SECTION LAN

LAN SYSTEM

CONTENTS

CAN GATEWAY

CAN SYSTEM (TYPE 4)

CAN SYSTEM (TYPE 5)

CAN SYSTEM (TYPE 8)

PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

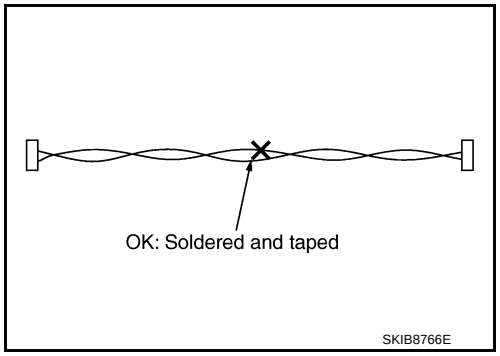
INFOID:0000000011255133

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.**

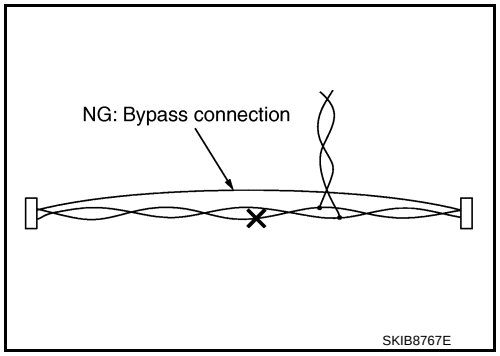
Precautions for Harness Repair

INFOID:0000000011255134

- 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.

SYSTEM DESCRIPTION

SYSTEM

CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : System Description

INFOID:0000000011255135

- 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

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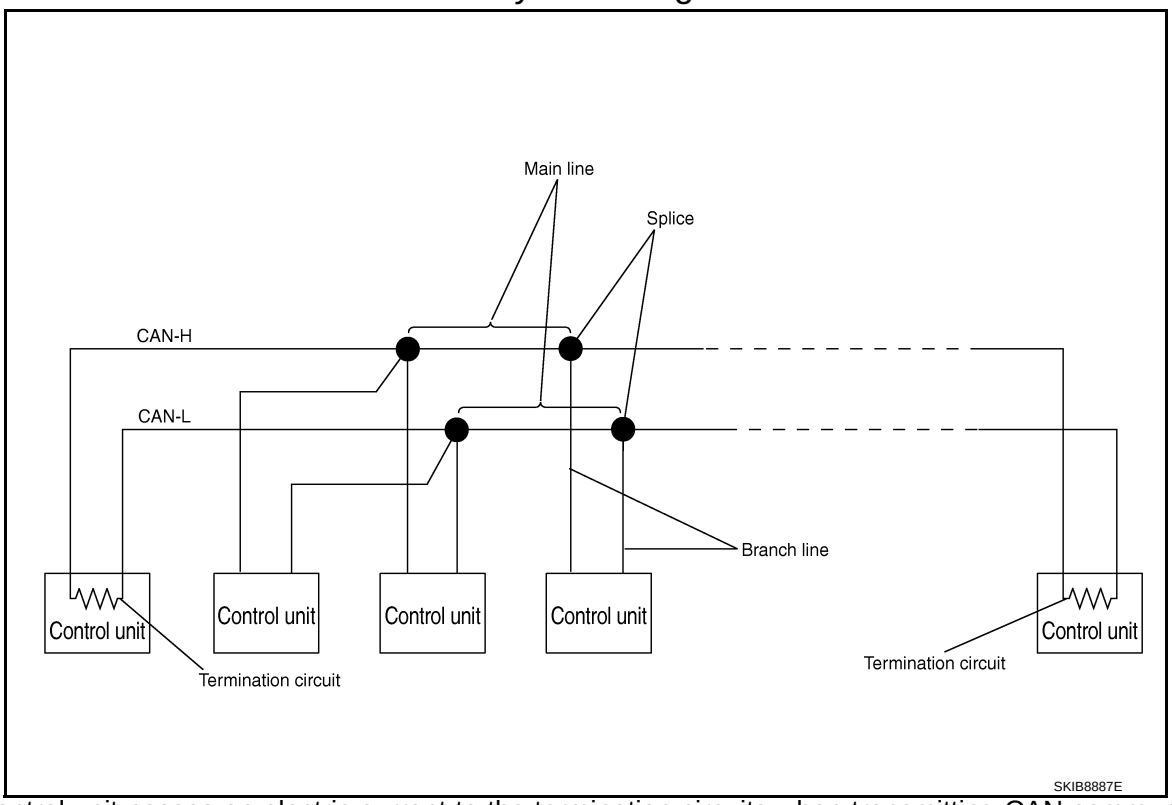
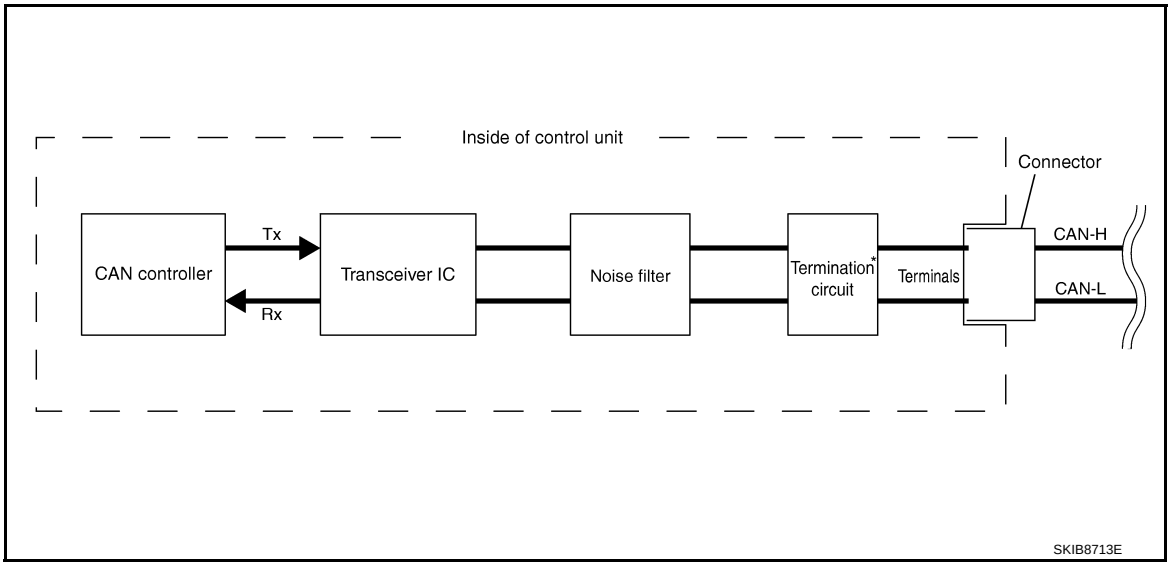


Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential 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-17, "CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit".

CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit

INFOID:0000000011255137



Component	System description
CAN controller	It controls CAN communication signal transmission and reception, error detection, etc.
Transceiver IC	It converts digital signal into CAN communication signal, and CAN communication signal into digital signal.
Noise filter	It eliminates noise of CAN communication signal.
Termination circuit* (Resistance of approx. 120 Ω)	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

INFOID:0000000011255138

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

DIAG ON CAN : System Diagram

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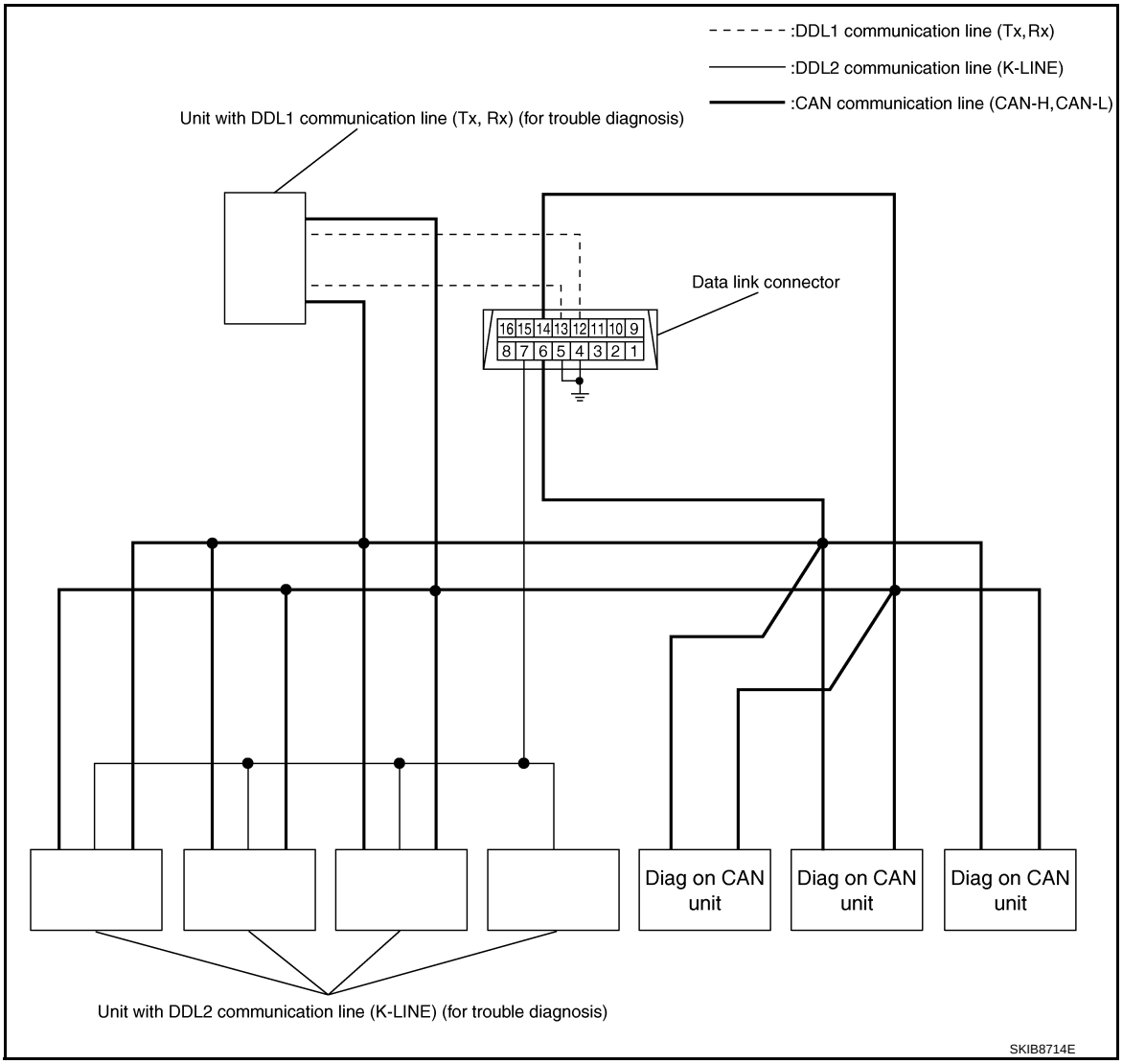


Name	Harness	Description
DDL1	Tx Rx	It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling)
DDL2	K-LINE	It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling)
Diag on CAN	CAN-H CAN-L	It is used for trouble diagnosis and control.

TROUBLE DIAGNOSIS

Condition of Error Detection

INFOID:0000000011255140

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

CAN COMMUNICATION SYSTEM ERROR

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

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

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

CAUTION:

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

Symptom When Error Occurs in CAN Communication System

INFOID:0000000011255141

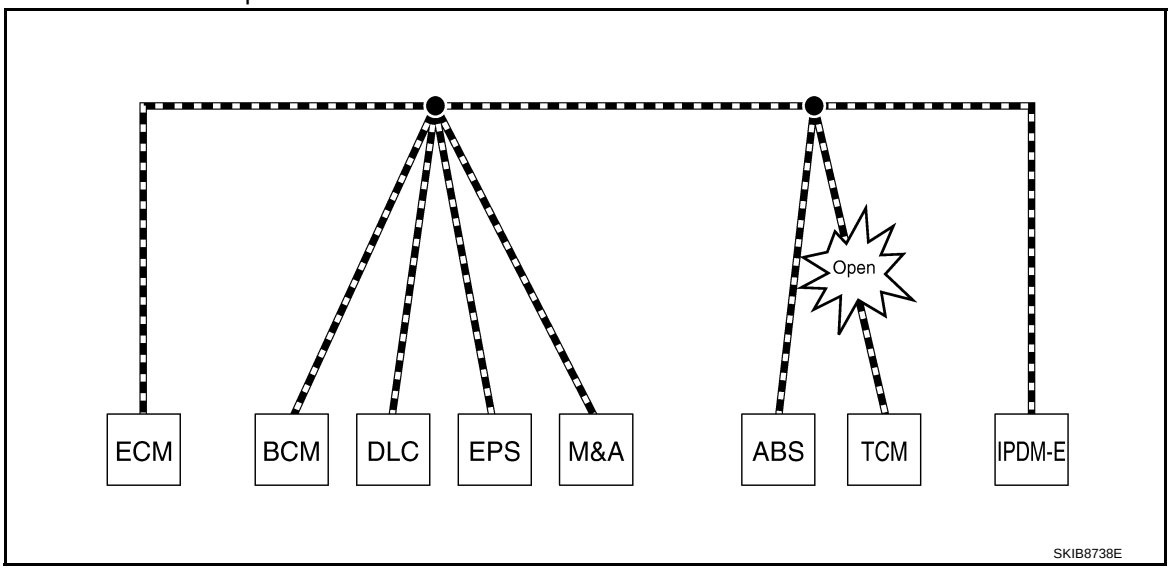
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

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.

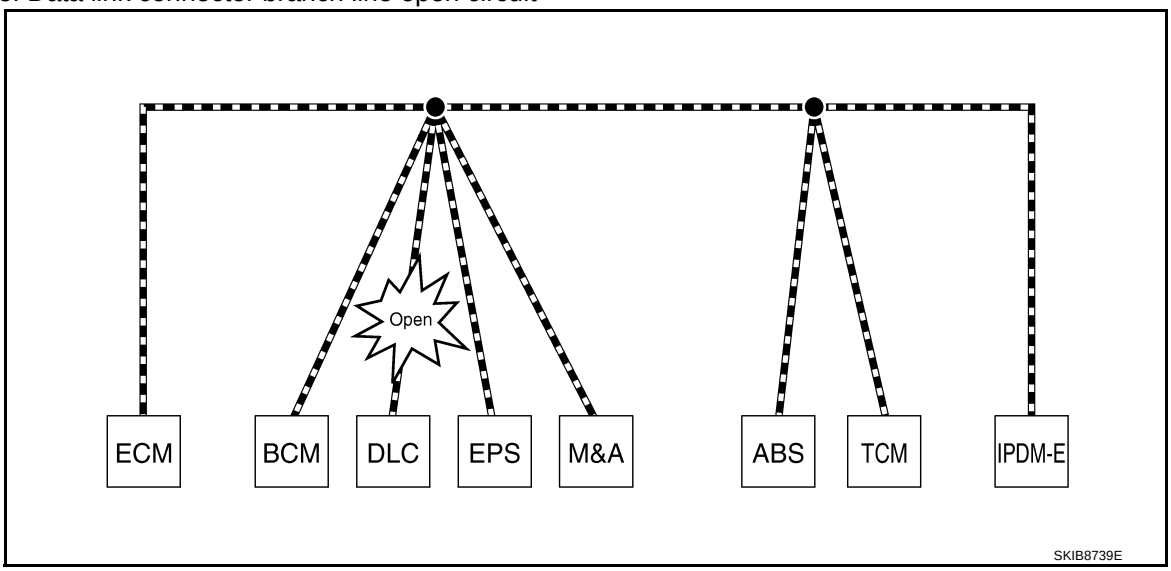
Example: TCM branch line open circuit



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

Unit name	Major symptom
EPS control unit	Normal operation.
Combination meter	• Shift position indicator and OD OFF indicator turn OFF. • Warning lamps turn ON.
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R	Normal operation.

Example: Data link connector branch line open circuit

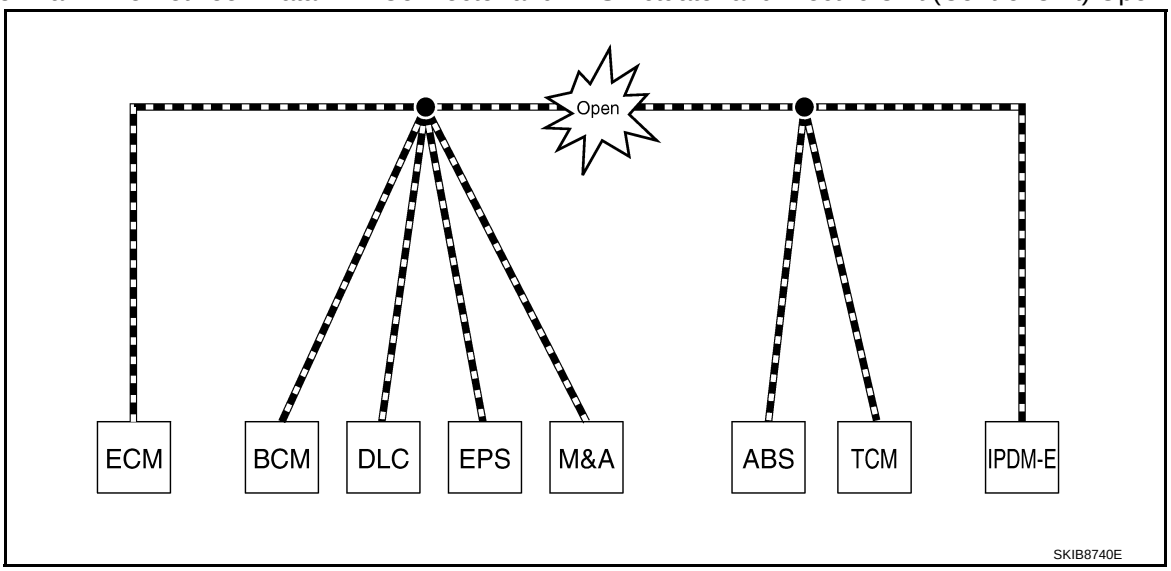


Unit name	Major symptom
ECM	Normal operation.
BCM	
EPS control unit	
Combination meter	
ABS actuator and electric unit (control unit)	
TCM	
IPDM E/R	

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

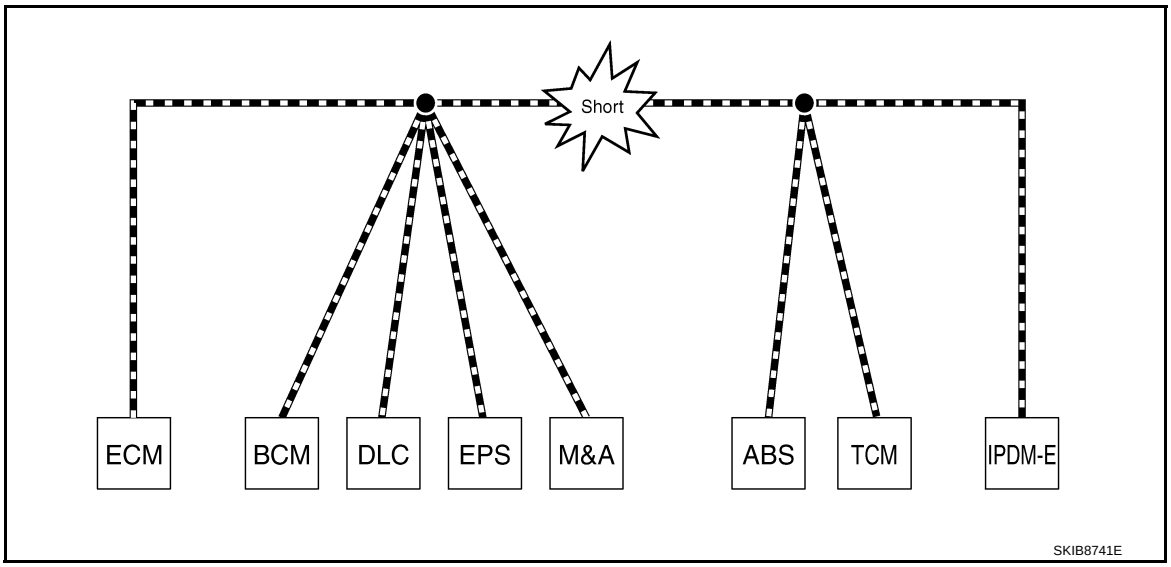
Error	Difference of symptom
Data link connector branch line open circuit	Normal operation.
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.

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.
TCM	No impact on operation.
IPDM E/R	When the ignition switch is ON, • The headlamps (Lo) turn ON. • The cooling fan continues to rotate.

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



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

CAN Diagnosis with CONSULT

INFOID:0000000011255142

CAN diagnosis on CONSULT extracts the root cause by receiving the following information.
- Response to the system call
- Control unit diagnosis information
- Self-diagnosis
- CAN diagnostic support monitor

Self-Diagnosis

INFOID:0000000011255143

If communication signals cannot be transmitted or received among units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT “Self Diagnostic Result” screen.
NOTE:
The following table shows examples of CAN communication-related DTC. For other DTC, refer to the applicable sections.

DTC	Self-diagnosis item (CONSULT indication)	DTC detection condition		Inspection/Action
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.	Start the inspection. Refer to the applicable section of the indicated control unit.
		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	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission-related diagnosis) for 2 seconds or more.		
U1002	SYSTEM COMM	When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less.		
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for CAN controller of each control unit.		Replace the control unit indicating “U1010”.

CAN Diagnostic Support Monitor

INFOID:0000000011255144

MONITOR ITEM (CONSULT)

Example: CAN DIAG SUPPORT MNTR indication

Without PAST

BCM		
MONITOR ITEM	PRESENT	PAST
INITIAL DIAG	OK	-
TRANSMIT DIAG	OK	-
ECM	OK	-
METER/M&A	OK	-
TCM	OK	-
IPDM E/R	OK	-
I-KEY	OK	-

With PAST

ENGINE		
MONITOR ITEM	PRESENT	PAST
TRANSMIT DIAG	OK	OK
VDC/TCS/ABS	OK	5
METER/M&A	Not diagnosed	-
BCM/SEC	OK	OK
ICC	Not diagnosed	-
HVAC	Not diagnosed	-
TCM	OK	OK
EPS	OK	OK
IPDM E/R	OK	5
e4WD	Not diagnosed	-
AWD/4WD	Not diagnosed	-

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Without PAST

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

With PAST

Item	PRESENT	PAST	Description
Transmission diagnosis	OK	OK	Normal at present and in the past
		1 – 39	Normal at present, but unable to transmit signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	UNKWN	0	Unable to transmit signals for 2 seconds or more at present.
Control unit name (Reception diagnosis)	OK	OK	Normal at present and in the past
		1 – 39	Normal at present, but unable to receive signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	UNKWN	0	Unable to receive signals for 2 seconds or more at present.
	Not diagnosed	–	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 indicated	Error counter	Description
CAN_COMM (Initial diagnosis)	OK	0	Normal at present
	NG	1 – 50	Control unit error (The number indicates how many times diagnosis has been run.)
CAN_CIRC_1 (Transmission diagnosis)	OK	0	Normal at present
	UNKWN	1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)
CAN_CIRC_2 – 9 (Reception diagnosis of each unit)	OK	0	Normal at present
	UNKWN	1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)
			Diagnosis not performed.
			No control unit for receiving signals. (No applicable optional parts)

How to Use CAN Communication Signal Chart

INFOID:0000000011255145

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.

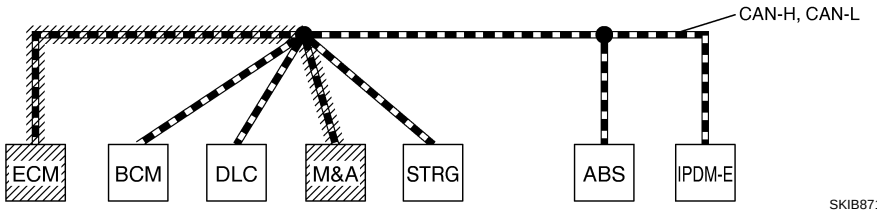
Example: Tachometer does not move even though the engine rotates.

T: Transmit R: Receive

Signal name/Connecting unit	ECM	BCM	M&A	STRG	ABS	IPDM-E
A/C compressor feedback signal	T		R			
A/C compressor request signal	T					R
Accelerator pedal position signal	T				R	
Cooling fan motor operation signal	T					R
Engine coolant temperature signal	T		R			
Engine speed signal	T		R		R	
Fuel consumption monitor signal	T		R			
Malfunction indicator lamp signal	T		R			
A/C switch signal	R	T				
Ignition switch signal		T				R
Sleep/wake up signal		T	R			R

No communication between ECM and M&A.

It indicates that an error occurs between ECM and M&A (Shaded area).



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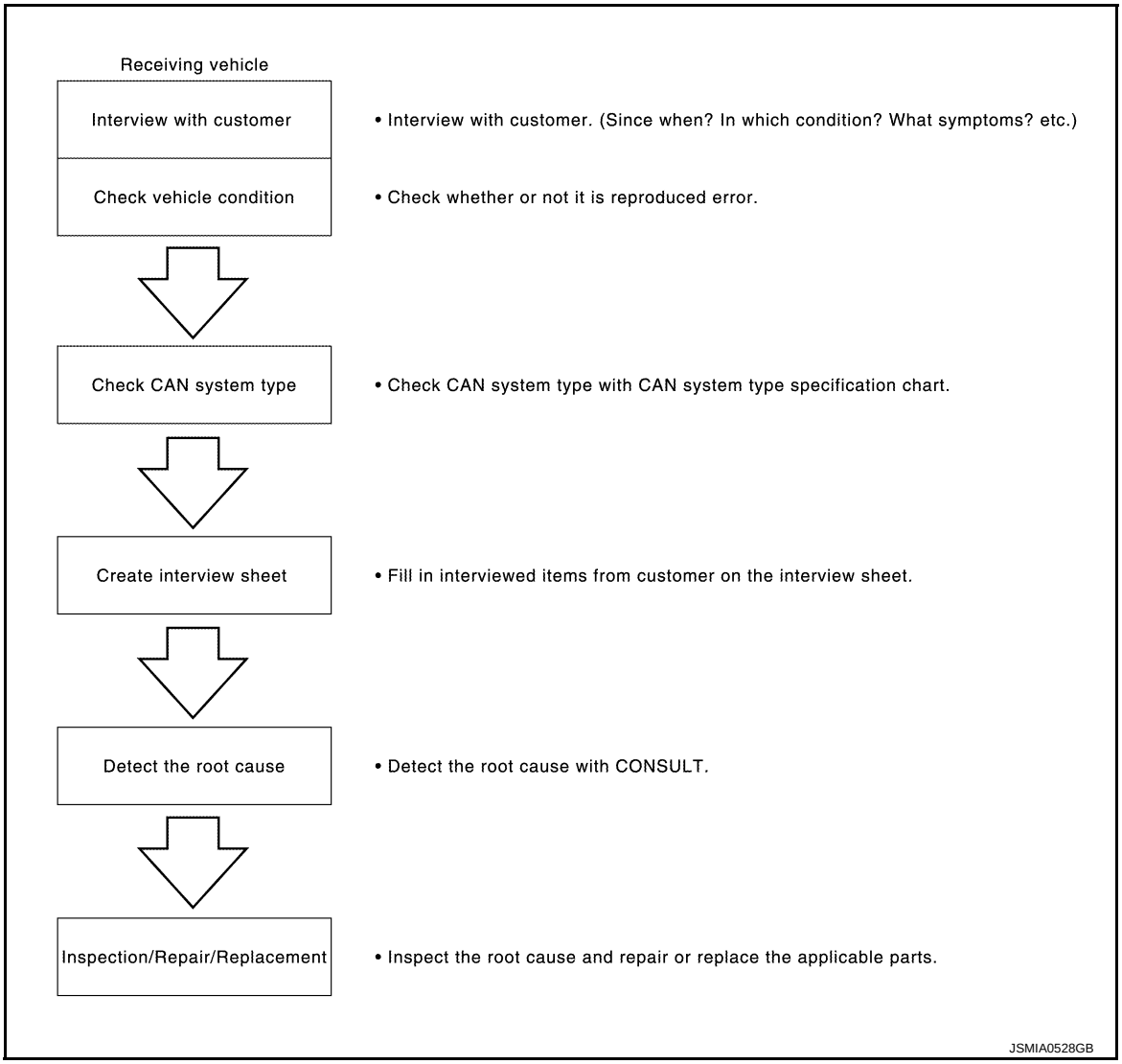
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

INFOID:0000000011255146

DESCRIPTION



DETAIL OF TROUBLE DIAGNOSIS FLOW CHART

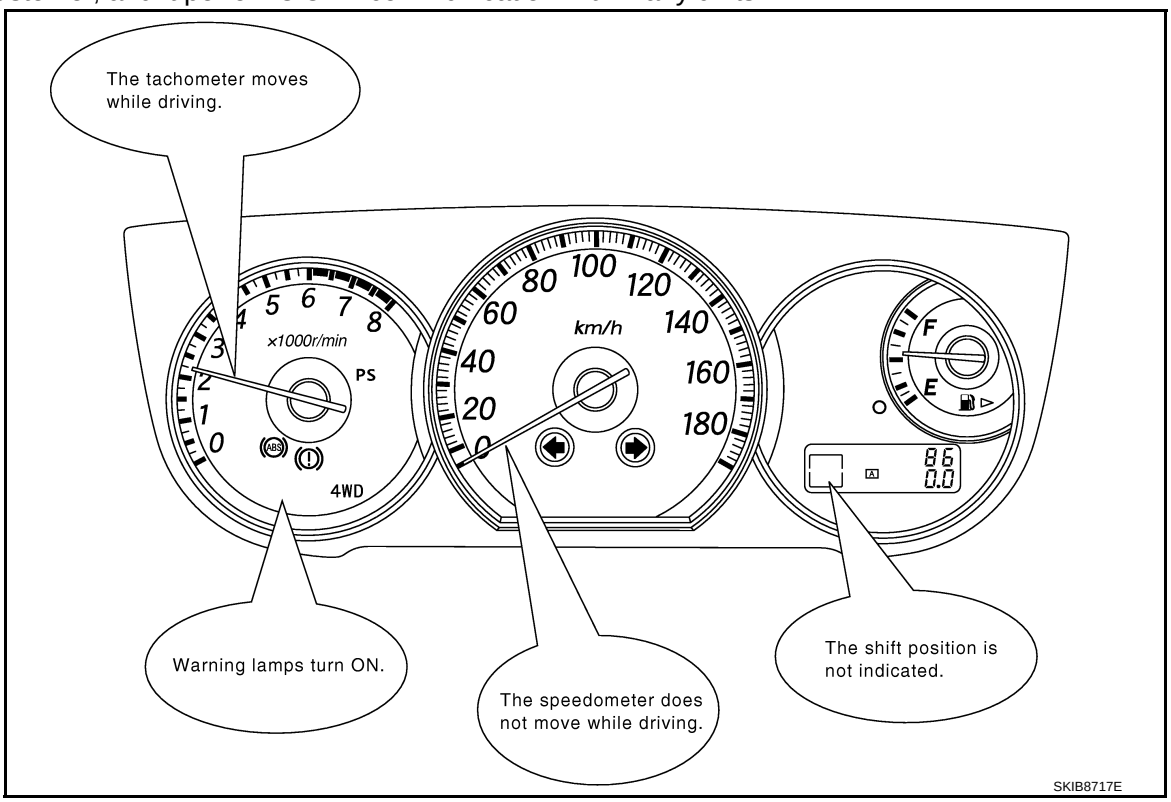
1. INTERVIEW WITH CUSTOMER

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

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

Notes for checking error symptoms:
- Check normal units as well as error symptoms.
- Example: Circuit between ECM and the combination meter is judged normal if the customer indicates tachometer functions normally.

- When a CAN communication system error is present, multiple control units may malfunction or go into fail-safe mode.
- Indication of the combination meter is important to detect the root cause because it is the most obvious to the customer, and it performs CAN communication with many units.



>> GO TO 2.

2. INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

>> GO TO 3.

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

Determine CAN system type based on vehicle equipment.

NOTE:

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

  NOTE:

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

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

CAN System Specification Chart
Determine CAN system type from the following specification chart.

Body type	Wagon					
Axle	2WD				AWD	
Engine	QR25DE		VQ35DE			
Transmission	A/T		CVT			
Brake control	ABS				VDC	
Intelligent Key system		×		×		×
CAN system type	1	2	3	4	5	6
CAN communication control unit						
ECM	×	×	×	×	×	×
AWD control unit					×	×
Air bag diagnosis sensor unit	×	×	×	×	×	×
BCM	×	×	×	×	×	×
Intelligent Key unit		×		×		×
Steering angle sensor					×	×
EPS control unit	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
TCM	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×

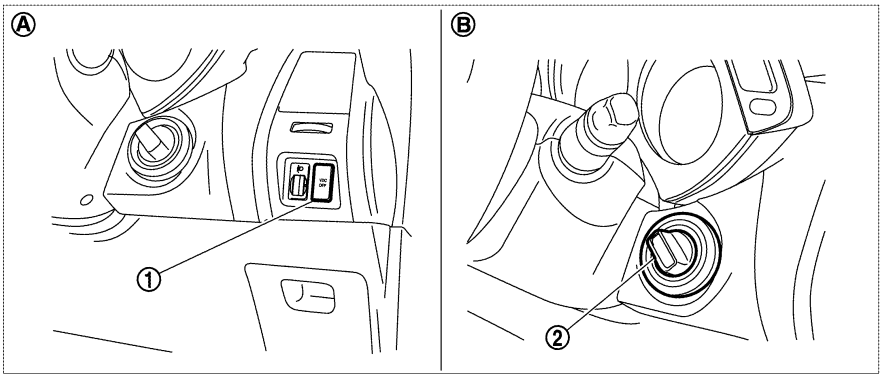
×: Applicable

Check the vehicle equipment with the vehicle identification number plate.

Check the vehicle equipment.

The number indicates the CAN system type of the vehicle.

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION
NOTE:
Check CAN system type from the vehicle shape and equipment.



In the above example,
- Checking VDC OFF switch leads to judge whether or not VDC is equipped.
- Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped.

1. VDC OFF switch
2. Ignition knob
A. With VDC
B. With Intelligent Key system

For the above case, CAN system type is “6”.

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

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

Example:
Vehicle is equipped as follows: Sedan, 2WD, MR20DE, CVT, ABS, Active AFS, Intelligent Key system, Navigation system and Automatic drive positioner. (shows an example of CAN system type.)

CAN System Specification Chart

Refer to the specification as shown in the chart.

Body type	Sedan			Check the vehicle equipment with the vehicle identification number plate.
Axle	2WD		AWD	
Engine	HR15DE	MR20DE	HR15DE	
Transmission	A/T	CVT	A/T	
Brake control	ABS			Check the vehicle equipment.
Specification chart	XX.XX. SPECIFICATION CHART A.	XX.XX. SPECIFICATION CHART B.	XX.XX. SPECIFICATION CHART C.	Select the applicable vehicle equipment. Refer to the specification chart.

×: Applicable

SPECIFICATION CHART B

Determine CAN system type from the following specification chart.

Body type	Sedan											
Axle	2WD											
Engine	MR20DE											
Transmission	CVT											
Brake control	ABS											
Active AFS		×			×	×			×	×		×
Intelligent Key system			×		×		×	×	×	×	×	×
Navigation system				×		×	×		×		×	×
Automatic drive positioner								×		×	×	×
CAN system type	9	10	11	12	13	14	15	16	17	18	19	20
CAN communication control unit												
ECM	×	×	×	×	×	×	×	×	×	×	×	×
AFS control unit		×			×	×			×	×		×
BCM	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×

Check the vehicle equipment.

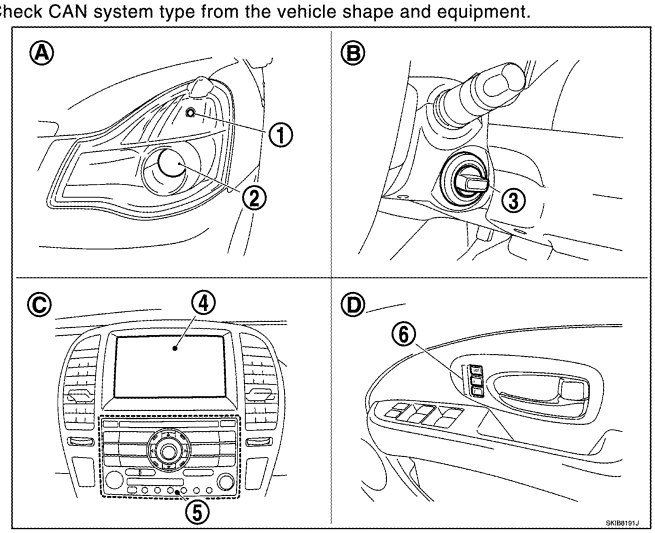
The number indicates the CAN system type of the vehicle.

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



In the above example,
- Checking Xenon bulb and bending lamp lead to judge whether or not Active AFS is equipped.
- Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped.
- Checking display and multifunction switch lead to judge whether or not Navigation system is equipped.
- Checking seat memory switch leads to judge whether or not Automatic drive positioner is equipped.

1.Bending lamp 2.Xenon bulb 3.Ignition knob
4.Display 5.Multifunction switch 6.Seat memory switch
A. With active AFS B. With Intelligent Key system C. With navigation system
D.With automatic drive positioner

For the above case, CAN system type is "20".

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>> GO TO 4.

4. CREATE INTERVIEW SHEET

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

NOTE:

Interview Sheet (Example)

CAN Communication System Diagnosis Interview Sheet

Date received: 3, Feb. 2006

Type: DBA-KG11 VIN No.: KG11-005040

Model: BDRARGZG11EDA-E-J-

First registration: 10, Jan. 2001 Mileage: 62,140

CAN system type: Type 19

Symptom (Results from interview with customer)

- Headlamps suddenly turn ON while driving the vehicle.
- The engine does not restart after stopping the vehicle and turning the ignition switch OFF.
- The cooling fan continues rotating while turning the ignition switch ON.

Condition at inspection

Error Symptom: (Present) / Past

The engine does not start.
While turning the ignition switch ON,
- The headlamps (Lo) turn ON, and the cooling fan continues rotating.
- The interior lamp does not turn ON.

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>> GO TO 5.

5. DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects a root cause.

>> GO TO 6.

6. REPAIR OR REPLACE MALFUNCTIONING PART

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

CAN communication circuit>>Refer to LAN-76, "CAN Communication Circuit".
ITS communication circuit>> Refer to LAN-77, "ITS Communication Circuit".

HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution

INFOID:0000000011255148

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to LAN-25, "Trouble Diagnosis Flow Chart".

Abbreviation List

INFOID:0000000011255149

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

Abbreviation	Unit name
4WD	AWD control unit
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
ADP	Driver seat control unit
AFS	AFS control unit
APA	Accelerator pedal actuator
AV	AV control unit
AVM	Around view monitor control unit
BCM	BCM
BSW/BUZZER	Driver assistance buzzer control module
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)
RDR-L	Side radar LH
RDR-R	Side radar RH
SONAR	Sonar control unit
STRG	Steering angle sensor
TCM	TCM
TCU	TCU
TPMS	Low tire pressure warning control unit

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011255150

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

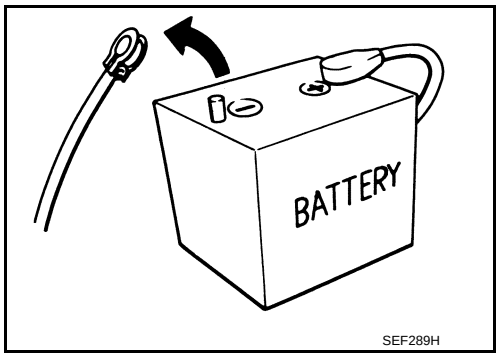
WARNING:
Always observe the following items for preventing accidental activation.
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized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

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

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

Precautions for Removing Battery Terminal

INFOID:0000000011255151



- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

Precautions for Trouble Diagnosis

INFOID:0000000011255152

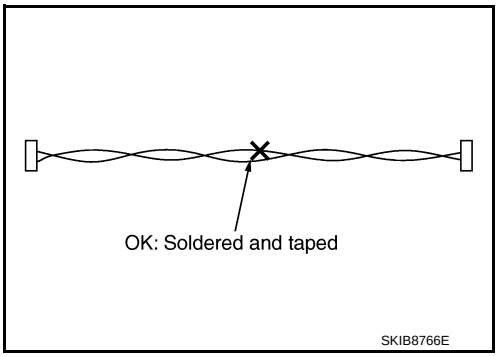
CAUTION:
- **Never apply 7.0 V or more to the measurement terminal.**
- **Use a tester with open terminal voltage of 7.0 V or less.**

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

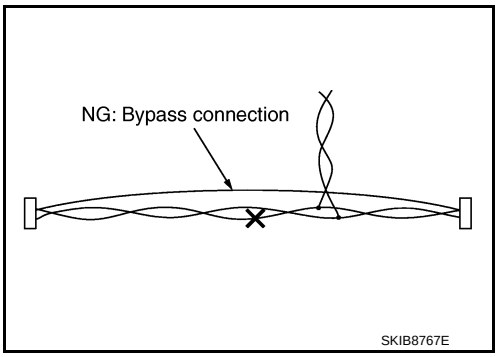
Precautions for Harness Repair

INFOID:0000000011255153

- 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.



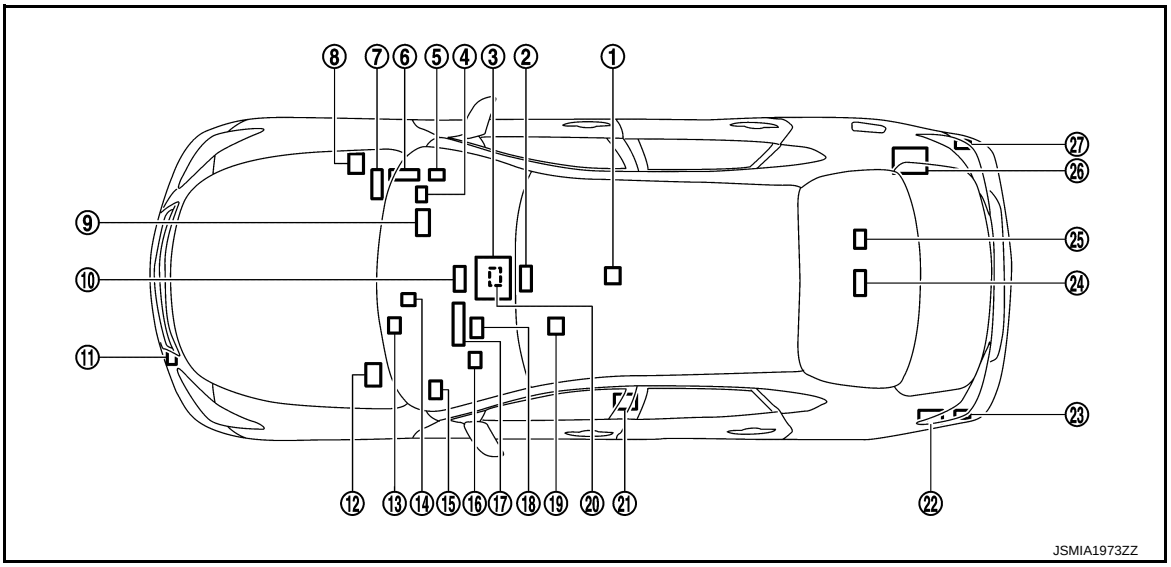
- Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011255154



1. Air bag diagnosis sensor unit	2. Lane camera unit	3. A/T assembly
4. CAN gateway	5. Low tire pressure warning control unit	6. A/C auto amp.
7. ECM	8. IPDM E/R	9. TCU
10. AV control unit	11. ICC sensor	12. ABS actuator and electric unit (control unit)
13. BCM	14. Accelerator pedal actuator	15. AFS control unit
16. Data link connector	17. Combination meter	18. Steering angle sensor
19. Driver seat control unit	20. Sonar control unit	21. Pre-crash seat belt control unit (driver side)
22. AWD control unit	23. Side radar LH	24. ADAS control unit
25. Driver assistance buzzer control module	26. Around view monitor control unit	27. Side radar RH

SYSTEM

CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : CAN System Specification Chart

INFOID:0000000011255155

Determine CAN system type from the following specification chart.
NOTE:
Refer to LAN-25, "Trouble Diagnosis Flow Chart" for how to use CAN system specification chart.

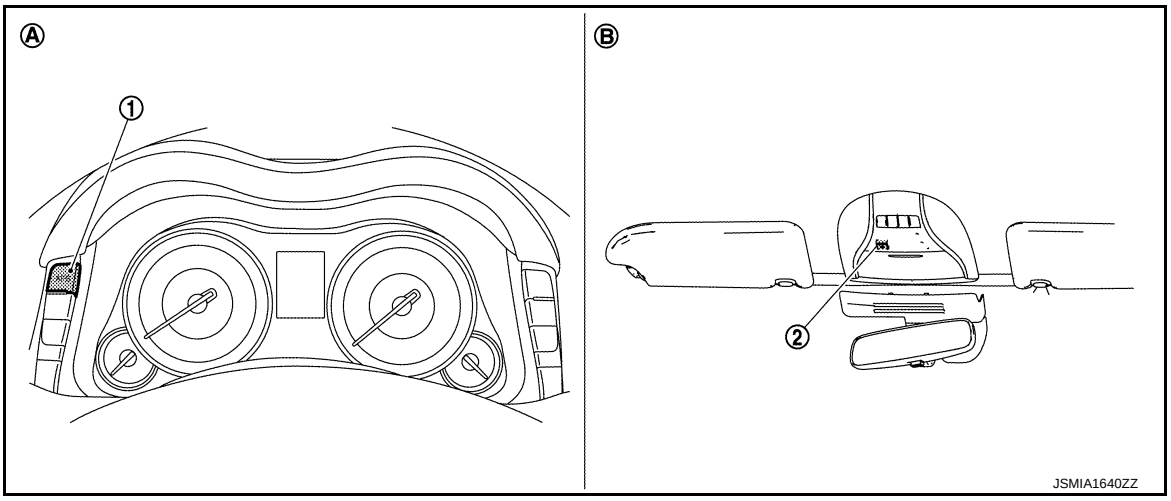
Body type	Sedan									
Axle	2WD					AWD				
Engine	VQ37VHR			VK56VD		VQ37VHR			VK56VD	
Transmission	A/T									
Brake control	VDC									
Telematics system		×	×	×	×		×	×	×	×
Active AFS			×		×			×		×
CAN system type	1	2	3	4	5	6	7	8	9	10
CAN communication unit										
ECM	×	×	×	×	×	×	×	×	×	×
Air bag diagnosis sensor unit	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×	×
TCU		×	×	×	×		×	×	×	×
AV control unit	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×
CAN gateway		×	×	×	×		×	×	×	×
A/C auto amp.	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit	×	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×
AWD control unit						×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×
AFS control unit			×		×			×		×
IPDM E/R	×	×	×	×	×	×	×	×	×	×
Around view monitor control unit		×		×			×		×	
Sonar control unit		×		×			×		×	
Driver seat control unit	×	×	×	×	×	×	×	×	×	×
ADAS control unit			×		×			×		×
Pre-crash seat belt control unit (driver side)			×		×			×		×
ITS communication unit										
ADAS control unit			×		×			×		×
Side radar LH			×		×			×		×
Around view monitor control unit			×		×			×		×
Sonar control unit			×		×			×		×
Side radar RH			×		×			×		×
Accelerator pedal actuator			×		×			×		×

Body type	Sedan									
Axle	2WD					AWD				
Engine	VQ37VHR			VK56VD		VQ37VHR			VK56VD	
Transmission	A/T									
Brake control	VDC									
Telematics system		×	×	×	×		×	×	×	×
Active AFS			×		×			×		×
CAN system type	1	2	3	4	5	6	7	8	9	10
Lane camera unit			×		×			×		×
ICC sensor			×		×			×		×

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:
Check CAN system type from the vehicle shape and equipment.



1. AFS switch
2. Telematics switch

A. With active AFS
B. With telematics system

CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

INFOID:0000000011255156

Refer to LAN-24, "How to Use CAN Communication Signal Chart" for how to use CAN communication signal chart.

NOTE:
Refer to LAN-30, "Abbreviation List" for the abbreviations of the connecting units.

T: Transmit R: Receive

Signal name	ECM	A-BAG	M&A	TCU	AV	BCM	CGW	HVAC	TPMS	STRG	TCM	4WD	ABS	AFS	IPDM-E	AVM*1	SONAR*1	ADP	ICC	PSB
A/C compressor request signal	T														R					
Accelerator pedal position signal	T										R	R	R						R	
ASCD OD cancel request signal	T										R									
ASCD operation signal	T										R									
ASCD status signal	T		R																	

Signal name	ECM	A-BAG	M&A	TCU	AV	BCM	CGW	HVAC	TPMS	STRG	TCM	4WD	ABS	AFS	IPDM-E	AVM*1	SONAR*1	ADP	ICC	PSB
Closed throttle position signal	T										R								R	
Cooling fan speed request signal	T														R					
ECO drive indicator control signal	T		R																	
ECO pedal reaction force control signal	T																		R	
ECO pedal reaction force setting signal	T				R															
	R				T															
Engine and A/T integrated control signal	T										R									
	R										T									
Engine coolant temperature signal	T		R					R												
Engine speed signal	T		R								R	R	R	R					R	
Engine status signal	T		R	R	R	R														
Fuel consumption monitor signal	T		R		R															
ICC brake switch signal	T																		R	
ICC operation signal	T										R									
	R												R						T	
ICC prohibition signal	T																		R	
ICC steering switch signal	T																		R	
Malfunctioning indicator lamp signal	T		R	R																
N idle instruction signal	R										T									
	T										R									
Oil pressure warning lamp signal	T		R																	
Power generation command value signal	T														R					
Snow mode switch signal	T												R						R	
Stop lamp switch signal	T																		R	
						T					R									
												R	T						R	
Wide open throttle position signal	T										R									
Car crash information signal		T		R																
Sleep-ready signal				T		R														
			T			R														
						R									T					
Wake up signal				T		R														
			T			R														
Brake fluid level switch signal			T										R							

Signal name	ECM	A-BAG	M&A	TCU	AV	BCM	CGW	HVAC	TPMS	STRG	TCM	4WD	ABS	AFS	IPDM-E	AVM*1	SONAR*1	ADP	ICC	PSB
Distance to empty signal			T		R															
Fuel level low warning signal			T		R															
Fuel level sensor signal	R		T																	
Manual mode shift down signal			T								R									
Manual mode shift up signal			T								R									
Manual mode signal			T								R									
Non-manual mode signal			T								R									
Odometer signal			T			R														
Paddle shifter shift down signal*2			T								R			R						
Paddle shifter shift up signal*2			T								R									
Parking brake switch signal			T			R						R	R						R	
Seat belt buckle switch signal (driver side)			T			R														
Vehicle speed signal	R		T		R	R		R			R			R	R			R		R
			R			R			R			R	T			R	R	R	R	
Door lock/unlock request signal				T		R														
A/C switch operation signal					T			R												
Rear window defogger switch signal					T	R														
System selection signal					T														R	
System setting signal					T	R														
					R	T														
Voice recognition signal					T			R												
Buzzer request signal						R			T											
			R			T														
Low tire pressure warning lamp signal			R			T														
			R		R	R			T											
Blower fan motor switch signal	R					T														
Buzzer output signal			R			T														
Daytime running light request signal						T									R					
Dimmer signal			R			T													R	
Door switch signal			R			T									R	R		R		R
Door lock status signal				R		T														
Door unlock signal						T												R		
Front fog light request signal			R			T									R	R				

Signal name	ECM	A-BAG	M&A	TCU	AV	BCM	CGW	HVAC	TPMS	STRG	TCM	4WD	ABS	AFS	IPDM-E	AVM*1	SONAR*1	ADP	ICC	PSB
Front wiper request signal						T									R				R	
Handle position signal						T												R		
High beam request signal			R			T									R	R				
Horn reminder signal						T									R					
Ignition switch ON signal						T									R					R
						R									T					
Ignition switch signal						T												R		R
Intelligent Key system warning display signal			R			T														
Interlock/PNP switch signal						T									R					
						R									T					
Key ID signal						T		R										R		
Low beam request signal						T									R	R				
Meter display signal			R			T														
			R																T	
Meter ring illumination request signal			R			T														
Oil pressure switch signal			R	R		T														
						R									T					
Position light request signal			R			T									R	R				
Rear window defogger control signal						T									R					
	R				R										T					
Sleep wake up signal			R	R		T	R								R			R		R
Starter control relay signal						T									R					
Starter relay status signal			R			T									R					
						R									T					
Starting mode signal						T												R		
Theft warning horn request signal						T									R					
Trunk switch signal			R			T														
Turn indicator signal			R			T					R								R	
A/C display signal					R			T												
A/C evaporator temperature signal	R							T												
A/C ON signal	R							T												
Ambient sensor signal			R					T												
Blower fan ON signal	R							T												
ECO mode signal			R					T			R								R	
	R										T									
SNOW mode signal			R					T			R								R	
	R										T									
SPORT mode signal			R					T			R								R	
	R										T									

Signal name	ECM	A-BAG	M&A	TCU	AV	BCM	CGW	HVAC	TPMS	STRG	TCM	4WD	ABS	AFS	IPDM-E	AVM*1	SONAR*1	ADP	ICC	PSB
STANDARD mode signal			R					T			R								R	
	R										T									
Target A/C evaporator temperature signal	R							T												
Tire pressure data signal					R				T											
Steering angle sensor malfunction signal										T				R					R	R
Steering angle sensor signal					R					T			R	R		R			R	R
Steering angle speed signal										T									R	R
Steering calibration signal										T				R						R
A/T CHECK indicator lamp signal			R								T			R						
A/T self-diagnosis signal	R										T									
Current gear position signal	R										T								R	
Drive mode select signal	R										T								R	
Input speed signal											T								R	
Manual mode shift refusal signal			R								T									
N range signal						R					T		R							
Next gear position signal	R										T									
Output shaft revolution signal	R										T								R	
P range signal						R					T									
R range signal											T		R							
Shift position signal			R								T			R		R		R	R	R
Shift schedule signal	R										T									
AWD signal												T	R							
AWD warning lamp signal			R									T								
A/T shift schedule change demand signal											R		T							
ABS malfunction signal													T						R	
ABS operation signal											R		T						R	R
ABS warning lamp signal			R	R									T						R	
Brake warning lamp signal			R										T							
			T	R																
Decel G sensor signal											R		T							
Pressure sensor signal											R		T							
Rear LH wheel speed signal													T			R				
Rear RH wheel speed signal													T			R				
Side G sensor signal											R		T						R	

Signal name	ECM	A-BAG	M&A	TCU	AV	BCM	CGW	HVAC	TPMS	STRG	TCM	4WD	ABS	AFS	IPDM-E	AVM*1	SONAR*1	ADP	ICC	PSB
TCS gear keep request signal											R		T							
TCS malfunction signal													T						R	
TCS operation signal													T						R	
VDC malfunction signal											R		T						R	
VDC OFF indicator lamp signal			R										T							
VDC OFF switch signal													T						R	
VDC operation signal													T						R	
VDC warning lamp signal			R	R									T							
Yaw rate signal													T						R	
AFS OFF indicator lamp signal			R											T						
A/C compressor feedback signal	R							R							T					
Front wiper position signal						R									T					
High beam status signal	R														T					
Hood switch signal						R									T					
Low beam status signal	R													R	T					
Push-button ignition switch status signal						R									T					
Sonar setting change signal																T	R			
Sonar status signal																R	T			
Active Trace control signal													R						T	
Brake fluid pressure control signal													R						T	
BSI ON indicator signal			R																T	
BSW/BSI warning lamp signal			R																T	
FEB warning lamp signal			R																T	
FEB operation signal																			T	R
ICC warning lamp signal			R																T	
Lane departure warning lamp signal			R																T	
LDP ON indicator lamp signal			R																T	
Target yaw moment signal													R						T	

*1: Models without ICC system

*2: Models with paddle shifter

WIRING DIAGRAM

CAN SYSTEM (WITH ICC)

Wiring Diagram

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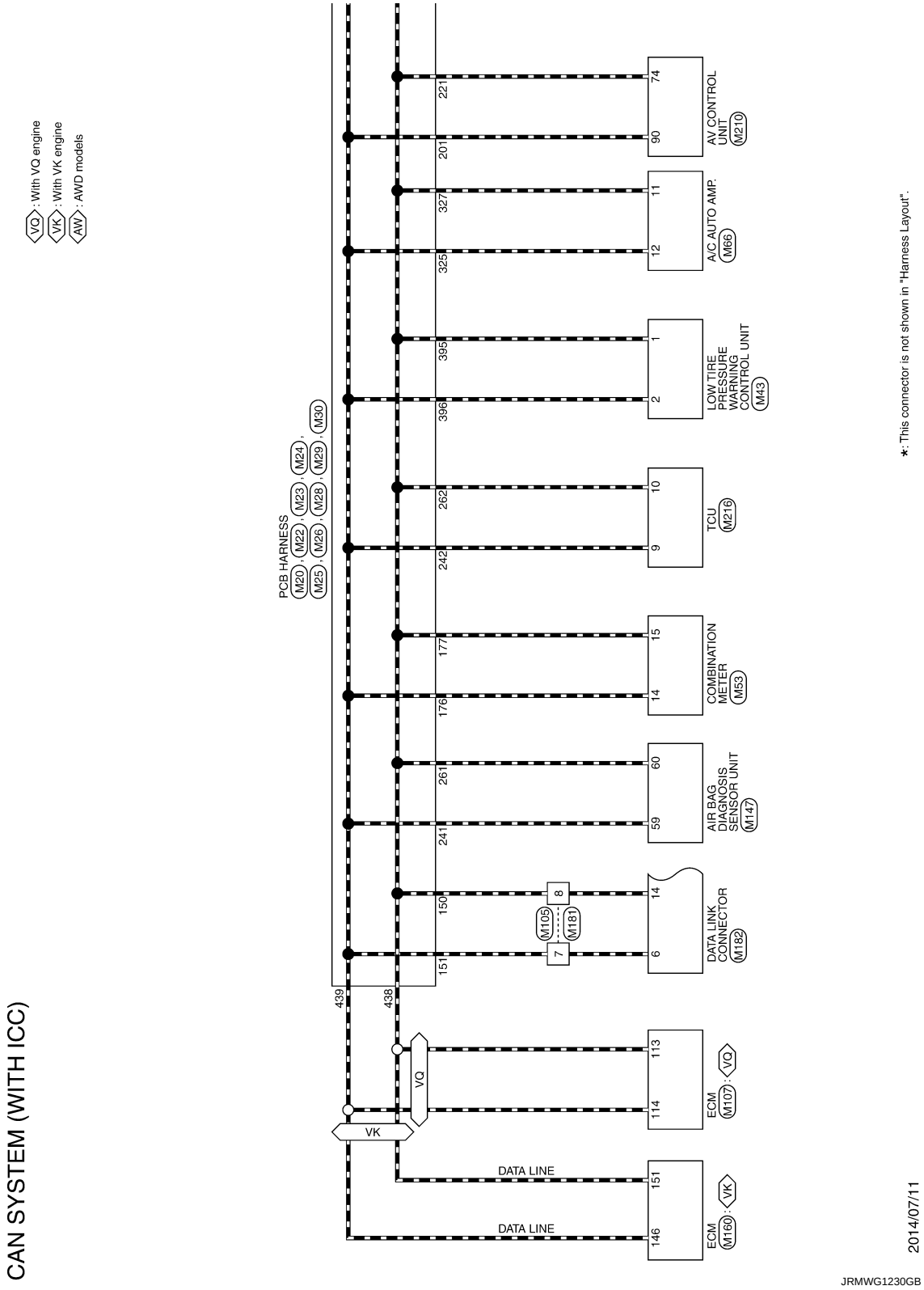
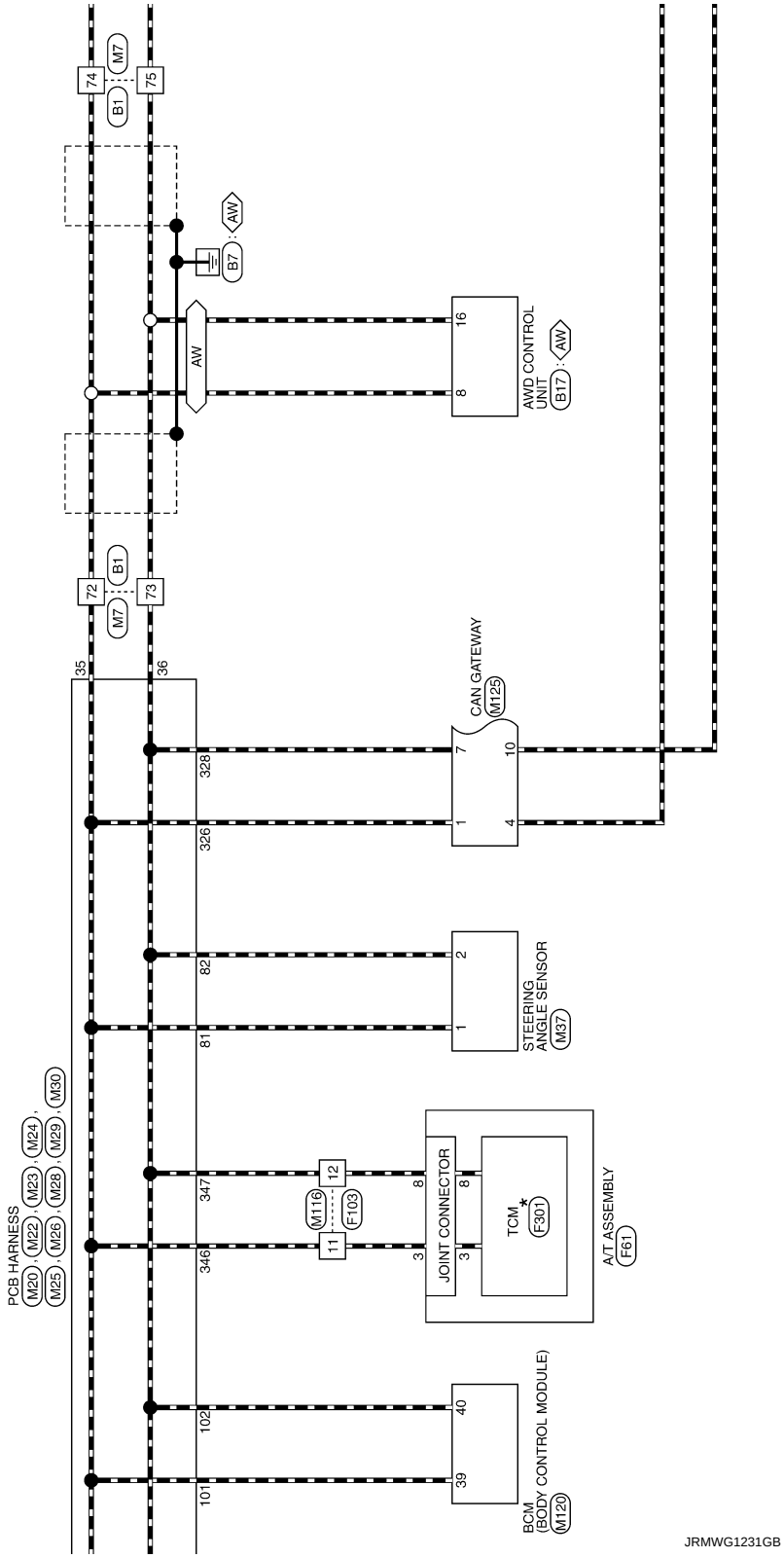
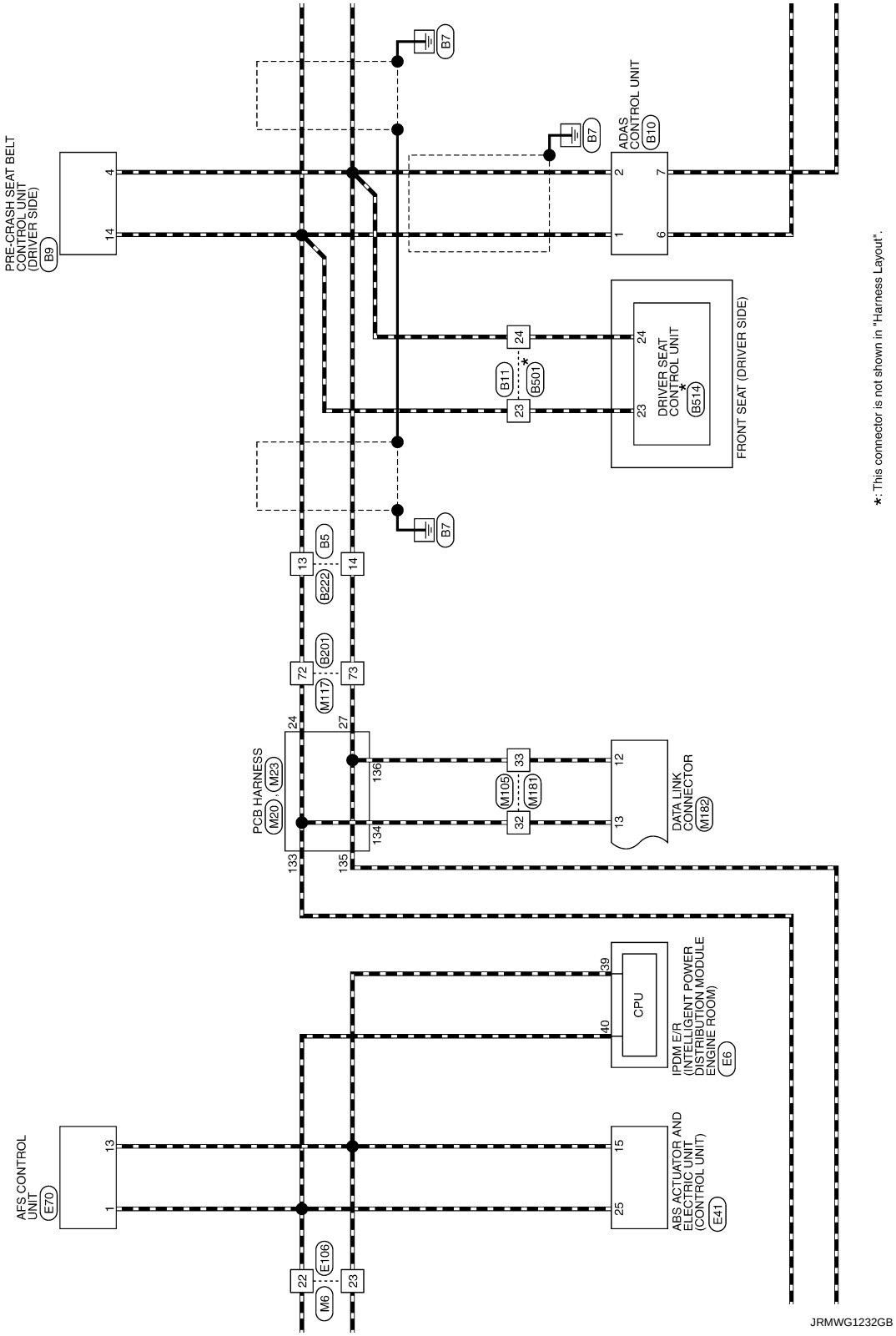
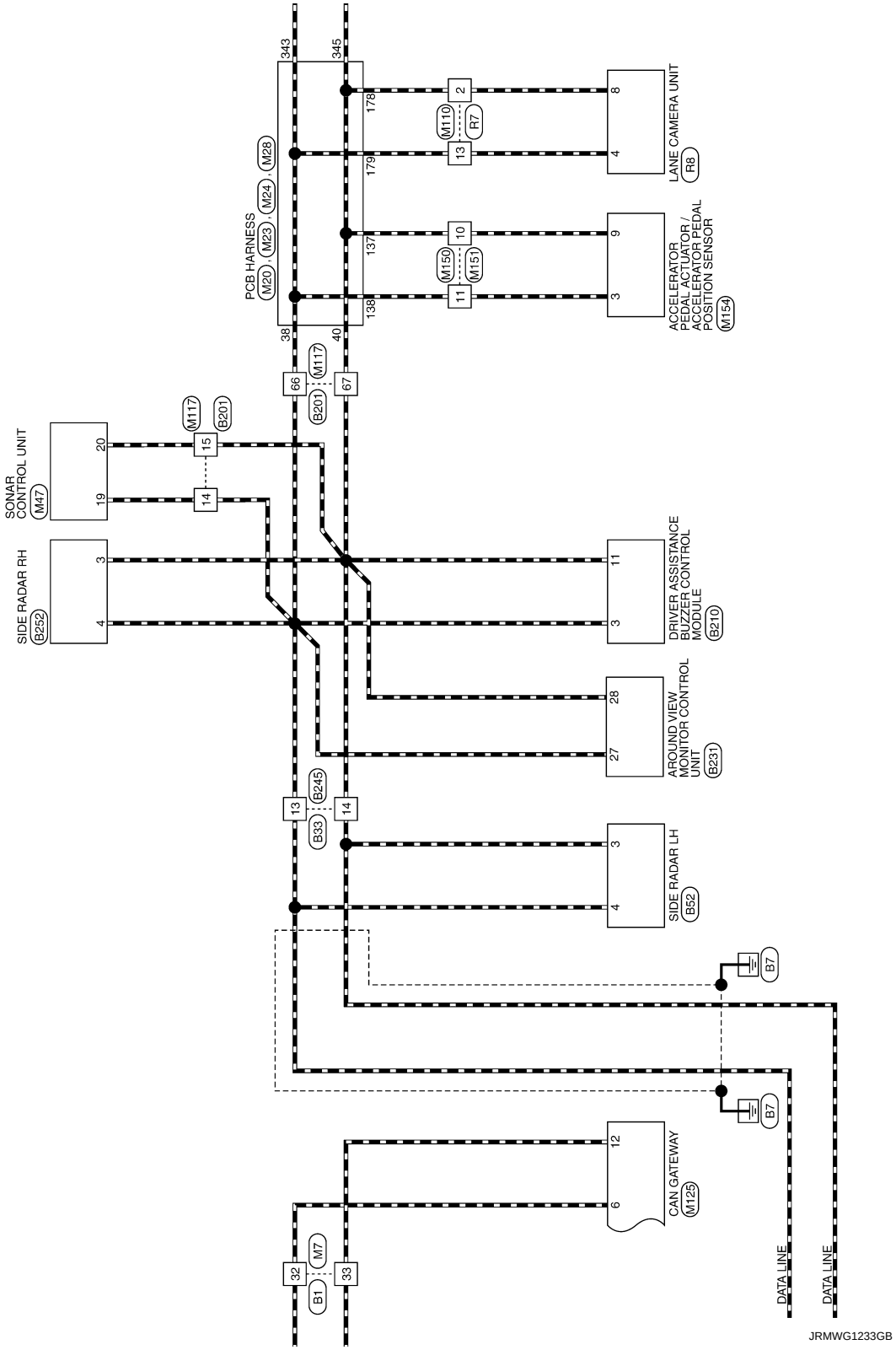


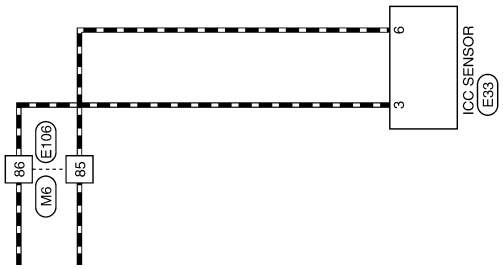
CAN SYSTEM (WITH ICC)


PCB HARNESS
M20, M22, M23, M24, M25, M26, M28, M29, M30
35
36
72
73
74
75
M7
B1
AW
B7
AWD CONTROL UNIT
B17
16
8
CAN GATEWAY
M125
7
1
10
4
328
326
STEERING ANGLE SENSOR
M37
2
1
82
81
JOINT CONNECTOR
M116
F103
12
11
8
3
TCM
F301
A/T ASSEMBLY
F61
347
346
BCM (BODY CONTROL MODULE)
M120
40
39
102
101
JRMWG1231GB



*: This connector is not shown in "Harness Layout".

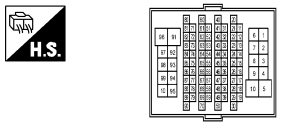

SONAR CONTROL UNIT
M47
20
19
15
14
M117
B201
SIDE RADAR RH
B252
3
4
PCB HARNESS
M20
M23
M24
M28
343
345
38
40
66
67
M117
B201
178
179
137
138
2
13
10
11
M110
R7
M150
M151
LANE CAMERA UNIT
R8
8
4
ACCELERATOR PEDAL ACTUATOR / ACCELERATOR PEDAL POSITION SENSOR
M154
9
3
DRIVER ASSISTANCE BUZZER CONTROL MODULE
B210
11
3
AROUND VIEW MONITOR CONTROL UNIT
B231
28
27
13
14
B245
B33
SIDE RADAR LH
B52
3
4
B7
B7
CAN GATEWAY
M125
12
6
32
33
M7
B1
DATA LINE
DATA LINE
JRMWG1233GB



JRMWG1234GB

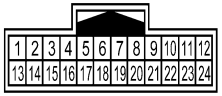
CAN SYSTEM (WITH ICC)

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



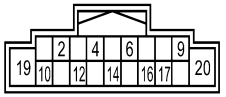
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
4	LG	-
5	P	-
7	GR	-
8	Y	-
9	LG	-
10	V	-
11	GR	- [With climate controlled seat]
11	L	- [With heated seat]
12	GR	- [With heated seat]
12	P	- [With climate controlled seat]
13	BR	-
14	R	-
15	O	-
16	V	-
17	B	-
18	R	-
19	W	-
20	L	-
21	B	-
22	LG	-
23	V	-
24	Y	-
25	G	-
26	GR	-
27	SB	-
28	L/O	-
29	W/L	-
30	SHIELD	-
32	L	-
33	R	-
34	G	-
35	SHIELD	-
36	G	-
37	SB	-
40	SHIELD	-
41	GR/V	-
42	W/L	-
43	L	-
44	B	-
45	V	-
46	P	-
47	O	-
48	Y	-
49	BR	-
50	SB	-
51	V	-
52	LG	-
53	G	-
55	G	-
56	P	-
57	BR	-
58	LG	-
59	Y	-
60	W	-
61	B	-
62	LG	-
63	V	-
65	O	-
66	BR	-
67	V	-
68	LG	-
69	GR	-
70	R	-
72	L	-
73	P	-
74	L	-
75	P	-
76	Y	-
77	R	-
78	W	-
79	G	-
81	LG	-
82	BR	-
83	SB	-
84	Y	-
85	W	-
86	R	-
87	G	-
88	GR	-
91	SB	-
92	G	-
96	Y	-
97	O	-
98	SB	-
99	LG	-

Connector No.	B5
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



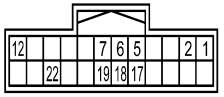
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	W	-
6	B	-
7	R	-
8	SHIELD	-
9	G	-
12	V	-
13	L	-
14	R	-
15	B	-
16	SHIELD	-
17	R	-
18	G	-
19	W	-
20	P	-
21	V	-
22	G	-
24	SB	-

Connector No.	B9
Connector Name	PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE)
Connector Type	TH18FW-CS2



Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	OUT 1
4	R	CAN LO
6	LG	BUCKLE SW LH NO
9	SHIELD	SHIELD GND
10	R	SENS POWER 1
12	B	OUT 2
14	L	CAN HI
16	Y	LOCAL COMM 1
17	W	SENS GND 1
19	Y	MOTOR BAT
20	B	MOTOR GND

Connector No.	B10
Connector Name	ADAS CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	R	CAN-L
5	B/R	GROUND
6	L	ITS COMM-H
7	P	ITS COMM-L
12	GR	IGNITION
17	SB	BRAKE HOLD RLY DRIVE SIGNAL
18	Y	WARNING SYSTEMS SW

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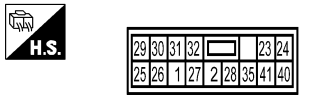
CAN SYSTEM (WITH ICC)

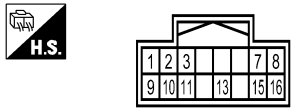
19	O	WARNING SYSTEMS ON IND
22	BR	BCI SW

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



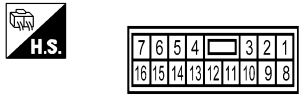
Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	B	-
23	L	-
24	P	- [Without CAN gateway]
24	R	- [With CAN gateway]
25	BR	-
26	W	-
27	L	-
28	P	-
29	O	-
30	V	-
31	BR	-
32	LG	-
35	LG	-
40	O	-
41	B	-

Connector No.	B17
Connector Name	AWD CONTROL UNIT
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	AWD SOL (+)
2	R	AWD SOL (-)
3	W	FLUID TEMP (-)
7	Y	IGN
8	L	CAN-H
9	SB	AWD SOL BAT
10	B/Y	GND
11	B/Y	GND
13	LG	FLUID TEMP (+)
15	G	BATTERY POWER SUPPLY
16	P	CAN-L

Connector No.	B33
Connector Name	WIRE TO WIRE
Connector Type	NS16FGY-CS

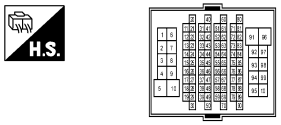


Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	O	-
3	O	-
6	G	-
8	GR	-
9	O	-
10	P	-
11	R/L	-
12	P/L	-
13	L	-
14	Y	-
15	SHIELD	-

Connector No.	B52
Connector Name	SIDE RADAR LH
Connector Type	AAC06FB-WP-5P

Terminal No.	Color Of Wire	Signal Name [Specification]
2	B/Y	GROUND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	GR	IGNITION
6	BR	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	R	-
6	R	-
7	W	-
8	V	-
11	R	-
12	G	-
13	Y	-
14	L	-
15	R	- [Without ADAS]
15	Y	- [With ADAS]
17	GR	-
18	P	-
19	BR	-
20	GR	-
21	Y	-
22	GR	-
23	R	-
24	V	-
25	B	-
26	W	-
28	V	-
29	P	-
30	O	-
31	B/R	-
32	Y	-
40	SHIELD	-
41	W/R	-
42	V	-
45	SB	-
46	R	- [With climate controlled seat]
46	Y	- [With heated seat]
47	G	- [With climate controlled seat]
47	GR	- [With heated seat]
48	V	-
49	O	-
50	R	-
51	GR	-
52	LG	-
53	P	-
56	P	-
57	W	-
58	O	-
59	Y	-
61	SB	-
62	L	-
63	W	-
64	SB	-
65	LG	-
66	L	-
67	Y	-
68	SB	-
69	B	-
71	L	-
72	L	-
73	R	-
74	B	-
75	L	-
76	SHIELD	-
77	G	-

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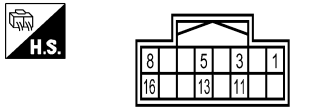
CAN SYSTEM (WITH ICC)

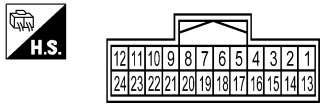
78	R	-
79	P	-
80	G	-
81	O	-
82	BR	-
83	GR	-
84	V	-
85	LG	-
86	W	-
87	O	-
88	Y	-
89	BR	-
90	L	-
91	BR	-
93	O	- [With heated seat]
93	Y	- [With climate controlled seat]
94	GR	-
96	W	-
97	P	-
98	LG	-
99	LG	-
100	Y	-

Connector No.	B210
Connector Name	DRIVER ASSISTANCE BUZZER CONTROL MODULE
Connector Type	TH16FW-NH



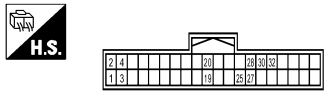
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	IGNITION
3	L	ITS COMM-H
5	B/R	GROUND
8	R	SPEAKER OUT(+)
11	Y	ITS COMM-L
13	B/R	GROUND
16	G	SPEAKER OUT(-)

Connector No.	B222
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



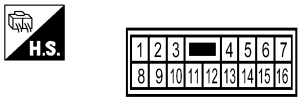
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	B	-
6	R	-
7	G	-
8	SHIELD	-
9	W	-
12	P	-
13	L	-
14	R	-
15	B	-
16	SHIELD	-
17	R	-
18	G	-
19	W	-
20	P	-
21	V	-
22	G	-
24	SB	-

Connector No.	B231
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/R	GROUND
2	Y	BATTERY POWER SUPPLY
3	W	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COMMUNICATION SIGNAL (H)
20	LG	AV COMMUNICATION SIGNAL (L)
25	B	REVERSE SIGNAL
27	L	CAN-H
28	R	CAN-L [Withou ICC]
28	Y	CAN-L [With ICC]
30	SB	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	P	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

Connector No.	B245
Connector Name	WIRE TO WIRE
Connector Type	NS16MGY-CS

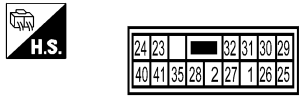


Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	O	-
3	Y	-
6	G	-
8	G	-
9	V	-
10	P	-
11	R/L	-
12	P/L	-
13	L	-
14	Y	-
15	SHIELD	-

Connector No.	B252
Connector Name	SIDE RADAR RH
Connector Type	AAC06FB-WP

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/R	RIGHT/LEFT SWITCHING SIGNAL
2	B/R	GROUND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	G	IGNITION
6	BR	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

Connector No.	B501
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
23	P	-
24	P/L	-
25	G/O	-
26	L/O	-
27	V	-
28	V/W	-
29	L	-
30	BR	-
31	BR/W	-
32	W/L	-
35	W/Y	-
40	W/G	-

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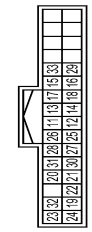
CAN SYSTEM (WITH ICC)

41	GR	-

Connector No.	B514
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH32FW-NH

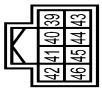
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
11	G/B	SLIDE SW (BACKWARD)
12	G/W	SLIDE SW (FORWARD)
13	R/G	RECLINER SW (BACKWARD)
14	R/W	RECLINER SW (FORWARD)
15	Y/B	REAR LIFTER SW (DOWNWARD)
16	Y/R	REAR LIFTER SW (UPWARD)
17	LG/B	FRONT LIFTER SW (DOWNWARD)
18	LG/R	FRONT LIFTER SW (UPWARD)
19	G/Y	PULSE (SLIDE)
20	R/Y	PULSE (RECLINER)
21	Y	PULSE (REAR LIFTER)
22	R	PULSE (FRONT LIFTER)
23	P	CAN-H
24	P/L	CAN-L
25	G/O	IND 1
26	L/O	IND 2
27	V	ADDRESS 1
28	V/W	ADDRESS 2
29	L	SET SW
30	BR	PULSE(TILT)
31	BR/W	PULSE(TELESCOPIC)
32	W/L	UART (TX/RX)
33	W	POWER SUPPLY (ENCODER)

Connector No.	E6
Connector Name	[IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)]
Connector Type	TH40FW-NH

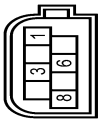
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	CAN-L
40	L	CAN-H
41	B	S-GND
42	V	MOTOR_FAN_RLY_CONT [With VK engine]
42	Y	MOTOR_FAN_RLY_CONT [With VQ engine]
43	SB	DETENT_SW
44	GR	HORN_RLY [With VK engine]
44	LG	HORN_RLY [With VQ engine]
45	G	HORN_SW
46	BR	START_CONT

Connector No.	E33
Connector Name	ICC SENSOR
Connector Type	AAZ08FB

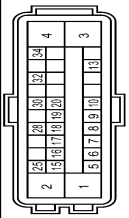
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	IGNITION
3	L	ITS COMM-H
6	Y	ITS COMM-L
8	B/Y	GROUND

Connector No.	E41
Connector Name	[ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)]
Connector Type	SAZ30FB-SJZ4-U

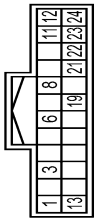
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/W	ECU(GND)
2	B	MOTOR(GND)
3	Y	SOLENOID(POWER)
4	G	MOTOR(POWER)
5	SB	STOP LAMP SW
6	Y	CANM2(-)
7	W	Rr-LH SEN(SIGNAL)
8	G	Rr-LH SEN(POWER)
9	BR	Fr-RH SEN(SIGNAL)
10	B	Fr-RH SEN(POWER)
13	LG	VAC SEN(SIGNAL)
15	P	CAN-L
16	B	CANM2(+)
17	Y	Rr-RH SEN(SIGNAL)
18	BR	Rr-RH SEN(POWER)
19	SB	Fr-LH SEN(SIGNAL)
20	O	Fr-LH SEN(POWER)
25	L	CAN-H
28	V	VAC SEN(POWER)
30	R	VDC OFF SW
32	SHIELD	VAC SEN(GND)
34	G	IGN(POWER)

Connector No.	E70
Connector Name	AFS CONTROL UNIT
Connector Type	TH24FW-NH

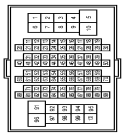
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
3	GR	AFS SWITCH SIGNAL
6	Y	HEIGHT SENSOR SIGNAL
8	Y	SWIVEL ACTUATOR_LIN SIGNAL
11	B	GROUND
12	G	IGNITION POWER SUPPLY
13	P	CAN-L
19	BR	SWIVEL ACTUATOR GROUND
21	V	HEIGHT SENSOR POWER SUPPLY
22	SB	AIMING MOTOR DRIVE SIGNAL
23	LG	HEIGHT SENSOR GROUND
24	B	AIMING MOTOR GROUND

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	W	-
3	SB	-
4	LG	-
5	O	-
6	W	-
7	GR	-
8	G	-

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CAN SYSTEM (WITH ICC)

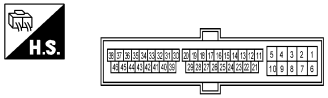
9	Y	-
10	BR	-
11	SB	-
12	L	-
13	GR	-
14	GR	-
15	V	-
16	Y	-
17	GR	-
18	V	-
20	BR	-
21	P	-
22	L	-
23	P	-
27	SHIELD	-
28	L/O	-
29	W/L	-
31	BR	-
32	G	-
33	O	-
34	Y	-
36	G	-
37	V	-
41	BR	-
44	W	-
45	L	-
46	GR	-
47	V	-
48	G	-
49	O	-
50	LG	-
54	R	-
55	B	-
60	W	-
61	G	-
62	Y	-
63	BR	-
64	B	-
65	Y	-
66	R	-
67	SB	-
68	G	-
69	SHIELD	-
70	W	-
71	W	-
72	R	-
73	G	-
74	Y	-
75	B	-
76	SHIELD	-

77	O	-
78	SB	-
80	V	-
82	SB	-
83	GR	-
84	Y	-
85	Y	-
86	L	-
87	V	-
88	BR	-
89	LG	-
90	W	-
91	W	-
92	P	-
93	LG	-
94	BR	-
95	W	-
97	R	-
98	Y	-
99	V	-
100	V	-

Connector No.	F61
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	POWER SUPPLY (BACK UP)
2	R	POWER SUPPLY (BACK UP)
3	L	CAN-H
4	V	K-LINE
5	B	GND
6	G	POWER SUPPLY (IGN)
7	SB	BACK-UP LAMP RELAY
8	P	CAN-L
9	BR	P/N SIGNAL
10	B	GROUND

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW-NS10

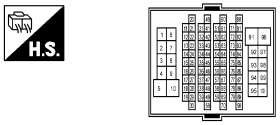


Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	G	-
4	B	- [With VK engine]
4	R	- [With VQ engine]
5	B	- [With VQ engine]
5	GR	- [With VK engine]
7	LG	-
8	Y	-
9	SB	- [With VQ engine]
9	W	- [With VK engine]
10	BR	- [With VK engine]
10	V	- [With VQ engine]
11	L	-
12	P	-
13	V	-
14	SB	-
15	R	-
16	W	-
17	GR	-
18	LG	-
21	LG	-
22	B	-
23	G	-
24	BR	-
25	O	-

Connector No.	F301
Connector Name	TCM
Connector Type	SP10FG

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	VIGN
2	-	BATT
3	-	CAN-H
4	-	K LINE
5	-	GND
6	-	VIGN
7	-	REV LAMP RLY
8	-	CAN-L
9	-	START RLY
10	-	GND

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	W	-
3	SB	-
4	LG	-
5	W	-
6	W	-
7	BG	-
8	G	-
9	Y	-
10	W	-

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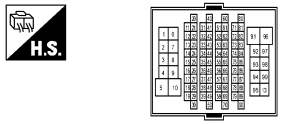
CAN SYSTEM (WITH ICC)

11	R	-
12	V	-
13	LG	-
14	L	-
15	V	-
16	B	-
17	GR	-
18	V	-
20	SB	-
21	BR	-
22	L	-
23	P	-
27	SHIELD	-
28	V	-
29	SB	-
31	BG	-
32	P	-
33	R	-
34	BG	-
36	V	-
37	G	-
41	BR	-
44	BR	-
45	Y	-
46	BG	-
47	V	-
48	G	-
49	BG	-
50	W	-
54	W	-
55	G	-
60	GR	-
61	B	-
62	LG	-
63	BR	-
64	L	- [With ICC]
64	SB	- [Without ICC]
65	R	- [With ICC]
65	Y	- [Without ICC]
66	P	-
67	L	-
68	R	-
69	SHIELD	-
70	B	-
71	W	-
72	R	-
73	G	-
74	Y	-
75	B	-
76	SHIELD	-

77	B	-
78	V	-
80	G	-
82	B	-
83	BG	-
84	SB	-
85	Y	-
86	L	-
87	V	-
88	V	-
89	LG	-
90	BG	-
91	W	-
92	BG	-
93	G	-
94	Y	-
95	W	-
97	SB	-
98	R	-
99	W	-
100	L	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

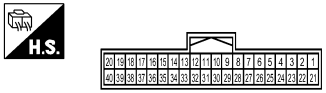


Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	Y	-
4	BR	-
5	P	-
7	G	-
8	Y	-
9	G	-
10	V	-
11	L	- [With heated seat]
11	V	- [With climate controlled seat]
12	GR	- [With heated seat]
12	P	- [With climate controlled seat]
13	BR	-

14	GR	-
15	BG	-
16	V	-
17	BG	-
18	L	- [Without CAN gateway]
18	Y	- [With CAN gateway]
19	W	-
20	L	-
21	B	-
22	LG	-
23	W	-
24	V	-
25	G	-
26	BR	-
27	SB	-
28	P	-
29	L	-
30	SHIELD	-
32	L	-
33	P	-
34	W	-
35	SHIELD	-
36	BG	-
37	SB	-
41	SB	-
42	V	-
43	L	-
44	B	-
45	BG	-
46	P	-
47	L	-
48	LG	-
49	BR	-
50	V	-
51	V	-
52	P	-
53	BG	-
55	G	-
56	SB	-
57	P	-
58	LG	-
59	Y	-
60	GR	-
61	B	-
62	LG	-
63	BR	-
65	W	-
66	R	-
67	V	-
68	LG	-

69	SB	-
70	V	-
72	L	-
73	P	-
74	L	-
75	P	-
76	G	-
77	Y	-
78	SB	-
79	W	-
81	LG	-
82	BR	-
83	BG	-
84	B	-
85	W	-
86	G	-
87	R	-
88	G	-
91	W	-
92	G	-
96	W	-
97	BG	-
98	Y	-
99	LG	-

Connector No.	M20
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	B	-
3	Y	-
4	G	-
5	R	-
6	W	-
11	BR	-
12	R	-
15	B	-
16	SHIELD	-

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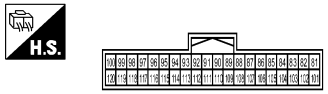
CAN SYSTEM (WITH ICC)

17	R	-
18	P	-
19	W	-
21	B	-
22	R	- [With ICC]
22	Y	- [Without ICC]
23	L	- [With ICC]
23	SB	- [Without ICC]
24	L	-
27	P	-
31	V	-
33	V	-
35	L	-
36	P	-
38	L	-
40	Y	-

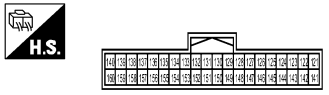
Connector No.	M22
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
81	L	-
82	P	-
83	B	-
84	B	-
85	B	-
86	B	-
87	B	-
88	B	-
89	Y	-
91	V	-
92	V	-
93	B	-
94	B	-
95	LG	-
96	BR	-
97	G	-
98	G	-
99	G	-

100	G	-
101	L	-
102	P	-
103	B	-
104	BR	-
105	R	-
107	Y	-
108	Y	-
109	BR	-
110	Y	-
112	B	-
113	P	-
114	L	-
116	B	-
117	B	- [With VK engine]
117	BG	- [With VQ engine]
118	B	-
119	LG	-
120	V	-

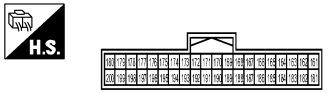
Connector No.	M23
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
121	R	-
122	V	-
123	BG	-
124	BG	-
126	B	-
131	SB	-
132	LG	-
133	L	-
134	L	-
135	P	-
136	P	-
137	Y	-
138	L	-
141	W	-
142	W	-

145	B	-
146	LG	-
147	B	-
149	B	-
150	P	-
151	L	-
152	B	-
153	W	-
154	W	-
155	W	-
158	R	-
159	R	-

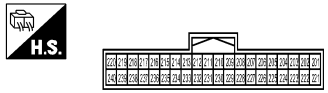
Connector No.	M24
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
161	BG	-
162	BG	-
164	V	-
165	V	-
166	R	-
167	LG	-
169	R	-
171	BG	-
172	B	-
174	W	-
176	L	-
177	P	-
178	Y	-
179	L	-
180	LG	-
182	BR	- [With VQ engine or with VK engine without ICC]
182	R	- [With VK engine with ICC]
183	G	-
184	V	-
185	P	-
186	R	-
187	L	- [Without CAN gateway]

187	Y	- [With CAN gateway]
188	L	-
189	B	-
190	V	-
191	LG	-
192	B	-
193	SB	-
194	BR	-
195	SB	-
198	R	-
199	B	-
200	SB	-

Connector No.	M25
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
201	L	-
206	P	-
207	Y	-
208	G	-
209	G	- [Without BOSE system]
209	L	- [With BOSE system]
210	L	- [Without BOSE system]
210	P	- [With BOSE system]
211	SHIELD	-
212	BR	- [Without BOSE system]
212	G	- [With BOSE system]
213	R	-
214	SHIELD	-
215	GR	- [Without BOSE system]
215	V	- [With BOSE system]
216	G	- [Without BOSE system]
216	LG	- [With BOSE system]
217	SHIELD	-
218	BR	- [With BOSE system]
218	P	- [Without BOSE system]
219	GR	- [With BOSE system]
219	V	- [Without BOSE system]

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CAN SYSTEM (WITH ICC)

220	SHIELD	-
221	P	-
222	LG	-
223	SB	-
224	SB	-
225	LG	-
226	R	-
229	SB	-
230	BR	-
231	SB	-
232	V	-
233	L	-
234	P	-
235	B	-
239	V	-
240	W	-

Connector No.	M26
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
241	L	-
242	L	-
243	R	- [With ICC]
243	Y	- [Without ICC]
244	L	- [With ICC]
244	SB	- [Without ICC]
245	B	-
246	B	-
247	B	-
248	SHIELD	-
251	SHIELD	-
252	B	-
253	B	-
254	B	- [With heated seat]
254	W	- [With climate controlled seat]
255	B	-
258	R	-
259	L	-

260	BG	-
261	P	-
262	P	-
267	P	-
268	Y	-
269	G	-
270	Y	-
271	BR	-
272	G	-
273	R	-
274	R	-
275	Y	-
276	B	-
277	G	-
278	R	-
279	R	-
280	Y	-

Connector No.	M28
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
321	V	-
322	V	-
324	B	-
325	L	-
326	L	-
327	P	-
328	P	-
330	B	-
331	V	-
332	V	-
335	B	-
337	W	-
338	W	-
343	L	-
344	B	-
345	Y	-
346	L	-

347	P	-
348	GR	-
349	V	-
350	LG	-
351	P	-
352	R	-
353	P	-
358	W	-
359	W	-
360	G	-

Connector No.	M29
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
361	W	-
362	W	-
363	Y	-
366	B	-
367	B	-
368	G	-
374	BG	-
375	BG	-
376	V	-
377	V	-
378	B	-
380	R	-
381	G	-
382	V	-
384	GR	-
395	P	-
396	L	-
400	V	-

Connector No.	M30
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
402	R	-
403	R	-
406	B	-
407	V	-
408	B	-
409	B	-
410	B	-
411	B	-
413	Y	-
414	BR	-
416	LG	-
417	B	-
419	SB	-
420	SHIELD	-
422	V	-
427	P	-
428	V	-
429	P	-
430	LG	-
431	B	-
432	Y	-
435	V	-
436	BG	-
437	B	-
438	P	-
439	L	-
440	B	-

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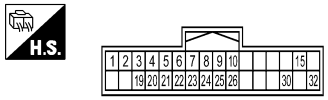
CAN SYSTEM (WITH ICC)

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH

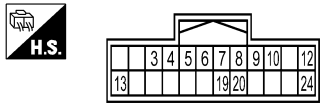
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
7	B	GND
8	G	IGN

Connector No.	M43
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH32FW-NH



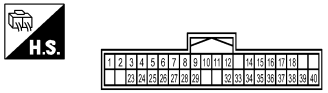
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	CAN-L
2	L	CAN-H
3	B	RR TUNER (SIG)
4	B	RL TUNER (SIG)
5	B	FR TUNER (SIG)
6	G	FL TUNER (SIG)
7	R	RR TUNER (VCC)
8	W	RL TUNER (VCC)
9	W	FR TUNER (VCC)
10	W	FL TUNER (VCC)
15	Y	IGN
19	G	RR TUNER (RSSI)
20	G	RL TUNER (RSSI)
21	G	FR TUNER (RSSI)
22	R	FL TUNER (RSSI)
23	W	RR TUNER (GND)
24	R	RL TUNER (GND)
25	R	FR TUNER (GND)
26	B	FL TUNER (GND)
30	G	BCM FLASHER
32	B	GND

Connector No.	M47
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FW-NH



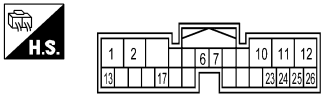
Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	CORNER SENSOR SIGNAL FRONT LH
4	W	CORNER SENSOR SIGNAL FRONT RH
5	W	CORNER SENSOR SIGNAL REAR LH
6	B	CORNER SENSOR SIGNAL REAR RH
7	G	CENTER SENSOR SIGNAL REAR LH
8	R	CENTER SENSOR SIGNAL REAR RH
9	Y	CENTER SENSOR SIGNAL FRONT LH
10	G	CENTER SENSOR SIGNAL FRONT RH
12	B	GROUND
13	LG	IGNITION POWER SUPPLY
19	L	CAN-H
20	R	CAN-L [Without ICC]
20	Y	CAN-L [With ICC]
24	B	GROUND

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



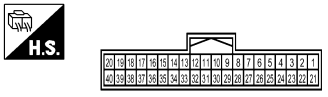
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BATTERY POWER SUPPLY
2	BG	IGNITION SIGNAL
3	GR	VEHICLE SPEED SIGNAL (2-PULSE)
4	R	VEHICLE SPEED SIGNAL (8-PULSE)
5	B	ILLUMINATION CONTROL SIGNAL
6	B	METER CONTROL SWITCH GROUND
7	SB	ENTER SWITCH SIGNAL
8	LG	SELECT SWITCH SIGNAL
9	G	ILLUMINATION CONTROL SWITCH SIGNAL (+)
10	GR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
11	L	TRIP RESET SWITCH SIGNAL
12	B	GROUND
14	L	CAN-H
15	P	CAN-L
16	R	AIR BAG SIGNAL
17	G	LED HEADLAMP (RH) WARNING SIGNAL
18	V	LED HEADLAMP (LH) WARNING SIGNAL
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	W	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	G	SECURITY SIGNAL
29	L	WASHER LEVEL SWITCH SIGNAL
32	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	W	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G	PASSENGER SEAT BELT WARNING SIGNAL
37	G	NON-MANUAL MODE SIGNAL
38	V	MANUAL MODE SHIFT DOWN SIGNAL
39	L	MANUAL MODE SHIFT UP SIGNAL
40	W	MANUAL MODE SIGNAL

Connector No.	M66
Connector Name	A/C AUTO AMP.
Connector Type	TH20FW-TB6



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
6	R	BLOWER MOTOR F/B SIGNAL
7	L	POWER TRANSISTOR CONTROL SIGNAL
10	B	GROUND
11	P	CAN-L
12	L	CAN-H
13	V	ACC POWER SUPPLY
17	BG	ECV CONTROL SIGNAL
23	W	DRIVE MODE SELECT SW (SNOW)
24	L	DRIVE MODE SELECT SW (ECO)
25	G	DRIVE MODE SELECT SW (STANDARD)
26	Y	DRIVE MODE SELECT SW (SPORT)

Connector No.	M105
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	LG	-
6	P	-
7	L	-
8	P	-
9	B	-

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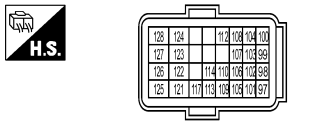
CAN SYSTEM (WITH ICC)

10	W	-
11	W	-
12	SB	-
13	G	-
14	SB	-
15	BR	-
16	V	-
17	P	-
18	G	-
22	BG	-
23	B	-
25	W	-
30	R	-
31	BR	-
32	L	-
33	P	-
34	LG	-
35	W	-
36	LG	-
37	L	-
38	BG	-
39	SHIELD	-
40	W	-

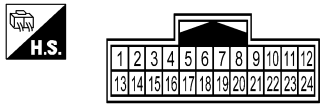
Connector No.	M107
Connector Name	ECM
Connector Type	RH24FGY-RZ8-R-RH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	ACCELERATOR PEDAL POSITION SENSOR 1
98	Y	ACCELERATOR PEDAL POSITION SENSOR 2
99	G	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
100	W	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1)
101	SB	ASCD STEERING SWITCH
102	P	FUEL TANK PRESSURE SENSOR
103	L	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2)
104	B	SENSOR GROUND [Without ICC]
104	BR	SENSOR GROUND [With ICC]
105	LG	REFRIGERANT PRESSURE SENSOR
106	P	FUEL TANK TEMPERATURE SENSOR

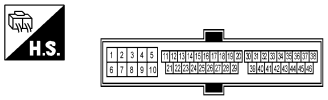
107	BG	AVCC2 PDPRES/FTPRES
108	Y	GND ASCD SW
109	BR	TRANSMISSION RANGE SWITCH
110	V	ENGINE SPEED SIGNAL OUTPUT
112	V	GNDA PDPRES/FTPRES
113	P	CAN COMMUNICATION LINE
114	L	CAN COMMUNICATION LINE
117	V	DATA LINK CONNECTOR
121	G	EVAP CANISTER VENT CONTROL VALVE
122	P	STOP LAMP SWITCH
123	B	ECM GROUND
124	B	ECM GROUND
125	SB	POWER SUPPLY FOR ECM
126	BR	ASCD BRAKE SWITCH
127	B	ECM GROUND
128	B	ECM GROUND

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



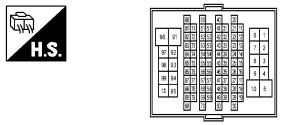
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	Y	-
3	W	-
4	R	-
5	L	-
6	B	-
7	BR	-
8	R	-
9	B	-
10	V	-
11	BR	-
12	G	-
13	L	-
20	V	-
21	R	-
22	G	-
23	L	-
24	LG	-

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK36MW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	SB	-
3	Y	-
4	B	- [With VK engine]
4	SB	- [With VQ engine]
5	B	-
7	W	-
8	Y	-
9	SB	- [With VQ engine]
9	W	- [With VK engine]
10	SB	-
11	L	-
12	P	-
13	V	-
14	R	-
15	Y	-
16	SB	-
17	BR	-
18	LG	-
21	LG	-
22	B	-
23	W	-
24	W	-
25	BG	-

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	Y	-
6	R	-
7	W	-
8	V	-
11	R	-
12	G	-
13	W	-
14	L	-
15	R	- [Without ADAS]
15	Y	- [With ADAS]
17	GR	-
18	P	-
19	BR	-
20	GR	-
21	Y	-
22	LG	-
23	R	-
24	BG	-
25	BG	-
26	W	-
28	V	-
29	P	-
30	B	-
31	G	-
32	Y	-
40	SHIELD	-
41	R	-
42	V	-
45	SB	-
46	BG	- [With heated seat]
46	L	- [With climate controlled seat]
47	G	- [With climate controlled seat]
47	GR	- [With heated seat]
48	V	-
49	BG	-

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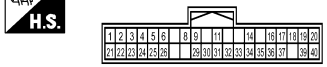
CAN SYSTEM (WITH ICC)

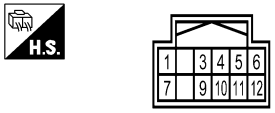
50	LG	-
51	SB	-
52	Y	-
53	W	-
56	B	-
57	G	-
58	R	-
59	W	-
61	LG	-
62	V	-
63	R	-
64	SB	-
65	LG	-
66	L	-
67	Y	-
68	SB	-
69	B	-
71	L	-
72	L	-
73	P	-
74	B	-
75	L	-
76	SHIELD	-
77	G	-
78	R	-
79	L	-
80	G	-
81	BG	-
82	BR	-
83	GR	-
84	V	-
85	LG	-
86	V	-
87	R	-
88	Y	-
89	BR	-
90	L	-
91	Y	-
93	G	- [With heated seat]
93	W	- [With climate controlled seat]
94	V	-
96	W	-
97	Y	-
98	BR	-
99	G	-
100	Y	-

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



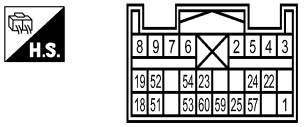
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	RR WINDOW DEFG RLY CONT
2	BG	COMBI SW INPUT 5
3	SB	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	W	OPTICAL SENSOR
16	SB	DIMMER SIGNAL
17	Y	SENSOR PWR SPLY
18	B	RECEIVER / SENSOR GND
19	V	TURN SIG RH OUTPUT (FRONT)
20	G	TURN SIG LH OUTPUT (FRONT)
21	P	NATS ANT AMP.
22	GR	KYLS ENT RECEIVER RSSI
23	G	SECURITY IND CONT
24	L	DONGLE LINK
25	G	NATS ANT AMP.
26	G	I-KEY IDENTIFICATION
29	G	HAZARD SW
30	O	TR LID OPNR SW
31	W	DR DOOR UNLK SENSOR
32	BR	COMBI SW OUTPUT 5
33	R	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	Y	COMBI SW OUTPUT 2
36	LG	COMBI SW OUTPUT 1
37	R	P POSITION
39	L	CAN-H
40	P	CAN-L

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
3	GR	BATTERY
4	L	CAN-H
5	B	GND
6	L	CAN-H
7	P	CAN-L
9	W	IGNITION
10	P	CAN-L
11	B	GND
12	P	CAN-L

Connector No.	M147
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH28FY-EX



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	IGN
2	B	GND
3	Y	DR1 (+)
4	Y	DR1 (-) DR2 (-)
5	Y	DR2 (+)
6	Y	AS1 (+)
7	Y	AS1 (-)
8	Y	AS2 (+)
9	Y	AS2 (-)
18	SB	ECZS (+)
19	V	ECZS (-)
22	SHIELD	GND
23	R	AIR BAG W/L
24	G	SEAT BELT
25	R	CUTOFF TELLTALE
51	G	SATELLITE RH2 (+)
52	R	SATELLITE RH2 (-)
53	P	SATELLITE RH2 (+)
54	L	SATELLITE RH2 (-)
57	L	IVCS
59	L	CAN-H
60	P	CAN-L

Connector No.	M150
Connector Name	WIRE TO WIRE
Connector Type	RH12FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	BR	-
3	R	-
4	L	-
5	W	-
6	G	-
7	BG	-
8	LG	-
9	G	-
10	Y	-
11	L	-
12	SHIELD	-

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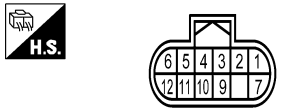
CAN SYSTEM (WITH ICC)

Connector No.	M151
Connector Name	WIRE TO WIRE
Connector Type	RH12MB

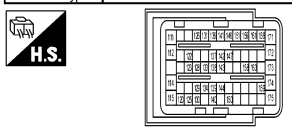
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	B	-
3	R	-
4	L	-
5	W	-
6	G	-
7	O	-
8	B	-
9	R	-
10	Y	-
11	L	-
12	SHIELD	-

Connector No.	M154
Connector Name	ACCELERATOR PEDAL ACTUATOR/ACCELERATOR PEDAL POSITION SENSOR
Connector Type	RH12FB



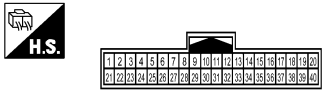
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	BATTERY
2	R	IGNITION
3	L	ITS COMM-H
4	G	SENSOR POWER SUPPLY
5	W	SENSOR GROUND
6	R	ACCELERATOR PEDAL POSITION SENSOR 1
7	B	GROUND
9	Y	ITS COMM-L
10	L	SENSOR POWER SUPPLY
11	B	SENSOR GROUND
12	Y	ACCELERATOR PEDAL POSITION SENSOR 2

Connector No.	M160
Connector Name	ECM
Connector Type	MAB55FB-MEB10-LH-Z



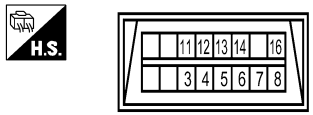
Terminal No.	Color Of Wire	Signal Name [Specification]
111	W	FUEL INJECTOR DRIVER POWER SUPPLY
112	W	FUEL INJECTOR DRIVER POWER SUPPLY
114	B	ECM GROUND
115	B	ECM GROUND
120	G	EVAP CANISTER VENT CONTROL VALVE
122	V	VVEL ACTUATOR MOTOR RELAY ABORT SIGNAL (VVEL CONTROL MODULE)
123	BG	THROTTLE CONTROL MOTOR RELAY
125	P	FUEL PUMP CONTROL MODULE (FPCM)
126	Y	ACCELERATOR PEDAL POSITION SENSOR 2
128	SB	ASCD STEERING SWITCH
129	B	SENSOR GROUND [Without ICC]
129	BR	SENSOR GROUND [With ICC]
130	Y	SENSOR GROUND
131	L	SENSOR POWER SUPPLY
133	BG	SENSOR POWER SUPPLY
134	P	FUEL TANK TEMPERATURE SENSOR
136	R	ACCELERATOR PEDAL POSITION SENSOR 1
137	G	SENSOR POWER SUPPLY
138	P	BATTERY CURRENT SENSOR
139	BG	BATTERY TEMPERATURE SENSOR
140	W	SENSOR GROUND
141	G	IGNITION SWITCH
142	GR	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	P	FUEL TANK PRESSURE SENSOR
144	LG	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	BR	ASCD BRAKE SWITCH
150	V	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	W	POWER SUPPLY FOR ECM (BACK-UP)
158	P	STOP LAMP SWITCH
161	Y	ENG COMMUNICATION LINE
163	W	ECM RELAY (SELF SHUT-OFF)
166	BG	ENG COMMUNICATION LINE
169	V	ENGINE SPEED SIGNAL OUTPUT
171	SB	POWER SUPPLY FOR ECM
172	SB	POWER SUPPLY FOR ECM
173	R	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	M181
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH



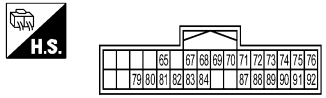
Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	R	-
6	BR	-
7	L	-
8	P	-
9	B	-
10	W	-
11	LG	-
12	SB	-
13	G	-
14	SB	-
15	BR	-
16	V	-
17	P	-
18	G	-
22	BG	-
23	B	-
25	W	-
30	R	-
31	BR	-
32	L	-
33	P	-
34	LG	-
35	W	-
36	LG	-
37	L	-
38	BG	-
39	SHIELD	-
40	W	-

Connector No.	M182
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	M-CAN_L
4	B	EARTH
5	B	EARTH
6	L	CAN-H
7	V	KLINE
8	LG	IGN_SW
11	SB	M-CAN_H
12	P	CAN-L
13	L	CAN-H
14	P	CAN-L
16	W	POWER

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH



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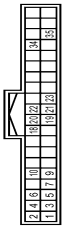
CAN SYSTEM (WITH ICC)

Terminal No.	Color Of Wire	Signal Name [Specification]
65	V	PARKING BRAKE SIGNAL
67	R	COMPOSITE IMAGE SIGNAL GND
68	W	COMPOSITE IMAGE SIGNAL
69	G	I-KEY IDENTIFICATION SIGNAL
70	P	-
71	SHIELD	MICROPHONE SHIELD
72	G	MICROPHONE VCC
73	BR	COMM (CONT->DISP)
74	P	CAN-L
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	SB	DIMMER SIGNAL
80	W	IGNITION SIGNAL
81	BG	REVERSE SIGNAL
82	R	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	B	COMPOSITE IMAGE SYNC SIGNAL
87	R	MICROPHONE SIGNAL
88	SHIELD	SHIELD
89	Y	COMM (DISP->CONT)
90	L	CAN-H
91	SB	AV COMM (-H)
92	SB	AV COMM (+H)

Connector No.	M216
Connector Name	TCU
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	B	GROUND
3	SB	ACC POWER SUPPLY
4	W	IGNITION SIGNAL
5	V	ACC OUTPUT
6	P	-
7	B	GROUND
9	L	CAN-H
10	P	CAN-L

Terminal No.	Color Of Wire	Signal Name [Specification]
18	G	MICROPHONE VCC
19	R	MICROPHONE SIGNAL
20	SHIELD	MICROPHONE SHIELD
21	G	MICROPHONE VCC
22	R	MICROPHONE SIGNAL
23	SHIELD	MICROPHONE SHIELD
34	G	SOS call switch
35	BR	SOS call switch LED signal

Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	Y	-
3	W	-
4	R	-
5	L	-
6	B	-
7	R	-
8	P	-
9	B	-
10	V	-
11	BR	-
12	G	-
13	L	-
20	R	-
21	R	-
22	G	-
23	L	-
24	LG	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH08FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
4	L	ITS COMM-H
5	B	GROUND
7	G	IGNITION
8	Y	ITS COMM-L

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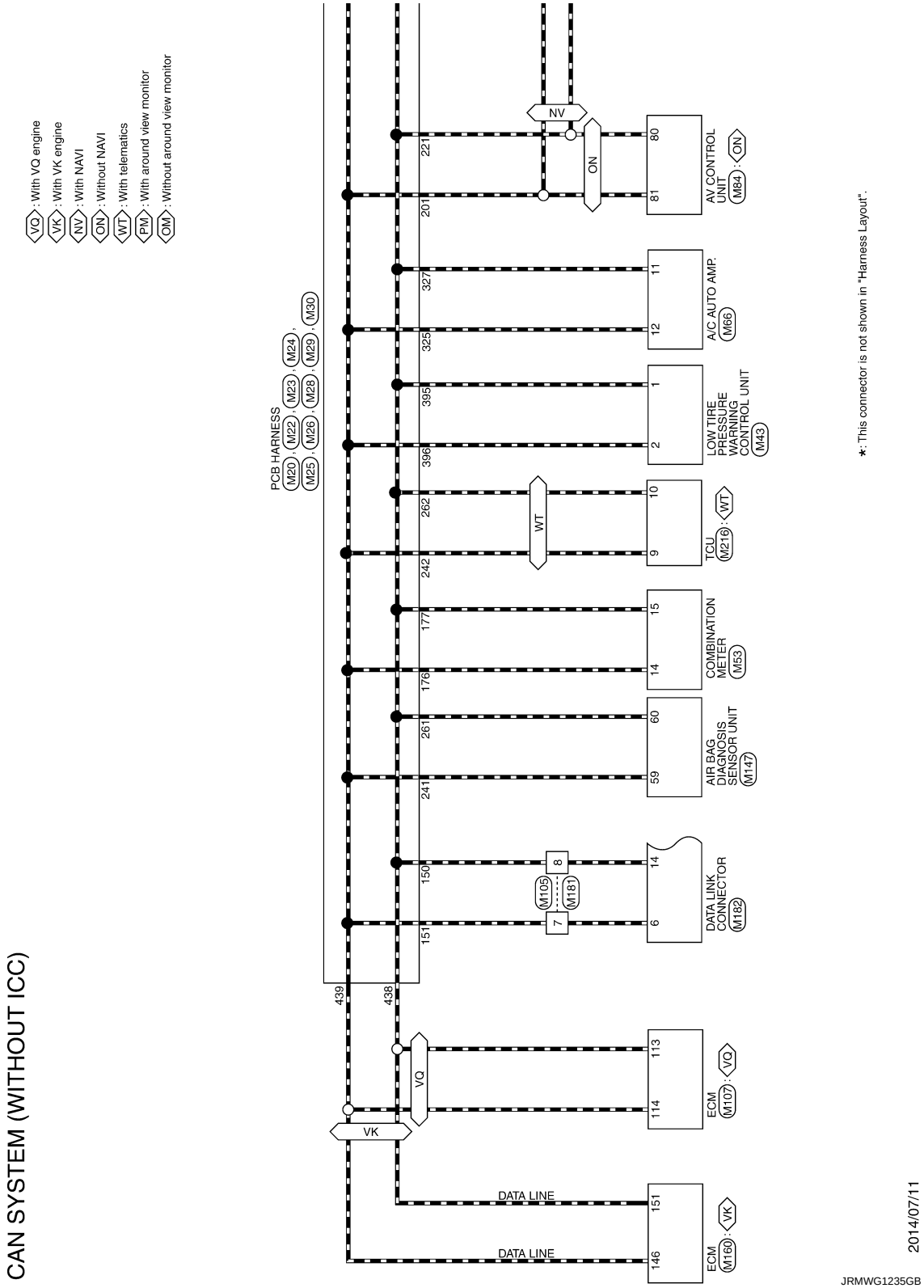
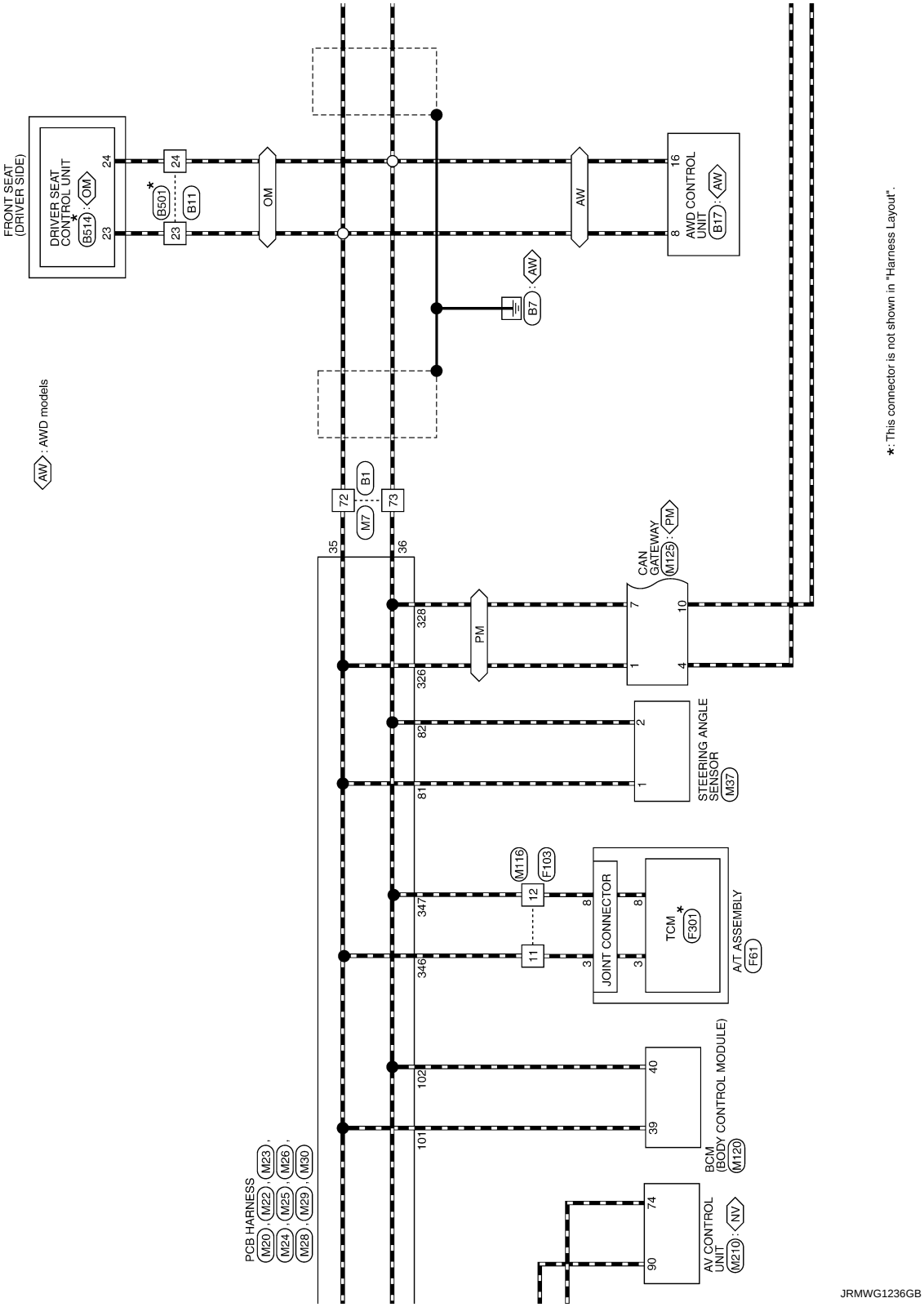
CAN SYSTEM (WITHOUT ICC)

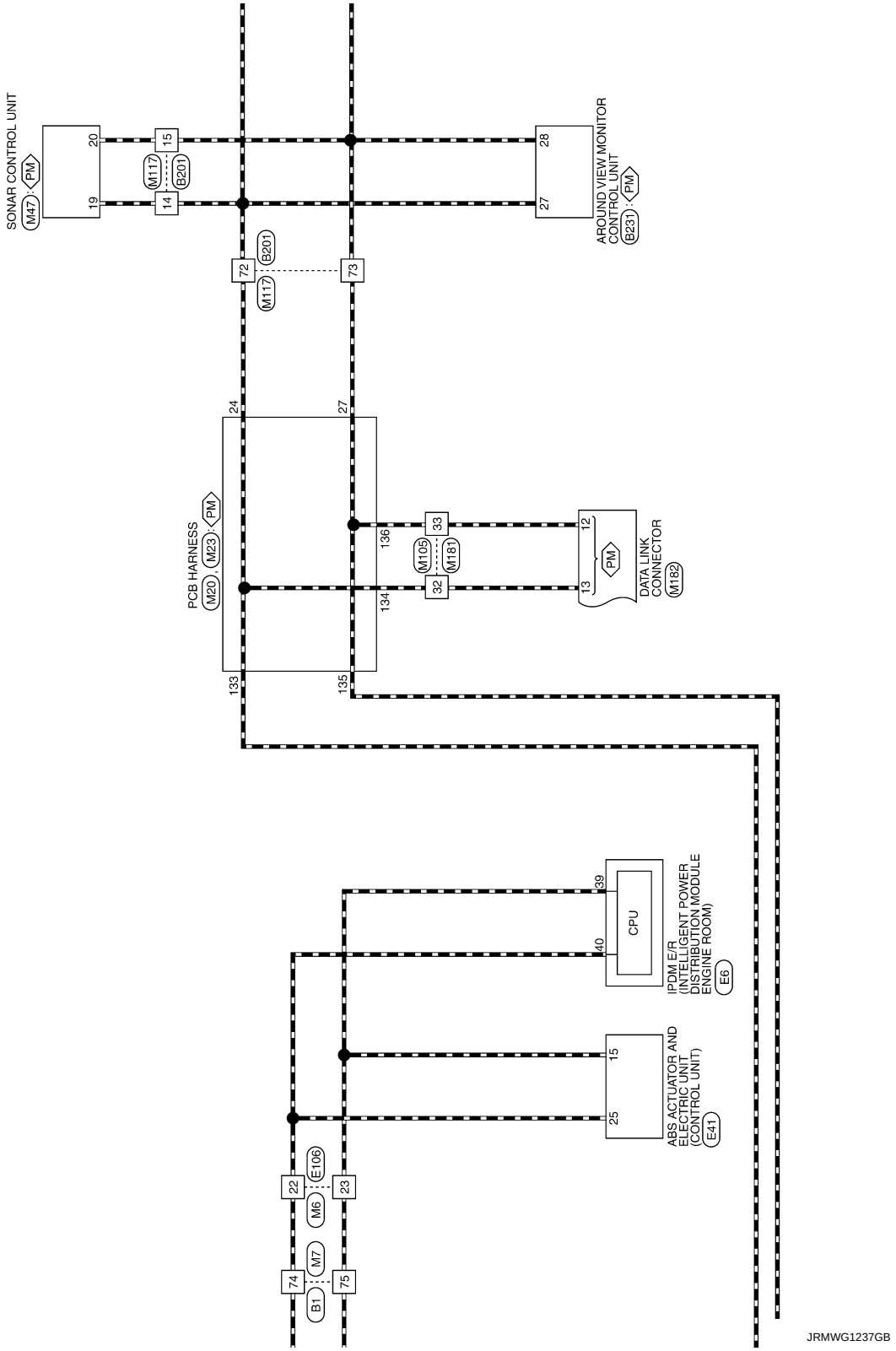
Wiring Diagram

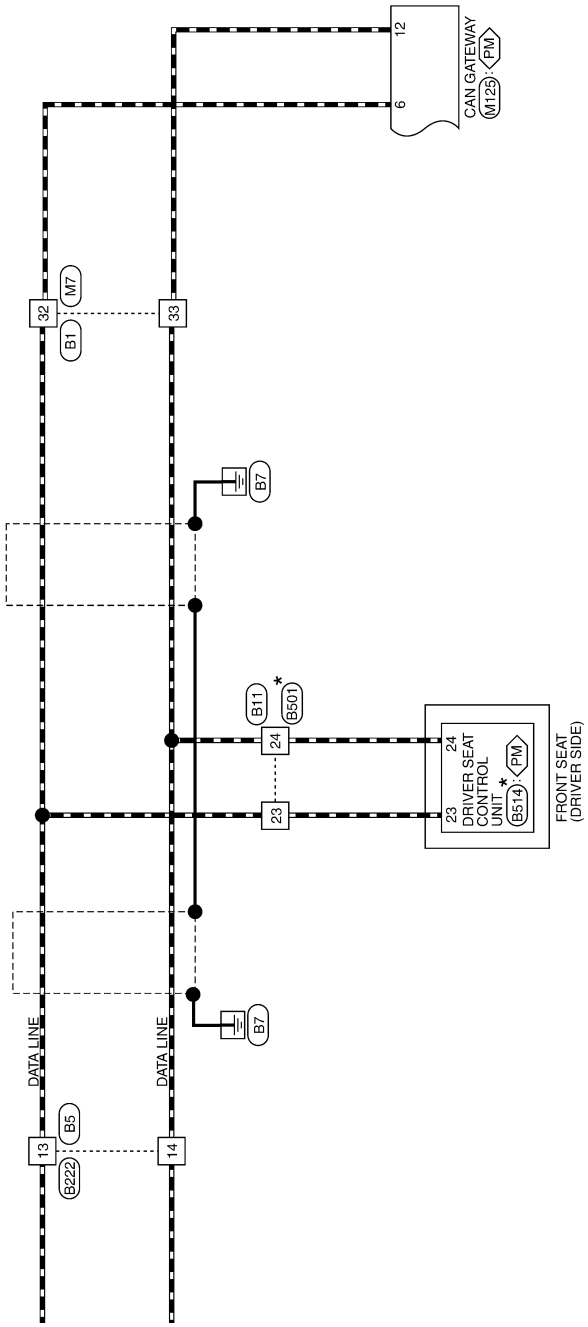
INFOID:0000000011255158



CAN SYSTEM (WITHOUT ICC)


FRONT SEAT (DRIVER SIDE)
DRIVER SEAT CONTROL UNIT
B514 : OM
23
24
B501
B11
OM
AW
AWD CONTROL UNIT
B17 : AW
16
8
B7
AW : AWD models
72
73
B1
M7
35
36
328
326
PM
CAN GATEWAY
M125 : PM
7
10
1
4
82
81
STEERING ANGLE SENSOR
M37
2
1
M116
F103
12
11
347
346
JOINT CONNECTOR
8
3
TCM
F301
A/T ASSEMBLY
F61
102
101
BCM (BODY CONTROL MODULE)
M120
40
39
PCB HARNESS
M20, M22, M23, M24, M25, M26, M28, M29, M30
AV CONTROL UNIT
M210 : NV
74
90
*: This connector is not shown in "Harness Layout".
JRMWG1236GB

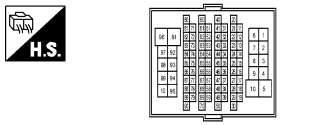

SONAR CONTROL UNIT
M47
PM
20
19
15
14
M117
B201
AROUND VIEW MONITOR CONTROL UNIT
B231
PM
28
27
72
73
B201
M117
PCB HARNESS
M20
M23
PM
24
27
133
135
136
134
33
32
M105
M181
DATA LINK CONNECTOR
M182
PM
12
13
CPU
39
40
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E6
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E41
15
25
22
23
E106
M6
74
75
M7
B1
JRMWG1237GB



JRMWG1238GB

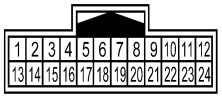
CAN SYSTEM (WITHOUT ICC)

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



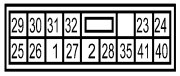
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
4	LG	-
5	P	-
7	GR	-
8	Y	-
9	LG	-
10	V	-
11	GR	- [With climate controlled seat]
11	L	- [With heated seat]
12	GR	- [With heated seat]
12	P	- [With climate controlled seat]
13	BR	-
14	R	-
15	O	-
16	V	-
17	B	-
18	R	-
19	W	-
20	L	-
21	B	-
22	LG	-
23	V	-
24	Y	-
25	G	-
26	GR	-
27	SB	-
28	L/O	-
29	W/L	-
30	SHIELD	-
32	L	-
33	R	-
34	G	-
35	SHIELD	-
36	G	-
37	SB	-
40	SHIELD	-
41	GR/V	-
42	W/L	-
43	L	-
44	B	-
45	V	-
46	P	-
47	O	-
48	Y	-
49	BR	-
50	SB	-
51	V	-
52	LG	-
53	G	-
55	G	-
56	P	-
57	BR	-
58	LG	-
59	Y	-
60	W	-
61	B	-
62	LG	-
63	V	-
65	O	-
66	BR	-
67	V	-
68	LG	-
69	GR	-
70	R	-
72	L	-
73	P	-
74	L	-
75	P	-
76	Y	-
77	R	-
78	W	-
79	G	-
81	LG	-
82	BR	-
83	SB	-
84	Y	-
85	W	-
86	R	-
87	G	-
88	GR	-
91	SB	-
92	G	-
96	Y	-
97	O	-
98	SB	-
99	LG	-

Connector No.	B5
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



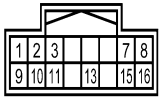
Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	W	-
6	B	-
7	R	-
8	SHIELD	-
9	G	-
12	V	-
13	L	-
14	R	-
15	B	-
16	SHIELD	-
17	R	-
18	G	-
19	W	-
20	P	-
21	V	-
22	G	-
24	SB	-

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	B	-
23	L	-
24	P	- [Without CAN gateway]
24	R	- [With CAN gateway]
25	BR	-
26	W	-
27	L	-
28	P	-
29	O	-
30	V	-
31	BR	-
32	LG	-
35	LG	-
40	O	-
41	B	-

Connector No.	B17
Connector Name	AWD CONTROL UNIT
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	AWD SOL (+)
2	R	AWD SOL (-)
3	W	FLUID TEMP (-)

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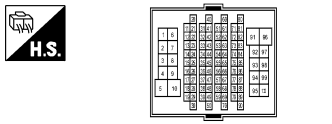
CAN SYSTEM (WITHOUT ICC)

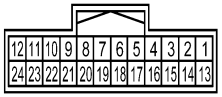
7	Y	IGN
8	L	CAN-H
9	SB	AWD SOL BAT
10	B/Y	GND
11	B/Y	GND
13	LG	FLUID TEMP (+)
15	G	BATTERY POWER SUPPLY
16	P	CAN-L

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	R	-
6	R	-
7	W	-
8	V	-
11	R	-
12	G	-
13	Y	-
14	L	-
15	R	- [Without ADAS]
15	Y	- [With ADAS]
17	GR	-
18	P	-
19	BR	-
20	GR	-
21	Y	-
22	GR	-
23	R	-
24	V	-
25	B	-
26	W	-
28	V	-
29	P	-
30	O	-
31	B/R	-
32	Y	-
40	SHIELD	-
41	W/R	-
42	V	-
45	SB	-
46	R	- [With climate controlled seat]
46	Y	- [With heated seat]
47	G	- [With climate controlled seat]
47	GR	- [With heated seat]
48	V	-
49	O	-
50	R	-
51	GR	-
52	LG	-
53	P	-
56	P	-
57	W	-
58	O	-
59	Y	-
61	SB	-
62	L	-
63	W	-
64	SB	-
65	LG	-
66	L	-
67	Y	-
68	SB	-
69	B	-
71	L	-
72	L	-
73	R	-
74	B	-
75	L	-
76	SHIELD	-
77	G	-
78	R	-
79	P	-
80	G	-
81	O	-
82	BR	-
83	GR	-
84	V	-
85	LG	-
86	W	-
87	O	-
88	Y	-
89	BR	-
90	L	-
91	BR	-
93	O	- [With heated seat]
93	Y	- [With climate controlled seat]
94	GR	-
96	W	-
97	P	-
98	LG	-
99	LG	-
100	Y	-

Connector No.	B222
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

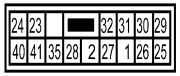


Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	B	-
6	R	-
7	G	-
8	SHIELD	-
9	W	-
12	P	-
13	L	-
14	R	-
15	B	-
16	SHIELD	-
17	R	-
18	G	-
19	W	-
20	P	-
21	V	-
22	G	-
24	SB	-

Connector No.	B231
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/R	GROUND
2	Y	BATTERY POWER SUPPLY
3	W	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COMMUNICATION SIGNAL (H)
20	LG	AV COMMUNICATION SIGNAL (L)
25	B	REVERSE SIGNAL
27	L	CAN-H
28	R	CAN-L [Withou ICC]
28	Y	CAN-L [With ICC]
30	SB	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	P	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

Connector No.	B501
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
23	P	-
24	P/L	-
25	G/O	-
26	L/O	-
27	V	-
28	V/W	-

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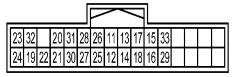
CAN SYSTEM (WITHOUT ICC)

29	L	-
30	BR	-
31	BR/W	-
32	W/L	-
35	W/Y	-
40	W/G	-
41	GR	-

Connector No.	B514
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH32FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
11	G/B	SLIDE SW (BACKWARD)
12	G/W	SLIDE SW (FORWARD)
13	R/G	RECLINER SW (BACKWARD)
14	R/W	RECLINER SW (FORWARD)
15	Y/B	REAR LIFTER SW (DOWNWARD)
16	Y/R	REAR LIFTER SW (UPWARD)
17	LG/B	FRONT LIFTER SW (DOWNWARD)
18	LG/R	FRONT LIFTER SW (UPWARD)
19	G/Y	PULSE (SLIDE)
20	R/Y	PULSE (RECLINER)
21	Y	PULSE (REAR LIFTER)
22	R	PULSE (FRONT LIFTER)
23	P	CAN-H
24	P/L	CAN-L
25	G/O	IND 1
26	L/O	IND 2
27	V	ADDRESS 1
28	V/W	ADDRESS 2
29	L	SET SW
30	BR	PULSE(TILT)
31	BR/W	PULSE(TELESCOPIC)
32	W/L	UART (TX/RX)
33	W	POWER SUPPLY (ENCODER)

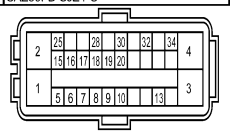
Connector No.	E6
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	CAN-L
40	L	CAN-H
41	B	S-GND
42	V	MOTOR_FAN_RLY_CONT [With VK engine]
42	Y	MOTOR_FAN_RLY_CONT [With VQ engine]
43	SB	DETENT_SW
44	GR	HORN_RLY [With VK engine]
44	LG	HORN_RLY [With VQ engine]
45	G	HORN_SW
46	BR	START_CONT

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ30FB-SJZ4-U

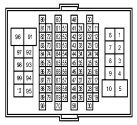
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/W	ECU(GND)
2	B	MOTOR(GND)
3	Y	SOLENOID(POWER)
4	G	MOTOR(POWER)
5	SB	STOP LAMP SW
6	Y	CANM2(-)
7	W	Rr-LH SEN(SIGNAL)
8	G	Rr-LH SEN(POWER)
9	BR	Fr-RH SEN(SIGNAL)
10	B	Fr-RH SEN(POWER)
13	LG	VAC SEN(SIGNAL)
15	P	CAN-L
16	B	CANM2(+)
17	Y	Rr-RH SEN(SIGNAL)
18	BR	Rr-RH SEN(POWER)
19	SB	Fr-LH SEN(SIGNAL)
20	O	Fr-LH SEN(POWER)
25	L	CAN-H
28	V	VAC SEN(POWER)
30	R	VDC OFF SW
32	SHIELD	VAC SEN(GND)
34	G	IGN(POWER)

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	W	-
3	SB	-
4	LG	-
5	O	-
6	W	-
7	GR	-
8	G	-
9	Y	-
10	BR	-
11	SB	-
12	L	-
13	GR	-
14	GR	-
15	V	-
16	Y	-
17	GR	-
18	V	-
20	BR	-
21	P	-
22	L	-
23	P	-
27	SHIELD	-
28	L/O	-
29	W/L	-
31	BR	-
32	G	-
33	O	-
34	Y	-
36	G	-
37	V	-
41	BR	-
44	W	-
45	L	-
46	GR	-
47	V	-
48	G	-
49	O	-
50	LG	-
54	R	-
55	B	-
60	W	-
61	G	-
62	Y	-
63	BR	-
64	B	-
65	Y	-
66	R	-
67	SB	-
68	G	-
69	SHIELD	-
70	W	-
71	W	-
72	R	-
73	G	-
74	Y	-
75	B	-
76	SHIELD	-
77	O	-
78	SB	-
80	V	-
82	SB	-
83	GR	-
84	Y	-
85	Y	-
86	L	-
87	V	-
88	BR	-
89	LG	-
90	W	-
91	W	-
92	P	-

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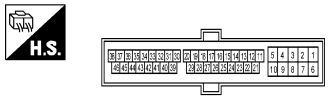
CAN SYSTEM (WITHOUT ICC)

93	LG	-
94	BR	-
95	W	-
97	R	-
98	Y	-
99	V	-
100	V	-

Connector No.	F61
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	POWER SUPPLY (BACK UP)
2	R	POWER SUPPLY (BACK UP)
3	L	CAN-H
4	V	K-LINE
5	B	GND
6	G	POWER SUPPLY (IGN)
7	SB	BACK-UP LAMP RELAY
8	P	CAN-L
9	BR	P/N SIGNAL
10	B	GROUND

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW-NS10

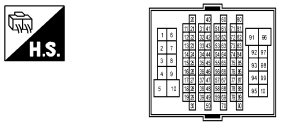


Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	G	-
4	B	- [With VK engine]
4	R	- [With VQ engine]
5	B	- [With VQ engine]
5	GR	- [With VK engine]
7	LG	-
8	Y	-
9	SB	- [With VQ engine]
9	W	- [With VK engine]
10	BR	- [With VK engine]
10	V	- [With VQ engine]
11	L	-
12	P	-
13	V	-
14	SB	-
15	R	-
16	W	-
17	GR	-
18	LG	-
21	LG	-
22	B	-
23	G	-
24	BR	-
25	O	-

Connector No.	F301
Connector Name	TCM
Connector Type	SP10FG

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	VIGN
2	-	BATT
3	-	CAN-H
4	-	K LINE
5	-	GND
6	-	VIGN
7	-	REV LAMP RLY
8	-	CAN-L
9	-	START RLY
10	-	GND

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	W	-
3	SB	-
4	LG	-
5	W	-
6	W	-
7	BG	-
8	G	-
9	Y	-
10	W	-
11	R	-
12	V	-
13	LG	-
14	L	-
15	V	-
16	B	-
17	GR	-
18	V	-
20	SB	-
21	BR	-
22	L	-
23	P	-
27	SHIELD	-
28	V	-
29	SB	-
31	BG	-
32	P	-
33	R	-
34	BG	-
36	V	-
37	G	-
41	BR	-
44	BR	-
45	Y	-
46	BG	-
47	V	-
48	G	-
49	BG	-
50	W	-
54	W	-
55	G	-
60	GR	-
61	B	-
62	LG	-
63	BR	-
64	L	- [With ICC]
64	SB	- [Without ICC]
65	R	- [With ICC]
65	Y	- [Without ICC]
66	P	-
67	L	-
68	R	-
69	SHIELD	-
70	B	-
71	W	-
72	R	-
73	G	-
74	Y	-
75	B	-
76	SHIELD	-
77	B	-
78	V	-
80	G	-
82	B	-
83	BG	-
84	SB	-
85	Y	-
86	L	-
87	V	-
88	V	-
89	LG	-
90	BG	-
91	W	-
92	BG	-
93	G	-
94	Y	-
95	W	-
97	SB	-
98	R	-
99	W	-
100	L	-

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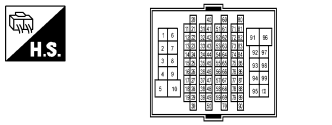
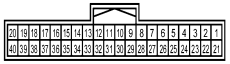
CAN SYSTEM (WITHOUT ICC)

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	Y	-
4	BR	-
5	P	-
7	G	-
8	Y	-
9	G	-
10	V	-
11	L	- [With heated seat]
11	V	- [With climate controlled seat]
12	GR	- [With heated seat]
12	P	- [With climate controlled seat]
13	BR	-
14	GR	-
15	BG	-
16	V	-
17	BG	-
18	L	- [Without CAN gateway]
18	Y	- [With CAN gateway]
19	W	-
20	L	-
21	B	-
22	LG	-
23	W	-
24	V	-
25	G	-
26	BR	-
27	SB	-
28	P	-
29	L	-
30	SHIELD	-
32	L	-
33	P	-
34	W	-
35	SHIELD	-
36	BG	-
37	SB	-
41	SB	-
42	V	-
43	L	-
44	B	-
45	BG	-
46	P	-
47	L	-
48	LG	-
49	BR	-
50	V	-
51	V	-
52	P	-
53	BG	-
55	G	-
56	SB	-
57	P	-
58	LG	-
59	Y	-
60	GR	-
61	B	-
62	LG	-
63	BR	-
65	W	-
66	R	-
67	V	-
68	LG	-
69	SB	-
70	V	-
72	L	-
73	P	-
74	L	-
75	P	-
76	G	-
77	Y	-
78	SB	-
79	W	-
81	LG	-
82	BR	-
83	BG	-
84	B	-
85	W	-
86	G	-
87	R	-
88	G	-
91	W	-
92	G	-
96	W	-
97	BG	-
98	Y	-
99	LG	-

Connector No.	M20
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	B	-
3	Y	-
4	G	-
5	R	-
6	W	-
11	BR	-
12	R	-
15	B	-
16	SHIELD	-
17	R	-
18	P	-
19	W	-
21	B	-
22	R	- [With ICC]
22	Y	- [Without ICC]
23	L	- [With ICC]
23	SB	- [Without ICC]
24	L	-
27	P	-
31	V	-
33	V	-
35	L	-
36	P	-
38	L	-
40	Y	-

Connector No.	M22
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
81	L	-
82	P	-
83	B	-
84	B	-
85	B	-
86	B	-
87	B	-
88	B	-
89	Y	-
91	V	-
92	V	-
93	B	-
94	B	-
95	LG	-
96	BR	-
97	G	-
98	G	-
99	G	-
100	G	-
101	L	-
102	P	-
103	B	-
104	BR	-
105	R	-
107	V	-
108	Y	-
109	BR	-
110	Y	-
112	B	-
113	P	-
114	L	-
116	B	-
117	B	- [With VK engine]
117	BG	- [With VQ engine]
118	B	-
119	LG	-

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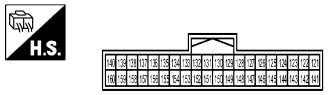
CAN SYSTEM (WITHOUT ICC)

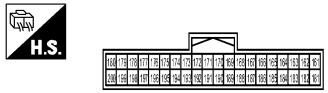
120	V	-

Connector No.	M23
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



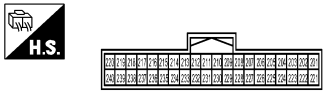
Terminal No.	Color Of Wire	Signal Name [Specification]
121	R	-
122	V	-
123	BG	-
124	BG	-
126	B	-
131	SB	-
132	LG	-
133	L	-
134	L	-
135	P	-
136	P	-
137	Y	-
138	L	-
141	W	-
142	W	-
145	B	-
146	LG	-
147	B	-
149	B	-
150	P	-
151	L	-
152	B	-
153	W	-
154	W	-
155	W	-
158	R	-
159	R	-

Connector No.	M24
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
161	BG	-
162	BG	-
164	V	-
165	V	-
166	R	-
167	LG	-
169	R	-
171	BG	-
172	B	-
174	W	-
176	L	-
177	P	-
178	Y	-
179	L	-
180	LG	-
182	BR	- [With VQ engine or with VK engine without ICC]
182	R	- [With VK engine with ICC]
183	G	-
184	V	-
185	P	-
186	R	-
187	L	- [Without CAN gateway]
187	Y	- [With CAN gateway]
188	L	-
189	B	-
190	V	-
191	LG	-
192	B	-
193	SB	-
194	BR	-
195	SB	-
198	R	-
199	B	-
200	SB	-

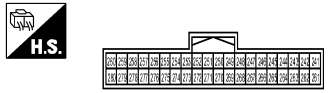
Connector No.	M25
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
201	L	-
206	P	-
207	Y	-
208	G	-
209	G	- [Without BOSE system]
209	L	- [With BOSE system]
210	L	- [Without BOSE system]
210	P	- [With BOSE system]
211	SHIELD	-
212	BR	- [Without BOSE system]
212	G	- [With BOSE system]
213	R	-
214	SHIELD	-
215	GR	- [Without BOSE system]
215	V	- [With BOSE system]
216	G	- [Without BOSE system]
216	LG	- [With BOSE system]
217	SHIELD	-
218	BR	- [With BOSE system]
218	P	- [Without BOSE system]
219	GR	- [With BOSE system]
219	V	- [Without BOSE system]
220	SHIELD	-
221	P	-
222	LG	-
223	SB	-
224	SB	-
225	LG	-
226	R	-
229	SB	-
230	BR	-
231	SB	-
232	V	-
233	L	-
234	P	-
235	B	-

239	V	-
240	W	-

Connector No.	M26
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
241	L	-
242	L	-
243	R	- [With ICC]
243	Y	- [Without ICC]
244	L	- [With ICC]
244	SB	- [Without ICC]
245	B	-
246	B	-
247	B	-
248	SHIELD	-
251	SHIELD	-
252	B	-
253	B	-
254	B	- [With heated seat]
254	W	- [With climate controlled seat]
255	B	-
258	R	-
259	L	-
260	BG	-
261	P	-
262	P	-
267	P	-
268	Y	-
269	G	-
270	Y	-
271	BR	-
272	G	-
273	R	-
274	R	-
275	Y	-
276	B	-
277	G	-

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CAN SYSTEM (WITHOUT ICC)

278	R	-
279	R	-
280	Y	-

Connector No.	M28
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
321	V	-
322	V	-
324	B	-
325	L	-
326	L	-
327	P	-
328	P	-
330	B	-
331	V	-
332	V	-
335	B	-
337	W	-
338	W	-
343	L	-
344	B	-
345	Y	-
346	L	-
347	P	-
348	GR	-
349	V	-
350	LG	-
351	P	-
352	R	-
353	P	-
358	W	-
359	W	-
360	G	-

Connector No.	M29
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
361	W	-
362	W	-
363	Y	-
366	B	-
367	B	-
368	G	-
374	BG	-
375	BG	-
376	V	-
377	V	-
378	B	-
380	R	-
381	G	-
382	V	-
384	GR	-
395	P	-
396	L	-
400	V	-

Connector No.	M30
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
402	R	-
403	R	-
406	B	-
407	V	-
408	B	-
409	B	-
410	B	-
411	B	-
413	Y	-
414	BR	-
416	LG	-
417	B	-
419	SB	-
420	SHIELD	-
422	V	-
427	P	-
428	V	-
429	P	-
430	LG	-
431	B	-
432	Y	-
435	V	-
436	BG	-
437	B	-
438	P	-
439	L	-
440	B	-

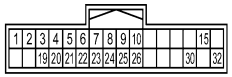
Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
7	B	GND
8	G	IGN

Connector No.	M43
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH32FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	CAN-L
2	L	CAN-H
3	B	RR TUNER (SIG)
4	B	RL TUNER (SIG)
5	B	FR TUNER (SIG)
6	G	FL TUNER (SIG)
7	R	RR TUNER (VCC)
8	W	RL TUNER (VCC)
9	W	FR TUNER (VCC)
10	W	FL TUNER (VCC)
15	Y	IGN
19	G	RR TUNER (RSSI)
20	G	RL TUNER (RSSI)
21	G	FR TUNER (RSSI)
22	R	FL TUNER (RSSI)
23	W	RR TUNER (GND)
24	R	RL TUNER (GND)
25	R	FR TUNER (GND)
26	B	FL TUNER (GND)
30	G	BCM FLASHER
32	B	GND

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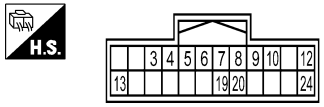
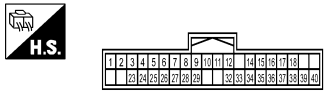
CAN SYSTEM (WITHOUT ICC)

Connector No.	M47
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FW-NH



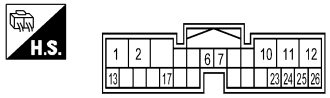
Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	CORNER SENSOR SIGNAL FRONT LH
4	W	CORNER SENSOR SIGNAL FRONT RH
5	W	CORNER SENSOR SIGNAL REAR LH
6	B	CORNER SENSOR SIGNAL REAR RH
7	G	CENTER SENSOR SIGNAL REAR LH
8	R	CENTER SENSOR SIGNAL REAR RH
9	Y	CENTER SENSOR SIGNAL FRONT LH
10	G	CENTER SENSOR SIGNAL FRONT RH
12	B	GROUND
13	LG	IGNITION POWER SUPPLY
19	L	CAN-H
20	R	CAN-L [Without ICC]
20	Y	CAN-L [With ICC]
24	B	GROUND

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



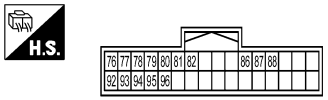
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BATTERY POWER SUPPLY
2	BG	IGNITION SIGNAL
3	GR	VEHICLE SPEED SIGNAL (2-PULSE)
4	R	VEHICLE SPEED SIGNAL (8-PULSE)
5	B	ILLUMINATION CONTROL SIGNAL
6	B	METER CONTROL SWITCH GROUND
7	SB	ENTER SWITCH SIGNAL
8	LG	SELECT SWITCH SIGNAL
9	G	ILLUMINATION CONTROL SWITCH SIGNAL (+)
10	GR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
11	L	TRIP RESET SWITCH SIGNAL
12	B	GROUND
14	L	CAN-H
15	P	CAN-L
16	R	AIR BAG SIGNAL
17	G	LED HEADLAMP (RH) WARNING SIGNAL
18	V	LED HEADLAMP (LH) WARNING SIGNAL
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	W	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	G	SECURITY SIGNAL
29	L	WASHER LEVEL SWITCH SIGNAL
32	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	W	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G	PASSENGER SEAT BELT WARNING SIGNAL
37	G	NON-MANUAL MODE SIGNAL
38	V	MANUAL MODE SHIFT DOWN SIGNAL
39	L	MANUAL MODE SHIFT UP SIGNAL
40	W	MANUAL MODE SIGNAL

Connector No.	M66
Connector Name	A/C AUTO AMP.
Connector Type	TH20FW-TB6



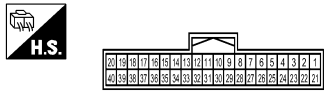
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
6	R	BLOWER MOTOR F/B SIGNAL
7	L	POWER TRANSISTOR CONTROL SIGNAL
10	B	GROUND
11	P	CAN-L
12	L	CAN-H
13	V	ACC POWER SUPPLY
17	BG	ECV CONTROL SIGNAL
23	W	DRIVE MODE SELECT SW (SNOW)
24	L	DRIVE MODE SELECT SW (ECO)
25	G	DRIVE MODE SELECT SW (STANDARD)
26	Y	DRIVE MODE SELECT SW (SPORT)

Connector No.	M84
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
76	LG	AV COMM (L)
77	SB	AV COMM (H)
78	LG	AV COMM (L)
79	SB	AV COMM (H)
80	P	CAN-L
81	L	CAN-H
82	BR	SW GND
86	SHIELD	SHIELD
87	P	TEL VOICE SIGNAL (+)
88	L	TEL VOICE SIGNAL (-)
92	R	VEHICLE SPEED (8-PULSE)
93	V	PARKING BRAKE
94	BG	REVERSE
95	W	IGNITION
96	SB	DISK EJECT SIGNAL

Connector No.	M105
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	LG	-
6	P	-
7	L	-
8	P	-
9	B	-
10	W	-
11	W	-
12	SB	-
13	G	-
14	SB	-
15	BR	-
16	V	-
17	P	-
18	G	-
22	BG	-
23	B	-
25	W	-
30	R	-
31	BR	-
32	L	-
33	P	-
34	LG	-
35	W	-
36	LG	-
37	L	-
38	BG	-
39	SHIELD	-
40	W	-

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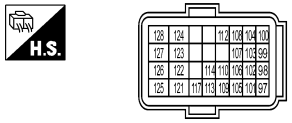
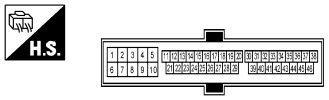
CAN SYSTEM (WITHOUT ICC)

Connector No.	M107
Connector Name	ECM
Connector Type	RH24FGY-RZ8-R-RH-Z



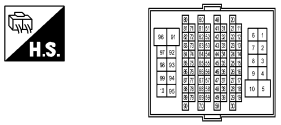
Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	ACCELERATOR PEDAL POSITION SENSOR 1
98	Y	ACCELERATOR PEDAL POSITION SENSOR 2
99	G	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
100	W	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1)
101	SB	ASCD STEERING SWITCH
102	P	FUEL TANK PRESSURE SENSOR
103	L	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2)
104	B	SENSOR GROUND [Without ICC]
104	BR	SENSOR GROUND [With ICC]
105	LG	REFRIGERANT PRESSURE SENSOR
106	P	FUEL TANK TEMPERATURE SENSOR
107	BG	AVCC2 PDPRES/FTPRES
108	Y	GND ASCD SW
109	BR	TRANSMISSION RANGE SWITCH
110	V	ENGINE SPEED SIGNAL OUTPUT
112	V	GNDA PDPRES/FTPRES
113	P	CAN COMMUNICATION LINE
114	L	CAN COMMUNICATION LINE
117	V	DATA LINK CONNECTOR
121	G	EVAP CANISTER VENT CONTROL VALVE
122	P	STOP LAMP SWITCH
123	B	ECM GROUND
124	B	ECM GROUND
125	SB	POWER SUPPLY FOR ECM
126	BR	ASCD BRAKE SWITCH
127	B	ECM GROUND
128	B	ECM GROUND

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK36MW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	SB	-
3	Y	-
4	B	- [With VK engine]
4	SB	- [With VQ engine]
5	B	-
7	W	-
8	Y	-
9	SB	- [With VQ engine]
9	W	- [With VK engine]
10	SB	-
11	L	-
12	P	-
13	V	-
14	R	-
15	Y	-
16	SB	-
17	BR	-
18	LG	-
21	LG	-
22	B	-
23	W	-
24	W	-
25	BG	-

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	Y	-
6	R	-
7	W	-
8	V	-
11	R	-
12	G	-
13	W	-
14	L	-
15	R	- [Without ADAS]
15	Y	- [With ADAS]
17	GR	-
18	P	-
19	BR	-
20	GR	-
21	Y	-
22	LG	-
23	R	-
24	BG	-
25	BG	-
26	W	-
28	V	-
29	P	-
30	B	-
31	G	-
32	Y	-
40	SHIELD	-
41	R	-
42	V	-
45	SB	-
46	BG	- [With heated seat]
46	L	- [With climate controlled seat]
47	G	- [With climate controlled seat]
47	GR	- [With heated seat]
48	V	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	W	-
56	B	-
57	G	-
58	R	-
59	W	-
61	LG	-
62	V	-
63	R	-
64	SB	-
65	LG	-
66	L	-
67	Y	-
68	SB	-
69	B	-
71	L	-
72	L	-
73	P	-
74	B	-
75	L	-
76	SHIELD	-
77	G	-
78	R	-
79	L	-
80	G	-
81	BG	-
82	BR	-
83	GR	-
84	V	-
85	LG	-
86	V	-
87	R	-
88	Y	-
89	BR	-
90	L	-
91	Y	-
93	G	- [With heated seat]
93	W	- [With climate controlled seat]
94	V	-
96	W	-
97	Y	-
98	BR	-
99	G	-
100	Y	-

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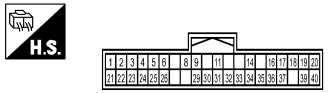
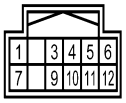
CAN SYSTEM (WITHOUT ICC)

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



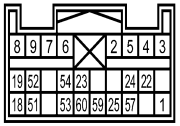
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	RR WINDOW DEFG RLY CONT
2	BG	COMBI SW INPUT 5
3	SB	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	W	OPTICAL SENSOR
16	SB	DIMMER SIGNAL
17	Y	SENSOR PWR SPLY
18	B	RECEIVER / SENSOR GND
19	V	TURN SIG RH OUTPUT (FRONT)
20	G	TURN SIG LH OUTPUT (FRONT)
21	P	NATS ANT AMP.
22	GR	KYLS ENT RECEIVER RSSI
23	G	SECURITY IND CONT
24	L	DONGLE LINK
25	G	NATS ANT AMP.
26	G	I-KEY IDENTIFICATION
29	G	HAZARD SW
30	O	TR LID OPNR SW
31	W	DR DOOR UNLK SENSOR
32	BR	COMBI SW OUTPUT 5
33	R	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	Y	COMBI SW OUTPUT 2
36	LG	COMBI SW OUTPUT 1
37	R	P POSITION
39	L	CAN-H
40	P	CAN-L

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



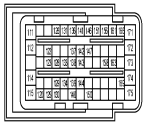
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
3	GR	BATTERY
4	L	CAN-H
5	B	GND
6	L	CAN-H
7	P	CAN-L
9	W	IGNITION
10	P	CAN-L
11	B	GND
12	P	CAN-L

Connector No.	M147
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH28FY-EX



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	IGN
2	B	GND
3	Y	DR1 (+)
4	Y	DR1 (-) DR2 (-)
5	Y	DR2 (+)
6	Y	AS1 (+)
7	Y	AS1 (-)
8	Y	AS2 (+)
9	Y	AS2 (-)
18	SB	ECZS (+)
19	V	ECZS (-)
22	SHIELD	GND
23	R	AIR BAG W/L
24	G	SEAT BELT
25	R	CUTOFF TELLTALE
51	G	SATELLITE RH2 (+)
52	R	SATELLITE RH2 (-)
53	P	SATELLITE RH2 (+)
54	L	SATELLITE RH2 (-)
57	L	IVCS
59	L	CAN-H
60	P	CAN-L

Connector No.	M160
Connector Name	ECM
Connector Type	MAB55FB-MEB10-LH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
111	W	FUEL INJECTOR DRIVER POWER SUPPLY
112	W	FUEL INJECTOR DRIVER POWER SUPPLY
114	B	ECM GROUND
115	B	ECM GROUND
120	G	EVAP CANISTER VENT CONTROL VALVE
122	V	VVEL ACTUATOR MOTOR RELAY ABORT SIGNAL (VVEL CONTROL MODULE)
123	BG	THROTTLE CONTROL MOTOR RELAY
125	P	FUEL PUMP CONTROL MODULE (FPCM)
126	Y	ACCELERATOR PEDAL POSITION SENSOR 2
128	SB	ASCD STEERING SWITCH
129	B	SENSOR GROUND [Without ICC]
129	BR	SENSOR GROUND [With ICC]
130	Y	SENSOR GROUND
131	L	SENSOR POWER SUPPLY
133	BG	SENSOR POWER SUPPLY
134	P	FUEL TANK TEMPERATURE SENSOR
136	R	ACCELERATOR PEDAL POSITION SENSOR 1
137	G	SENSOR POWER SUPPLY
138	P	BATTERY CURRENT SENSOR
139	BG	BATTERY TEMPERATURE SENSOR
140	W	SENSOR GROUND
141	G	IGNITION SWITCH
142	GR	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	P	FUEL TANK PRESSURE SENSOR
144	LG	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	BR	ASCD BRAKE SWITCH
150	V	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	W	POWER SUPPLY FOR ECM (BACK-UP)
158	P	STOP LAMP SWITCH
161	Y	ENG COMMUNICATION LINE
163	W	ECM RELAY (SELF SHUT-OFF)
166	BG	ENG COMMUNICATION LINE
169	V	ENGINE SPEED SIGNAL OUTPUT
171	SB	POWER SUPPLY FOR ECM
172	SB	POWER SUPPLY FOR ECM
173	R	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	M181
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	R	-
6	BR	-
7	L	-
8	P	-
9	B	-
10	W	-
11	LG	-
12	SB	-
13	G	-
14	SB	-
15	BR	-
16	V	-
17	P	-
18	G	-

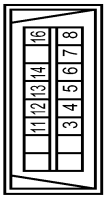
JRMWG1551GB

CAN SYSTEM (WITHOUT ICC)

22	BG
23	B
25	W
30	R
31	BR
32	L
33	P
34	LG
35	W
36	LG
37	L
38	BG
39	SHIELD
40	W

Connector No.	M182
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

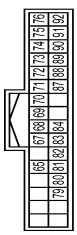
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	M-CAN_L
4	B	EARTH
5	B	EARTH
6	L	CAN-H
7	V	KLINE
8	LG	IGN_SW
11	SB	M-CAN_H
12	P	CAN-L
13	L	CAN-H
14	P	CAN-L
16	W	POWER

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
65	V	PARKING BRAKE SIGNAL
67	R	COMPOSITE IMAGE SIGNAL GND
68	W	COMPOSITE IMAGE SIGNAL
69	G	I-KEY IDENTIFICATION SIGNAL
70	P	
71	SHIELD	MICROPHONE SHIELD
72	G	MICROPHONE VCC
73	BR	COMM (CONT->DISP)
74	P	CAN-L
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	SB	DIMMER SIGNAL
80	W	IGNITION SIGNAL
81	BG	REVERSE SIGNAL
82	R	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	B	COMPOSITE IMAGE SYNC SIGNAL
87	R	MICROPHONE SIGNAL
88	SHIELD	SHIELD
89	Y	COMM (DISP->CONT)
90	L	CAN-H
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M216
Connector Name	TCU
Connector Type	TH40FW-NH

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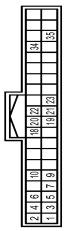


Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	B	GROUND
3	SB	ACC POWER SUPPLY
4	W	IGNITION SIGNAL
5	V	ACC OUTPUT
6	P	-
7	B	GROUND
9	L	CAN-H
10	P	CAN-L
18	G	MICROPHONE VCC
19	R	MICROPHONE SIGNAL
20	SHIELD	MICROPHONE SHIELD
21	G	MICROPHONE VCC
22	R	MICROPHONE SIGNAL
23	SHIELD	MICROPHONE SHIELD
34	G	SOS call switch
35	BR	SOS call switch LED signal

JRMWG1552GB

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

INFOID:0000000011255159

CAN Communication System Diagnosis Interview Sheet

Date received:

Type: VIN No.:

Model:

First registration: Mileage:

CAN system type:

Symptom (Results from interview with customer)

Condition at inspection

Error symptom : Present / Past

SKIB8898E

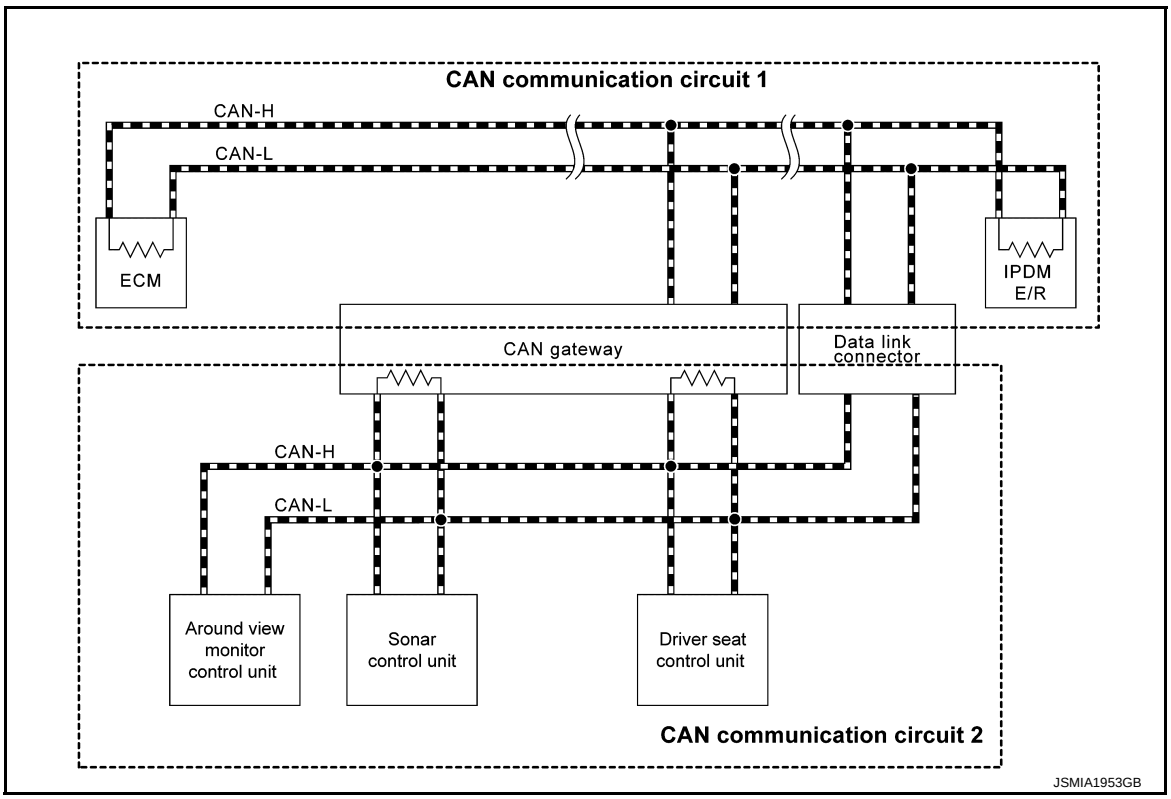
DTC/CIRCUIT DIAGNOSIS

MALFUNCTION AREA CHART

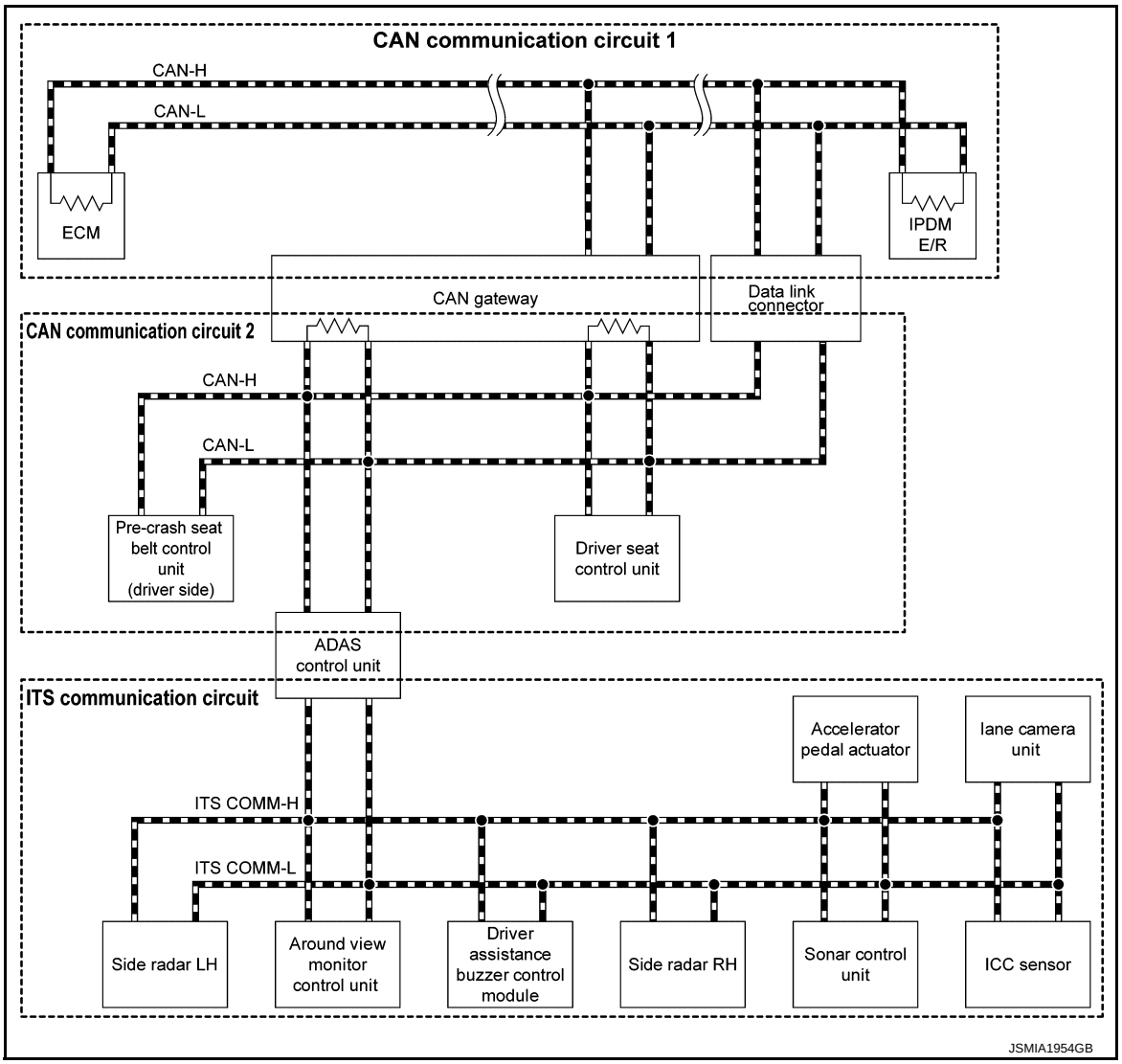
System Diagram

INFOID:0000000011255160

WITHOUT ICC SYSTEM



WITH ICC SYSTEM



CAN Communication Circuit

INFOID:0000000011255161

MAIN LINE

Malfunction area	Reference
Main line between data link connector and air bag diagnosis sensor unit	LAN-79, "Diagnosis Procedure"
Main line between air bag diagnosis sensor unit and combination meter	LAN-80, "Diagnosis Procedure"
Main line between combination meter and TCU	LAN-81, "Diagnosis Procedure"
Main line between combination meter and low tire pressure warning control unit	LAN-82, "Diagnosis Procedure"
Main line between TCU and low tire pressure warning control unit	LAN-83, "Diagnosis Procedure"
Main line between low tire pressure warning control unit and A/C auto amp.	LAN-84, "Diagnosis Procedure"
Main line between A/C auto amp. and AV control unit	LAN-85, "Diagnosis Procedure"
Main line between AV control unit and BCM	LAN-86, "Diagnosis Procedure"
Main line between BCM and TCM	LAN-87, "Diagnosis Procedure"
Main line between TCM and steering angle sensor	LAN-88, "Diagnosis Procedure"
Main line between steering angle sensor and CAN gateway	LAN-91, "Diagnosis Procedure"
Main line between steering angle sensor and driver seat control unit	LAN-89, "Diagnosis Procedure"
Main line between CAN gateway and AWD control unit	LAN-92, "Diagnosis Procedure"

Malfunction area	Reference
Main line between CAN gateway and ABS actuator and electric unit (control unit)	LAN-94, "Diagnosis Procedure"
Main line between AWD control unit and ABS actuator and electric unit (control unit)	LAN-98, "Diagnosis Procedure"
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-96, "Diagnosis Procedure"
Main line between data link connector and around view monitor control unit	LAN-100, "Diagnosis Procedure"
Main line between data link connector and ADAS control unit	LAN-102, "Diagnosis Procedure"
Main line between around view monitor control unit and driver seat control unit	LAN-101, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	LAN-108, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-113, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 1)	LAN-111, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 2)	LAN-112, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-114, "Diagnosis Procedure"
TCU branch line circuit	LAN-115, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-118, "Diagnosis Procedure"
BCM branch line circuit	LAN-120, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-125, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-117, "Diagnosis Procedure"
Low tire pressure warning control unit branch line circuit	LAN-116, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-124, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-123, "Diagnosis Procedure"
TCM branch line circuit	LAN-121, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-126, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-127, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-128, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-129, "Diagnosis Procedure"
Around view monitor control unit branch line circuit	LAN-130, "Diagnosis Procedure"
Sonar control unit branch line circuit	LAN-131, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-132, "Diagnosis Procedure"
ADAS control unit branch line circuit	LAN-133, "Diagnosis Procedure"
Pre-crash seat belt control unit (driver side) branch line circuit	LAN-134, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit (Without telematics system)	LAN-141, "Diagnosis Procedure"
CAN communication circuit 1 (With telematics system)	LAN-143, "Diagnosis Procedure"
CAN communication circuit 2 (With telematics system)	LAN-145, "Diagnosis Procedure"

ITS Communication Circuit

INFOID:0000000011255162

MAIN LINE

Malfunction area	Reference
Main line between side radar LH and side radar RH	LAN-104, "Diagnosis Procedure"
Main line between side radar RH and accelerator pedal actuator	LAN-105, "Diagnosis Procedure"
Main line between accelerator pedal actuator and lane camera unit	LAN-107, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
Side radar LH branch line circuit	LAN-135, "Diagnosis Procedure"
Around view monitor control unit branch line circuit	LAN-130, "Diagnosis Procedure"
Driver assistance buzzer control module branch line circuit	LAN-136, "Diagnosis Procedure"
Side radar RH branch line circuit	LAN-137, "Diagnosis Procedure"
Sonar control unit branch line circuit	LAN-131, "Diagnosis Procedure"
Accelerator pedal actuator branch line circuit	LAN-138, "Diagnosis Procedure"
Lane camera unit branch line circuit	LAN-139, "Diagnosis Procedure"
ICC sensor branch line circuit	LAN-140, "Diagnosis Procedure"

SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	LAN-147, "Diagnosis Procedure"

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011255168

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011255165

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011508251

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011508253

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
- Low tire pressure warning control unit
4. Check the continuity between the combination meter harness connector and the low tire pressure warning control unit harness connector.

Combination meter harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M43	2	Existed
	15		1	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 low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011508254

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011255163

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011508255

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011255166

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011255169

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011255171

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011508591

1. CHECK CONNECTOR

1. Turn the ignition 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 M22 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1
- Harness connector B11
- Harness connector B501

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 connector M22.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

Steering angle sensor harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M37	1	81	Existed
	2	82	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
81	35	Existed
82	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4. 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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B11	23	Existed
	73		24	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the driver seat control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011255170

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:0000000011255173

1.CHECK CONNECTOR

1. Turn the ignition 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 M28 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 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of AWD control unit.
2. Check the continuity between the harness connector and the AWD control unit harness connector.

Harness connector		AWD control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B17	8	Existed
	73		16	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 CAN gateway and the AWD control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011508260

1.CHECK CONNECTOR

1. Turn the ignition 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 M28 and PCB harness side connector
- 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 harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. 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 6.
NO >> Replace the body harness.

6. 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.	
M7	74	M6	22	Existed
	75		23	Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the body harness.

7. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011508592

1.CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 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).

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011255172

1.CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 AWD 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).

MAIN LINE BETWEEN DLC AND AVM CIRCUIT

Diagnosis Procedure

INFOID:0000000011255174

1. CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201

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 connector M23.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B201.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B231	27	Existed
	73		28	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the around view monitor control unit.
NO >> Repair the main line between the harness connector B201 and the around view monitor control unit.

MAIN LINE BETWEEN AVM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011508263

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.
- Around view monitor control unit
- Harness connector B222
- Harness connector B5
4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.

Around view monitor control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M231	27	B222	13	Existed
	28		14	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the main line between the around view monitor control unit and the harness connector B222.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B501.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B11	23	Existed
	14		24	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 harness connectors B5 and B11.
NO >> Replace the body harness.

MAIN LINE BETWEEN DLC AND ICC CIRCUIT

Diagnosis Procedure

INFOID:0000000011508262

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201
- Harness connector B222
- Harness connector B5

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 connector M20.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B222 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B222	13	Existed
	73		14	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors B201 and B222.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of ADAS control unit.
2. Check the continuity between the harness connectors.

Harness connector		ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B10	1	Existed
	14		2	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the ADAS control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:0000000011255175

1.CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:0000000011255176

1. CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	
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.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255177

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.	
M150	11	M110	13	Existed
	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

Diagnosis Procedure

INFOID:0000000011255178

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255188

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011255189

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011255190

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255184

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255187

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255185

1. CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255179

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255182

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255186

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255191

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255183

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255192

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011255180

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011255181

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255193

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 DLN-49, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-61, "Removal and Installation".
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255194

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255195

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E70	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-95, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-148, "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

Diagnosis Procedure

INFOID:0000000011255196

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011508438

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011508439

1. CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255197

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255198

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.		
B10	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.
NO >> Replace the body harness.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-165, "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

Diagnosis Procedure

INFOID:0000000011255199

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of pre-crash seat belt control unit (driver side).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 SBC-48, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (driver side). Refer to SB-7, "SEAT BELT RETRACTOR : Removal and Installation".
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

Diagnosis Procedure

INFOID:0000000011255200

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 DAS-346, "SIDE RADAR LH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-392, "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.

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011508441

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 driver assistance buzzer control module for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver assistance buzzer control module.
2. Check the resistance between the driver assistance buzzer control module harness connector terminals.

Driver assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B210	3	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the driver assistance buzzer control module branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver assistance buzzer control module. Refer to DAS-347, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the driver assistance buzzer control module. Refer to DAS-395, "Removal and Installation".
YES (Past error)>>Error was detected in the driver assistance buzzer control module branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255201

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 DAS-349, "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.	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 DAS-347, "SIDE RADAR RH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-392, "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

Diagnosis Procedure

INFOID:0000000011255202

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 position sensor
- 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 position sensor.
2. Check the resistance between the accelerator pedal position sensor harness connector terminals.

Accelerator pedal position sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M154	3	9	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 accelerator pedal position sensor. Refer to DAS-345, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation".
YES (Past error)>>Error was detected in the accelerator pedal position sensor 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 position sensor harness connector and the harness connector.

Accelerator pedal position sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M154	3	M23	138	Existed
	9		137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the accelerator pedal position sensor harness connector M152 and the harness connector M23.

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011255203

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to DAS-345, "LANE CAMERA UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-391, "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.	
R8	4	M24	179	Existed
	8		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

Diagnosis Procedure

INFOID:0000000011255204

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Resistance (Ω)
Connector No.	Terminal No.		
E33	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-115, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-132, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E33	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011255205

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011255206

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011255207

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011255208

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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 LAN-75, "System Diagram".

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
2. 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.	
B10	6	E33	3	Existed
	7		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
- Accelerator pedal actuator
- Lane camera unit
2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.		
B10	6	7	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Check the harness and repair or replace (if shield line or 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.

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B10	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Check the harness and repair or replace (if shield line or 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.		
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Terminal No.		
3	6	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the ADAS control unit and/or the ICC sensor.

7. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

8. CHECK UNIT REPRODUCTION

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

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of ITS communication 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.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011255209

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

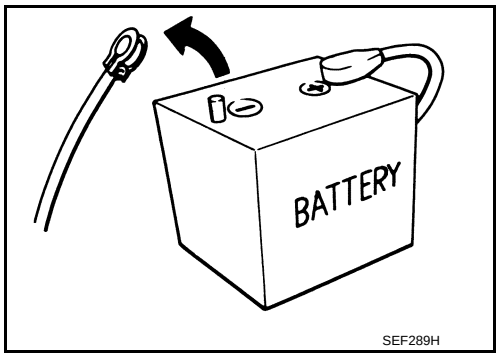
WARNING:
Always observe the following items for preventing accidental activation.
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized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

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

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

Precautions for Removing Battery Terminal

INFOID:0000000011255210



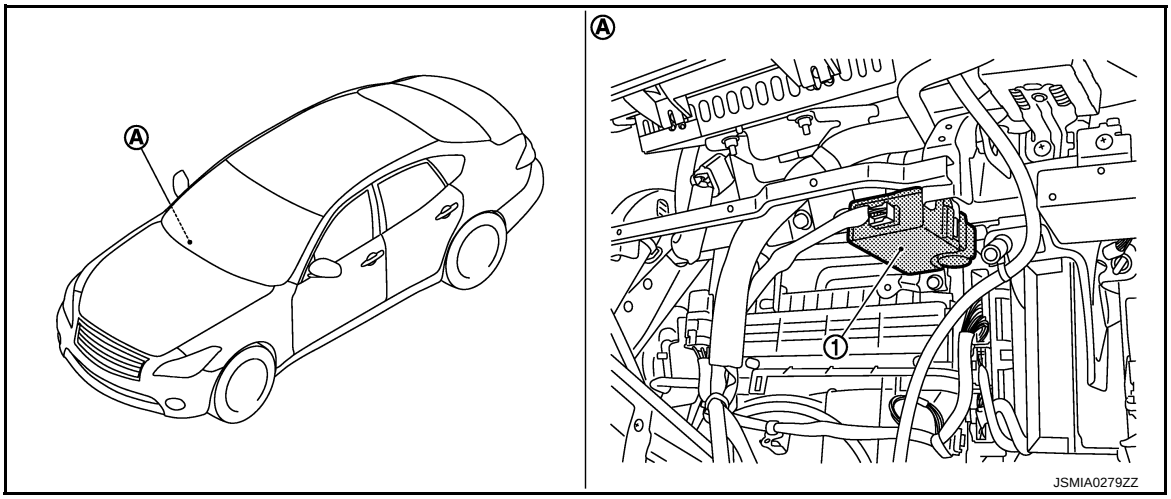
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011255211



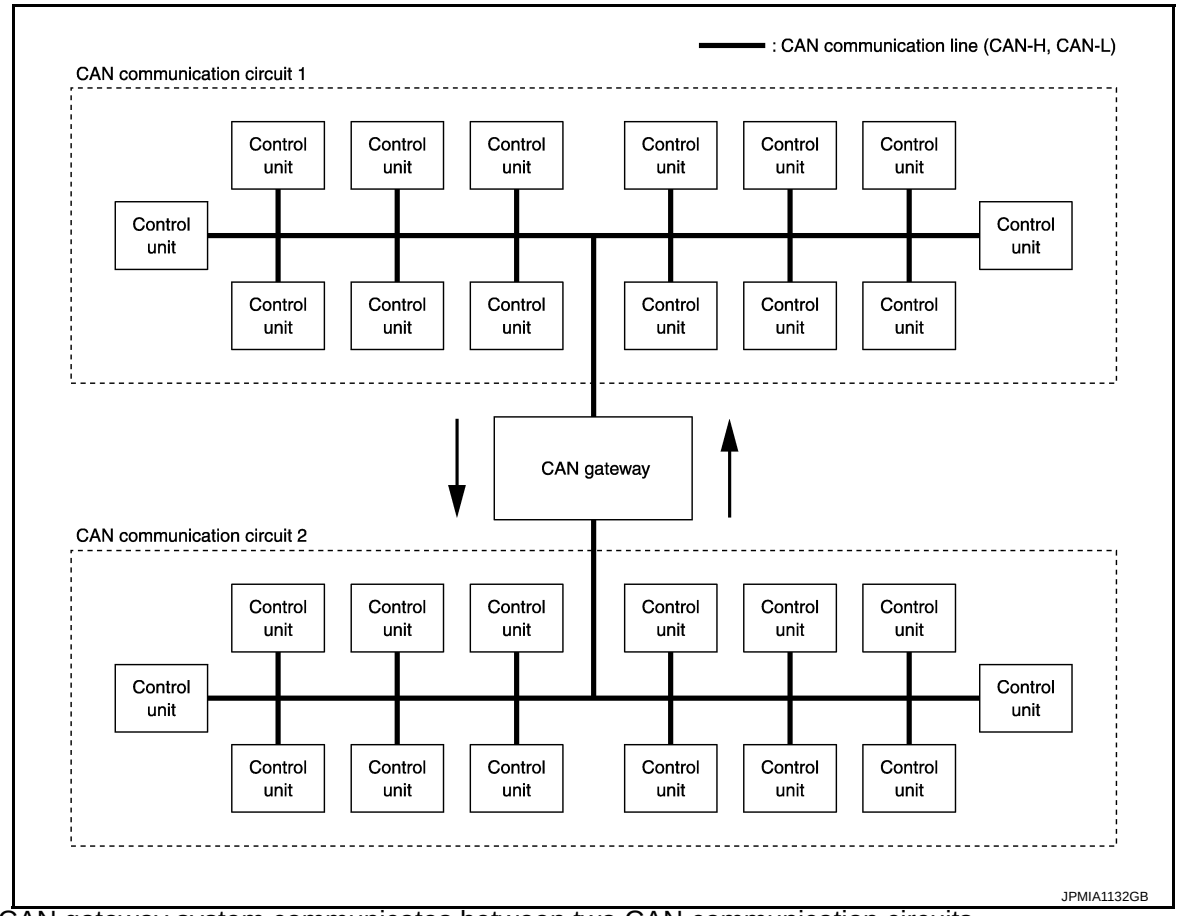
1. CAN gateway

A. Over the glove box

SYSTEM

System Description

INFOID:0000000011255212



- The CAN gateway system communicates between two CAN communication circuits.
- This system selects and transmits only necessary information.

DIAGNOSIS SYSTEM (CAN GATEWAY)

CONSULT Function

INFOID:0000000011255213

APPLICATION ITEM

CONSULT 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-153, "DTC Index".

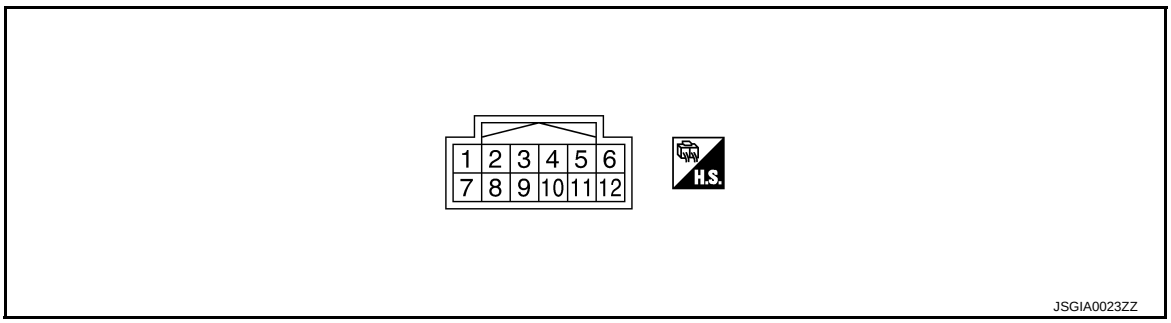
ECU DIAGNOSIS INFORMATION

CAN GATEWAY

Reference Value

INFOID:0000000011255214

TERMINAL LAYOUT



PHYSICAL VALUES

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

DTC Inspection Priority Chart

INFOID:0000000011255215

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

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

DTC Index

INFOID:0000000011255216

NOTE:

- 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 → 2 ··· 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

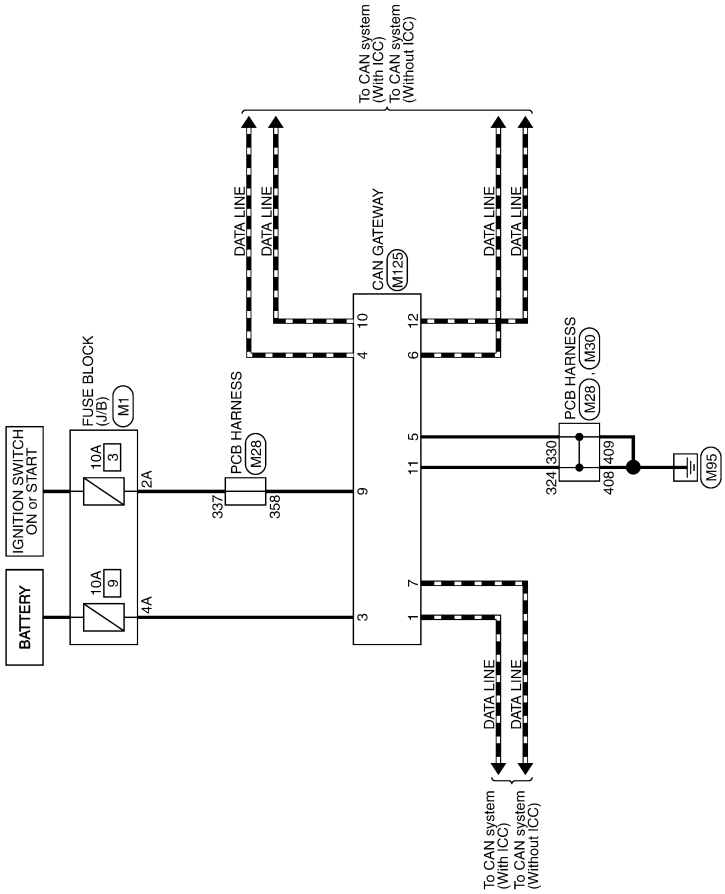
DTC		Reference
No DTC is detected. Further testing may be required.		—
U1000: CAN COMM CIRCUIT		LAN-159
U1010: CONTROL UNIT(CAN)		LAN-160
B2600: CONFIG ERROR	WRONG DATA	LAN-161
	NOT CONFIGURED	

WIRING DIAGRAM

CAN GATEWAY SYSTEM

Wiring Diagram

INFOID:0000000011255217



CAN GATEWAY SYSTEM

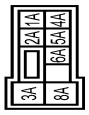
2014/07/11

JRMWG1239GB

CAN GATEWAY SYSTEM

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

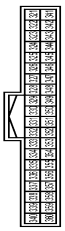
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	R	-
2A	W	-
3A	Y	-
4A	W	-
5A	V	-
6A	Y	-
8A	Y	-

Connector No.	M28
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
321	V	-
322	V	-
324	B	-
325	L	-
326	L	-
327	P	-
328	P	-
330	B	-
331	V	-
332	V	-
335	B	-
337	W	-
338	W	-
343	L	-
344	B	-
345	Y	-
346	L	-
347	P	-
348	GR	-
349	V	-
350	LG	-
351	P	-
352	R	-
353	P	-
358	W	-
359	W	-
360	G	-

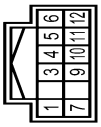
Connector No.	M30
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
402	R	-
403	R	-
406	B	-
407	V	-
408	B	-
409	B	-
410	B	-
411	B	-
413	Y	-
414	BR	-
416	LG	-
417	B	-
419	SB	-
420	SHIELD	-
422	V	-
427	P	-
428	V	-
429	P	-
430	LG	-
431	B	-
432	Y	-
435	V	-
436	BG	-
437	B	-
438	P	-
439	L	-
440	B	-

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
3	GR	BATTERY
4	L	CAN-H
5	B	GND
6	L	CAN-H
7	P	CAN-L
9	W	IGNITION
10	P	CAN-L
11	B	GND
12	P	CAN-L

JRMWG1553GB

BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

Description

INFOID:0000000011255218

BEFORE REPLACEMENT

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

NOTE:

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

AFTER REPLACEMENT

CAUTION:

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

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

Work Procedure

INFOID:0000000011255219

1. SAVING VEHICLE SPECIFICATION

CONSULT Configuration

Perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to LAN-158, "Description".

NOTE:

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

>> GO TO 2.

2. REPLACE CAN GATEWAY

Replace CAN gateway. Refer to LAN-163, "Removal and Installation".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT Configuration

Perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” to write vehicle specification. Refer to LAN-158, "Work Procedure".

>> WORK END

CONFIGURATION (CAN GATEWAY)

Description

INFOID:0000000011255220

Vehicle specification needs to be written with CONSULT because it is not written after replacing CAN gateway. Configuration has three functions as follows

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

CAUTION:
Follow the instructions listed below. Failure to do this may cause malfunctions to the CAN gateway.:
- **When replacing CAN gateway, you must perform “Read / Write Configuration” or “Manual Configuration” with CONSULT.**
- **Complete the procedure of “Read / Write Configuration” or “Manual Configuration” in order.**
- **If you set incorrect “Read / Write Configuration” or “Manual Configuration”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
- **Never perform “Read / Write Configuration” or “Manual Configuration” except for new CAN gateway.**

Work Procedure

INFOID:0000000011255221

1. WRITING MODE SELECTION

CONSULT Configuration
Select “Re/programming, Configuration” of CAN gateway.

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

2. PERFORM “AFTER REPLACE ECU” OF “READ / WRITE CONFIGURATION”

CONSULT Configuration
Perform “After Replace ECU” of “Read / Write Configuration”.

>> GO TO 4.

3. PERFORM “MANUAL CONFIGURATION”

CONSULT Configuration
1. Select “Manual Configuration”.
2. Touch “Next”.
3. Touch “OK”.
4. Check that the configuration has been successfully written and touch “End”.

>> GO TO 4.

4. CHECK ALL ECU SELF-DIAGNOSIS RESULTS

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

>> WORK END

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000011255222

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 Signal Chart".

DTC Logic

INFOID:0000000011255223

DTC DETECTION LOGIC

DTC	CONSULT display description	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:0000000011255224

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-44, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000011255225

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 Signal Chart".

DTC Logic

INFOID:0000000011255226

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for CAN controller of CAN gateway.	CAN gateway

Diagnosis Procedure

INFOID:0000000011255227

1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to LAN-163, "Removal and Installation".

B2600 CONFIG ERROR

Description

INFOID:0000000011255228

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

DTC Logic

INFOID:0000000011255229

DTC DETECTION LOGIC

DTC	CONSULT 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
	CONFIG ERROR NOT CONFIGURED	When no data are stored in the CAN gateway.	

Diagnosis Procedure

INFOID:0000000011255230

1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to LAN-163, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000011255231

1.CHECK FUSE

Check that the following fuse are not blown.

Signal name	Fuse No.
Battery power supply	9
Ignition power supply	3

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
CAN gateway			Ignition switch	
Connector	Terminal			
M125	3	Ground	OFF	Battery voltage
	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		Ground	Continuity
Connector	Terminal		
M125	5		Existed
	11		

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

REMOVAL AND INSTALLATION

CAN GATEWAY

Removal and Installation

INFOID:0000000011255232

CAUTION:
Before replacing CAN gateway, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to LAN-157, "Description".

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:
To prevent malfunction, be sure to perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” when replacing CAN gateway. Refer to LAN-157, "Description".

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011518260

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011518261

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011518263

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
- Low tire pressure warning control unit
4. Check the continuity between the combination meter harness connector and the low tire pressure warning control unit harness connector.

Combination meter harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M43	2	Existed
	15		1	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 low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011518265

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011518266

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011518267

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011518268

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011518269

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011518270

1.CHECK CONNECTOR

1. Turn the ignition 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 M22 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1
- Harness connector B11
- Harness connector B501

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 connector M22.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

Steering angle sensor harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M37	1	81	Existed
	2	82	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
81	35	Existed
82	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B11	23	Existed
	73		24	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the driver seat control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011518274

1.CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 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

Diagnosis Procedure

INFOID:0000000011518282

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518283

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518286

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518287

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518289

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518290

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518291

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518292

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518293

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518294

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

Diagnosis Procedure

INFOID:0000000011518298

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518300

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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 CIRCUIT

Diagnosis Procedure

INFOID:0000000011518303

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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

Diagnosis Procedure

INFOID:0000000011518312

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 DIAGNOSIS

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011518316

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011518317

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011518318

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011518320

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011518321

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011518322

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011518323

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011518324

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011518325

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011518327

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011518329

1.CHECK CONNECTOR

1. Turn the ignition 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 M28 and PCB harness side connector
- 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 harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. 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 6.
NO >> Replace the body harness.

6. 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.	
M7	74	M6	22	Existed
	75		23	Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the body harness.

7. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

MAIN LINE BETWEEN DLC AND AVM CIRCUIT

Diagnosis Procedure

INFOID:0000000011518332

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201

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 connector M23.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B201.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B231	27	Existed
	73		28	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the around view monitor control unit.
NO >> Repair the main line between the harness connector B201 and the around view monitor control unit.

MAIN LINE BETWEEN AVM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011518333

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.
- Around view monitor control unit
- Harness connector B222
- Harness connector B5
4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.

Around view monitor control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M231	27	B222	13	Existed
	28		14	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the main line between the around view monitor control unit and the harness connector B222.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B501.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B11	23	Existed
	14		24	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 harness connectors B5 and B11.
NO >> Replace the body harness.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518338

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011518340

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011518341

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518342

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518343

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518344

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518345

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518346

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518347

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518348

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518349

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518350

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011518351

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011518352

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518354

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518356

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518357

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518358

1.CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518359

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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 1

Diagnosis Procedure

INFOID:0000000011518369

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011518370

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011518376

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011518377

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011518378

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011518380

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011518381

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011518382

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011518383

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011518384

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011518385

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011518387

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011518389

1.CHECK CONNECTOR

1. Turn the ignition 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 M28 and PCB harness side connector
- 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 harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. 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 6.
NO >> Replace the body harness.

6. 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.	
M7	74	M6	22	Existed
	75		23	Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the body harness.

7. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

MAIN LINE BETWEEN DLC AND ICC CIRCUIT

Diagnosis Procedure

INFOID:0000000011518394

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201
- Harness connector B222
- Harness connector B5

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 connector M20.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B222 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B222	13	Existed
	73		14	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors B201 and B222.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of ADAS control unit.
2. Check the continuity between the harness connectors.

Harness connector		ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B10	1	Existed
	14		2	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the ADAS control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:0000000011518395

1.CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:0000000011518396

1. CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	
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.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518397

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.	
M150	11	M110	13	Existed
	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

Diagnosis Procedure

INFOID:0000000011518398

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011518400

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011518401

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518402

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518403

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518404

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518405

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518406

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518407

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518408

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518409

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518410

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011518411

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011518412

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518414

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518415

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E70	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-95, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-148, "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

Diagnosis Procedure

INFOID:0000000011518416

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518417

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518418

1.CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518419

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518420

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.		
B10	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.
NO >> Replace the body harness.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-165, "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

Diagnosis Procedure

INFOID:0000000011518421

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of pre-crash seat belt control unit (driver side).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 SBC-48, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (driver side). Refer to SB-7, "SEAT BELT RETRACTOR : Removal and Installation".
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

Diagnosis Procedure

INFOID:0000000011518422

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 DAS-346, "SIDE RADAR LH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-392, "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.

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518423

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 driver assistance buzzer control module for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver assistance buzzer control module.
2. Check the resistance between the driver assistance buzzer control module harness connector terminals.

Driver assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B210	3	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the driver assistance buzzer control module branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver assistance buzzer control module. Refer to DAS-347, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the driver assistance buzzer control module. Refer to DAS-395, "Removal and Installation".
YES (Past error)>>Error was detected in the driver assistance buzzer control module branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518424

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 DAS-349, "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.	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 DAS-347, "SIDE RADAR RH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-392, "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

Diagnosis Procedure

INFOID:0000000011518425

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 position sensor
- 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 position sensor.
2. Check the resistance between the accelerator pedal position sensor harness connector terminals.

Accelerator pedal position sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M154	3	9	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 accelerator pedal position sensor. Refer to DAS-345, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation".
YES (Past error)>>Error was detected in the accelerator pedal position sensor 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 position sensor harness connector and the harness connector.

Accelerator pedal position sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M154	3	M23	138	Existed
	9		137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the accelerator pedal position sensor harness connector M152 and the harness connector M23.

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011518426

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to DAS-345, "LANE CAMERA UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-391, "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.	
R8	4	M24	179	Existed
	8		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

Diagnosis Procedure

INFOID:0000000011518427

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Resistance (Ω)
Connector No.	Terminal No.		
E33	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-115, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-132, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E33	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011518429

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011518430

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011518431

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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 LAN-75, "System Diagram".

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
2. 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.	
B10	6	E33	3	Existed
	7		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
- Accelerator pedal actuator
- Lane camera unit
2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.		
B10	6	7	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Check the harness and repair or replace (if shield line or 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.

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B10	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Check the harness and repair or replace (if shield line or 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.		
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Terminal No.		
3	6	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the ADAS control unit and/or the ICC sensor.

7. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

8. CHECK UNIT REPRODUCTION

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

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of ITS communication 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.

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519276

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011519277

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011519278

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519279

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011519280

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011519281

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519282

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519283

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519284

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011519285

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519286

1. CHECK CONNECTOR

1. Turn the ignition 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 M28 and PCB harness side connector
- 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 harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4. 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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. 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 6.
NO >> Replace the body harness.

6. 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.	
M7	74	M6	22	Existed
	75		23	Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the body harness.

7. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

MAIN LINE BETWEEN DLC AND AVM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519287

1. CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201

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 connector M23.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B201.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B231	27	Existed
	73		28	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the around view monitor control unit.
NO >> Repair the main line between the harness connector B201 and the around view monitor control unit.

MAIN LINE BETWEEN AVM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011519288

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.
- Around view monitor control unit
- Harness connector B222
- Harness connector B5
4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.

Around view monitor control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M231	27	B222	13	Existed
	28		14	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the main line between the around view monitor control unit and the harness connector B222.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B501.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B11	23	Existed
	14		24	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 harness connectors B5 and B11.
NO >> Replace the body harness.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519289

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519290

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011519291

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519292

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519293

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519294

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519295

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519296

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519297

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519298

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519299

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519300

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519301

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011519302

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519303

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519304

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519305

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519306

1. CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519307

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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 1

Diagnosis Procedure

INFOID:0000000011519308

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011519309

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519313

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011519314

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011519315

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519316

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011519317

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011519318

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519319

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519320

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519321

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011519322

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519323

1. CHECK CONNECTOR

1. Turn the ignition 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 M28 and PCB harness side connector
- 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 harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4. 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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. 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 6.
NO >> Replace the body harness.

6. 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.	
M7	74	M6	22	Existed
	75		23	Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the body harness.

7. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

MAIN LINE BETWEEN DLC AND ICC CIRCUIT

Diagnosis Procedure

INFOID:0000000011519324

1. CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201
- Harness connector B222
- Harness connector B5

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 connector M20.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B222 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B222	13	Existed
	73		14	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors B201 and B222.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of ADAS control unit.
2. Check the continuity between the harness connectors.

Harness connector		ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B10	1	Existed
	14		2	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the ADAS control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:0000000011519325

1. CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:0000000011519326

1.CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	
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.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519327

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.	
M150	11	M110	13	Existed
	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

Diagnosis Procedure

INFOID:0000000011519328

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519329

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011519330

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519331

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519332

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519333

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519334

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519335

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519336

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519337

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519338

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519339

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519340

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011519341

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519342

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519343

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E70	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the AFS control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-95, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-148, "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

Diagnosis Procedure

INFOID:0000000011519344

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519345

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519346

1.CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519347

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519348

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.		
B10	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.
NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-165, "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

Diagnosis Procedure

INFOID:0000000011519349

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of pre-crash seat belt control unit (driver side).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 SBC-48, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (driver side). Refer to SB-7, "SEAT BELT RETRACTOR : Removal and Installation".
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

Diagnosis Procedure

INFOID:0000000011519350

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 DAS-346, "SIDE RADAR LH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-392, "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.

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519351

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 driver assistance buzzer control module for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver assistance buzzer control module.
2. Check the resistance between the driver assistance buzzer control module harness connector terminals.

Driver assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B210	3	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the driver assistance buzzer control module branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver assistance buzzer control module. Refer to DAS-347, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the driver assistance buzzer control module. Refer to DAS-395, "Removal and Installation".
YES (Past error)>>Error was detected in the driver assistance buzzer control module branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519352

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 DAS-349, "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.	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 DAS-347, "SIDE RADAR RH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-392, "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

Diagnosis Procedure

INFOID:0000000011519353

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 position sensor
- 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 position sensor.
2. Check the resistance between the accelerator pedal position sensor harness connector terminals.

Accelerator pedal position sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M154	3	9	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 accelerator pedal position sensor. Refer to DAS-345, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation".
YES (Past error)>>Error was detected in the accelerator pedal position sensor 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 position sensor harness connector and the harness connector.

Accelerator pedal position sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M154	3	M23	138	Existed
	9		137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the accelerator pedal position sensor harness connector M152 and the harness connector M23.

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519354

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to DAS-345, "LANE CAMERA UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-391, "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.	
R8	4	M24	179	Existed
	8		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

Diagnosis Procedure

INFOID:0000000011519355

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Resistance (Ω)
Connector No.	Terminal No.		
E33	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> GO TO 4.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-115, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-132, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E33	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011519356

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011519357

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011519358

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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 LAN-75, "System Diagram".

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
2. 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.	
B10	6	E33	3	Existed
	7		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
- Accelerator pedal actuator
- Lane camera unit
2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.		
B10	6	7	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Check the harness and repair or replace (if shield line or 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.

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B10	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Check the harness and repair or replace (if shield line or 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.		
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Terminal No.		
3	6	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the ADAS control unit and/or the ICC sensor.

7. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

8. CHECK UNIT REPRODUCTION

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

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of ITS communication 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.

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519363

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011519364

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519365

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
- Low tire pressure warning control unit
4. Check the continuity between the combination meter harness connector and the low tire pressure warning control unit harness connector.

Combination meter harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M43	2	Existed
	15		1	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 low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011519366

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011519367

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519368

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519369

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519370

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011519371

1.CHECK CONNECTOR

1. Turn the ignition 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 M22 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1
- Harness connector B11
- Harness connector B501

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 connector M22.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

Steering angle sensor harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M37	1	81	Existed
	2	82	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
81	35	Existed
82	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B11	23	Existed
	73		24	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the driver seat control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519372

1.CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 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

Diagnosis Procedure

INFOID:0000000011519373

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519374

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519375

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519376

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519377

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519378

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519379

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519380

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519381

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519382

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

Diagnosis Procedure

INFOID:0000000011519403

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 DLN-49, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-61, "Removal and Installation".
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519383

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519384

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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 CIRCUIT

Diagnosis Procedure

INFOID:0000000011519385

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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

Diagnosis Procedure

INFOID:0000000011519386

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 DIAGNOSIS

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519406

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011519407

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011519408

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519409

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011519410

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011519411

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519412

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519413

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519414

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011519415

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:0000000011519598

1. CHECK CONNECTOR

1. Turn the ignition 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 M28 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 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4. 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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of AWD control unit.
2. Check the continuity between the harness connector and the AWD control unit harness connector.

Harness connector		AWD control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B17	8	Existed
	73		16	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 CAN gateway and the AWD control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519690

1. CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 AWD 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).

MAIN LINE BETWEEN DLC AND AVM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519417

1. CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201

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 connector M23.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B201.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B231	27	Existed
	73		28	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the around view monitor control unit.
NO >> Repair the main line between the harness connector B201 and the around view monitor control unit.

MAIN LINE BETWEEN AVM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011519418

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.
- Around view monitor control unit
- Harness connector B222
- Harness connector B5
4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.

Around view monitor control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M231	27	B222	13	Existed
	28		14	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the main line between the around view monitor control unit and the harness connector B222.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B501.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B11	23	Existed
	14		24	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 harness connectors B5 and B11.
NO >> Replace the body harness.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519419

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519420

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011519421

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519422

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519423

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519424

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519425

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519426

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519427

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519428

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519429

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519430

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519431

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011519432

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519692

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 DLN-49, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-61, "Removal and Installation".
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519433

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519434

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519435

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519436

1.CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519437

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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 1

Diagnosis Procedure

INFOID:0000000011519438

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011519439

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519716

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011519717

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011519718

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519720

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011519721

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011519722

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519723

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011519724

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011519725

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011519727

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:0000000011519772

1.CHECK CONNECTOR

1. Turn the ignition 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 M28 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 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of AWD control unit.
2. Check the continuity between the harness connector and the AWD control unit harness connector.

Harness connector		AWD control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B17	8	Existed
	73		16	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 CAN gateway and the AWD control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011519773

1.CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 AWD 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).

MAIN LINE BETWEEN DLC AND ICC CIRCUIT

Diagnosis Procedure

INFOID:0000000011519734

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201
- Harness connector B222
- Harness connector B5

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 connector M20.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B222 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B222	13	Existed
	73		14	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors B201 and B222.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of ADAS control unit.
2. Check the continuity between the harness connectors.

Harness connector		ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B10	1	Existed
	14		2	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the ADAS control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:0000000011519735

1.CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:0000000011519736

1. CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	
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.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519737

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.	
M150	11	M110	13	Existed
	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

Diagnosis Procedure

INFOID:0000000011519738

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519740

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011519741

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519742

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519743

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519744

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519745

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519746

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519747

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519748

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519749

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519750

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011519751

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011519752

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519774

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 DLN-49, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-61, "Removal and Installation".
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519754

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519755

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E70	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the AFS control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-95, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-148, "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

Diagnosis Procedure

INFOID:0000000011519756

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519757

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519758

1.CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519759

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519760

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.		
B10	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.
NO >> Replace the body harness.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-165, "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

Diagnosis Procedure

INFOID:0000000011519761

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of pre-crash seat belt control unit (driver side).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 SBC-48, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (driver side). Refer to SB-7, "SEAT BELT RETRACTOR : Removal and Installation".
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

Diagnosis Procedure

INFOID:0000000011519762

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 DAS-346, "SIDE RADAR LH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-392, "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.

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519763

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 driver assistance buzzer control module for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver assistance buzzer control module.
2. Check the resistance between the driver assistance buzzer control module harness connector terminals.

Driver assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B210	3	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the driver assistance buzzer control module branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver assistance buzzer control module. Refer to DAS-347, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the driver assistance buzzer control module. Refer to DAS-395, "Removal and Installation".
YES (Past error)>>Error was detected in the driver assistance buzzer control module branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519764

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 DAS-349, "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.	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 DAS-347, "SIDE RADAR RH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-392, "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

Diagnosis Procedure

INFOID:0000000011519765

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 position sensor
- 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 position sensor.
2. Check the resistance between the accelerator pedal position sensor harness connector terminals.

Accelerator pedal position sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M154	3	9	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 accelerator pedal position sensor. Refer to DAS-345, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation".
YES (Past error)>>Error was detected in the accelerator pedal position sensor 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 position sensor harness connector and the harness connector.

Accelerator pedal position sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M154	3	M23	138	Existed
	9		137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the accelerator pedal position sensor harness connector M152 and the harness connector M23.

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011519766

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to DAS-345, "LANE CAMERA UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-391, "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.	
R8	4	M24	179	Existed
	8		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

Diagnosis Procedure

INFOID:0000000011519767

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Resistance (Ω)
Connector No.	Terminal No.		
E33	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-115, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-132, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E33	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011519769

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011519770

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011519771

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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 LAN-75, "System Diagram".

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
2. 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.	
B10	6	E33	3	Existed
	7		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
- Accelerator pedal actuator
- Lane camera unit
2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.		
B10	6	7	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Check the harness and repair or replace (if shield line or 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.

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B10	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Check the harness and repair or replace (if shield line or 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.		
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Terminal No.		
3	6	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the ADAS control unit and/or the ICC sensor.

7. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

8. CHECK UNIT REPRODUCTION

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

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of ITS communication 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.

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011520248

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011520249

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011520250

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011520251

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011520252

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011520253

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011520254

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011520255

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011520256

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011520257

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:0000000011520258

1.CHECK CONNECTOR

1. Turn the ignition 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 M28 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 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4.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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of AWD control unit.
2. Check the continuity between the harness connector and the AWD control unit harness connector.

Harness connector		AWD control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B17	8	Existed
	73		16	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 CAN gateway and the AWD control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011520260

1.CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 AWD 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).

MAIN LINE BETWEEN DLC AND AVM CIRCUIT

Diagnosis Procedure

INFOID:0000000011520261

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201

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 connector M23.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B201.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B231	27	Existed
	73		28	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the around view monitor control unit.
NO >> Repair the main line between the harness connector B201 and the around view monitor control unit.

MAIN LINE BETWEEN AVM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011520262

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.
- Around view monitor control unit
- Harness connector B222
- Harness connector B5
4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.

Around view monitor control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M231	27	B222	13	Existed
	28		14	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the main line between the around view monitor control unit and the harness connector B222.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B501.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B11	23	Existed
	14		24	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 harness connectors B5 and B11.
NO >> Replace the body harness.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520263

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011520264

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011520265

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520266

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520267

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520268

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520269

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520270

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520271

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520272

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520273

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520274

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011520275

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011520276

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520277

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 DLN-49, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-61, "Removal and Installation".
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520278

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520279

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520280

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520281

1. CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520282

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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 1

Diagnosis Procedure

INFOID:0000000011520283

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011520284

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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

MAIN LINE BETWEEN DLC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:0000000011520308

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		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 data link connector and the air bag diagnosis sensor unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011520309

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
- Combination meter
4. Check the continuity between the harness connector and the combination meter harness connector.

Harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M105	7	M53	14	Existed
	8		15	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the combination meter.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND TCU CIRCUIT

Diagnosis Procedure

INFOID:0000000011520310

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
- TCU
4. Check the continuity between the combination meter harness connector and the TCU harness connector.

Combination meter harness connector		TCU harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M216	9	Existed
	15		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 combination meter and the TCU.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCU AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011520312

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
- TCU
- Low tire pressure warning control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

TCU harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M43	2	Existed
	10		1	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 TCU and the low tire pressure warning control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000011520313

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.

MAIN LINE BETWEEN HVAC AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011520314

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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 amp. and the AV control unit.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND BCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011520315

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
- BCM
4. Check the continuity between the AV control unit harness connector and the BCM harness connector.
- Models with navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M120	39	Existed
	74		40	Existed

- Models without navigation system

AV control unit harness connector		BCM harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M120	39	Existed
	80		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 AV control unit and the BCM.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000011520316

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
- BCM
- Harness connector F103 and M116
4. Check the continuity between the BCM harness connector and the A/T assembly harness connector.

BCM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M116	11	Existed
	40		12	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the A/T assembly.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN TCM AND STRG CIRCUIT

Diagnosis Procedure

INFOID:0000000011520317

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 connector F103 and M116
- Steering angle sensor
4. Check the continuity between the harness connector and the steering angle sensor harness connector.

Harness connector		Steering angle sensor harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M116	11	M37	1	Existed
	12		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 A/T assembly and the steering angle sensor.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN STRG AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011520319

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
- Steering angle sensor
- CAN gateway
4. Check the continuity between the steering angle sensor harness connector and the CAN gateway harness connector.

Steering angle sensor harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M125	1	Existed
	2		7	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the steering angle sensor and the CAN gateway.
NO >> Replace the PCB harness.

MAIN LINE BETWEEN CGW AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:0000000011520321

1. CHECK CONNECTOR

1. Turn the ignition 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 M28 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 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.
2. Check the continuity between the steering angle sensor and the PCB harness connector.

CAN gateway harness connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M125	1	326	Existed
	7	328	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 connector M20.
2. Check the continuity between the PCB harness connectors.

PCB harness connector		Continuity
Terminal No.		
326	35	Existed
328	36	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the PCB harness.

4. 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.	
M20	35	M7	72	Existed
	36		73	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors M20 and M7.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of AWD control unit.
2. Check the continuity between the harness connector and the AWD control unit harness connector.

Harness connector		AWD control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	72	B17	8	Existed
	73		16	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 CAN gateway and the AWD control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011520322

1. CHECK CONNECTOR

1. Turn the ignition 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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 AWD 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).

MAIN LINE BETWEEN DLC AND ICC CIRCUIT

Diagnosis Procedure

INFOID:0000000011520328

1. CHECK CONNECTOR

1. Turn the ignition 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 M117
- Harness connector B201
- Harness connector B222
- Harness connector B5

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 connector M20.
2. Check the continuity between the data link connector and the PCB harness connector.

Data link connector		PCB harness connector	Continuity
Connector No.	Terminal No.	Terminal No.	
M182	13	24	Existed
	12	27	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 M117 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M20	24	M117	72	Existed
	27		73	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M117.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B222 and B5.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B201	72	B222	13	Existed
	73		14	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the main line between the harness connectors B201 and B222.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector of ADAS control unit.
2. Check the continuity between the harness connectors.

Harness connector		ADAS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B5	13	B10	1	Existed
	14		2	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the data link connector and the ADAS control unit.
NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:0000000011520329

1.CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:0000000011520330

1.CHECK CONNECTOR

1. Turn the ignition 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	
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.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520331

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.	
M150	11	M110	13	Existed
	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

Diagnosis Procedure

INFOID:0000000011520332

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to the following.

- VQ37VHR: EC-187, "Diagnosis Procedure"
- VK56VD: EC-734, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR: EC-543, "Removal and Installation"
- VK56VD: EC-1130, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011520334

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal 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 (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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.	
M182	6	M23	151	Existed
	14		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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011520335

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M182	13	12	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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.	
M182	13	M23	134	Existed
	12		136	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.

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520336

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-33, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520337

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
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 MWI-74, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-94, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520338

1.CHECK CONNECTOR

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

- TCU
- Harness connector M26 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M216	9	10	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 TCU. Refer to AV-507, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to AV-516, "Removal and Installation".
YES (Past error)>>Error was detected in the TCU branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M26.
2. Check the continuity between the TCU harness connector and the harness connector.

TCU harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M216	9	M26	242	Existed
	10		262	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the TCU harness connector M216 and the harness connector M26.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520339

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

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 WT-52, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to WT-66, "Removal and Installation".
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.
2. 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
	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.

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520340

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 HAC-106, "A/C AUTO AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-125, "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. harness 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.
NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520341

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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-94, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-371, "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-126, "Removal and Installation"
- BOSE audio with navigation system: AV-405, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520342

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 BCS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-91, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520343

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 5.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to TM-192, "Exploded View".
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

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

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to TM-159, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-192, "Exploded View".
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector 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.	
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.

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520344

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-52, "Wiring Diagram".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-151, "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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011520345

1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2.CHECK CONNECTOR

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

- CAN gateway
- Harness connector 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			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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to LAN-75, "System Diagram".
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

Diagnosis Procedure

INFOID:0000000011520346

1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.
NO >> GO TO 2.

2. CHECK CONNECTOR

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

- CAN gateway
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the terminal and connector.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 LAN-162, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-163, "Removal and Installation".
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".
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 harness 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 >> Replace the PCB harness.
NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520348

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 DLN-49, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to DLN-61, "Removal and Installation".
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520349

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 BRC-126, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-148, "Removal and Installation".
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520350

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E70	1	13	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the AFS control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-95, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-148, "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

Diagnosis Procedure

INFOID:0000000011520351

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 PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-34, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520352

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 around view monitor 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 around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M231	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to AV-373, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to AV-427, "Removal and Installation".
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520353

1. CHECK CONNECTOR

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

- Sonar control unit
- Harness connector M117 and B201

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Sonar control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the power supply and the ground circuit.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to AV-374, "SONAR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to the AV-431, "Removal and Installation".
YES (Past error)>>Error was detected in the sonar control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520354

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.	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 ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520355

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

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.		
B10	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.
NO >> Replace the body harness.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-164, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-165, "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

Diagnosis Procedure

INFOID:0000000011520356

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	10	12	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2 side). Refer to LAN-75, "System Diagram".

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of pre-crash seat belt control unit (driver side).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 SBC-48, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (driver side). Refer to SB-7, "SEAT BELT RETRACTOR : Removal and Installation".
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

Diagnosis Procedure

INFOID:0000000011520357

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 DAS-346, "SIDE RADAR LH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-392, "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.

BSW/BUZZER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520358

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 driver assistance buzzer control module for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver assistance buzzer control module.
2. Check the resistance between the driver assistance buzzer control module harness connector terminals.

Driver assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B210	3	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the driver assistance buzzer control module branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver assistance buzzer control module. Refer to DAS-347, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the driver assistance buzzer control module. Refer to DAS-395, "Removal and Installation".
YES (Past error)>>Error was detected in the driver assistance buzzer control module branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520359

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 DAS-349, "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.	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 DAS-347, "SIDE RADAR RH : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-392, "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

Diagnosis Procedure

INFOID:0000000011520360

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 position sensor
- 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 position sensor.
2. Check the resistance between the accelerator pedal position sensor harness connector terminals.

Accelerator pedal position sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M154	3	9	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 accelerator pedal position sensor. Refer to DAS-345, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation".
YES (Past error)>>Error was detected in the accelerator pedal position sensor 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 position sensor harness connector and the harness connector.

Accelerator pedal position sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M154	3	M23	138	Existed
	9		137	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.
NO >> Repair the harness between the accelerator pedal position sensor harness connector M152 and the harness connector M23.

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011520361

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to DAS-345, "LANE CAMERA UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-391, "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.	
R8	4	M24	179	Existed
	8		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

Diagnosis Procedure

INFOID:0000000011520362

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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			Resistance (Ω)
Connector No.	Terminal No.		
E33	3	6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-115, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-132, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E33	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011520364

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-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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

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

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

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

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

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

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 COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011520365

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 LAN-75, "System Diagram".
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.		
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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair or replace (if shield line or 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)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

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.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011520366

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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 LAN-75, "System Diagram".

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
2. 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.	
B10	6	E33	3	Existed
	7		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
- Accelerator pedal actuator
- Lane camera unit
2. Check the continuity between the ADAS control unit harness connector terminals.

ADAS control unit harness connector			Continuity
Connector No.	Terminal No.		
B10	6	7	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Check the harness and repair or replace (if shield line or 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.

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B10	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Check the harness and repair or replace (if shield line or 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.		
6	7	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Terminal No.		
3	6	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace the ADAS control unit and/or the ICC sensor.

7. CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

8. CHECK UNIT REPRODUCTION

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

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of ITS communication 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.