	Existed		
WIZU	27	M7	35	Existed		

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

8.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	B1 34		Existed
DI	35	33	Existed

Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

HVAC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

IVAC BRANCH		1		
agnosis Proced	ure			INFOID:000000006094637
.CHECK CONNECT	OR			
	ttery cable from the ne		nd and loose connec	tion (unit side and con-
	r M28 and PCB harne	ess side connector		
the inspection result	normal?			
YES >> GO TO 2. NO >> Repair the	terminal and connect	tor.		
	FOR OPEN CIRCUIT			
	nnector of A/C auto an the between the A/C a	mp. auto amp. harness cor	nnector terminals.	
	A/C auto amp. harne	ess connector		
Connector No.		Terminal No.		Resistance (Ω)
M66	12		11	Resistance (Ω) Approx. 54 – 66
M66 the measurement va (ES >> GO TO 3. NO >> GO TO 4.		cation?	11	
M66 the measurement va YES >> GO TO 3. NO >> GO TO 4. •CHECK POWER SI heck the power supp iagnosis Procedure".	12 alue within the specific UPPLY AND GROUN oly and the ground cir	cation? D CIRCUIT		
M66 the measurement var YES >> GO TO 3. NO >> GO TO 4. • CHECK POWER SU heck the power suppling iagnosis Procedure". the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the	12 alue within the specific UPPLY AND GROUN oly and the ground cir <u>normal?</u> >Replace the A/C auto	Cation? D CIRCUIT Trouit of the A/C auto a to amp. Refer to <u>HAC-2</u> the A/C auto amp. brance or ground circuit.	mp. Refer to <u>HAC-1</u>	Approx. 54 – 66 67. "A/C AUTO AMP. :
M66 the measurement var YES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SU heck the power suppling index inspection result YES (Present error)>= YES (Past error)>	12 alue within the specific UPPLY AND GROUN oly and the ground cir normal? >Replace the A/C autor ror was detected in the power supply and the CONTINUITY (OPEN rness connector M28.	Cation? D CIRCUIT Trouit of the A/C auto a to amp. Refer to <u>HAC-</u> the A/C auto amp. brance a ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and Ir ch line.	Approx. 54 – 66 67. "A/C AUTO AMP. : Installation".
M66 the measurement va (ES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SI heck the power supple agnosis Procedure". the inspection result (ES (Present error)>> (ES (Past error)>>Er NO >> Repair the .CHECK HARNESS Disconnect the han Check the continuit	12 alue within the specific UPPLY AND GROUN oly and the ground cir normal? >Replace the A/C autor ror was detected in the power supply and the CONTINUITY (OPEN rness connector M28.	Cation? D CIRCUIT Trouit of the A/C auto a to amp. Refer to <u>HAC-2</u> the A/C auto amp. brand the ground circuit. N CIRCUIT)	mp. Refer to <u>HAC-1</u> 201. "Removal and Ir ch line. nector and the harne	Approx. 54 – 66 67. "A/C AUTO AMP. : Installation". ss connector.
M66 the measurement va (ES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SI heck the power supple agnosis Procedure". the inspection result (ES (Present error)>> (ES (Past error)>>Er NO >> Repair the .CHECK HARNESS Disconnect the han Check the continuit	12 alue within the specific UPPLY AND GROUN bly and the ground cir normal? >Replace the A/C aut ror was detected in th power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/C aut	D CIRCUIT cuit of the A/C auto a o amp. Refer to <u>HAC-</u> he A/C auto amp. bran e ground circuit. N CIRCUIT) uto amp. harness cont	mp. Refer to <u>HAC-1</u> 201. "Removal and Ir ch line. nector and the harne	Approx. 54 – 66 67. "A/C AUTO AMP. : Installation".
M66 the measurement var YES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SU heck the power suppling index inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the .CHECK HARNESS Disconnect the har Check the continuit A/C auto amp. har	12 alue within the specific UPPLY AND GROUN oly and the ground cir normal? >Replace the A/C autor ror was detected in th power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/C autor anness connector	D CIRCUIT rcuit of the A/C auto a to amp. Refer to <u>HAC-</u> the A/C auto amp. brance e ground circuit. N CIRCUIT) uto amp. harness cont Harness c	mp. Refer to <u>HAC-1</u> 201, <u>"Removal and Ir</u> ch line. nector and the harne	Approx. 54 – 66 67. "A/C AUTO AMP. : Installation". ss connector.

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094638

[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 F103
- Harness connector M116
- Harness connector M28 and PCB harness 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.	Termi		
F61	3	8	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 TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

A/T assembly h	A/T assembly harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
F61	3	M28	346	Existed
1.01	8	IVIZO	347	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

[CAN SYSTEM (TYPE 10)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094639 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 following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094640

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).
- AV control unit
- Harness connector M25 and PCB harness 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

	Resistance (Ω)		
Connector No.	Termi		
M210	90 74		Approx. 54 – 66

Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (32)
M84	81	80	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 AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

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

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

AV control unit h	V control unit harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M25	201	Existed
	74		221	Existed

Models without navigation system

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

AV control unit ha	arness connector	Harness connector		- Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M84	81	M25	201	Existed	_
10104	80	IVIZO	221	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094641

[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).
- Combination meter
- Harness connector M24 and PCB harness 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 combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Termi		
M53	14 15		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 combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

Combination meter	Combination meter harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M24	176	Existed
IND5	15	10124	177	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Proced	ure			INFOID:0000000060946
1.CHECK CONNECT	OR			
 Check the following nector side). Data link connector Harness connector Harness connector Harness connector <u>s the inspection result</u> YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	ttery cable from the n g terminals and conn r M181 r M105 r M23 and PCB harne normal? terminal and connec FOR OPEN CIRCUI	ectors for damage, b ess side connector tor. T		ection (unit side and con
Check the resistance b				
	Data link cor			Resistance (Ω)
Connector No.		Terminal No.		A
M182 s the measurement va	6		14	Approx. 54 – 66
	ror was detected in th	ne data link connecto N CIRCUIT)	or branch line circuit.	
Data link o	connector	Harnes	s connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	6	M23	151	Existed
M182			150	Existed

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094643

[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).
- BCM
- Harness connector M22 and PCB harness 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 BCM.
- 2. Check the resistance between the BCM harness connector terminals.

	Resistance (Ω)		
Connector No.	Termi		
M120	39 40		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 BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

BCM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M120	39	M22	101	Existed
101120	40	IVIZZ	102	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

STRG BRANCH				
Diagnosis Proced	ure			INFOID:000000006094644
	OR			
 Check the followin nector side). Steering angle sendering angle send	ttery cable from the ne g terminals and conne nsor r M22 and PCB harne <u>normal?</u> terminal and connecte	ectors for damage, be ss side connector or. - gle sensor.		tion (unit side and con-
	Steering angle sensor ha	arness connector		Resistance (Ω)
Connector No.		Terminal No.		
M37 s the measurement va	1 alue within the specific		2	Approx. 54 – 66
M37 <u>s the measurement va</u> YES >> GO TO 3. NO >> GO TO 4. 3. CHECK POWER SI Check the power supp <u>tram</u> ". <u>s the inspection result</u> YES (Present error)>> YES (Past error)>>Er NO >> Repair the 1. CHECK HARNESS . Disconnect the had	UPPLY AND GROUNI	ation? D CIRCUIT cuit of the steering an angle sensor. Refer t e steering angle sens ground circuit. I CIRCUIT)	ngle sensor. Refer to to <u>BRC-144, "Remov</u> or branch line.	Approx. 54 – 66 D BRC-54. "Wiring Dia- al and Installation".
M37 S the measurement var YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI Check the power support Tam". S the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS . Disconnect the han . Check the continuit	UPPLY AND GROUNI oly and the ground cirr normal? >Replace the steering ror was detected in the power supply and the CONTINUITY (OPEN rness connector M22.	ation? D CIRCUIT cuit of the steering an angle sensor. Refer t e steering angle sens ground circuit. I CIRCUIT)	ngle sensor. Refer to to <u>BRC-144, "Remov</u> or branch line.	Approx. 54 – 66 D BRC-54, "Wiring Dia- al and Installation".
M37 S the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI CHECK POWER SI CHECK POWER SI S the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the han Check the continui	UPPLY AND GROUNI oly and the ground circ normal? >Replace the steering ror was detected in the power supply and the CONTINUITY (OPEN rness connector M22. ity between the steering	ation? D CIRCUIT cuit of the steering at angle sensor. Refer t e steering angle sens e ground circuit. I CIRCUIT) ng angle sensor harne	ngle sensor. Refer to to <u>BRC-144, "Remov</u> or branch line.	Approx. 54 – 66 D BRC-54. "Wiring Dia- al and Installation".
M37 Sthe measurement var YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU Check the power suppram. Sthe inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the har Check the continui	UPPLY AND GROUND oly and the ground cirr normal? >Replace the steering ror was detected in the power supply and the CONTINUITY (OPEN rness connector M22. ity between the steerin	ation? D CIRCUIT cuit of the steering an angle sensor. Refer t e steering angle sens e ground circuit. I CIRCUIT) ng angle sensor harne Harness	ngle sensor. Refer to to <u>BRC-144, "Remov</u> or branch line.	Approx. 54 – 66 D BRC-54, "Wiring Dia- al and Installation".

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094645

[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 AWD 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 AWD control unit.

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

A	AWD control unit harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
B17	8	16	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.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 <u>DLN-59, "Removal and Installation"</u>.

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

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:00000006094647
.CHECK CONNECTOR			
Check the terminals and and loose connection (us the inspection result norm	cable from the negative termi d connectors of the ABS actunity nit side and connector side).	ator and electric unit (co	ntrol unit) for damage, bend
YES >> GO TO 2. NO >> Repair the termi	nal and connector		
CHECK HARNESS FOR			
	etween the ABS actuator and		ity namess connector termi
nals.	and electric unit (control unit) harne:	ss connector	
nals.	and electric unit (control unit) harne: Terminal		Resistance (Ω)
nals. ABS actuator a	Terminal 25		Resistance (Ω) Approx. 54 – 66
ABS actuator a Connector No. E41 the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL heck the power supply an RC-119, "Diagnosis Proceed the inspection result norm YES (Present error)>>Rep and Installation"	Terminal 25 ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A dure". al? ace the ABS actuator and electron	No. 15 Introl unit) branch line. BS actuator and electric ectric unit (control unit). F	Approx. 54 – 66 e unit (control unit). Refer to Refer to <u>BRC-141, "Removal</u>

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094648

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

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

/	AFS control unit harness connector		
Connector No.	Termi	Resistance (Ω)	
E104	30	7	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 EXL-84, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-126, "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.

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

1.CHECK CONNECTOR			
	able from the negative term		nd loose connection (unit side
s the inspection result norm	<u>al?</u>		
YES >> GO TO 2. NO >> Repair the termi	nal and connector.		
2. CHECK HARNESS FOR	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 	or of IPDM E/R. tween the IPDM E/R harne	ss connector terminals.	
	IPDM E/R harness connector		
Connector No.	Termina	l No.	Resistance (Ω)
E6	40	39	Approx. 108 – 132
NO >> Repair the IPDN			
3. CHECK POWER SUPPL' Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the IPI	PCS-33, "Removal an branch line.	-
3. CHECK POWER SUPPL' Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the IPI al? ace the IPDM E/R. Refer to as detected in the IPDM E/F	PCS-33, "Removal an branch line.	-
3. CHECK POWER SUPPL' Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the IPI al? ace the IPDM E/R. Refer to as detected in the IPDM E/F	PCS-33, "Removal an branch line.	-
3. CHECK POWER SUPPL' Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa	Y AND GROUND CIRCUIT the ground circuit of the IPI al? ace the IPDM E/R. Refer to as detected in the IPDM E/F	PCS-33, "Removal an branch line.	-

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< DTC/CIRCUIT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094650

[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).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC 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.	Termir	Continuity	
M125	4	6	Existed
11123	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Driver seat control unit harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
B514	23	24	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-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

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

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

	CIRCUIT		
Diagnosis Procedure			INFOID:000000006094651
1.CHECK CONNECTOR			
	cable from the negative terr	ninal. lamage, bend and loose con	nection (unit side and con-
Is the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2.CHECK HARNESS CON)	
 Disconnect the connect Check the continuity be 	or of CAN gateway. tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connector		Continuity
Connector No.	Termiı 4	nal No. 6	Existed
M125	10	12	Existed
tion circuit 2).		f shield line is open) the roo	t cause (CAN communica-
tion circuit 2). 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect	OPEN CIRCUIT of CAN gateway. or of ADAS control unit.	f shield line is open) the roo	
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. or of ADAS control unit. etween the ADAS control u	nit harness connector termin	
tion circuit 2). 3.CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. or of ADAS control unit. etween the ADAS control un DAS control unit harness connect	nit harness connector termin	
tion circuit 2). 3. CHECK HARNESS FOR 1. Connect the connector 2. Disconnect the connect 3. Check the resistance be	OPEN CIRCUIT of CAN gateway. or of ADAS control unit. etween the ADAS control unit DAS control unit harness connect Termin 14	nit harness connector termin	als.

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094652

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

	CAN gateway harness connector			
Connector No.	Termi	Continuity		
M125	4	6	Existed	
1123	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).

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	Pre-crash seat belt control unit (driver side) harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
B9	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-47, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to <u>SBC-54, "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.

RDR-L BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

Diagnosis Procedure			INFOID:00000006094653
1 .CHECK CONNECTOR			
	cable from the negative term ad connectors of the side ra		and loose connection (unit
s the inspection result norm	nal?		
YES >> GO TO 2. NO >> Repair the term	inal and connector.		
2. CHECK HARNESS FOR			
 Disconnect the connect Check the resistance be 	or of side radar LH. etween the side radar LH h	arness connector terminals	S.
	Side radar LH harness connecto	r	Resistance (Ω)
Connector No.	Termi	nal No.	
B52	4	3	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the side CHECK POWER SUPPL	radar LH branch line.	г	
Check the power supply an <u>Diagnosis Procedure"</u> . Is the inspection result norm	-	side radar LH. Refer to D/	AS-575, "SIDE RADAR LH :
YES (Present error)>>Rep YES (Past error)>>Error w	lace the side radar LH. Ref as detected in the side rada er supply and the ground ci	ar LH branch line.	and Installation".

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RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094655

[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 side radar RH 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 RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check the right/left switching signal circuit of the side radar RH. Refer to <u>DAS-578</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO >> Repair the root cause.

3.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.		
B252	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the side radar RH branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-576. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-592, "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.

APA BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 10)]

re			
			INFOID:000000006094657
R			
terminals and connectuator M151 M150	ctors for damage, be	nd and loose conr	nection (unit side and con-
ormal?			
erminal and connect)r		
	pedal actuator.		
		harness connecto	r terminals.
ccelerator pedal actuator	harness connector		
	Terminal No.		Resistance (Ω)
5		4	Approx. 54 – 66
and the ground circu ATOR : Diagnosis Pro- ormal? Replace the accelera NTROL ASSIST SYS or was detected in the ower supply and the CONTINUITY (OPEN ess connector M23.	uit of the accelerator ocedure". ator pedal assembly <u>TEM : Removal and</u> accelerator pedal ac ground circuit. CIRCUIT)	/. Refer to <u>ACC-/</u> <u>Installation"</u> . ctuator branch line	4, "MODELS WITH DIS- 9.
			r and the harness connec-
			Continuity
5		138	Existed
	M23	137	
	ery cable from the neterminals and conneterminals and conneterminal and connector 2007 OPEN CIRCUIT 2007 O	ary cable from the negative terminal. terminals and connectors for damage, be ctuator M151 M150 M23 and PCB harness side connector ormal? erminal and connector. COR OPEN CIRCUIT nector of accelerator pedal actuator. e between the accelerator pedal actuator cccelerator pedal actuator harness connector cccelerator pedal actuator harness connector cccelerator pedal actuator harness connector ge within the specification? PPLY AND GROUND CIRCUIT and the ground circuit of the accelerator ATOR : Diagnosis Procedure". ormal? Replace the accelerator pedal assembly NTROL ASSIST SYSTEM : Removal and power supply and the ground circuit. CONTINUITY (OPEN CIRCUIT) ess connector M23. v between the accelerator pedal actuator for the accelerator peda	ery cable from the negative terminal. terminals and connectors for damage, bend and loose connector M151 M150 M23 and PCB harness side connector ormal? erminal and connector. COR OPEN CIRCUIT nector of accelerator pedal actuator. e between the accelerator pedal actuator harness connector ccelerator pedal actuator harness connector PPLY AND GROUND CIRCUIT and the ground circuit of the accelerator pedal actuator. Re ATOR : Diagnosis Procedure". ormal? Replace the accelerator pedal assembly. Refer to ACC- NTROL ASSIST SYSTEM : Removal and Installation". or was detected in the accelerator pedal actuator branch line iower supply and the ground circuit. CONTINUITY (OPEN CIRCUIT) less connector M23. r between the accelerator pedal actuator harness connector

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094656

[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).
- Lane camera unit
- Harness connector R7
- Harness connector M110
- Harness connector M24 and PCB harness 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 lane camera unit.
- 2. Check the resistance between the lane camera unit harness connector terminals.

L	Lane camera unit harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
R8	4	8	Approx. 54 – 66

Is the measurement value within the specification?

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 lane camera unit. Refer to <u>DAS-403</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-419, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the lane camera unit harness connector and the harness connector.

Lane camera unit	Lane camera unit harness connector		connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
R8	4	M24	179	Existed
KO	8	11124	178	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

< DTC/CIRCUIT DIAGNOSIS >

LASER BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094658 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). ICC sensor Harness connector E106 D Harness connector M6 Harness connector M28 and PCB harness side connector Is the inspection result normal? E YES >> GO TO 2. >> Repair the terminal and connector. NO 2.check harness for open circuit Disconnect the connector of ICC sensor. 1. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector Resistance (Ω) Connector No. Terminal No. E67 3 6 Approx. 108 - 132 Н 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 ICC sensor. Refer to CCS-162, "ICC SENSOR : Diagno-. [sis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation". Κ YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit. **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT) L 1. Disconnect the harness connector M28. Check the continuity between the ICC sensor harness connector and the harness connector. 2. LAN ICC sensor harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Ν 3 343 Existed E67 M28 6 345 Fxisted Is the inspection result normal? YES >> Replace the PCB harness. NO

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

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< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

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	nal No.	Continuity
M182	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 PCB harness is short) the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data lin	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M182	6	Ground	Not existed
IVI 102	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

2. Check the resistance between the ECM terminals.

- VQ37VHR

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

VK56VD

ECM		Resistance (Ω)
Termi	nal No.	
146	151	Approx. 108 – 132

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

INFOID:000000006094660

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

IPDM E/R		Resistance (Ω)
Term	ninal No.	- Resistance (12)
40	39	Approx. 108 – 132
Is the measurement value within	n the specification?	
YES >> GO TO 5.		
NO >> Replace the ECM a	and/or the IPDM E/R.	
5.CHECK SYMPTOM		
Connect all the connectors. Ch customer)" are reproduced.	eck if the symptoms described ir	the "Symptom (Results from interview with
Inspection result		
Reproduced>>GO TO 6.		
	iagnosis again. Follow the troub	le diagnosis procedure when past error is
Non-reproduced>>Start the d detected.	0	le diagnosis procedure when past error is
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT	TION	
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test as 1. Turn the ignition switch OF	TION s per the following procedure for e F.	
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test a 1. Turn the ignition switch OF 2. Disconnect the battery cabl	TION s per the following procedure for e F. e from the negative terminal.	each unit.
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test a 1. Turn the ignition switch OF 2. Disconnect the battery cabl	TION s per the following procedure for e F.	each unit.
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test as 1. Turn the ignition switch OFI 2. Disconnect the battery cabl 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have a	TION s per the following procedure for e F. e from the negative terminal. connectors of CAN communicatio a termination circuit. Check other u	each unit. n circuit 1. units first.
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test as 1. Turn the ignition switch OFI 2. Disconnect the battery cabl 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have a 4. Connect the battery cable (Results from interview with	TION s per the following procedure for e F. e from the negative terminal. connectors of CAN communicatio a termination circuit. Check other u	each unit.
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test as 1. Turn the ignition switch OFI 2. Disconnect the battery cabl 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have a 4. Connect the battery cable (Results from interview with NOTE:	TION s per the following procedure for e F. e from the negative terminal. connectors of CAN communication a termination circuit. Check other u to the negative terminal. Check	each unit. n circuit 1. units first. if the symptoms described in the "Symptom
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test at 1. Turn the ignition switch OF 2. Disconnect the battery cabl 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have at 4. Connect the battery cable (Results from interview with NOTE: Although unit-related error starts)	TION s per the following procedure for e F. e from the negative terminal. connectors of CAN communication a termination circuit. Check other u to the negative terminal. Check in customer)" are reproduced.	each unit. n circuit 1. units first. if the symptoms described in the "Symptom
Non-reproduced>>Start the d detected. 6.CHECK UNIT REPRODUCT Perform the reproduction test as 1. Turn the ignition switch OFI 2. Disconnect the battery cabl 3. Disconnect one of the unit of NOTE: ECM and IPDM E/R have a 4. Connect the battery cable (Results from interview with NOTE: Although unit-related error so Inspection result Reproduced>>Connect the co	TION s per the following procedure for e F. e from the negative terminal. connectors of CAN communication a termination circuit. Check other u to the negative terminal. Check in customer)" are reproduced.	each unit. n circuit 1. units first. if the symptoms described in the "Symptom hem with other symptoms. the above procedure.

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CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

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	nal No.	Continuity
M182	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 PCB harness 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
M182	13	Ground	Not existed
IVI I OZ	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

CAN gateway		Resistance (Ω)	
Termi	nal No.		
4	10	Approx. 108 – 132	
6	12	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

INFOID:000000006094661

CAN COMMUNICATION CIRCUIT 2 < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 10)]
<u>CAN SYSTEM (TYPE 10)</u> 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. 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: 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 >

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006094662

[CAN SYSTEM (TYPE 10)]

1.CHECK CAN DIAGNOSIS

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

NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

Are the CAN communication 1 and 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. Check the terminals and connectors of the ADAS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

ADAS control unit harness connector ICC sensor harness of		rness connector	Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
B50 —	7	E67	3	Existed	
	8		6	Existed	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Termi	Continuity	
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

 $\mathbf{5.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

LAN-502

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

Connector No.			Continuity	
	Terminal No.	Ground	Continuity	
B50	7	Ground	Not existed	
	8		Not existed	
CHECK TERMINATION C	ss and repair or replace (if		ss is short) the root cause.	
ΔDA	S control unit			
	erminal No.		Resistance (Ω)	
7	8	Α	pprox. 108 – 132	
Check the resistance bet	ween the ICC sensor term			
	CC sensor			
	erminal No.		Resistance (Ω)	
3	6	Α	pprox. 108 – 132	
CHECK SYMPTOM onnect all the connectors. (istomer)" are reproduced. <u>spection result</u> Reproduced>>GO TO 8. Non-reproduced>>Start the				
delected.				
detected. CHECK UNIT REPRODUC	CTION			
CHECK UNIT REPRODUC erform the reproduction test Turn the ignition switch O Disconnect the battery ca Disconnect one of the unit NOTE: ADAS control unit and IC Connect the battery cabl (Results from interview w NOTE:	as per the following proce OFF. able from the negative term it connectors of ITS comm C sensor have a termination	ninal. unication system. on circuit. Check other un I. Check if the symptoms iced.	described in the "Symptor	

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000006094553

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

Low tire pressure warning control unit harness connector		A/C auto amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43 –	2	M66	12	Existed
	1		11	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 low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

DTC/CIRCUIT DIAG	SNOSIS >		[CAN	SYSTEM (TYPE 11)]
MAIN LINE BET	WEEN HVAC	AND A-BAG CI	RCUIT	
Diagnosis Proced	ure			INFOID:000000006094554
I.CHECK HARNESS	CONTINUITY (OPE	N CIRCUIT)		
 Disconnect the foll ECM A/C auto amp. AV control unit 	tery cable from the n owing harness conne ty between the A/C a	ectors.	nnector and the AV c	ontrol unit harness con-
A/C auto amp. ha	arness connector	AV control unit h	arness connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Connector No.				
M66	12	M210	90	Existed

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Models without navigation system -

A/C auto amp. h	arness connector	AV control unit harness connector				Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity			
M66	12	M84	81	Existed	_		
IVIOO	11	10184	80	Existed	_		

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000006094555

[CAN SYSTEM (TYPE 11)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M66	12	M210	90	Existed
1000	11	M210 74		Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit harness connector		ess connector AV control unit harn		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity		
M66	12	M84	81	Existed		
IVIOO	11	10104	80	Existed		

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

I SYSTEM (TYPE 1 [,]	[CAN S		NOSIS >	TC/CIRCUIT DIAG
	Т	D M&A CIRCUI	WEEN AV AND	AIN LINE BET
INF01D:0000000060			ure	agnosis Procedu
		I CIRCUIT)	CONTINUITY (OPEN	CHECK HARNESS
			tery cable from the ne owing harness conne	
nbination meter harne	nnector and the comb	ontrol unit harness con	ty between the AV co	
		ontrol unit harness con	ty between the AV co	Check the continui connector.
Dination meter harne			ty between the AV co	Check the continui connector. Models with naviga
	harness connector	Combination meter	ty between the AV co ation system arness connector	Check the continuit connector. Models with naviga AV control unit ha Connector No.
- Continuity	harness connector Terminal No.	Combination meter	ty between the AV co ation system arness connector Terminal No.	Check the continui connector. Models with naviga AV control unit ha
- Continuity Existed	harness connector Terminal No. 14	Combination meter	ty between the AV co ation system arness connector Terminal No. 90 74	Check the continuit connector. Models with naviga AV control unit ha Connector No.
Continuity Existed Existed	harness connector Terminal No. 14 15	Combination meter	ty between the AV co ation system arness connector Terminal No. 90 74 /igation system	Check the continuit connector. Models with naviga AV control unit ha Connector No. M210
- Continuity Existed	harness connector Terminal No. 14 15	Combination meter Connector No. M53	ty between the AV co ation system arness connector Terminal No. 90 74 /igation system	Check the continuit connector. Models with naviga AV control unit hat Connector No. M210 Models without nav
Continuity Existed Existed	harness connector Terminal No. 14 15 harness connector	Combination meter Connector No. M53 Combination meter	ty between the AV co ation system arness connector Terminal No. 90 74 /igation system	Check the continuit connector. Models with naviga AV control unit hat Connector No. M210 Models without nav AV control unit hat

MAIN LINE BETWEEN AV AND M&A CIRCUIT

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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006094557

[CAN SYSTEM (TYPE 11)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

Combination mete	harness connector Harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M53	14	M105	7	Existed
CCIVI	15	COT IVI	8	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 combination meter and the data link connector.
- NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA	MAIN LINE BET GNOSIS >	WEEN DLC ANI		SYSTEM (TYPE 11)]	
MAIN LINE BET	WEEN DLC AN	ND BCM CIRC	UIT		Δ
Diagnosis Proced	lure			INFOID:000000006094558	A
1. CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)			В
 Disconnect the fol ECM 	witch OFF. ttery cable from the ne lowing harness conne ors M181 and M105				С
BCMCheck the continu	ity between the harnes	ss connector and the	BCM harness connect	ctor.	D
Harness	connector	BCM harnes	ss connector	Continuity	F
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E

Is the inspection result normal?

M105

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

7

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

39

40

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000006094560

[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 M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

BCM harne	ss connector	PCB harness connector	Continuity	
Connector No.	Terminal No.	Terminal No.	Continuity	
M120	39	35	Existed	
IVI 120	40	36	Existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M20	35	M7	72	Existed
WZ0	36	1017	73	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Termi	Continuity	
B1	72	74	Existed
DI	73	75	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 BCM and the AWD control unit.

NO >> Replace the body harness.

SYSTEM (TYPE 11)]		WEEN 4WD ANI		N DTC/CIRCUIT DIAG
	-	ND ABS CIRC		AIN LINE BET
INFOID:000000006094563			Э	iagnosis Procedu
				.CHECK CONNECTO
				Turn the ignition sw
ection (connector side		nectors for damage, b tor. N CIRCUIT) and M7.	y cable from the ne erminals and coni 7 6 106 <u>rmal?</u> minal and connect DNTINUITY (OPEN ss connectors B1	Disconnect the batt Check the following and harness side). Harness connector Harness connector Harness connector the inspection result in YES >> GO TO 2. NO >> Repair the to CHECK HARNESS (Disconnect the harr
Continuity	S.	ss connector terminal	between the harne	Check the continuit
Existed	74		72	Connector No.
Existed	75		73	B1
		and E106.	ONTINUITY (OPEN ss connectors M6	YES >> GO TO 3. NO >> Replace the CHECK HARNESS (Disconnect the ham Check the continuit
	connector	Harness	nector	Harness c
Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
Existed	22	M6	74	M7
Existed	23	ΙΫΙΟ	75	
ectric unit (control unit)	ontrol unit).	tor and electric unit (c	ain line between th DNTINUITY (OPE)	CHECK HARNESS
Continuity	ctric unit (control unit) connector	harness		Harness c
Existed	Terminal No. 25	Connector No.	Terminal No.	Connector No.
EXISTER	20	E41	22	E106

AIN LINE DETWEEN AND AND ARE CIRCUIT

Is the inspection result normal?

23

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the AWD control unit and the ABS actuator and electric unit (control unit).

15

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

DIC/CIRCUIT DIAGNUS	>		
CM BRANCH LIN	E CIRCUIT		
Diagnosis Procedure			INFOID:000000006094569
1.CHECK CONNECTOR			
 Check the following terr nector side). ECM Harness connector M30 Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connect 	cable from the negative termininals and connectors for da and PCB harness side conr al? Inal and connector. OPEN CIRCUIT	mage, bend and loose	connection (unit side and con-
	ECM harness connector		Posistanco (O)
Connector No.	Termina	l No.	Resistance (Ω)
M107	114	113	Approx. 108 – 132
VK56VD			
	ECM harness connector		
Connector No.	Termina	l No.	Resistance (Ω)
M160	146	151	Approx. 108 – 132
	Y AND GROUND CIRCUIT I the ground circuit of the EC nosis Procedure"	M. Refer to the followir	ıg.
Is the inspection result norm	al?		
 VQ37VHR: <u>EC</u> VK56VD: <u>EC</u>- YES (Past error)>>Error w 	lace the ECM. Refer to the for <u>C-535</u> , "Removal and Installa <u>535</u> , "Removal and Installation as detected in the ECM bran er supply and the ground circ	<u>ition"</u> on" ch line.	
4. CHECK HARNESS CON	TINUITY (OPEN CIRCUIT)		
 Disconnect the harness Check the continuity be VQ37VHR 	connector M30. tween the ECM harness con	nector and the harness	connector.

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ess connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M107	114	M30	439	Existed	
WITO7	113	WISO	438	Existed	

VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ECM harne	ss connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M160	146	M30	439	Existed
WITOO	151	10130	438	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

FPMS BRANCH	I LINE CIRCUI	Т		
Diagnosis Proced	lure			INFOID:000000006094570
	OR			
 Check the followin nector side). Low tire pressure Harness connectors the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS 	ttery cable from the neig terminals and conneig warning control unit or M29 and PCB harnes to normal? terminal and connect FOR OPEN CIRCUI	ectors for damage, be ess side connector tor. Γ		ection (unit side and con-
. Check the resistar	nnector of low tire pre	ire pressure warning		connector terminals.
Connector No.		Terminal No.		Resistance (Ω)
M43	2		1	Approx. 54 – 66
heck the power supp Diagnosis Procedure the inspection result YES (Present error)> Installation YES (Past error)>>E NO >> Repair the CHECK HARNESS	2. <u>normal?</u> >Replace the low tire <u>orror was detected in the</u> power supply and the CONTINUITY (OPEN rness connector M29.	cuit of the low tire pre e pressure warning on the low tire pressure w e ground circuit. N CIRCUIT)	control unit. Refer to	Trol unit. Refer to <u>WT-53</u> , b <u>WT-70</u> , <u>"Removal and</u> ranch line.
-	warning control unit connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
M43	2	M29	396 395	Existed

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094573

[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/C auto amp.
- Harness connector M28 and PCB harness 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/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.		
M66 12		11	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 A/C auto amp. Refer to <u>HAC-167, "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-201, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	12	M28	325	Existed
MOO	11	IVIZO	327	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

iagnosis Proced	ure			INFOID:000000006094574
CHECK CONNECT	OR			
 Check the followin nector side). A/T assembly Harness connecto Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the con 	ttery cable from the ne g terminals and conne r F103 r M116 r M28 and PCB harne	ectors for damage, be ss side connector or. - bly.		ction (unit side and con-
	A/T assembly harne	_		Posistance (0)
Connector No.		Terminal No.		Resistance (Ω)
F61	3		8	Approx. 54 – 66
YES >> GO TO 3. NO >> GO TO 4. .CHECK POWER SI heck the power supp the inspection result YES (Present error)> ponent Pa parts list.) YES (Past error)>>Er NO >> Repair the .CHECK HARNESS Disconnect the ha	Replace the control v rts Location". (Replace ror was detected in th power supply and the CONTINUITY (OPEN rness connector M28.	D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. e ground circuit. I CIRCUIT)	to <u>TM-8, "A/T CON</u> trol valve with TCM	ITROL SYSTEM : Com- is not listed in the lates
NO >> GO TO 4. CHECK POWER SI the ck the power supp the inspection result YES (Present error)> <u>ponent Pa</u> parts list.) YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu	ly and the ground circl normal? >Replace the control v rts Location". (Replace ror was detected in th power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/T as	D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. I CIRCUIT) ssembly harness conr	to <u>TM-8, "A/T CON</u> trol valve with TCM	ITROL SYSTEM : Com- is not listed in the lates
YES >> GO TO 3. NO >> GO TO 4. •CHECK POWER SI heck the power supp the inspection result YES (Present error)> <u>ponent Pa</u> parts list.) YES (Past error)>>Er NO >> Repair the •CHECK HARNESS Disconnect the ha Check the continu	ly and the ground circe <u>normal?</u> >Replace the control v rts Location". (Replace fror was detected in th power supply and the CONTINUITY (OPEN rness connector M28.	D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. I CIRCUIT)	to <u>TM-8, "A/T CON</u> trol valve with TCM	ITROL SYSTEM : Com- is not listed in the lates
YES >> GO TO 3. NO >> GO TO 4. • CHECK POWER SI heck the power supp the inspection result YES (Present error)> ponent Pa parts list.) YES (Past error)>>Er NO >> Repair the • CHECK HARNESS Disconnect the ha Check the continu	ly and the ground circe <u>normal?</u> >Replace the control v rts Location". (Replace ror was detected in th power supply and the CONTINUITY (OPEN rness connector M28. ity between the A/T as	D CIRCUIT uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. I CIRCUIT) ssembly harness conr Harness	trol <u>TM-8, "A/T CON</u> trol valve with TCM ector and the harne	ITROL SYSTEM : Com- is not listed in the latest

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094575

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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

AV BRANCH LI				
Diagnosis Proced	dure			INFOID:000000006094576
1 .CHECK CONNEC	TOR			
 Check the followin nector side). AV control unit Harness connector s the inspection result YES >> GO TO 2 NO >> Repair the 	attery cable from the nang terminals and conn or M25 and PCB harne It normal?	ectors for damage, be ess side connector tor.	end and loose connec	tion (unit side and con-
. Disconnect the co	onnector of AV control nce between the AV co	unit.	nnector terminals.	
	AV control unit harn			Resistance (Ω)
Connector No. M210	90	Terminal No.	74	Approx. 54 – 66
Models without na	avigation system			
	AV control unit harn	loss connector		
				Resistance (Ω)
Connector No.		Terminal No.		Resistance (Ω)
M84	81	Terminal No.	80	Resistance (Ω) Approx. 54 – 66
M84 YES >> GO TO 3 NO >> GO TO 4 3.CHECK POWER S Check the power supp Base audio without BOSE audio with na Is the inspection resulf YES (Present error): Base audio YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS 1. Disconnect the har	81 alue within the specific SUPPLY AND GROUN bly and the ground circ navigation system: AV-2 avigation system: AV-2 avigation system: AV-2 blt normal? >>Replace the AV cont audio without navigation s arror was detected in the power supply and the S CONTINUITY (OPEN arness connector M25.	Terminal No. Cation? ID CIRCUIT Cuit of the AV control u -90. "AV CONTROL U 72. "AV CONTROL U trol unit. Refer to the f n system: <u>AV-120. "Re</u> system: <u>AV-298, "Rem</u> ne AV control unit brar e ground circuit. N CIRCUIT)	Init. Refer to the follow JNIT : Diagnosis Proce NIT : Diagnosis Proce following. Imoval and Installation oval and Installation oval and Installation	Approx. 54 – 66 ving. edure" dure"
M84 S the measurement v YES >> GO TO 3 NO >> GO TO 4 3.CHECK POWER S Check the power supp Base audio without BOSE audio without BOSE audio without BOSE audio without BOSE audio without S (Present error) Base au S (Present error) Base au S (Past error) YES (Past error) NO >> Repair the A.CHECK HARNESS Disconnect the ha Check the continu- Models with navig	81 alue within the specific SUPPLY AND GROUN SUPPLY AND GROUN oly and the ground circ navigation system: AV-2 avigation system: AV-2 by and the ground circ avigation system: AV-2 avigation system: AV-2 by and the ground circ avigation system: AV-2 by and the ground circ by and the ground circ avigation system by and the ground circ avigation system avigation system	Terminal No. Cation? D CIRCUIT cuit of the AV control u -90, "AV CONTROL U 72, "AV CONTROL U trol unit. Refer to the f n system: AV-120, "Re system: AV-298, "Rem ne AV control unit brar e ground circuit. N CIRCUIT) - ontrol unit harness cor	Init. Refer to the follow JNIT : Diagnosis Proce NIT : Diagnosis Proce following. Immoval and Installation oval and Installation oval and Installation oval and Installation	Approx. 54 – 66 ving. edure" dure"
M84 <u>s the measurement v</u> YES >> GO TO 3 NO >> GO TO 4 3. CHECK POWER S Check the power supp Base audio without BOSE audio without BOSE audio with na <u>s the inspection resul</u> YES (Present error): Base au Base au Sthe inspection resul YES (Present error): Base au Stress (Past error): NO >> Repair the A.CHECK HARNESS Disconnect the ha Check the continu- Models with navig	81 alue within the specific SUPPLY AND GROUN by and the ground circ navigation system: AV-2 avigation system: AV-2 avigation system: AV-2 by and the ground circ navigation system: AV-2 avigation system: AV-2 by and the ground circ navigation system: AV-2 by and the ground circ navigation system: AV-2 by and the ground circ avigation system: AV-2 avigation system: AV-2 av	Terminal No. Cation? D CIRCUIT cuit of the AV control u -90, "AV CONTROL U 72, "AV CONTROL U trol unit. Refer to the f n system: AV-120, "Re system: AV-298, "Rem ne AV control unit brar e ground circuit. N CIRCUIT) - ontrol unit harness cor	Init. Refer to the follow JNIT : Diagnosis Proce NIT : Diagnosis Proce following. Imoval and Installation oval and Installation oval and Installation	Approx. 54 – 66 ving. edure" dure"
M84 <u>s the measurement v</u> YES >> GO TO 3 NO >> GO TO 4 3. CHECK POWER S Check the power supple Base audio without BOSE audio with na <u>s the inspection resul</u> YES (Present error): Base audio Sthe inspection resulf YES (Past error): Base audio SCHECK HARNESS 1. Disconnect the have Check the continue Models with navige AV control unit	81 alue within the specific SUPPLY AND GROUN oly and the ground circ navigation system: AV-2 avigation system: AV-2 avigation system: AV-2 avigation system: AV-2 bit normal? >>Replace the AV cont audio without navigation s arror was detected in the power supply and the S CONTINUITY (OPEN arness connector M25. uity between the AV cont pation system harness connector	Terminal No. Cation? ID CIRCUIT Cuit of the AV control u -90. "AV CONTROL U 72. "AV CONTROL U trol unit. Refer to the f n system: AV-120. "Re system: AV-298, "Rem ne AV control unit brar e ground circuit. N CIRCUIT) - ontrol unit harness cor Harness	init. Refer to the follow JNIT : Diagnosis Proce NIT : Diagnosis Proce following. moval and Installation oval and Installation nch line.	Approx. 54 – 66 ving. edure" dure" " ss connector.

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
 M84	81	M25	201	Existed
	80	IVI25	221	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

	INE CIRCUIT				
Diagnosis Procedu	ure			INFOID:00000006094577	
1. CHECK CONNECTO	DR				
 Check the following nector side). Combination meter Harness connector <u>s the inspection result r</u> YES >> GO TO 2. 	ery cable from the n terminals and conn M24 and PCB harne normal? terminal and connec	ectors for damage, be ess side connector tor.	nd and loose conr	ection (unit side and con-	
. Disconnect the con	nector of combinatio	on meter.			
2. Check the resistand	ce between the com	bination meter harness	s connector termin	als.	
	Combination meter ha	arness connector		Posistanco (O)	
Connector No.		Terminal No.		Resistance (Ω)	
M53 s the measurement val	14 ue within the specific	cation?	15	Approx. 54 – 66	
Is the measurement val YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power supplement valor METER : Diagnosis Product Is the inspection result in YES (Present error)>> YES (Past error)>>Err NO >> Repair the part of the part	ue within the specific IPPLY AND GROUN y and the ground cir ocedure". normal? Replace the combin or was detected in th power supply and th CONTINUITY (OPEI ness connector M24	ID CIRCUIT rcuit of the combination nation meter. Refer to <u>Nation</u> he combination meter le ground circuit. N CIRCUIT)	on meter Refer to j MWI-90, "Removal branch line.	MWI-70, "COMBINATION and Installation".	
Is the measurement val YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power supple METER : Diagnosis Pro- Is the inspection result of YES (Present error)>> YES (Past error)>>Err NO >> Repair the power supple 4.CHECK HARNESS (Compared to the formation of the	ue within the specific IPPLY AND GROUN y and the ground ci- <u>ocedure"</u> . Replace the combin or was detected in th power supply and th CONTINUITY (OPEI ness connector M24 y between the comb	ID CIRCUIT rcuit of the combination nation meter. Refer to <u>Nation</u> the combination meter is a ground circuit. N CIRCUIT)	on meter Refer to b MWI-90, "Removal branch line. connector and the	MWI-70, "COMBINATION and Installation".	
s the measurement val YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power suppl METER : Diagnosis Pro- s the inspection result in YES (Present error)>> YES (Past error)>>Err NO >> Repair the p 4.CHECK HARNESS (1. Disconnect the harn 2. Check the continuit	ue within the specific IPPLY AND GROUN y and the ground cir ocedure". normal? Replace the combin or was detected in th power supply and th CONTINUITY (OPEI ness connector M24 y between the comb	ID CIRCUIT rcuit of the combination nation meter. Refer to <u>Nation</u> the combination meter e ground circuit. N CIRCUIT) ination meter harness	on meter Refer to b MWI-90, "Removal branch line. connector and the	MWI-70, "COMBINATION and Installation".	
Is the measurement val YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SU Check the power supple METER : Diagnosis Pro- Is the inspection result of YES (Present error)>> YES (Past error)>>Err NO >> Repair the power supple 4.CHECK HARNESS (Compared to the formation of the	ue within the specific IPPLY AND GROUN y and the ground ci- <u>ocedure"</u> . Replace the combin or was detected in th power supply and th CONTINUITY (OPEI ness connector M24 y between the comb	ID CIRCUIT rcuit of the combination nation meter. Refer to <u>Nation</u> the combination meter is a ground circuit. N CIRCUIT)	on meter Refer to b MWI-90, "Removal branch line. connector and the	MWI-70. "COMBINATION and Installation".	

NO >> Repair the harness between the combination meter harness connector M53 and the harness con nector M24.

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094578

[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).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness 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		
M182	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 M23.

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
M182	6	M23	151	Existed
WI 102	14	WIZ5	150	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

BCM BRANCH	LINE CIRCUIT			
Diagnosis Procec	lure			INFOID:00000006094579
1.CHECK CONNECT	ſOR			
 Check the followir nector side). BCM 	ttery cable from the ne	ectors for damage, b	end and loose cor	nnection (unit side and con-
s the inspection result				
YES >> GO TO 2. NO >> Repair the	e terminal and connect			
	FOR OPEN CIRCUIT	Г 		
. Disconnect the co 2. Check the resistant	nnector of BCM. nce between the BCM	harness connector	terminals.	
	BCM harness o	connector		Resistance (Ω)
Connector No.		Terminal No.		
M120	39		40	Approx. 54 – 66
YES >> GO TO 3. NO >> GO TO 4.				
	bly and the ground circ		er to <u>BCS-73, "Diac</u>	gnosis Procedure".
YES (Past error)>>E NO >> Repair the	Replace the BCM. R rror was detected in the power supply and the	e BCM branch line. e ground circuit.	moval and Installa	ition".
CHECK HARNESS	CONTINUITY (OPEN	I CIRCUIT)		
	irness connector M22. hity between the BCM		nd the harness co	nnector.
BCM harne	ess connector	Harnes	s connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	39		101	Existed
M120		M22	102	

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094580

[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
- Harness connector M22 and PCB harness 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 steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	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 steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

Steering angle sens	or harness connector	Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M37	1	M22	81	Existed	
W37	2	IVIZZ	82	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

4WD BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

Diagnosis Procedure			INFOID:00000006094581
1. CHECK CONNECTOR			
	cable from the negative terr d connectors of the AWD co	ninal. ontrol unit for damage, benc	l and loose connection (unit
s the inspection result norm YES >> GO TO 2. NO >> Repair the term			
2.check harness for	OPEN CIRCUIT		
 Disconnect the connect Check the resistance be 		it harness connector termin	als.
Α	WD control unit harness connect	or	Resistance (Ω)
Connector No.		nal No.	
		10	A
B17	8	16	Approx. 54 – 66
s the measurement value w YES >> GO TO 3. NO >> Repair the AWD CHECK POWER SUPPL	vithin the specification? Control unit branch line. Y AND GROUND CIRCUIT	Γ	
s the measurement value w YES >> GO TO 3. NO >> Repair the AWD CHECK POWER SUPPL Check the power supply and ture".	vithin the specification? O control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the	Γ	
s the measurement value w YES >> GO TO 3. NO >> Repair the AWD CHECK POWER SUPPL Check the power supply and dure". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	vithin the specification? Control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the hal? lace the AWD control unit.	AWD control unit. Refer to Refer to <u>DLN-59, "Removal</u> ntrol unit branch line.	DLN-47, "Diagnosis Proce-
s the measurement value w YES >> GO TO 3. NO >> Repair the AWD CHECK POWER SUPPL Check the power supply and dure". s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	vithin the specification? Control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the hal? lace the AWD control unit. as detected in the AWD con	AWD control unit. Refer to Refer to <u>DLN-59, "Removal</u> ntrol unit branch line.	DLN-47, "Diagnosis Proce-
s the measurement value w YES >> GO TO 3. NO >> Repair the AWD CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	vithin the specification? Control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the hal? lace the AWD control unit. as detected in the AWD con	AWD control unit. Refer to Refer to <u>DLN-59, "Removal</u> ntrol unit branch line.	DLN-47, "Diagnosis Proce-

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094583

[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 ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator a	Resistance (Ω)		
Connector No.	Terminal No.		(122)
E41	25 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "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.

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 11)]

	M (TYPE 11)]
	INFOID:000000006094585
loose conne	ction (unit side
Resista	ance (Ω)
Approx.	108 – 132
2, "Diagnosis Installation".	Procedure".

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< DTC/CIRCUIT DIAGNOSIS >

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006094586

[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).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC 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	
M125	4	6	Existed
M125	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).

3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

Driv	Resistance (Ω)		
Connector No.	Termi		
B514	23 24		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-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

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

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 11)]

CAN COMMUNICATION CIRCUIT А **Diagnosis Procedure** INFOID:000000006094595 **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 system. 3. C 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. M182 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 PCB harness is short) the root cause. **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 M182 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 PCB harness is short) the root cause. ${f 4}$. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. Check the resistance between the ECM terminals. 2. VQ37VHR LAN ECM Resistance (Ω) Terminal No. Ν 114 113 Approx. 108 - 132 VK56VD ECM Resistance (Ω) Terminal No. Ρ 146 151 Approx. 108 - 132 Check the resistance between the IPDM E/R terminals. IPDM E/R Resistance (Ω) Terminal No. Approx. 108 - 132 40 39

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

NOTE:

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

Inspection result

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

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

[CAN SYSTEM (TYPE 12)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006093545 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit _ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000006093546

[CAN SYSTEM (TYPE 12)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

A/C auto amp. h	arness connector	AV control unit harness connector Connector No. Terminal No.		Continuity
Connector No.	Terminal No.			Continuity
M66	12	M210	90	Existed
1000	11		74	Existed

Models without navigation system

A/C auto amp. h	arness connector	AV control unit ha	arness connector	Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
Mcc	12	MOA	81	Existed
M66 11	M84	80	Existed	

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIA	GNOSIS >	_	[CAN	SYSTEM (TYPE 12)]		
MAIN LINE BE	ΓWEEN Α-BAG	AND AV CIRC	UIT			
Diagnosis Proced	lure			INFOID:000000006093547		
1.CHECK HARNESS		N CIRCUIT)				
 3. Disconnect the for ECM A/C auto amp. AV control unit 	ittery cable from the n llowing harness conne lity between the A/C a	ectors.	nnector and the AV c	ontrol unit harness con-		
A/C auto amp. ł	narness connector	AV control unit h	arness connector	- Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
Mee	12	M210	90	Existed		
Ινιοο	M66 M210 74 Existed					
- Models without na	avigation system					
A/C auto amp. h	narness connector	AV control unit h	arness connector	Questionaite		

Connector No.

M84

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV

Terminal No.

81

80

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Connector No.

M66

NO

Is the inspection result normal?

control unit.

>> Replace the PCB harness.

Terminal No.

12

11

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

Continuity

Existed

Existed

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< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000006093548

[CAN SYSTEM (TYPE 12)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

AV control unit h	arness connector	Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M210	90	M53	14	Existed
WZ 10	74		15	Existed

Models without navigation system

AV control unit h	rness connector Combination meter harness connector		tor Combination meter harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	- Continuity
M84	81	MEQ	14	Existed
	80	M53	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 AV control unit and the combination meter.

NO >> Replace the PCB harness.

<pre>< DTC/CIRCUIT DIAC</pre> MAIN LINE BET	GNOSIS >	ND DLC CIRC	[CAN S	SYSTEM (TYPE 12)]	٥
Diagnosis Proced	ure			INFOID:00000006093549	А
1.CHECK HARNESS	CONTINUITY (OPEI	N CIRCUIT)			В
 3. Disconnect the fol ECM Combination mete Harness connector 	ttery cable from the n lowing harness conne r rs M105 and M181	ectors.	s connector and the ha	irness connector.	C
Combination mete	r harness connector	Harness	connector	Continuity	_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	Е
M53	14	- M105	7	Existed	
ND2	15	- 10105	8	Existed	F
nector.	>Check CAN system		the combination meter	and the data link con-	G

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000006093550

[CAN SYSTEM (TYPE 12)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

Harness connector BCM harness connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M105	7	M120	39	Existed
	8		40	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 BCM.

NO >> Replace the PCB harness.

< DTC/CIRCUIT DIAG		WEEN BCM A	ND 4WD CIRCUI	T I SYSTEM (TYPE 12)]
MAIN LINE BET		ND 4WD CIF	-	
Diagnosis Proced	ure			INFOID:000000006093552
1.CHECK CONNECT	OR			
 Check the followir and harness side) Harness connecto Harness connecto Harness connecto Harness connecto Is the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the fol BCM Harness connecto 	ttery cable from the non- ng terminals and conn r M20 and PCB harned r M7 r B1 <u>normal?</u> e terminal and connect CONTINUITY (OPEN lowing harness connect r M20	nectors for damag ess side connector tor. N CIRCUIT) ectors.	e, bend and loose con	nection (connector side
	ss connector		mess connector	
Connector No.	Terminal No.		rminal No.	- Continuity
	39		35	Existed
M120	40		36	Existed
 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness 	ne PCB harness. CONTINUITY (OPEN rness connectors M7 ity between the harne	and B1. ss connectors. Hame	ess connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	35	M7	72	Existed
le the inerestion result	36		73	Existed
Is the inspection result YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS Check the continuity b	e main line between th CONTINUITY (OPEN	N CIRCUIT)		
Connector No.		Terminal No.		Continuity
B1	72		74	Existed
	73		75	Existed

Is the inspection result normal?

73

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit. NO >> Replace the body harness.

75

Existed

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006093555

[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 B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	72	74	Existed
	73	75	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 M6 and E106.

2. Check the continuity between the harness connectors.

Harness	Harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M7	74	M6	22	Existed
1017	75		23	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness	connector	ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	-
F400	22	E 44	25	Existed
E106 -	23	E41	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 AWD control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000006093558

[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 B33
- Harness connector B245

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.

- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

Side radar LH I	Side radar LH harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B52	4	B33	13	Existed
D02	3		14	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

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

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

Harness connector Side radar RH harness connector		Continuity		
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
B245	13	B252	4	Existed
D243	14	- BZJZ	3	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 side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

MAIN LINE BE	TWEEN RDR-R	AND APA CIRC	CUIT	
Diagnosis Procec	lure			INFOID:000000006093555
	OR			
 Check the following and harness side) Harness connectore Harness connectore Harness connectore Harness connectore Harness connectore Sthe inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the following Side radar RH Harness connectore 	attery cable from the neing terminals and conru- or B201 or M117 or M20 and PCB harne <u>t normal?</u> e terminal and connect S CONTINUITY (OPEN llowing harness conner ors B201 and M117	nectors for damage, b ss side connector or. I CIRCUIT) ctors.		
	hity between the side ra	adar RH harness conn Harness c		s connector.
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
	4	Door	66	Existed
B252	3	B201 –	67	Existed
YES >> GO TO 3.	e main line between the	e side radar RH and th	ne harness connector	B201.
NO >> Repair the 3. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	CONTINUITY (OPEN Irness connector M20. Ity between the harne			
NO >> Repair the 3. CHECK HARNESS 1. Disconnect the ha 2. Check the continu	CONTINUITY (OPEN arness connector M20.	ss connectors.		Continuity
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No.	CONTINUITY (OPEN arness connector M20. hity between the harnes	ss connectors. Harness c Connector No.	onnector	Continuity
NO >> Repair the 3. CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M117	CONTINUITY (OPEN arness connector M20. hity between the harnes connector Terminal No. 66 67	ss connectors. Harness c	onnector Terminal No.	
NO >> Repair the 3. CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M117 Is the inspection result YES >> GO TO 4. NO >> Repair the 4. CHECK HARNESS 1. Disconnect the ha	CONTINUITY (OPEN arness connector M20. hity between the harnes connector Terminal No. 66 67	ss connectors. Harness c Connector No. M20 e harness connectors I CIRCUIT) 50 and M151.	onnector Terminal No. 38 40 M117 and M20.	Existed
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M117 Is the inspection result YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continu	CONTINUITY (OPEN arness connector M20. hity between the harnes connector Terminal No. 66 67 t normal? e main line between the CONTINUITY (OPEN arness connectors M15	ss connectors. Harness c Connector No. M20 e harness connectors I CIRCUIT) 50 and M151.	onnector Terminal No. 38 40 M117 and M20.	Existed Existed
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M117 Is the inspection result YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continu PCB harne	CONTINUITY (OPEN arness connector M20. hity between the harnes connector Terminal No. 66 67 t normal? e main line between the CONTINUITY (OPEN arness connectors M15 hity between the PCB h	ss connectors. Harness c Connector No. M20 e harness connectors I CIRCUIT) 50 and M151. harness connector and	onnector Terminal No. 38 40 M117 and M20.	Existed
NO >> Repair the 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M117 Is the inspection result YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continu PCB harne Termi	CONTINUITY (OPEN arness connector M20. hity between the harnes connector Terminal No. 66 67 t normal? e main line between the CONTINUITY (OPEN arness connectors M15 hity between the PCB h	ss connectors. Harness c Connector No. M20 e harness connectors I CIRCUIT) 50 and M151. harness connector and Harness c	onnector Terminal No. 38 40 M117 and M20.	Existed Existed

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT						
< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 12)]						
MAIN LINE BETWEEN APA AND LANE CIRCUIT						
Diagnosis Procedure	INFOID:000000006093560					
1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)						
1. Turn the ignition switch OFF.						
2. Disconnect the battery cable from the negative terminal.						
3. Disconnect the following harness connectors.						
- ADAS control unit						
 Harness connectors M151 and M150 						
 Harness connectors M110 and R7 						
Check the continuity between the harness connectors.						

Harness	Harness connector		Harness connector		_
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	E
M150	11	M110	13	Existed	
101150	10	INTTO	2	Existed	F

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane G camera unit.

NO >> Replace the PCB harness.

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[CAN SYSTEM (TYPE 12)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093561

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 M30 and PCB harness 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.

- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		Resistance (22)
M107	114	113	Approx. 108 – 132

VK56VD

	ECM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M160	146	151	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 the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: EC-716, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "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 harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

ECM harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity	
M107	114	- M30	439	Existed	
MITO7	113		438	Existed	

- VK56VD

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ECM harne	ss connector	Harness connector		Continuity	A
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M160	146	M30	439	Existed	
MITOO	151	MSO	438	Existed	В

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093562

[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).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness 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 low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

Low tire pro	essure warning control unit harnes	Resistance (Ω)	
Connector No.	Termi	nal No.	
M43	2	1	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 low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.			
M43	2	M29	396	Existed	
10145	1	10129	395	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 12)]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Proced	ure			INFOID:00000000609356
1.снеск отс				
Check DTC of the CAN	gateway with CONS	SULT-III.		
<u>Is U1010 or B2600 indi</u>	cated?			
NO >> GO TO 2.	diagnosis of the indic	ated DTC.		
2. CHECK CONNECT	ЭR			
 Check the following nector side). CAN gateway Harness connector Is the inspection result YES >> GO TO 3. 	tery cable from the ne g terminals and conne M28 and PCB harne normal? terminal and connect	ectors for damage, be ess side connector tor.	end and loose conne	ction (unit side and con
	nector of CAN gatew			
		gateway harness cor	nector terminals.	
	CAN gateway harne			Resistance (Ω)
Connector No.		Terminal No.	-	A
M125	1		7	Approx. 54 – 66
Is the measurement va YES >> GO TO 4. NO >> GO TO 5.	·			
4.CHECK POWER SU	JPPLY AND GROUN	D CIRCUIT		
Chook the newer curr	ly and the ground ci	ircuit of the CAN date	eway Refer to I AN	142 "Diagnosis Proce
		four of the of the gate		-143, Diagnosis Floce
dure".	normal?			-143, Diagnosis Floce
<u>dure"</u> . <u>Is the inspection result</u>		-		
<u>dure"</u> . <u>Is the inspection result</u> YES (Present error)>> YES (Past error)>>Er	Replace the CAN ga ror was detected in the contract of the	ateway. Refer to <u>LAN-</u> ne CAN gateway bran	144, "Removal and I	Installation".
<u>dure"</u> . <u>Is the inspection result</u> YES (Present error)>> YES (Past error)>>Er NO >> Repair the	Replace the CAN ga ror was detected in th power supply and the	ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit.	144, "Removal and I	Installation".
<u>dure"</u> . <u>Is the inspection result</u> YES (Present error)>> YES (Past error)>>Er	Replace the CAN ga ror was detected in th power supply and the	ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit.	144, "Removal and I	Installation".
dure". <u>Is the inspection result</u> YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the har	Replace the CAN ga for was detected in the power supply and the CONTINUITY (OPEN ness connector M28.	ateway. Refer to <u>LAN-</u> ne CAN gateway bran e ground circuit. N CIRCUIT)	144, "Removal and l ch line (CAN commu	Installation". unication circuit 1).
dure". <u>Is the inspection result</u> YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the har	Replace the CAN gate for was detected in the power supply and the CONTINUITY (OPEN ness connector M28. ty between the CAN g	ateway. Refer to <u>LAN-</u> ne CAN gateway bran- e ground circuit. N CIRCUIT) gateway harness con	144, "Removal and l ch line (CAN commu	Installation". unication circuit 1). ess connector.
dure". <u>Is the inspection result</u> YES (Present error)>> YES (Past error)>>Er NO >> Repair the 5. CHECK HARNESS 1. Disconnect the har 2. Check the continui	Replace the CAN gate for was detected in the power supply and the CONTINUITY (OPEN ness connector M28. ty between the CAN g	ateway. Refer to <u>LAN-</u> ne CAN gateway bran- e ground circuit. N CIRCUIT) gateway harness con	144, "Removal and I ch line (CAN commu nector and the harne	Installation". unication circuit 1).

Is the inspection result normal?

YES >> Replace the PCB harness.

7

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

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Existed

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000006093564

[CAN SYSTEM (TYPE 12)]

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT-III.

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 M23 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

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	
M125	4	6	Existed
101125	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-143</u>, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2).

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

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

CAN gateway h	CAN gateway harness connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M125	4	M23	133	Existed
1123	10	IVIZ5	135	Existed

Is the inspection result normal?

YES >> GO TO 6.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

[CAN SYSTEM (TYPE 12)]

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< DTC/CIRCUIT DIAGNOSIS >

NO	>> Repair the harness between the CAN gateway harness connector M125 and the harness connec-	
	tor M23.	

6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

antinuit <i>i</i>	PCB harness connector	PCB harness connector
ontinuity C	Terminal No.	Terminal No.
Existed	24	133
Existed	27	135

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

7.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

2. Check the continuity between the harness connectors.

_	Continuity	Harness connector		Harness connector	
G	Continuity	Terminal No.	Connector No.	Terminal No.	Connector No.
_	Existed	34	MZ	24	M20
- н	Existed	35	M7	27	IVIZU

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

8.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

-	Connector No.	Termi	Continuity	-	
-	D4	34	32	Existed	ĸ
	B1	35	33	Existed	

Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093565

[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/C auto amp.
- Harness connector M28 and PCB harness 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/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. Termina	al No.		
M66 12	12 11		

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 A/C auto amp. Refer to <u>HAC-167, "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-201, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

A/C auto amp. h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M66	M66 12 M28	325	Existed	
MOO	11	IVIZO	327	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

-	ure			INFOID:000000006093566
.CHECK CONNECT	OR			
Check the following nector side). A/T assembly Harness connector Harness connector the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the cor	tery cable from the ne g terminals and conne • F103 • M116 • M28 and PCB harne normal? terminal and connect FOR OPEN CIRCUIT	ectors for damage, bei ss side connector or. - bly.		ction (unit side and con-
Check the resistan	ce between the A/T a	ssembly harness con	nector terminals.	
Connector No.	A rassensity namess connector Resistance (Ω) Terminal No. Γεινιαι Νο.			
F61	3		8	Approx. 54 – 66
YES >> GO TO 3. NO >> GO TO 4.	JPPLY AND GROUN	D CIRCUIT		
heck the power suppl the inspection result YES (Present error)>> ponent Par parts list.) YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the har	normal? Replace the control was detected in the power supply and the CONTINUITY (OPEN rness connector M28.	uit of the TCM. Refer to valve with TCM. Refer e A/T assembly if con- e TCM branch line. e ground circuit. I CIRCUIT)	to <u>TM-8, "A/T CON</u> trol valve with TCM	ITROL SYSTEM : Com- is not listed in the latest
heck the power suppl the inspection result YES (Present error)>> ponent Par parts list.) YES (Past error)>>Error)>>Error NO >> Repair the CHECK HARNESS Disconnect the har Check the continui	normal? Replace the control v rts Location". (Replace ror was detected in the power supply and the CONTINUITY (OPEN rness connector M28. ty between the A/T as	uit of the TCM. Refer valve with TCM. Refer e A/T assembly if con e TCM branch line. ground circuit. I CIRCUIT) ssembly harness conn	to <u>TM-8, "A/T CON</u> trol valve with TCM	ITROL SYSTEM : Com- is not listed in the latest
heck the power suppl the inspection result YES (Present error)>> ponent Par parts list.) YES (Past error)>>Err NO >> Repair the CHECK HARNESS Disconnect the har	normal? Replace the control v rts Location". (Replace ror was detected in the power supply and the CONTINUITY (OPEN rness connector M28. ty between the A/T as	uit of the TCM. Refer to valve with TCM. Refer e A/T assembly if con- e TCM branch line. e ground circuit. I CIRCUIT)	to <u>TM-8, "A/T CON</u> trol valve with TCM	ITROL SYSTEM : Com- is not listed in the latest

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093567

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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

AV BRANCH L	INE CIRCUIT			
Diagnosis Proce	dure			INFOID:000000006093568
1.CHECK CONNEC	TOR			
 Check the followin nector side). AV control unit Harness connect Is the inspection resurve YES >> GO TO 2 NO >> Repair th CHECK HARNES Disconnect the control of the con	attery cable from the n ng terminals and conn or M25 and PCB harne <u>It normal?</u> e terminal and connec S FOR OPEN CIRCUI onnector of AV control unce between the AV c	ectors for damage, be ess side connector tor. T unit.		tion (unit side and con-
	AV control unit harn	ess connector		
Connector No.		Terminal No.		Resistance (Ω)
M210	90		74	Approx. 54 – 66
- Models without n	avigation system			
	AV control unit harn	ess connector		Decistance (O)
Connector No.		Terminal No.		Resistance (Ω)
M84	81		80	Approx. 54 – 66
YES >> GO TO 3 NO >> GO TO 4 3. CHECK POWER 5 Check the power sup • Base audio without • BOSE audio with na Is the inspection result YES (Present error) • Base a • BOSE a YES (Past error) >> Repair th	SUPPLY AND GROUN ply and the ground circ navigation system: <u>AV</u> avigation system: <u>AV-2</u>	D CIRCUIT cuit of the AV control u -90, "AV CONTROL U 72, "AV CONTROL U trol unit. Refer to the f a system: <u>AV-120, "Rem</u> ystem: <u>AV-298, "Rem</u> he AV control unit bran e ground circuit.	JNIT : Diagnosis Proc NIT : Diagnosis Proce following. emoval and Installation loval and Installation	edure" edure"
1. Disconnect the h	arness connector M25 uity between the AV co	· ·	nnector and the harne	ss connector.
	harness connector		connector	Continuity
Connector No.	Terminal No. 90	Connector No.	Terminal No. 201	Existed
M210	74	M25	201	Existed
	14		221	LAISIGU

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV control unit h	arness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
 M84	81	M25	201	Existed
	80	IVI25	221	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LI						
Diagnosis Procedur	e			INFOID:000000006093569		
1. CHECK CONNECTOR	र					
 Turn the ignition swite Disconnect the batter Check the following to nector side). Combination meter Harness connector N Is the inspection result no YES >> GO TO 2. 	ry cable from the ne erminals and conne 124 and PCB harne	ectors for damage, be	nd and loose conr	nection (unit side and con-		
NO >> Repair the ter	rminal and connect					
2. CHECK HARNESS FOR		Г				
 Disconnect the connect Check the resistance 		n meter. vination meter harness	s connector termin	als.		
Combination meter harness connector						
	Terminal No. Resistance (Ω)					
Connector No.		Terminal No.				
M53	14		15	Approx. 54 – 66		
M53 s the measurement value YES >> GO TO 3. NO >> GO TO 4.	e within the specific	ation?	15	Approx. 54 – 66		
$\frac{M53}{\text{Is the measurement value}}$ $\frac{\text{YES}}{\text{YES}} \Rightarrow \text{GO TO 3.}$ $\frac{\text{NO}}{\text{NO}} \Rightarrow \text{GO TO 4.}$ $3.\text{CHECK POWER SUP}$	e within the specific PLY AND GROUNI and the ground cire	cation? D CIRCUIT		Approx. 54 – 66 MWI-70, "COMBINATION		
M53 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply METER : Diagnosis Proce Is the inspection result no YES (Present error)>>R YES (Past error)>>Error	PLY AND GROUNI and the ground circe edure". ormal? eplace the combina	ation? D CIRCUIT cuit of the combinatio ation meter. Refer to <u>N</u> the combination meter b	n meter Refer to //WI-90, "Removal	MWI-70. "COMBINATION		
M53 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply METER : Diagnosis Proce Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po	PLY AND GROUNI and the ground cirred edure". ormal? eplace the combination was detected in the	ation? D CIRCUIT cuit of the combinatio ation meter. Refer to <u>N</u> e combination meter b ground circuit.	n meter Refer to //WI-90, "Removal	MWI-70. "COMBINATION		
M53 s the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply METER : Diagnosis Proce s the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS CO 1. Disconnect the harne	e within the specific PLY AND GROUNI and the ground cirred edure". ormal? eplace the combina was detected in th ower supply and the ONTINUITY (OPEN ess connector M24.	ation? D CIRCUIT cuit of the combinatio ation meter. Refer to <u>N</u> the combination meter to a ground circuit. N CIRCUIT)	n meter Refer to //WI-90, "Removal oranch line.	MWI-70, "COMBINATION and Installation".		
M53 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply METER : Diagnosis Proce Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS CO 1. Disconnect the harne	e within the specific PLY AND GROUN and the ground circedure". ormal? eplace the combina was detected in th ower supply and the ONTINUITY (OPEN ess connector M24. between the combi	ation? D CIRCUIT cuit of the combinatio ation meter. Refer to <u>N</u> the combination meter b a ground circuit. N CIRCUIT)	n meter Refer to <u>/WI-90, "Removal</u> oranch line. connector and the	MWI-70. "COMBINATION and Installation".		
M53 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply METER : Diagnosis Proce Is the inspection result no YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS CO 1. Disconnect the harne 2. Check the continuity	e within the specific PLY AND GROUN and the ground circedure". ormal? eplace the combina was detected in th ower supply and the ONTINUITY (OPEN ess connector M24. between the combi	Exation? D CIRCUIT cuit of the combination ation meter. Refer to <u>N</u> the combination meter to a ground circuit. N CIRCUIT) Ination meter harness	n meter Refer to <u>/WI-90, "Removal</u> oranch line. connector and the	MWI-70, "COMBINATION and Installation".		
M53 Is the measurement value YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER SUP Check the power supply METER : Diagnosis Proce Is the inspection result no YES (Present error)>>R YES (Present error)>>R YES (Past error)>>Error NO >> Repair the po 4.CHECK HARNESS CO 1. Disconnect the harne 2. Check the continuity	e within the specific PLY AND GROUNI and the ground cirred edure". ormal? eplace the combinator was detected in the ower supply and the ONTINUITY (OPEN ess connector M24. between the combinator	Eation? D CIRCUIT cuit of the combination ation meter. Refer to <u>N</u> be combination meter to a ground circuit. N CIRCUIT) Ination meter harness Harness of	n meter Refer to <u>//WI-90, "Removal</u> oranch line. connector and the	MWI-70. "COMBINATION and Installation".		

NO >> Repair the harness between the combination meter harness connector M53 and the harness con nector M24.

Ρ

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093570

[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).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness 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	Terminal No.		
M182	6	6 14		

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 M23.

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	
M182	6	M23	151	Existed	
IVI I OZ	14	IVIZ5	150	Existed	

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

BCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

BCM BRANCH	LINE CIRCUIT			
Diagnosis Proced	lure			INFOID:000000060935
1.CHECK CONNECT	TOR			
 Check the followin nector side). BCM Harness connector side inspection result YES >> GO TO 2. NO >> Repair the COM Source CHECK HARNESS Disconnect the communication of the second se	attery cable from the neightery cable from the neighterminals and connect or M22 and PCB harne <u>t normal?</u> te terminal and connect FOR OPEN CIRCUIT	ectors for damage, b ess side connector or.		ection (unit side and con
2. Check the resistar	BCM harness c		terminais.	
Connector No.		Terminal No.		Resistance (Ω)
M120	39		40	Approx. 54 – 66
s the measurement va	alue within the specific	ation?		
Check the power support of the inspection result (Present error) > YES (Past error) >> E NO >> Repair the 4. CHECK HARNESS 1. Disconnect the hat the the terror of the terror) and the terror of the terror of the terror of the terror of	UPPLY AND GROUNI oly and the ground circ t normal? >Replace the BCM. R rror was detected in th power supply and the CONTINUITY (OPEN trness connector M22.	D CIRCUIT uit of the BCM. Refe efer to <u>BCS-79, "Re</u> e BCM branch line. e ground circuit. I CIRCUIT)	emoval and Installation	<u>on"</u> .
YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER S Check the power supply the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continu	UPPLY AND GROUN by and the ground circ t normal? >Replace the BCM. R rror was detected in th power supply and the CONTINUITY (OPEN inness connector M22.	D CIRCUIT uit of the BCM. Refe efer to <u>BCS-79, "Re</u> e BCM branch line. e ground circuit. I CIRCUIT) harness connector a	moval and Installation	on". nector.
YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER S Check the power supply the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continu	UPPLY AND GROUNI oly and the ground circ t normal? >Replace the BCM. R rror was detected in th power supply and the CONTINUITY (OPEN trness connector M22.	D CIRCUIT uit of the BCM. Refe efer to <u>BCS-79, "Re</u> e BCM branch line. e ground circuit. I CIRCUIT) harness connector a	emoval and Installation	<u>on"</u> .
YES >> GO TO 3. NO >> GO TO 4. 3.CHECK POWER S Check the power supply the inspection result YES (Present error)> YES (Past error)>>E NO >> Repair the 4.CHECK HARNESS 1. Disconnect the ha 2. Check the continue BCM harme	UPPLY AND GROUN by and the ground circ t normal? >Replace the BCM. R rror was detected in the power supply and the CONTINUITY (OPEN inness connector M22. by between the BCM I	D CIRCUIT uit of the BCM. Refe efer to <u>BCS-79, "Re</u> e BCM branch line. e ground circuit. I CIRCUIT) harness connector a Harnes	emoval and Installation	on". nector.

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093572

[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 angle sensor
- Harness connector M22 and PCB harness 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 steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

	Resistance (Ω)		
Connector No.	Termi	Terminal No.	
M37	1	1 2	

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 steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

Steering angle sens	or harness connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M37	1	M22	81	Existed
W37	2	IVIZZ	82	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

4WD BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

Diagnosis Procedure			INFOID:00000006093573
1.CHECK CONNECTOR			
	able from the negative terr connectors of the AWD co		d and loose connection (unit
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 		it harness connector termin	als.
	WD control unit harness connected	or	Resistance (Ω)
Connector No.		nal No.	
B17	8	nal No. 16	Approx. 54 – 66
B17 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL	8 ithin the specification? control unit branch line. Y AND GROUND CIRCUIT	16	Approx. 54 – 66
B17 S the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and dure".	8 ithin the specification? control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the	16	Approx. 54 – 66
B17 Is the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	8 ithin the specification? control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the al? ace the AWD control unit.	16 AWD control unit. Refer to Refer to <u>DLN-59, "Remova</u> ntrol unit branch line.	Approx. 54 – 66 DLN-47, "Diagnosis Proce-
B17 Is the measurement value w YES >> GO TO 3. NO >> Repair the AWD 3.CHECK POWER SUPPL Check the power supply and dure". Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa	8 ithin the specification? control unit branch line. Y AND GROUND CIRCUIT d the ground circuit of the al? lace the AWD control unit. as detected in the AWD con	16 AWD control unit. Refer to Refer to <u>DLN-59, "Remova</u> ntrol unit branch line.	Approx. 54 – 66 DLN-47, "Diagnosis Proce-

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093575

[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 ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi		
E41	25 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "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.

AFS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

Diagnosis Procedure			INFOID:000000006093576
1.CHECK CONNECTOR			
	cable from the negative term d connectors of the AFS cor		and loose connection (unit
s the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR	inal and connector.		
1. Disconnect the connect		harness connector termina	als.
	AFS control unit harness connector	r	Posistance (O)
Connector No.	Termina	al No.	Resistance (Ω)
E104	30	7	Approx. 54 – 66
B. CHECK POWER SUPPL Check the power supply an <u>JNIT : Diagnosis Procedure</u> <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error wa	<u>"</u>	AFS control unit. Refer to efer to <u>EXL-126, "Remova</u> rol unit branch line.	EXL-84, "AFS CONTROL
	i supply and the ground of		

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093577

[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 IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

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

	IPDM E/R harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "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.

agnosis Procedure			INFOID:000000006093578
.CHECK CONNECTOR			
Check the following terr nector side). Driver seat control unit Harness connector B50 Harness connector B11 CAN gateway (With ICC the inspection result norm (ES (With ICC system)>>0 (ES (Without ICC system) NO >> Repair the term	cable from the negative term ninals and connectors for c 1 C system) <u>nal?</u> GO TO 2. >>GO TO 3.	lamage, bend and loose co	nnection (unit side and con-
Disconnect the connect Check the continuity be	tween the CAN gateway ha	arness connector terminals.	
	CAN gateway harness connecto		Continuity
Connector No.		nal No.	
M125	4 10	6 12	Existed
· · · · · · · · · · · · · · · · · · ·	nal?		
YES >> GO TO 3. NO >> Check the harn tion circuit 2). • CHECK HARNESS FOR Connect the connector Disconnect the connect	ess and repair or replace (OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni	system) t.	ot cause (CAN communica-
YES >> GO TO 3. NO >> Check the harn tion circuit 2). • CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	ess and repair or replace (OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat cont	system) t. rol unit harness connector t	
YES >> GO TO 3. NO >> Check the harn tion circuit 2). • CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	ess and repair or replace (OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat cont rer seat control unit harness conn	system) t. rol unit harness connector t ector	
NO >> Check the harn tion circuit 2). CHECK HARNESS FOR Connect the connector Disconnect the connect Check the resistance be	ess and repair or replace (OPEN CIRCUIT of CAN gateway. (With ICC or of driver seat control uni etween the driver seat cont rer seat control unit harness conn Termi 23	system) t. rol unit harness connector t	erminals.

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093579

[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				
Connector No.	Termi	Continuity			
M125	4 6		Existed		
123	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).

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.

AD/	Resistance (Ω)		
Connector No.	Termir		
B50	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 ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

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

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

PSB BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:000000006093580 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 con-С nector side). Pre-crash seat belt control unit (driver side) CAN gateway D Is the inspection result normal? YES >> GO TO 2. >> Repair the terminal and connector. NO Е 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. F Check the continuity between the CAN gateway harness connector terminals. 2. CAN gateway harness connector Continuity Connector No. Terminal No. 4 6 Existed M125 10 12 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 (CAN communication circuit 2). **3.**CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway. 1. Disconnect the connector of pre-crash seat belt control unit (driver side). 2. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector termi-3. nals. Κ Pre-crash seat belt control unit (driver side) harness connector Resistance (Ω) Connector No. Terminal No. R9 4 14 Approx. 54 - 66 Is the measurement value within the specification? LAN YES >> GO TO 4. NO >> Repair the pre-crash seat belt control unit (driver side) branch line. ${f 4}$. CHECK POWER SUPPLY AND GROUND CIRCUIT Ν Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to SBC-47, "Diagnosis Procedure". Is the inspection result normal? C YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to SBC-54, "Removal and Installation". YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line. Ρ NO >> Repair the power supply and the ground circuit.

< DTC/CIRCUIT DIAGNOSIS >

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093581

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

	Side radar LH harness connector		
Connector No.	Termi	Resistance (Ω)	
B52	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

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

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

RDR-R BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 12)]

DIC/CIRCUIT DIAGNUS	>>>		
RDR-R BRANCH L	NE CIRCUIT		
Diagnosis Procedure			INFOID:0000000609358
CHECK CONNECTOR			
	cable from the negative tern d connectors of the side ra e).		nd and loose connection (un
NO >> Repair the term	inal and connector.		
CHECK RIGHT/LEFT SV	VITCHING SIGNAL CIRCU	IT	
YES >> GO TO 3. NO >> Repair the root CHECK HARNESS FOR Disconnect the connect Check the resistance be	OPEN CIRCUIT	arness connector termina	als.
	Side radar RH harness connector		Resistance (Ω)
Connector No.	Termir	al No.	
B252	4	3	Approx. 54 – 66
1. CHECK POWER SUPPL Check the power supply and Diagnosis Procedure". <u>s the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error w		side radar RH. Refer to <u>[</u> er to <u>DAS-592, "Remova</u> ar RH branch line.	DAS-576, "SIDE RADAR RH

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093585

[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).
- Accelerator pedal actuator
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness 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 accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accel	Accelerator pedal actuator harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
M152	5	4	Approx. 54 – 66

Is the measurement value within the specification?

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 accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

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.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

Accelerator pedal actu	tor harness connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M152	5	M23	138	Existed
W152	4	IVI25	137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

iagnosis Proced	ure			INFOID:00000000609358
.CHECK CONNECT	OR			
Check the followin nector side). Lane camera unit Harness connecto Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the	tery cable from the ne g terminals and conne r R7 r M110 r M24 and PCB harne	ectors for damage, ber ess side connector or.	nd and loose conr	nection (unit side and con
Disconnect the cor	nnector of lane camer	a unit.		
Check the resistan	ce between the lane	camera unit harness c	connector terminal	S.
	Lane camera unit har	ness connector		Resistance (Ω)
Connector No.		Terminal No.		Resistance (Ω)
R8 the measurement va	Lane camera unit han 4 Ilue within the specific	Terminal No.	8	Resistance (Ω) Approx. 54 – 66
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI heck the power supp NIT : Diagnosis Proce the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the har	4 JPPLY AND GROUNI ly and the ground circ edure". normal? >Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24.	Terminal No. Eation? D CIRCUIT cuit of the lane camera mera unit. Refer to DA e lane camera unit bra ground circuit. I CIRCUIT)	a unit. Refer to <u>D</u> S-419, "Removal anch line.	Approx. 54 – 66 AS-403, "LANE CAMERA and Installation".
R8 the measurement va YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI heck the power supp NIT : Diagnosis Proce the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the har	4 JPPLY AND GROUN ly and the ground circ edure". Normal? >Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24. ty between the lane c	Terminal No. Eation? D CIRCUIT cuit of the lane camera mera unit. Refer to DA the lane camera unit bra a ground circuit. I CIRCUIT)	a unit. Refer to <u>D</u> . <u>S-419, "Removal</u> anch line.	Approx. 54 – 66 AS-403, "LANE CAMERA and Installation".
R8 the measurement vary YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SI heck the power supp NIT : Diagnosis Proce the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the han Check the continuit	4 JPPLY AND GROUN ly and the ground circ edure". Normal? >Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24. ty between the lane c	Terminal No. ation? D CIRCUIT cuit of the lane camera mera unit. Refer to DA e lane camera unit bra e ground circuit. I CIRCUIT) camera unit harness co	a unit. Refer to <u>D</u> . <u>S-419, "Removal</u> anch line.	Approx. 54 – 66 AS-403, "LANE CAMERA and Installation".
R8 The measurement var YES >> GO TO 3. NO >> GO TO 4. CHECK POWER SU heck the power supp NIT : Diagnosis Process the inspection result YES (Present error)>> YES (Past error)>>Er NO >> Repair the CHECK HARNESS Disconnect the har Check the continuit Lane camera unit	4 JPPLY AND GROUNI ly and the ground circ adure". normal? >Replace the lane car ror was detected in th power supply and the CONTINUITY (OPEN mess connector M24. ty between the lane c	Terminal No. Eation? D CIRCUIT cuit of the lane camera mera unit. Refer to DA e lane camera unit bra e ground circuit. I CIRCUIT) camera unit harness con Harness con	a unit. Refer to <u>D</u> S-419, "Removal anch line.	Approx. 54 – 66 AS-403, "LANE CAMERA and Installation".

< DTC/CIRCUIT DIAGNOSIS >

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006093586

[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).
- ICC sensor
- Harness connector E106
- Harness connector M6
- Harness connector M28 and PCB harness 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 ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

	ICC sensor harness connector		
Connector No.	Termi	nal No.	Resistance (Ω)
E67	3	6	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 ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

ICC sensor ha	rness connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E67	3	M28	343	Existed
	6	ινίζο	345	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 1

А **Diagnosis** Procedure INFOID:000000006093588 **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. NOTE: For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to LAN-69, "System Diagram". D 4. Check terminals and connectors for damage, bend and loose connection. Is the inspection result normal? YES >> GO TO 2. Е NO >> Repair the terminal and connector. 2.check harness continuity (short circuit) F Check the continuity between the data link connector terminals. Data link connector Continuity Connector No. Terminal No. M182 6 14 Not existed Is the inspection result normal? Н YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line or PCB harness 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 6 Not existed M182 Κ 14 Not existed Is the inspection result normal? YES >> GO TO 4. L NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT LAN Remove the ECM and the IPDM E/R. 1 2. Check the resistance between the ECM terminals. VQ37VHR Ν ECM Resistance (Ω) Terminal No. 113 Approx. 108 - 132 114 VK56VD Ρ ECM Resistance (Ω) Terminal No. 146 151 Approx. 108 - 132

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

IPDN	/ E/R		
Termin	nal No.	Resistance (Ω)	
40 39		Approx. 108 – 132	
Is the measurement value within	the specification?		

YES >> GO TO 5.

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

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

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

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

NOTE:

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

Inspection result

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

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

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure			INFOID:000000006093589
CONNECTOR INSPECT	TION		
 Disconnect all the unit on NOTE: 	cable from the negative terr connectors on CAN commu	nication circuit 2.	t 2 and ITS communication
circuit, refer to LAN-69.			t 2, and ITS communication
the inspection result norn	nal?		
YES >> GO TO 2. NO >> Repair the term	ninal and connector.		
	TINUITY (SHORT CIRCUI	Т)	
	en the data link connector te		
	Dete liele en enten		
Connector No.	Data link connector	nal No.	Continuity
	13	12	Not existed
s the inspection result norn	∩al?		
Check the continuity betwee	NTINUITY (SHORT CIRCUI en the data link connector a		
Connector No.	connector Terminal No.		Continuity
	13	Ground	Not existed
M182	12		Not existed
4.CHECK CAN GATEWAY	ess and repair or replace (if / TERMINATION CIRCUIT		s is short) the root cause.
	CAN gateway		Resistance (Ω)
	Terminal No.		
4	10		prox. 108 – 132
6	12	Ар	prox. 108 – 132
s the measurement value v YES >> GO TO 5. NO >> Replace the CA D.CHECK SYMPTOM	AN gateway.		
Connect all the connectors customer)" are reproduced.		escribed in the "Symptom	(Results from interview with

Inspection result

Reproduced>>GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

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 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

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

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

ICAN SYSTEM (TYPE 12)1

DTC/CIRCUIT DIA	GNOSIS >			SYSTEM (TYPE 12)]
S COMMUNI	CATION CIRCL	JIT		
agnosis Proced	ure			INFOID:000000006093590
CHECK CAN DIAG	NOSIS			
mmunication circuit	osis results from CON 2 have no malfunctior		the CAN communica	tion circuit 1 and CAN
OTE: or identification of C/ iit, refer to <u>LAN-69, "</u>		cuit 1, CAN communio	cation circuit 2, and I	TS communication cir-
	cation 1 and CAN cor	mmunication 2 circuits	normal?	
YES >> GO TO 2. NO >> Check and	d repair CAN commun	nication circuit 1 and/or	· CAN communication	n circuit 2.
.CONNECTOR INS	•			
	ttery cable from the neals and connectors of		it for damage, bend	and loose connection
the inspection result ES >> GO TO 3.	normal?			
IO >> Repair the	terminal and connect	tor		
CHECK HARNESS	e terminal and connect CONTINUITY (OPEN lowing harness conne	N CIRCUIT)		
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor	CONTINUITY (OPEN lowing harness conne	N CIRCUIT) ectors.	connector and the IC	C sensor harness con-
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector.	CONTINUITY (OPEN lowing harness conne	N CIRCUIT) ectors.		
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector.	CONTINUITY (OPEN lowing harness conne ity between the ADAS	N CIRCUIT) ectors. S control unit harness o		C sensor harness con- Continuity
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No.	CONTINUITY (OPEN lowing harness conne ity between the ADAS	N CIRCUIT) ectors. S control unit harness of ICC sensor har Connector No.	ness connector	
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50	CONTINUITY (OPEN lowing harness conne ity between the ADAS harness connector Terminal No. 7 8	N CIRCUIT) ectors. S control unit harness of ICC sensor harr	ness connector Terminal No.	Continuity
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace the	CONTINUITY (OPEN lowing harness conne ity between the ADAS harness connector Terminal No. 7 8	N CIRCUIT) ectors. 5 control unit harness of ICC sensor harn Connector No. E67	ness connector Terminal No. 3	- Continuity Existed
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result (ES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the fol Side radar LH Side radar RH Lane camera unit Accelerator pedal	CONTINUITY (OPEN lowing harness connector ity between the ADAS harness connector Terminal No. 7 8 contral? ne body harness. CONTINUITY (SHOP lowing harness connector actuator	N CIRCUIT) ectors. S control unit harness of ICC sensor har Connector No. E67	ness connector Terminal No. 3 6	- Continuity Existed
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the fol Side radar LH Side radar RH Lane camera unit Accelerator pedal	CONTINUITY (OPEN lowing harness connector ity between the ADAS harness connector Terminal No. 7 8 contral? ne body harness. CONTINUITY (SHOP lowing harness connector actuator	N CIRCUIT) ectors. S control unit harness of ICC sensor har Connector No. E67 RT CIRCUIT) ectors. S control unit harness of	ness connector Terminal No. 3 6	Continuity Existed Existed
CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the fol Side radar LH Side radar RH Lane camera unit Accelerator pedal	CONTINUITY (OPEN lowing harness conne ity between the ADAS harness connector Terminal No. 7 8 c.normal? he body harness. CONTINUITY (SHOP lowing harness conne actuator ity between the ADAS	N CIRCUIT) ectors. S control unit harness of ICC sensor har Connector No. E67 RT CIRCUIT) ectors. S control unit harness of	ness connector Terminal No. 3 6	- Continuity Existed

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

LAN-575

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ADAS control unit	ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
B50	7	Ground	Not existed
600	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness 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.		
7	8	Approx. 108 – 132	

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Termi	nal 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 system. **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.