

SECTION **LAN**
LAN SYSTEM

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		Diagnosis Procedure	494	
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		Diagnosis Procedure	495	
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CAN SYSTEM (TYPE 51)			
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Diagnosis Procedure	541	Diagnosis Procedure	547	D

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PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

INFOID:000000010101266

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.

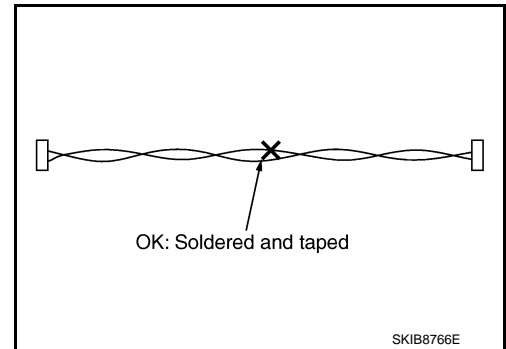
Precautions for Harness Repair

INFOID:000000010101267

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

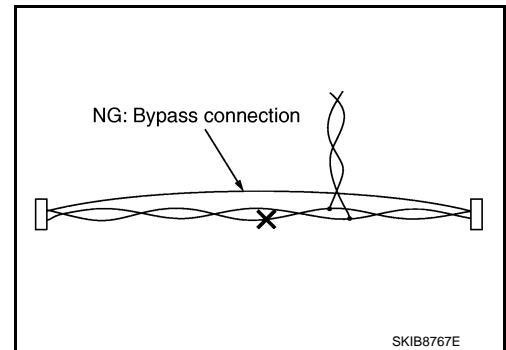
A fray of twisted lines must be within 110 mm (4.33 in).



- 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

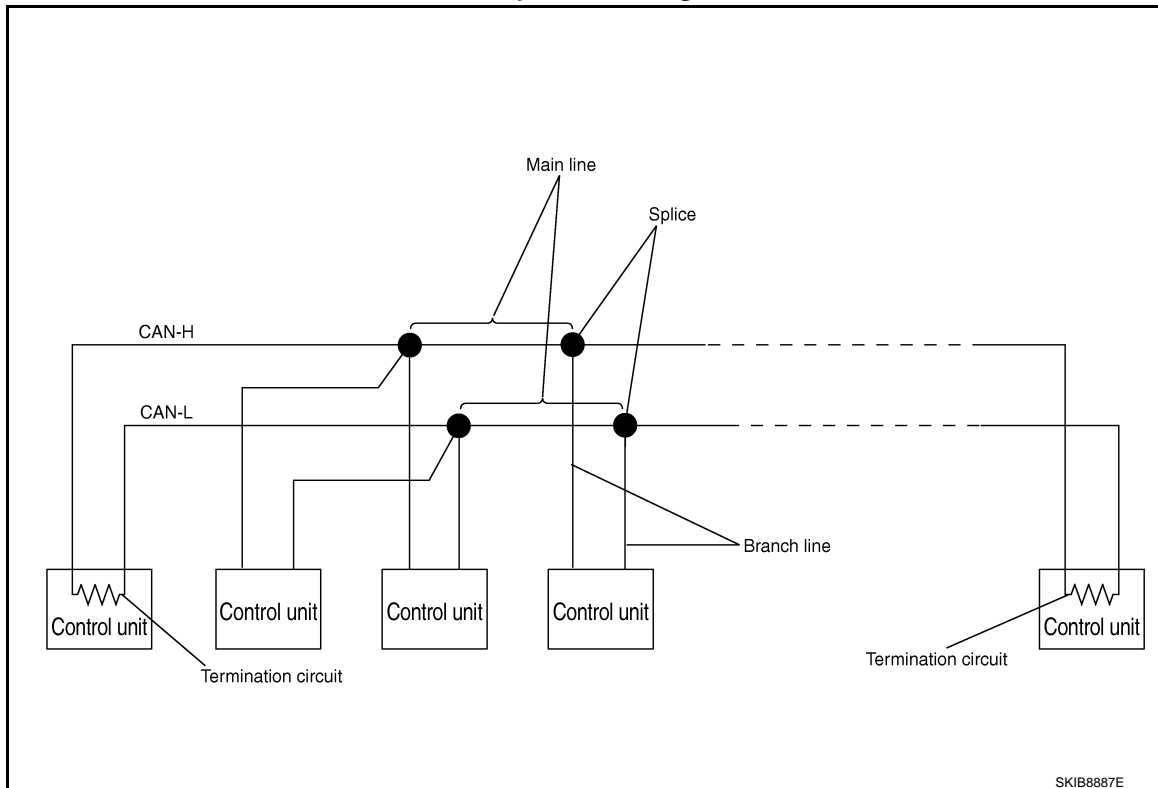
CAN COMMUNICATION SYSTEM : System Description

INFOID:000000010101268

- 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

INFOID:000000010101269



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.

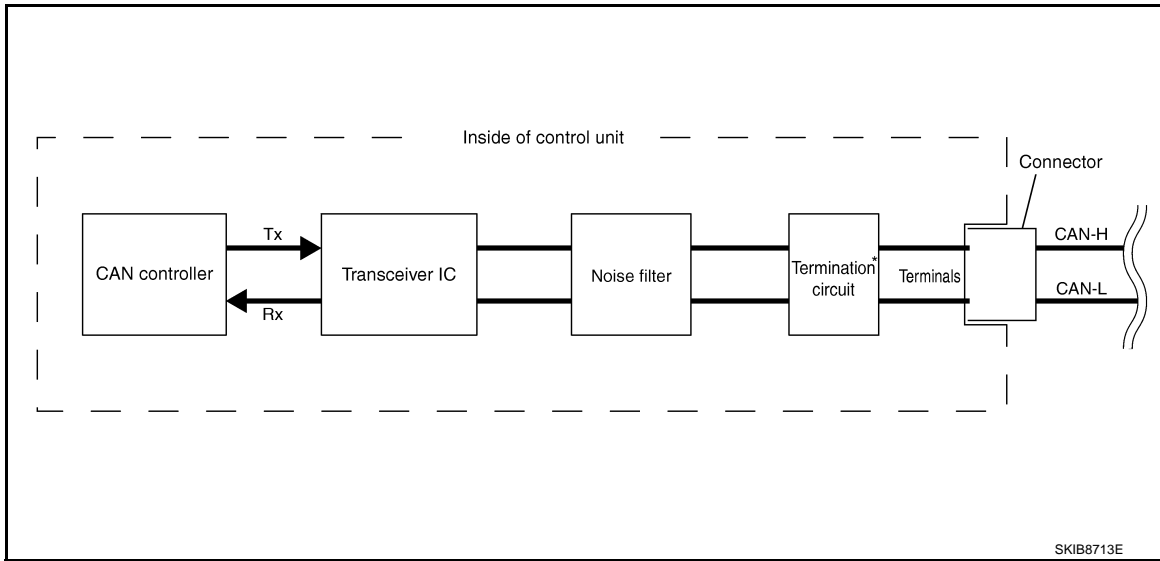
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Component	Description
Main line	CAN communication line between splices
Branch line	CAN communication line between splice and a control unit
Splice	A point connecting a branch line with a main line
Termination circuit	Refer to LAN-16, "CAN COMMUNICATION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

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CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit

INFOID:000000010101270



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

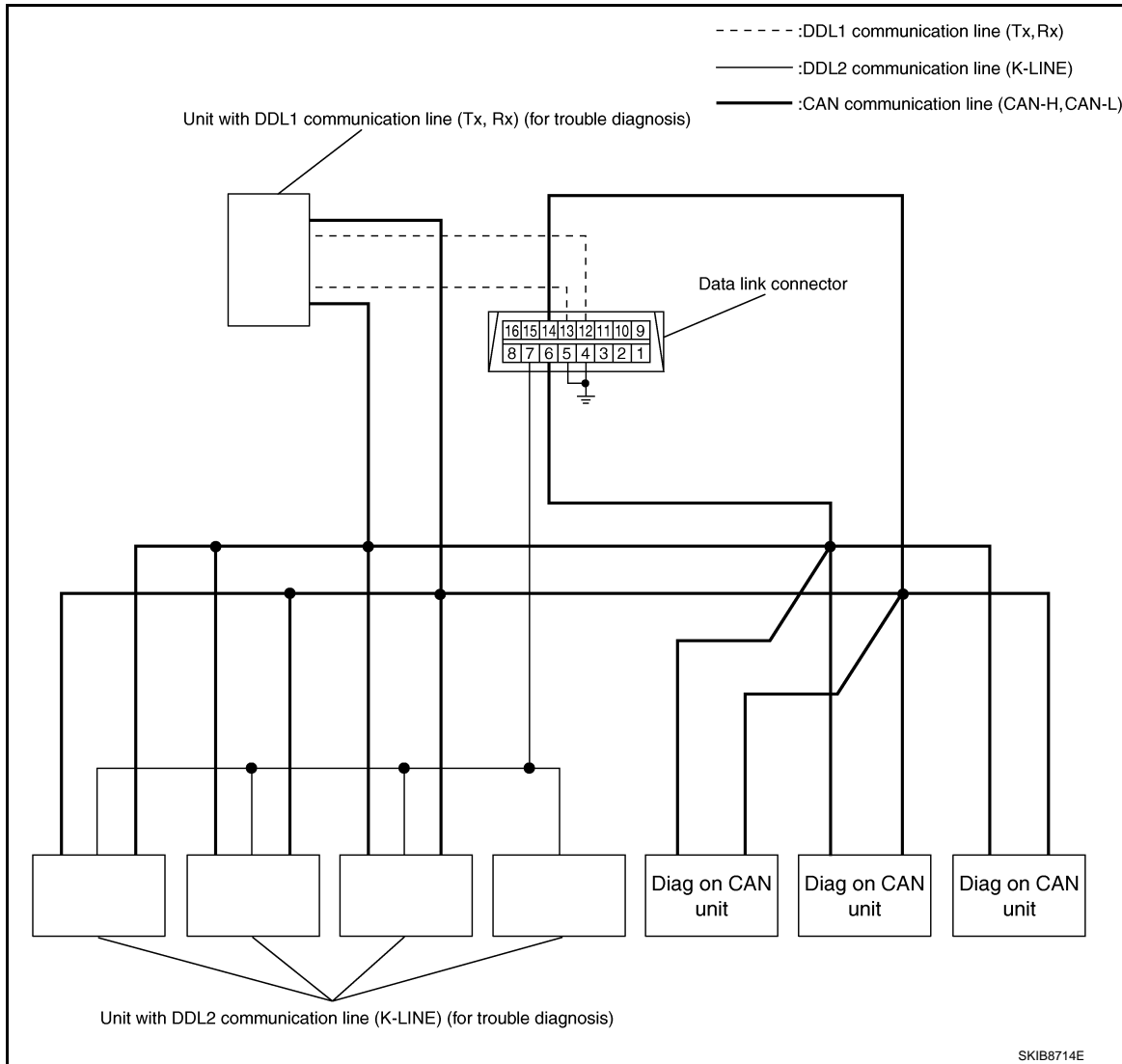
DIAG ON CAN : Description

INFOID:000000010101271

“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

INFOID:000000010101272



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

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TROUBLE DIAGNOSIS

Condition of Error Detection

INFOID:000000010101273

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:000000010101274

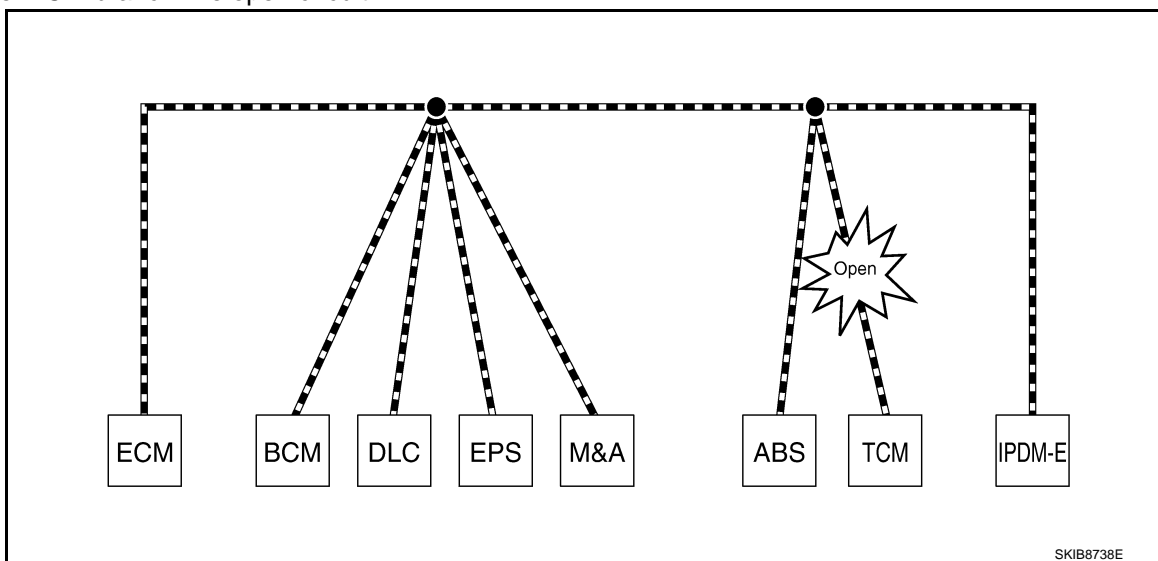
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to [LAN-29, "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.

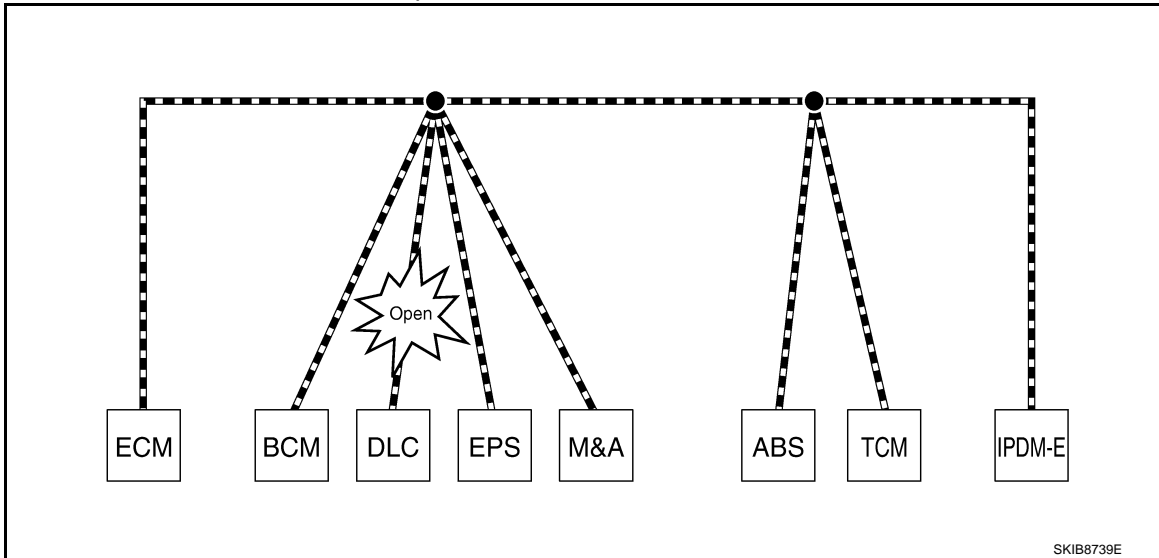
TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Major symptom
EPS control unit	Normal operation.
Combination meter	<ul style="list-style-type: none"> 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.

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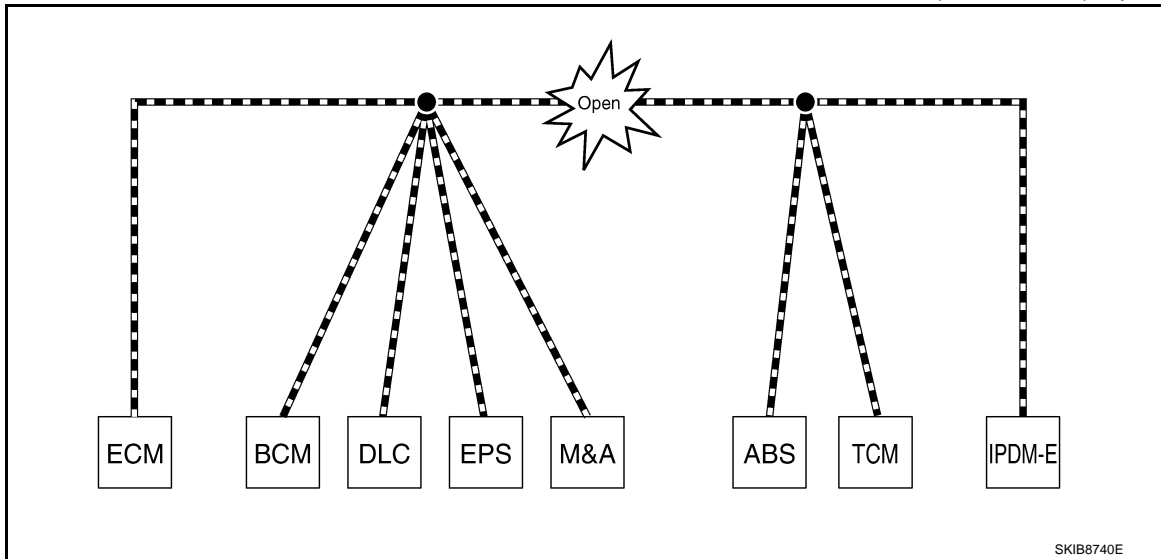
LAN

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

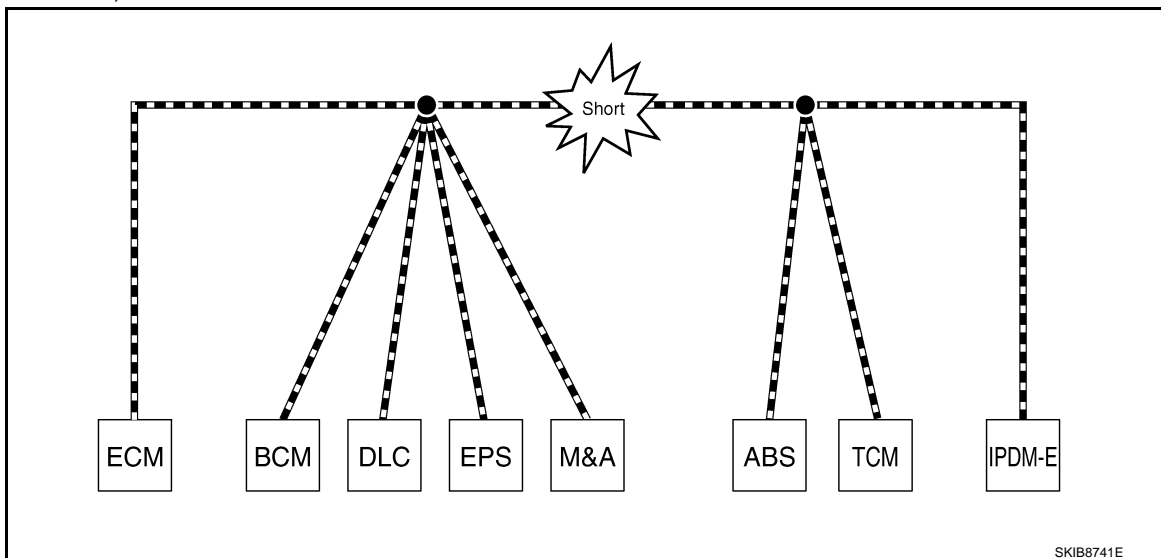
[CAN FUNDAMENTAL]

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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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, <ul style="list-style-type: none"> The headlamps (Lo) turn ON. The cooling fan continues to rotate.

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



TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Major symptom
ECM	<ul style="list-style-type: none"> Engine torque limiting is affected, and shift harshness increases. Engine speed drops.
BCM	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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, <ul style="list-style-type: none"> The headlamps (Lo) turn ON. The cooling fan continues to rotate.

CAN Diagnosis with CONSULT

INFOID:000000010101275

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:000000010101276

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.		

CAN Diagnostic Support Monitor

INFOID:000000010101277

MONITOR ITEM (CONSULT)

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

Without PAST			With PAST		
BCM			ENGINE		
MONITOR ITEM	PRESENT	PAST	MONITOR ITEM	PRESENT	PAST
INITIAL DIAG	OK	-	TRANSMIT DIAG	OK	OK
TRANSMIT DIAG	OK	-	VDC/TCS/ABS	OK	5
ECM	OK	-	METER/M&A	Not diagnosed	-
METER/M&A	OK	-	BCM/SEC	OK	OK
TCM	OK	-	ICC	Not diagnosed	-
IPDM E/R	OK	-	HVAC	Not diagnosed	-
I-KEY	OK	-	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
	UNKWN	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.

TROUBLE DIAGNOSIS

[CAN FUNDAMENTAL]

< SYSTEM DESCRIPTION >

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)

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How to Use CAN Communication Signal Chart

INFOID:000000010101278

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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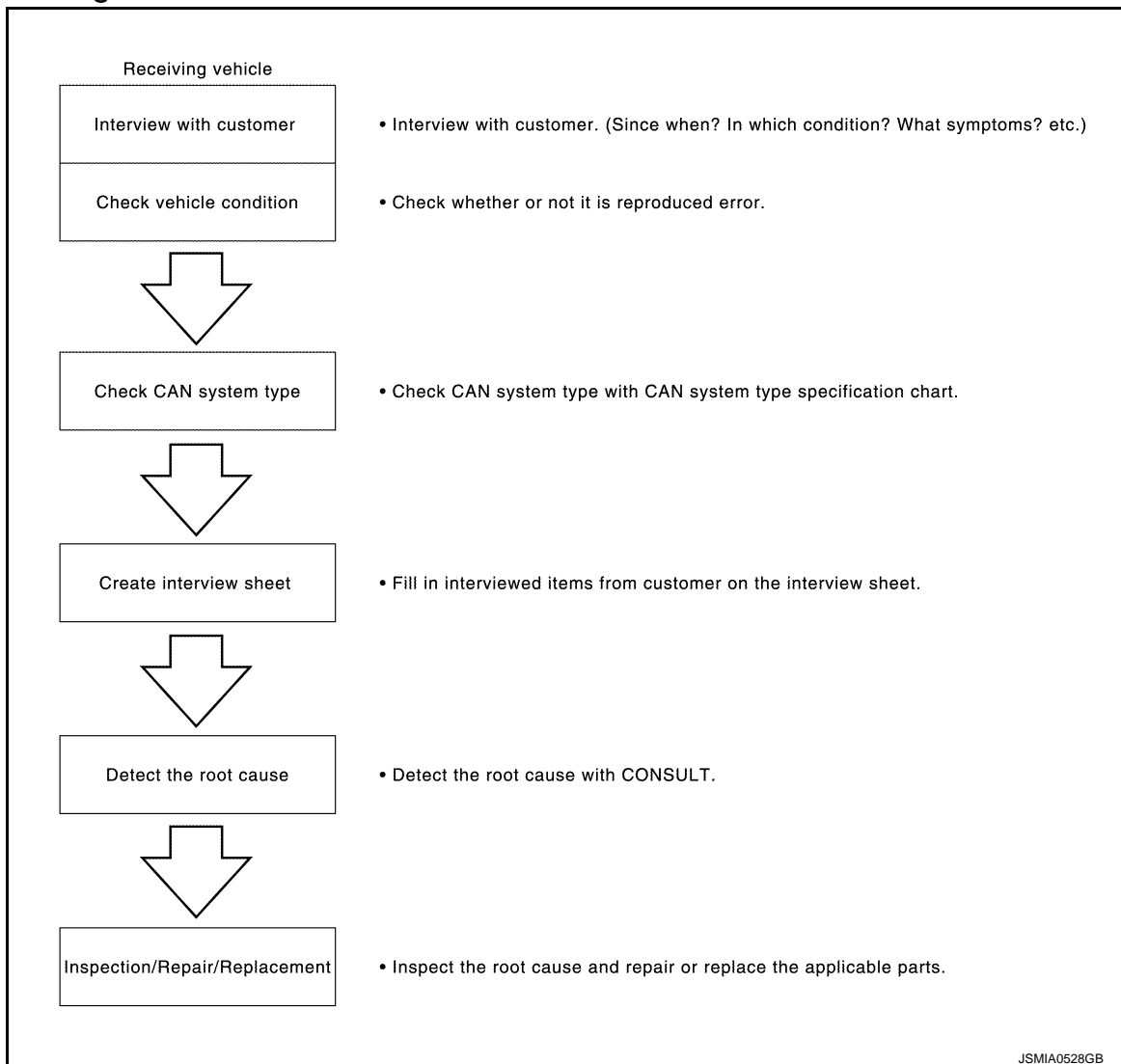
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

INFOID:0000000010101279



Trouble Diagnosis Procedure

INFOID:0000000010101280

INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

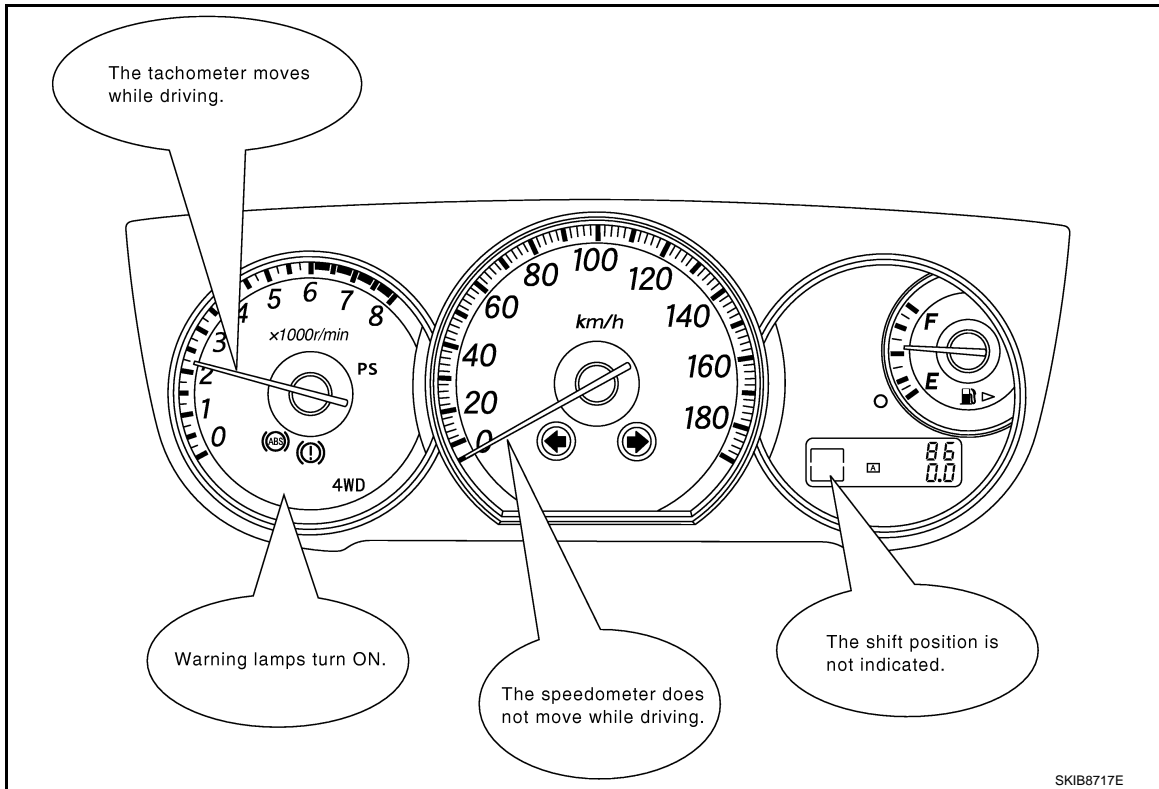
- Check normal units as well as error symptoms.
- Example: Circuit between ECM and the combination meter is judged normal if the customer indicates tachometer functions normally.
- When a CAN communication system error is present, multiple control units may malfunction or go into fail-safe mode.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

Determine CAN system type based on vehicle equipment.

NOTE:

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

CAN System Type Specification Chart (Style A)

NOTE:

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

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

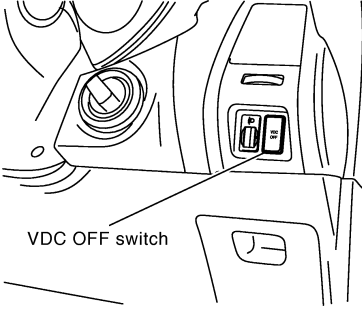
CAN System Specification Chart
Determine CAN system type from the following specification chart.

Body type	Wagon					
Axle	2WD			AWD		
Engine	QR25DE		VQ35DE			
Transmission	A/T		CVT			
Brake control	ABS			VDC		
Intelligent Key system		X		X		X
CAN system type	1	2	3	4	5	6
CAN communication signal chart	XX-XX. "TYPE 1/TYPE 2"		XX-XX. "TYPE 3/TYPE 4"		XX-XX. "TYPE 5/TYPE 6"	

X : Applicable

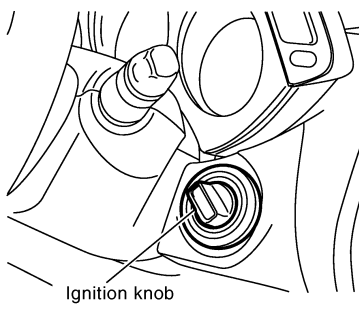
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION
NOTE:
Check CAN system type from the vehicle shape and equipment.

With VDC



VDC OFF switch

With Intelligent Key system



Ignition knob

[For the above case, CAN system type is "6".]

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CAN System Type Specification Chart (Style B)

NOTE:

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

Example:
Vehicle is equipped as follows: 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		
Axle	2WD		AWD
Engine	HR15DE	MR20DE	HR15DE
Transmission	A/T	CVT	A/T
Brake control		ABS	
Specification chart	XXX SPECIFICATION CHART A	YYY SPECIFICATION CHART B	ZZZ SPECIFICATION CHART C

x: Applicable

Check the vehicle equipment with the vehicle identification number plate.
Check the vehicle equipment.
Select the applicable vehicle equipment. Refer to the specification chart.

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		x				x	x			x	x	x	x	x	x
Intelligent Key system			x			x		x	x	x	x	x	x	x	x
Navigation system				x			x	x			x	x	x	x	x
Automatic drive positioner									x			x	x	x	x
CAN system type	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CAN communication signal chart	XXX TYPE MINPA 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A 12V/50A														

x: Applicable

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.

<p>With active AFS</p> <p>Bending lamp Xenon bulb</p>	<p>With Intelligent Key system</p> <p>Ignition knob</p>
<p>With navigation system</p> <p>Display Multifunction switch</p>	<p>With automatic drive positioner</p> <p>Seat memory switch</p>

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.

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

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CREATE INTERVIEW SHEET

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

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

CAN Communication System Diagnosis Interview Sheet	
Date received:	3, Feb. 2006
Type: DBA-KG11	VIN No.: KG11-005040
Model: BDRARGZ397EDA-E-J-	
First registration: 10, Jan. 2001	Mileage: 62,140
CAN system type: Type 19	
Symptom (Results from interview with customer)	
<ul style="list-style-type: none">•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	
<p>The engine does not start. While turning the ignition switch ON,</p> <ul style="list-style-type: none">•The headlamps (Lo) turn ON, and the cooling fan continues rotating.•The interior lamp does not turn ON.	

JSMA0019GB

DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

HOW TO USE THIS SECTION

< HOW TO USE THIS MANUAL >

[CAN]

HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution

INFOID:0000000010101281

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to [LAN-24, "Trouble Diagnosis Procedure"](#).

Abbreviation List

INFOID:0000000010101282

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
BCM	BCM
CGW	CAN gateway
DLC	Data link connector
ECM	ECM
HVAC	A/C auto amp.
ICC	ADAS control unit
IPDM-E	IPDM E/R
LANE	Lane camera unit
LASER	ICC sensor
M&A	Combination meter
PSB	Pre-crash seat belt control unit (driver side)
RDR-L	Side radar LH
RDR-R	Side radar RH
STRG	Steering angle sensor
TCM	TCM
TCU	TCU
TPMS	Low tire pressure warning control unit

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PRECAUTION

PRECAUTIONS

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

INFOID:000000010285561

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 of Battery Terminal

INFOID:000000010285563

- 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.

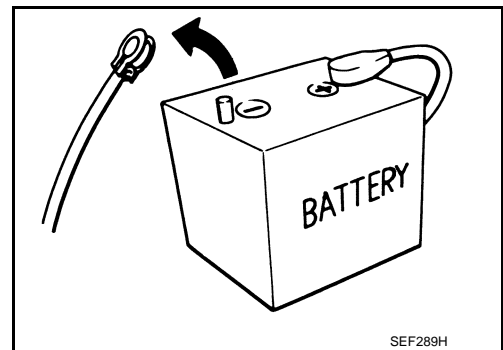
NOTE:

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:000000010101284

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.

PRECAUTIONS

[CAN]

< PRECAUTION >

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

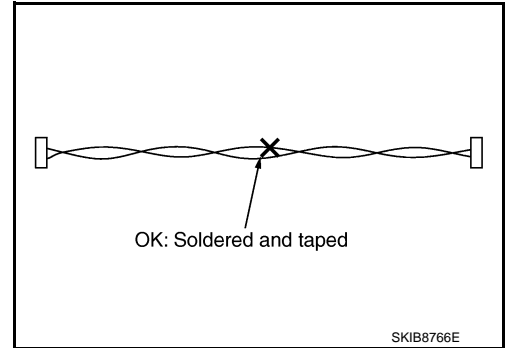
Precautions for Harness Repair

INFOID:000000010101285

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

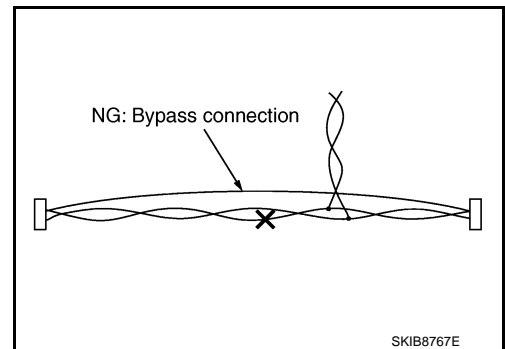
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

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



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

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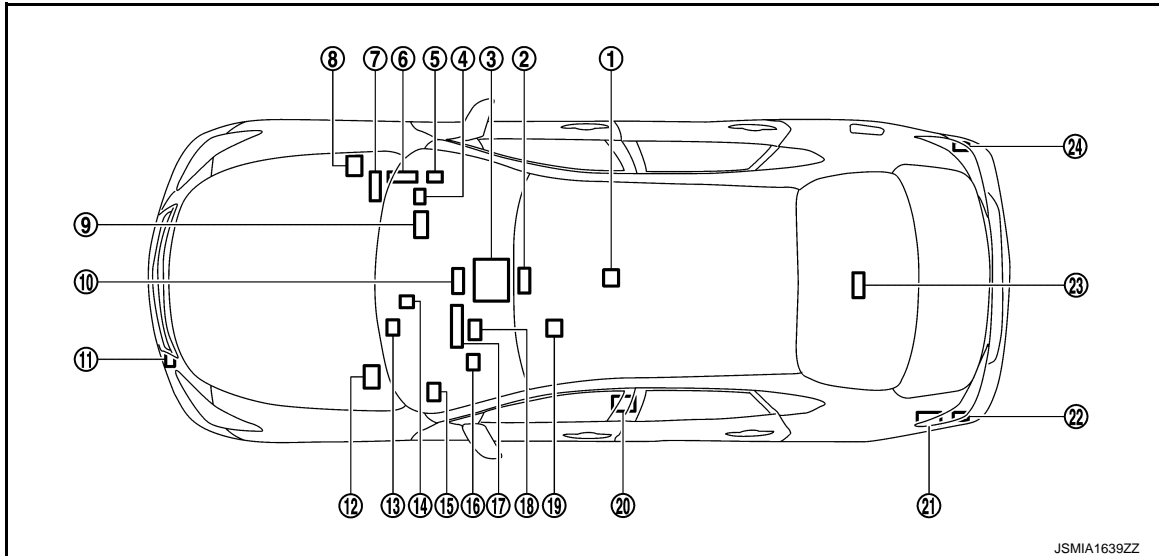
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000010101286



JSMIA1639ZZ

- | | | |
|----------------------------------|--|---|
| 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. Pre-crash seat belt control unit (driver side) | 21. AWD control unit |
| 22. Side radar LH | 23. ADAS control unit | 24. Side radar RH |

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

SYSTEM

CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : CAN System Specification Chart

INFOID:000000010101287

Determine CAN system type from the following specification chart.

NOTE:

Refer to [LAN-24. "Trouble Diagnosis Procedure"](#) 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	50	1	2	3	51	4	5	6	7	8	9
CAN communication unit											
ECM	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit	×	×	×	×	×	×	×	×	×	×	×
CAN gateway			×		×	×			×		×
A/C auto amp.	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×
Air bag diagnosis sensor unit	×	×	×	×	×	×	×	×	×	×	×
TCU		×	×	×		×		×	×	×	×
AV control unit	×	×	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×	×	×	×	×	×
AWD control unit							×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×
AFS control unit			×		×	×			×		×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×
Driver seat control unit	×	×	×	×	×	×	×	×	×	×	×
ADAS control unit			×		×	×			×		×
Pre-crash seat belt control unit (driver side)			×		×	×			×		×
ITS communication unit											
ADAS control unit			×		×	×			×		×
Side radar LH			×		×	×			×		×
Side radar RH			×		×	×			×		×
Accelerator pedal actuator			×		×	×			×		×
Lane camera unit			×		×	×			×		×
ICC sensor			×		×	×			×		×

×: Applicable

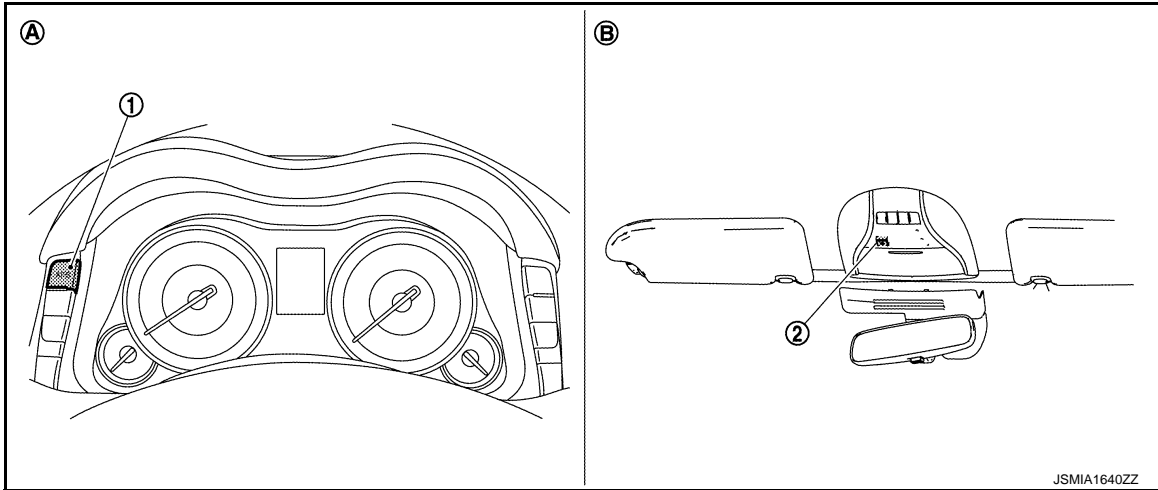
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.

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- 1. AFS switch
- 2. Telematics switch
- A. With active AFS
- B. With telematics system

CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

INFOID:000000010101288

Refer to [LAN-23. "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

NOTE:

Refer to [LAN-29. "Abbreviation List"](#) for the abbreviations of the connecting units.

T: Transmit R: Receive

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	ABS	AFS	IPDM-E	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									
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	

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	ABS	AFS	IPDM-E	ADP	ICC	PSB	
ICC prohibition signal	T																R		A
ICC steering switch signal	T																R		B
Malfunctioning indicator lamp signal	T						R		R										C
N idle instruction signal	R				T														
	T				R														
Oil pressure warning lamp signal	T								R										D
Power generation command value signal	T														R				
Snow mode switch signal	T												R				R		E
Stop lamp switch signal	T																R		
					R					T									
Wide open throttle position signal	T				R							R	T				R		F
Buzzer request signal		T								R									
									R	T									
Low tire pressure warning lamp signal								R	R	R									H
Tire pressure data signal		T						R											
A/C display signal				T				R											I
A/C evaporator temperature signal	R			T															
A/C ON signal	R			T															J
Ambient sensor signal				T					R										
Blower fan ON signal	R			T															
ECO mode signal				T	R				R								R		K
	R				T														
SNOW mode signal				T	R				R								R		L
	R				T														
SPORT mode signal				T	R				R								R		
	R				T														LAN
STANDARD mode signal				T	R				R								R		
	R				T														
Target A/C evaporator temperature signal	R			T															N
A/T CHECK indicator lamp signal					T				R					R					O
A/T self-diagnosis signal	R				T														
Current gear position signal	R				T												R		
Drive mode select signal	R				T												R		P
Input speed signal					T												R		
Manual mode shift refusal signal					T				R										
N range signal					T					R			R						
Next gear position signal	R				T														
Output shaft revolution signal	R				T												R		

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	ABS	AFS	IPDM-E	ADP	ICC	PSB
P range signal					T					R								
R range signal					T								R					
Shift position signal					T				R					R		R	R	
Shift schedule signal	R				T													
Car crash information signal						T	R											
Door lock/unlock request signal							T			R								
Sleep-ready signal							T			R								
									T	R								
										R					T			
Wake up signal							T			R								
									T	R								
A/C switch operation signal				R				T										
Rear window defogger switch signal								T		R								
System selection signal								T									R	
System setting signal								T		R								
								R		T								
Voice recognition signal				R				T										
Brake fluid level switch signal									T				R					
Distance to empty signal								R	T									
Fuel level low warning signal								R	T									
Fuel level sensor signal	R									T								
Manual mode shift down signal					R				T									
Manual mode shift up signal					R				T									
Manual mode signal					R				T									
Non-manual mode signal					R				T									
Odometer signal									T	R								
Paddle shifter shift down signal*					R				T									
Paddle shifter shift up signal*					R				T									
Parking brake switch signal									T	R		R	R				R	
Seat belt buckle switch signal (driver side)									T	R								
Vehicle speed signal	R			R	R			R	T	R				R	R	R		R
		R							R	R		R	T			R	R	
Blower fan motor switch signal	R									T								
Buzzer output signal									R	T								
									R								T	
Daytime running light request signal										T					R			
Dimmer signal									R	T							R	
Door switch signal									R	T					R	R		R
Door lock status signal							R			T								
Door unlock signal										T						R		

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[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	ABS	AFS	IPDM-E	ADP	ICC	PSB
Front fog light request signal									R	T					R			
Front wiper request signal										T					R		R	
Handle position signal										T						R		
High beam request signal									R	T					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				R						T						R		
Low beam request signal										T					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			
Rear window defogger control signal										T					R			
	R							R							T			
Sleep wake up signal			R				R		R	T					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				R	T							R	
Steering angle sensor malfunction signal											T						R	R
Steering angle sensor signal								R			T		R	R			R	R
Steering angle speed signal											T						R	R
Steering calibration signal											T							R
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	

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SYSTEM

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[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	ABS	AFS	IPDM-E	ADP	ICC	PSB
Brake warning lamp signal							R		R				T					
Decel G sensor signal					R								T					
Pressure sensor signal					R								T					
Side G sensor signal					R								T				R	
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			
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	
IBA OFF indicator lamp signal									R								T	
IBA 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	

*: Models with paddle shifter

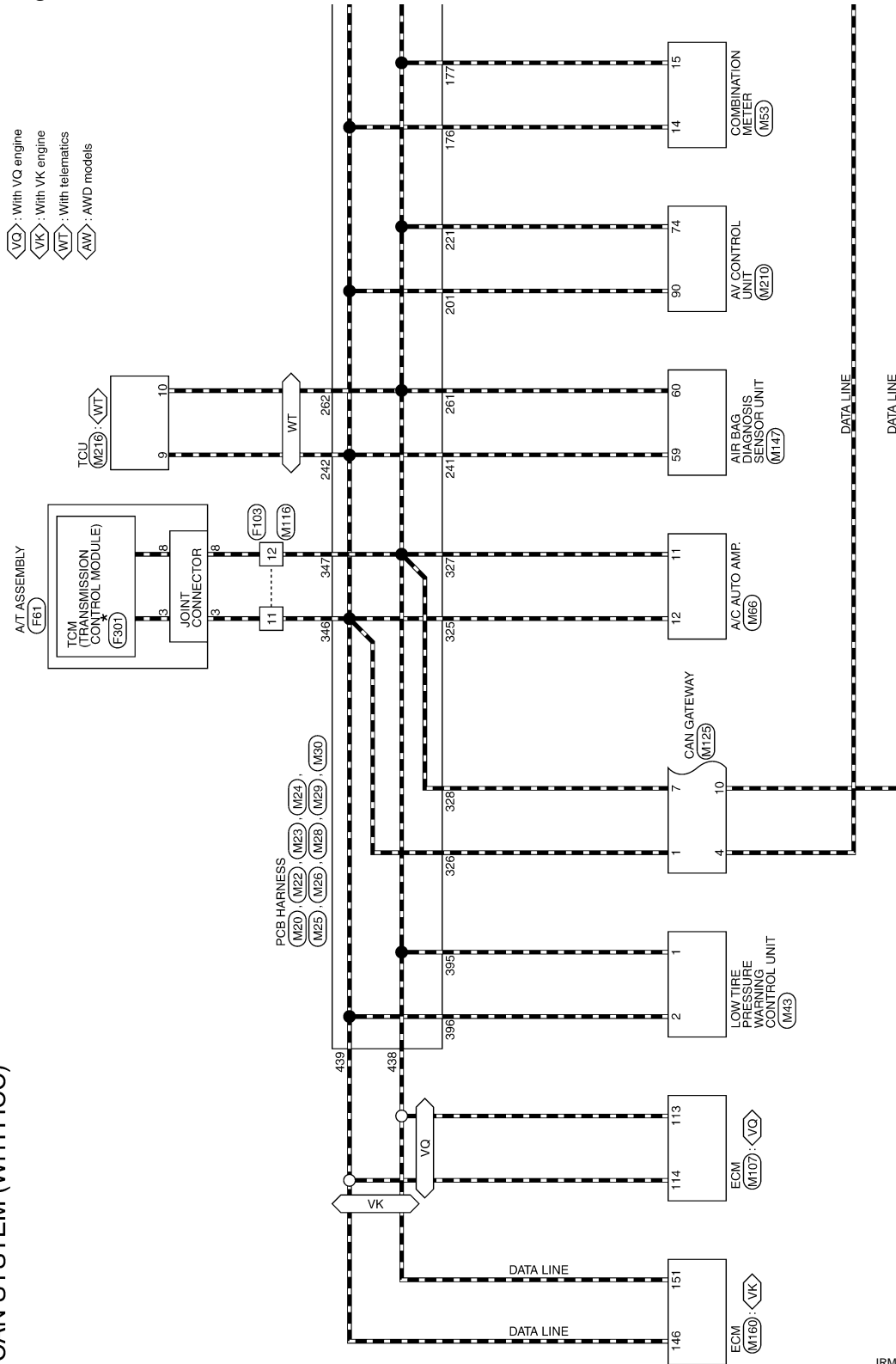
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WIRING DIAGRAM

CAN SYSTEM (WITH ICC)

Wiring Diagram

CAN SYSTEM (WITH ICC)



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

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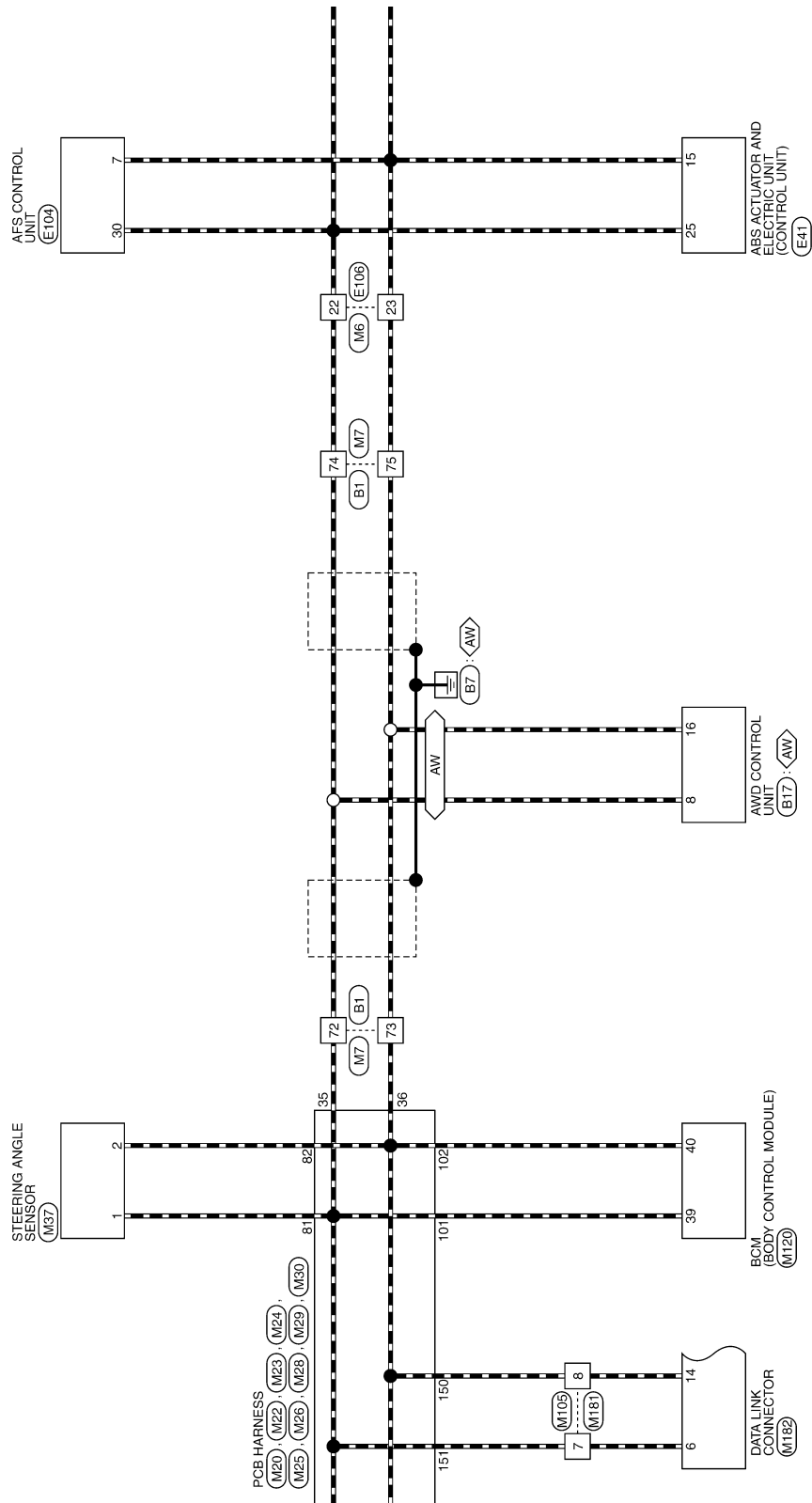
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CAN SYSTEM (WITH ICC)

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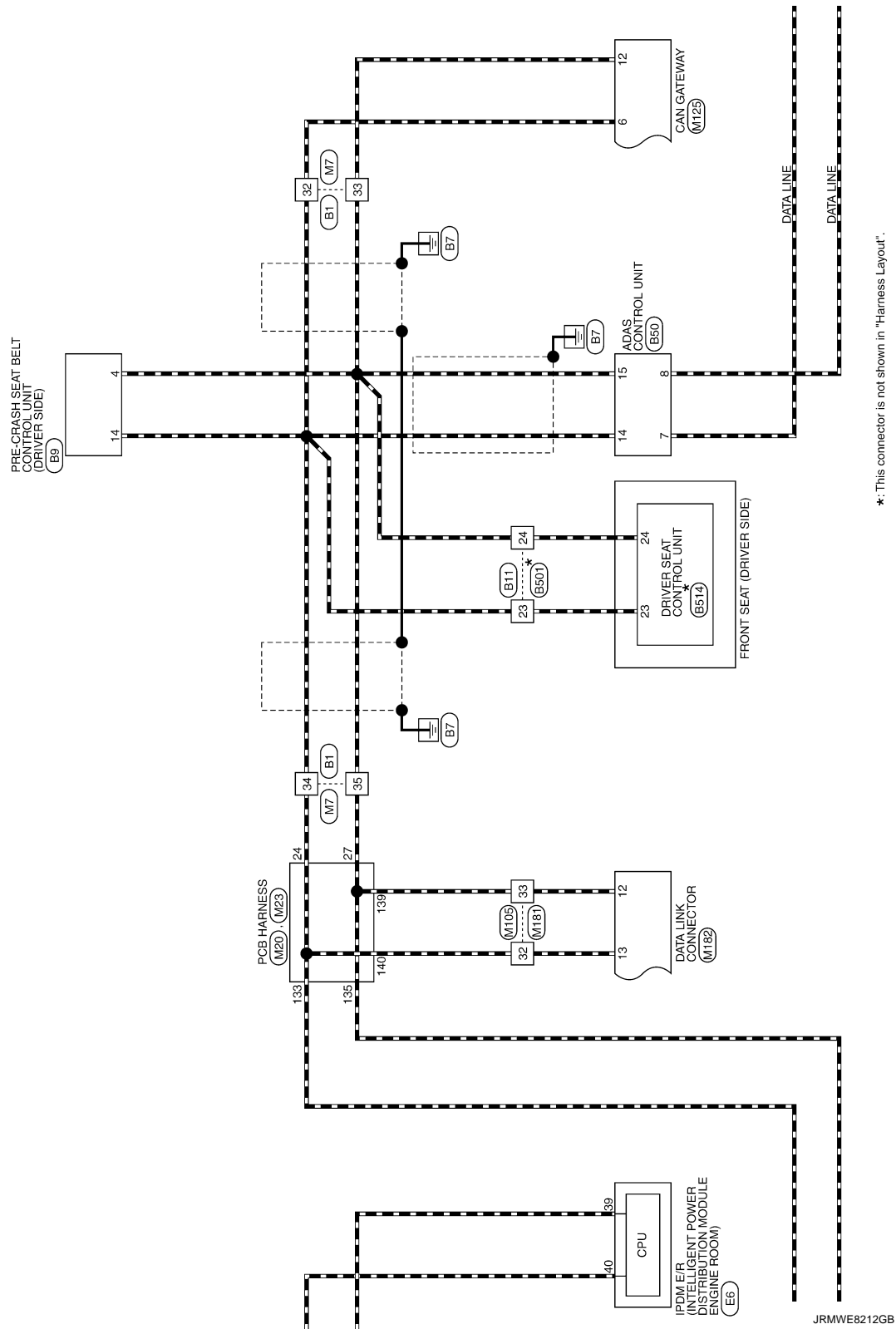


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CAN SYSTEM (WITH ICC)

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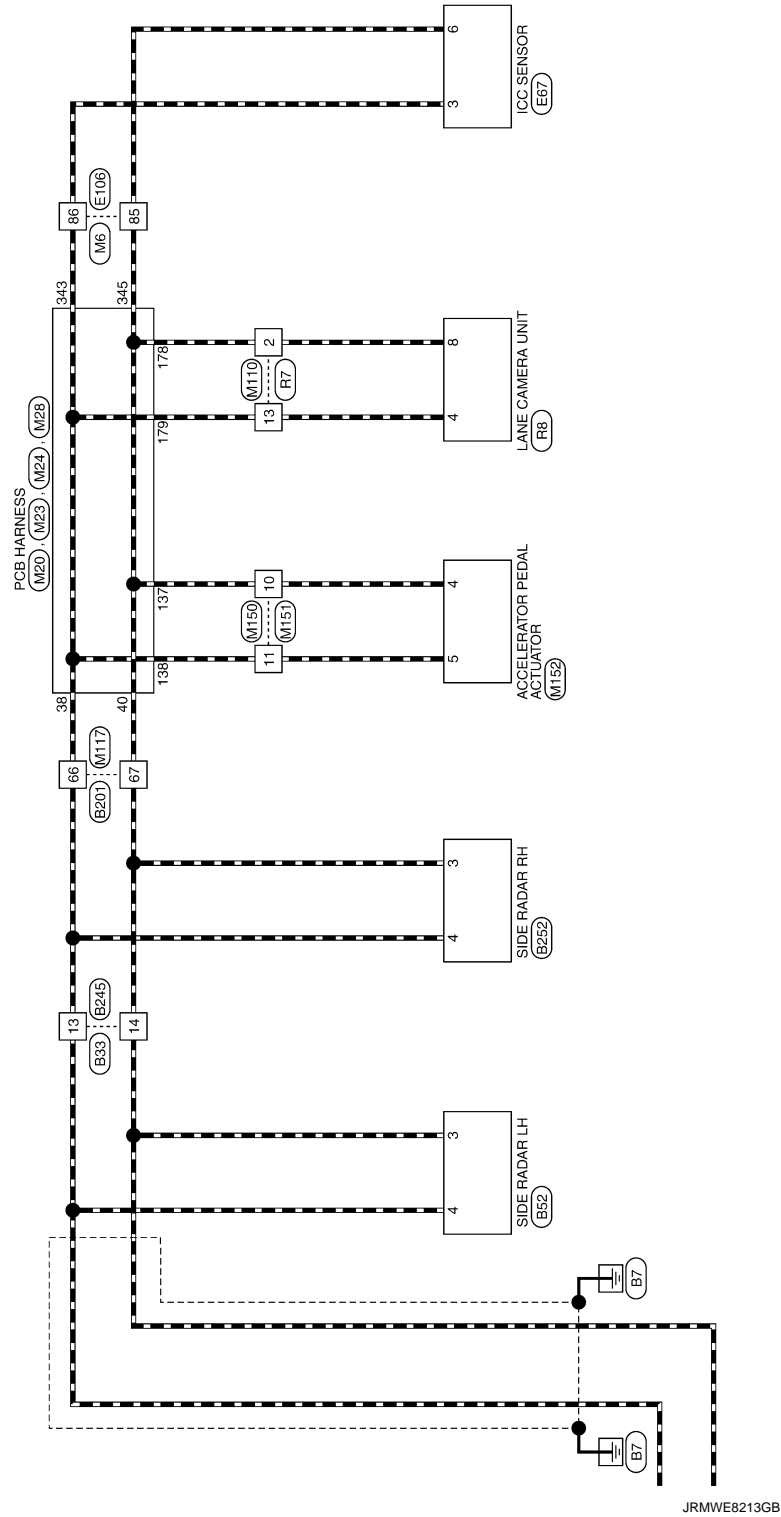
*: This connector is not shown in "Harness Layout".

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CAN SYSTEM (WITH ICC)

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CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80PW-CS36-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	
2	W	
3	LG	
4	P	
5	V	
6	GR	
7	Y	
8	LG	
9	V	
10	GR	
11	L	[With climate controlled seat]
12	GR	[With heated seat]
13	P	[With heated seat]
14	R	[With climate controlled seat]
15	O	
16	V	
17	B	
18	R	
19	W	
20	R	
21	B	
22	LG	
23	V	
24	Y	
25	G	
26	GR	
27	SB	
28	W	
29	O	
30	SHIELD	
31	R	
32	L	
33	R	
34	L	
35	R	

36	G	
37	SB	
38	SHIELD	
39	CSZV	
40	W/L	
41	L	
42	B	
43	W	
44	O	
45	Y	
46	SB	
47	V	
48	LG	
49	Y	
50	W	
51	G	
52	G	
53	GR	
54	LG	
55	Y	
56	W	
57	B	
58	LG	
59	V	
60	W	
61	B	
62	LG	
63	V	
64	O	
65	BR	
66	V	
67	GR	
68	LG	
69	GR	
70	R	
71	W	
72	P	
73	L	
74	P	
75	Y	
76	Y	
77	R	
78	W	
79	G	
80	L	
81	LG	
82	BR	
83	SB	
84	Y	
85	R	
86	C	
87	GR	
88	GR	
89	G	
90	Y	
91	G	
92	G	
93	Y	

37	O	
38	CS	
39	CS	

Connector No.	B9
Connector Name	PRE-ORBIT SEAT BELT CONTROL UNIT (PRE-ORBIT)
Connector Type	TH180PW-CSZ



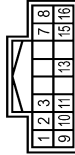
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	SIG BAT
2	G	OUT 1
3	R	CAN LO
4	R	CAN LO
5	LG	BUCKLE SW LH NO
6	LG	LOCAL COMM 2
7	BR	SHIELD
8	BR	SHIELD
9	R	SENS POWER 1
10	R	OUT 2
11	B	CAN HI
12	B	CAN HI
13	L	LOCAL COMM 1
14	L	LOCAL COMM 1
15	W	SIG SW 1
16	W	SIG SW 1
17	B	MOTOR BAT
18	Y	MOTOR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

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS180PW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	
2	B	
3	P	
4	P	
5	R	[Without CAN antenna]
6	R	[With CAN antenna]
7	BR	
8	W	
9	L	
10	L	
11	P	
12	O	
13	V	
14	BR	
15	LG	
16	LG	
17	O	
18	O	
19	B	
20	B	

Connector No.	B17
Connector Name	AMD CONTROL UNIT
Connector Type	TH180PW-NH



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

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CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

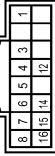
7	GR	CAN-H
8	L	CAN-L
9	SB	AWD SOL BAT
10	B/Y	GND
11	B/Y	GND
13	LG	FLUID TEMP (+)
15	G	BATTERY POWER SUPPLY
16	P	CAN-L

Connector No.	BE3
Connector Name	WIRE TO WIRE
Connector Type	INS19FCY-CS



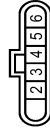
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	L	-
3	O	-
4	O	-
5	O	-
6	O	-
7	O	-
8	O	-
9	O	-
10	O	-
11	P/L	-
12	P/L	-
13	L	-
14	Y	-

Connector No.	BE9
Connector Name	ADAS CONTROL UNIT
Connector Type	TH18EW-NH



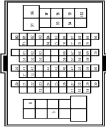
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	WARNING SYSTEMS SW
2	O	WARNING SYSTEMS SW
3	O	WARNING SYSTEMS ON/IND
4	O	WARNING SYSTEMS ON/IND
5	SB	BRAKE HOLD RLY DRIVE SIGNAL
6	B/R	GND
7	L	ITS COMM-H
8	P	ITS COMM-L
12	W	WARNING BUZZER
14	L	CAN-H
15	R	CAN-L
16	GR	IGNITION

Connector No.	BE2
Connector Name	SIDE RADAR LH
Connector Type	AAC08EP-WP-5P



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

Connector No.	BE21
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-GS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	SB	-
3	Y	-
4	Y	-
5	Y	-
6	Y	-
7	GR	-
8	GR	-
9	GR	-
10	GR	-
11	GR	-
12	GR	-
13	GR	-
14	GR	-
15	GR	-
16	GR	-
17	GR	-
18	P	-
19	BR	-
20	GR	-
21	Y	-
22	GR	-
23	R	-
24	V	-
25	B	-
26	W	-
27	O	-
28	P	-
29	P	-
30	O	-
31	B/R	-
32	Y	-
40	SHIELD	-
41	W/R	-
42	V	-
44	P	-
45	SB	-
46	R	- [With climate controlled seat]
47	Y	- [With heated seat]
48	G	- [With climate controlled seat]
49	GR	- [With heated seat]
50	O	- [With heated seat]
51	R	-
52	GR	-
53	LG	-
54	P	-
55	P	-
56	P	-
57	W	-

58	O	-
59	Y	-
61	SB	-
62	SB	-
63	W	-
66	L	-
67	Y	-
68	SB	-
69	B	-
70	R	-
71	L	-
74	B	-
75	L	-
76	SHIELD	-
78	G	-
79	S	-
79	P	-
80	G	-
81	O	-
82	BR	-
83	GR	-
84	Y	-
85	LG	-
86	W	-
87	O	-
88	Y	-
89	BR	-
90	L	-
91	GR	-
93	Y	- [With heated seat]
93	Y	- [With climate controlled seat]
94	GR	-
96	W	-
97	P	-
98	LG	-
99	LG	-
100	Y	-

JRMWE8215GB

CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

Connector No.	B245
Connector Name	WIRE TO WIRE
Connector Type	NS18MGY-C5



1	2	3	4	5	6	7	8	9	10	11	12	13	14
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	O	-
3	Y	-
4	G	-
5	G	-
6	V	-
8	P	-
10	P	-
11	R/L	-
12	P/L	-
13	L	-
14	Y	-

Connector No.	B252
Connector Name	SIDE RADAR RH
Connector Type	AAC08FB-HP



1	2	3	4	5	6
---	---	---	---	---	---

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/R	RIGHT/LEFT SWITCHING SIGNAL
2	B/R	GND
3	Y	ITS COMB-L
4	L	ITS COMB-H
5	G	LOCK/UNLOCK
6	BR	BSW/BSI INDICATOR

Connector No.	B601
Connector Name	WIRE TO WIRE
Connector Type	NS18MW-C5



24	23	32	31	30	29
40	41	38	39	27	11
28	25	26	22	21	20

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	-
41	GR	-

Connector No.	B614
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH32FW-NH



23	22	21	20	19	18
17	16	15	14	13	12
11	10	9	8	7	6

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)

15	Y/B	REAR LIFTER SW (UPWARD)
16	L/S/B	FRONT LIFTER SW (UPWARD)
17	L/S/R	FRONT LIFTER SW (DOWNWARD)
18	G/Y	PULSE (SLIDE)
19	R/Y	PULSE (RECLINER)
20	Y	PULSE (REAR LIFTER)
21	R	PULSE (FRONT LIFTER)
22	P	PULSE (FRONT LIFTER)
23	P/L	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 (L/D)
31	BR/W	PULSE (L/D)
32	W/L	PULSE (L/D)
33	W	POWER (SUPPLY (ENGINEER))



Connector No.	E6
Connector Name	POWER IN INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH08FW-NH



42	41	40	39
16	15	14	13

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)
43	Y	MOTOR FAN RLY CONT (With VG engine)
44	GR	DEFENT SW
45	LG	HORN RLY (With VK engine)
46	G	HORN RLY (With VG engine)
48	BR	START CONT

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC PART (CONTROL UNIT)
Connector Type	SAZ08FB-SL24-U



25	24	23	22	21	20
19	18	17	16	15	14
13	12	11	10	9	8
7	6	5	4	3	2
1	1	1	1	1	1

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

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CAN SYSTEM (WITH ICC)

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[CAN]

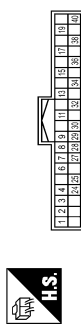
CAN SYSTEM (WITH ICC)

Connector No.	E07
Connector Name	ICC SENSOR
Connector Type	RS08EB-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	IGNITION
2	B/Y	ITS COMA-H
3	GR	GND
4	Y	ITS COMA-L

Connector No.	E104
Connector Name	AFS CONTROL UNIT
Connector Type	TH40PW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	IGN
2	O	PSG-R
3	GR	SW
4	BR	PSV-R
5	V	HSV-R
6	P	CAN-L
7	B	HSG-R
8	B	PSV-R
9	Y	SMR-(-)
10	R	SMR-(-)
11	B	SMR-(-)
12	L	SMR-(-)
13	B	SMR-(-)
14	W	SMR-(-)
15	W	SMR-(-)
16	G	SMR-(-)
17	G	SMR-(-)
18	W	AMDS-R
19	W	PSV-L
20	LG	GND
21	B	GND
22	B	PSG-L
23	BR	PSG-L

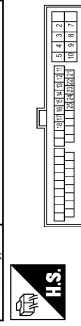
33	O	-
34	Y	-
41	BR	-
44	W	-
45	L	-
46	GR	-
47	V	-
48	G	-
49	O	-
50	LG	-
50	W	-
61	G	-
62	Y	-
63	BR	-
64	Y	-
65	R	-
66	R	-
67	SB	-
71	O	-
78	SB	-
80	G	-
81	R	-
82	SB	-
83	GR	-
84	Y	-
85	Y	-
86	L	-
87	LG	-
88	LG	-
89	LG	-
90	W	-
91	W	-
92	P	-
93	LG	-
94	BR	-
95	W	-
97	R	-
98	Y	-
99	V	-
100	V	-

Connector No.	F61
Connector Name	A-T ASSEMBLY
Connector Type	RK08CG-DBY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	POWER SUPPLY (BACK LIP)
2	R	POWER SUPPLY (BACK LIP)
3	R	POWER SUPPLY (BACK LIP)
4	V	HEV SYSTEM CAN-H
5	B	K-LINE
6	G	GND
7	SB	POWER SUPPLY (IGN)
8	P	BACK-UP LAMP RELAY
9	BR	HEV SYSTEM CAN-L
10	LG	P/N SIGNAL (Without paddle shifter)
10	B	P/N SIGNAL (With paddle shifter)
10	B	GROUND

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK38PW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	G	-
4	R	- [With VK engine]
5	B	- [With VO engine]
5	GR	- [With VK engine]
7	LG	-
8	Y	-
9	SB	- [With VO engine]

CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

9	W	- [With Vx engine]
10	BR	- [With Vx engine]
11	V	- [With Vx engine]
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 (TRANSMISSION CONTROL MODULE)
Connector Type	SPT18FC



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

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



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	SB	-
3	LG	-
4	LG	-
5	W	-
6	BG	-
7	BG	-
8	G	-
9	Y	-
10	W	-
11	R	-
12	V	-
13	LG	-
14	L	-
15	V	-
16	R	-
17	BR	-
18	Y	-
19	R	-
20	SB	-
21	BR	-
22	L	-
23	P	-
27	SHIELD	-
28	V	-
29	SB	-
31	BG	-
32	P	-
33	R	-
34	BG	-
41	BR	-
42	Y	-
43	BG	-
47	V	-
48	BG	-
49	G	-
49	BG	-
50	W	-

60	GR	-
61	LG	-
62	BR	-
63	BR	-
64	L	-
65	R	-
66	P	-
67	L	-
71	B	-
79	V	-
80	G	-
81	L	-
82	B	-
83	BG	-
84	SB	-
85	L	-
86	W	-
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	-

6	W	-
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	EG	-
18	L	-
19	W	-
21	B	-
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	P	-
34	P	-
36	EG	-
37	SB	-
41	SB	-
42	V	-
43	L	-
44	B	-
45	W	-
47	L	-
48	LG	-
49	BR	-
50	V	-
51	V	-
52	P	-
53	BG	-
56	SB	-
57	P	-
58	LG	-
59	Y	-
60	GR	-

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CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

Terminal No.	Color Of Wire	Signal Name [Specification]
82	LG	-
83	BR	-
85	W	-
86	R	-
87	V	-
88	LG	-
89	SB	-
70	V	-
72	L	-
73	P	-
74	L	-
75	P	-
76	G	-
77	V	-
78	SB	-
79	W	-
80	BR	-
81	LG	-
82	BR	-
83	BG	-
84	B	-
85	W	-
86	G	-
87	R	-
88	G	-
81	W	-
82	G	-
83	V	-
84	BG	-
85	Y	-
89	LG	-

Connector No.	M20
Connector Name	PCB HARNESS
Connector Type	TH40PB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
11	BR	-
12	R	-
14	L	-
15	B	-
17	R	-
19	W	-
20	R	-
21	B	-
22	R	-
23	L	-
24	G	-
27	V	-
31	Y	-
33	V	-
35	L	-
36	P	-
38	L	-
40	Y	-

Connector No.	M22
Connector Name	PCB HARNESS
Connector Type	TH40PB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
86	BR	-
87	G	-
88	G	-
89	G	-
100	LG	-
101	L	-
102	P	-
103	B	-
104	BR	-
105	R	-
107	Y	-
108	Y	-
109	BR	-
110	Y	-
111	Y	-
112	B	-
113	W	-
114	L	-
116	B	-
117	B	-
117	BG	- [With V6 engine]
118	B	-
119	G	-
120	V	-

Connector No.	M23
Connector Name	PCB HARNESS
Connector Type	TH40PB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
138	L	-
139	P	-
140	L	-
141	W	-
142	W	-
144	P	-
145	B	-
146	B	-
147	B	-
148	L	-
149	B	-
150	P	-
151	L	-
152	B	-
153	W	-
154	W	-
155	W	-
157	W	-
159	R	-
159	R	-

Connector No.	M24
Connector Name	PCB HARNESS
Connector Type	TH40PW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
121	R	-
122	V	-
123	BG	-
124	BG	-
125	BG	-
130	B	-
131	SB	-
132	LG	-
133	L	-
135	P	-
137	Y	-

Terminal No.	Color Of Wire	Signal Name [Specification]
161	BG	-
162	BG	-
163	G	-
164	V	-
165	V	-
166	R	-
167	LG	-
168	R	-
170	B	-
172	B	-
174	W	-
175	B	-
176	L	-

JRMWE8219GB

CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

177	P	-
178	Y	-
179	L	-
180	LG	-
181	BR	- [With V6 engine or with VK engine, without ICC]
182	BR	- [With VK engine with ICC]
183	G	-
184	V	-
185	P	- [With BOSE system]
186	R	- [Without BOSE system]
187	L	-
188	Y	-
189	B	-
190	V	-
191	G	-
192	B	-
193	SB	-
194	BR	-
195	S5	-
198	R	-
199	B	-
200	SB	-

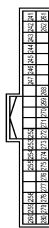
Connector No.	M25
Connector Name	PCB HARNESS
Connector Type	TH46PE-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
201	L	-
207	Y	-
208	G	-
209	G	- [Without BOSE system]
210	L	- [With BOSE system]
210	P	- [With BOSE system]
211	SHIELD	-
212	BR	- [Without BOSE system]
212	G	- [With BOSE system]
213	R	-

214	SHIELD	-
215	VR	- [With BOSE system]
216	L	- [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	G	-
226	R	-
228	V	-
230	BR	-
231	SB	-
232	V	-
233	L	-
235	B	-
240	W	-

Connector No.	M26
Connector Name	PCB HARNESS
Connector Type	TH46PW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
241	L	-
242	L	-
243	R	-
244	B	-
246	B	-
247	B	-
252	B	-
253	B	-
254	B	- [With heated seat]

254	W	- [With climate controlled seat]
255	R	-
256	L	-
259	L	-
260	BG	-
261	P	-
262	P	-
268	Y	-
269	GR	-
270	Y	-
271	BR	-
272	G	-
273	R	-
274	R	-
275	Y	-
276	G	-
277	G	-
278	R	-
279	R	-
280	Y	-

Connector No.	M28
Connector Name	PCB HARNESS
Connector Type	TH46PW-NH



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

345	Y	-
346	P	-
347	B	-
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	TH46PE-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
381	W	-
382	B	-
383	G	-
388	G	-
373	BR	-
374	EG	-
375	EG	-
376	V	-
377	V	-
378	B	-
379	R	-
380	R	-
381	G	-
382	V	-
384	GR	-
385	P	-
386	L	-
400	V	-

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CAN SYSTEM (WITH ICC)

CAN SYSTEM (WITH ICC)

Connector No.	M39
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



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

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	B	CAN-L
7	B	GND
8	G	IGN

Connector No.	M43
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH02FW-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
18	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	B	RL TUNER (GND)
25	R	FR TUNER (GND)
26	B	FL TUNER (GND)
30	G	ECM FLASHER
32	B	GND

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH04FW-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	SB	ENTER SWITCH GROUND
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
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	G	WASHER FLUID LEVEL SIGNAL
32	G	PADDLE SHIFTER SHIF (UP) SIGNAL
33	BG	PADDLE SHIFTER SHIF (DOWN) 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 SHIF (DOWN) SIGNAL

39	L	MANUAL MODE SHIF (UP) SIGNAL
40	W	MANUAL MODE SIGNAL

Connector No.	M68
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	ACC POWER SUPPLY
13	V	ACC POWER SUPPLY
17	EG	ECU CONTROL SIGNAL
20	R	HUMIDITY SENSOR (SICK) SIGNAL
21	R	HUMIDITY SENSOR (SICK) GROUND
22	B	HUMIDITY SENSOR SIGNAL
23	W	HUMIDITY SENSOR GROUND
24	L	DRIVE MODE SELECT SW (ECON)
25	G	DRIVE MODE SELECT SW (STANDARD)
26	Y	DRIVE MODE SELECT SW (SPORT)

CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

Connector No.	M105
Connector Name	WIRE TO WIRE
Connector Type	1144PW-NH



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

Connector No.	M107
Connector Name	ECM
Connector Type	RI24EV-R26-R-9H-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	ACCELERATOR PEDAL POSITION SENSOR L
98	P	ACCELERATOR PEDAL POSITION SENSOR Z
99	G	SENSOR GROUND (Without ICC)
100	W	SENSOR GROUND (With ICC)
101	SB	ASDQ STEERING SWITCH
102	P	FUEL TANK PRESSURE SENSOR
103	L	BROUAF-PUMP SUPPLY (ACCELERATOR PEDAL POSITION SENSOR Z)
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	AVCZ2 IDPRES/FTPRES
108	Y	GND ASDQ SW
109	BR	TRANSMISSION RANGE SWITCH
110	V	ENGINE SPEED SIGNAL OUTPUT
111	V	ENGINE SPEED SIGNAL OUTPUT
112	W	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	ASDQ BRAKE SWITCH
127	B	ECM GROUND
128	B	ECM GROUND

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	1142MW-NH



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

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	1133MW-NS/O



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

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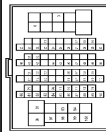
CAN SYSTEM (WITH ICC)

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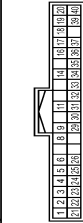
CAN SYSTEM (WITH ICC)

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH88FW-CS16-TM4



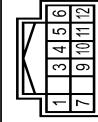
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	—
2	W	—
3	B	—
4	W	—
5	W	—
6	W	—
7	GR	—
8	P	—
9	BR	—
10	GR	—
11	Y	—
12	LG	—
13	R	—
14	LG	—
15	GR	—
16	GR	—
17	GR	—
18	P	—
19	BR	—
20	GR	—
21	Y	—
22	LG	—
23	R	—
24	BG	—
25	BG	—
26	W	—
27	R	—
28	V	—
29	B	—
30	B	—
31	G	—
32	Y	—
40	SHIELD	—
41	R	—
42	V	—
44	W	—
45	SB	—
46	LG	—
47	G	— [With heated seat]
48	GR	— [With climate controlled seat]
49	V	— [With heated seat]
50	LG	—
51	SB	—
52	Y	—
53	W	—
56	B	—
57	G	—

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH48FB-NH



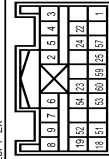
Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	RR WINDOW DEEG RELY CONT
2	BG	COMBI SW INPUT 5
3	SR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	W	OPTICAL SENSOR
16	SB	DIMMER SIGNAL
17	Y	SENSOR PWR SUPPLY
18	B	REVERSE / SENSOR GND
19	R	REVERSE PWR SUPPLY
20	GR	REVERSE PWR SUPPLY
21	P	NATS ANT AMP
22	GR	KYLS INT RECEIVER RSSI
23	G	SECURITY IND CONT
24	L	DOOR LOCK
25	G	NATS ANT AMP
26	G	F-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	L	COMBI SW OUTPUT 2
37	GR	COMBI SW OUTPUT 1
38	L	P POSITION
39	L	CAN-H
40	P	CAN-L

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH18EM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	CAN-H
2	GR	BATTERY
3	GR	CAN-H
4	GR	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	IGN
4	Y	DRH (DR2 (-))
5	Y	DR2 (+)
6	Y	ASI (+)
7	Y	ASI (-)
8	Y	ASZ (+)
9	Y	ASZ (-)
18	SB	ECZS (+)

JRMWE8223GB

CAN SYSTEM (WITH ICC)

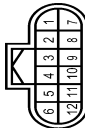
< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITH ICC)

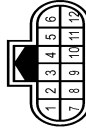
19	V	EC2S (-)
22	SHIELD	AIR BAG (W/L)
24	G	SEAT BELT
25	R	OUTOFF TELLTALE
51	G	SATELLITE RH2 (+)
52	R	SATELLITE RH2 (-)
53	P	SATELLITE RH2 (+)
54	L	SATELLITE RH2 (-)
57	L	IVCS
59	L	CAN-H
60	P	CAN-L

Connector No.	M150
Connector Name	WIRE TO WIRE
Connector Type	RH121B



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

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



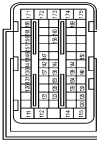
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	
2	R	
3	L	
4	L	
5	W	
6	G	
7	O	
8	B	
9	R	
10	Y	
11	L	
12	SHIELD	

Connector No.	M152
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH06LEY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	BATTERY
2	R	IGNITION
3	B	
4	Y	ITS COMM-L
5	L	ITS COMM-H

Connector No.	M160
Connector Name	ECM
Connector Type	MAB5FEF-MEB10-LH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	FUEL INJECTOR DRIVER POWER SUPPLY
2	B	FUEL INJECTOR DRIVER POWER SUPPLY
3	B	ECM GROUND
4	B	ECM GROUND
5	G	EYAP CANISTER VENT CONTROL VALVE
6	V	VEEL ACTUATOR MOTOR RELAY (VEEL SIGNAL LINE CONTROL MODULE)
7	BG	THROTTLE CONTROL MOTOR RELAY
8	P	FUEL PUMP CONTROL MODULE (FPOM)
9	Y	ACCELERATOR PEDAL POSITION SENSOR 2
10	SB	ASC2 STEERING SWITCH
11	B	SENSOR GROUND (Without ICC)
12	BR	SENSOR GROUND (With ICC)
13	Y	SENSOR GROUND
14	Y	SENSOR POWER SUPPLY
15	BG	SENSOR POWER SUPPLY
16	R	FUEL TANK PRESSURE SENSOR
17	G	ACCELERATOR PEDAL POSITION SENSOR 1
18	G	SENSOR POWER SUPPLY
19	P	BATTERY CURRENT SENSOR
20	BG	BATTERY TEMPERATURE SENSOR
21	W	SENSOR GROUND
22	G	IGNITION SWITCH
23	GR	FUEL PUMP CONTROL MODULE (FPOM) CHECK
24	P	FUEL TANK PRESSURE SENSOR
25	L	REFRIGERANT PRESSURE SENSOR
26	L	CAN COMMUNICATION LINE
27	BR	ASC2 BRAKE SWITCH
28	BR	SENSOR GROUND
29	V	ASC2 BRAKE SWITCH
30	R	SENSOR GROUND
31	BR	CAN COMMUNICATION LINE
32	W	POWER WINDOW LOCK (UP)
33	P	STOP LAMP SWITCH
34	Y	ENG COMMUNICATION LINE
35	W	ECM RELAY (SELF SHUT-OFF)
36	BG	ENG COMMUNICATION LINE
37	V	ENGINE SPEED SIGNAL OUTPUT
38	R	POWER SUPPLY FOR ECM

172	SB	POWER SUPPLY FOR ECM
173	R	THROTTLE CONTROL
174	R	ECM GROUND
175	B	ECM GROUND

Connector No.	M181
Connector Name	WIRE TO WIRE
Connector Type	TH40MM-NH



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

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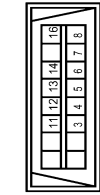
CAN SYSTEM (WITH ICC)

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[CAN]

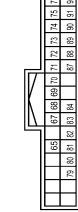
CAN SYSTEM (WITH ICC)

Connector No.	M282
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16W



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	M-CAN-L
2	B	M-CAN-H
3	B	EARTH
4	B	EARTH
5	B	EARTH
6	L	CAN-H
7	V	KLINE
8	LG	IGN SW
9	SB	M-CAN-H
10	P	CAN-L
11	P	CAN-L
12	P	CAN-L
13	L	CAN-H
14	P	CAN-L
15	W	POWER
16	W	POWER

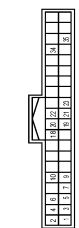
Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH26W-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
65	V	PARKING BRAKE SIGNAL
66	W	COMPOSITE IMAGE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL
68	W	COMPOSITE IMAGE SIGNAL
69	G	I-KEY IDENTIFICATION SIGNAL
70	P	SHIELD
71	P	MICROPHONE SHIELD
72	G	MICROPHONE VCC
73	BR	COMM (CONT->DISP)
74	P	CAN-L

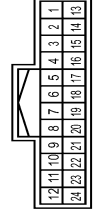
76	LG	AV COMM (L)
77	LG	AV COMM (L)
78	SB	DIMMER SIGNAL
79	W	IGNITION SIGNAL
80	W	REVERSE SIGNAL
81	BG	VEHICLE SPEED SIGNAL (8-PULSE)
82	R	SHIELD
83	R	SHIELD
84	B	COMPOSITE IMAGE SYNC SIGNAL
87	R	MICROPHONE SIGNAL
88	SHIELD	SHIELD
89	Y	COMM (DISP->CONT)
90	L	CAN-H
91	SB	AV COMM (R)
92	SB	AV COMM (R)

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	ACG POWER SUPPLY
4	W	IGNITION SIGNAL
5	V	ACG OUTPUT
6	P	GROUND
7	B	GROUND
9	L	CAN-H
10	P	CAN-L
18	G	MICROPHONE VCC
19	R	MICROPHONE SIGNAL
20	SHIELD	MICROPHONE SHIELD
21	R	MICROPHONE SIGNAL
22	R	MICROPHONE SIGNAL
23	SHIELD	MICROPHONE SHIELD
34	G	SOS call switch
35	BR	SOS call switch LED signal

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



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

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH8BW-NH



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

CAN SYSTEM (WITHOUT ICC)

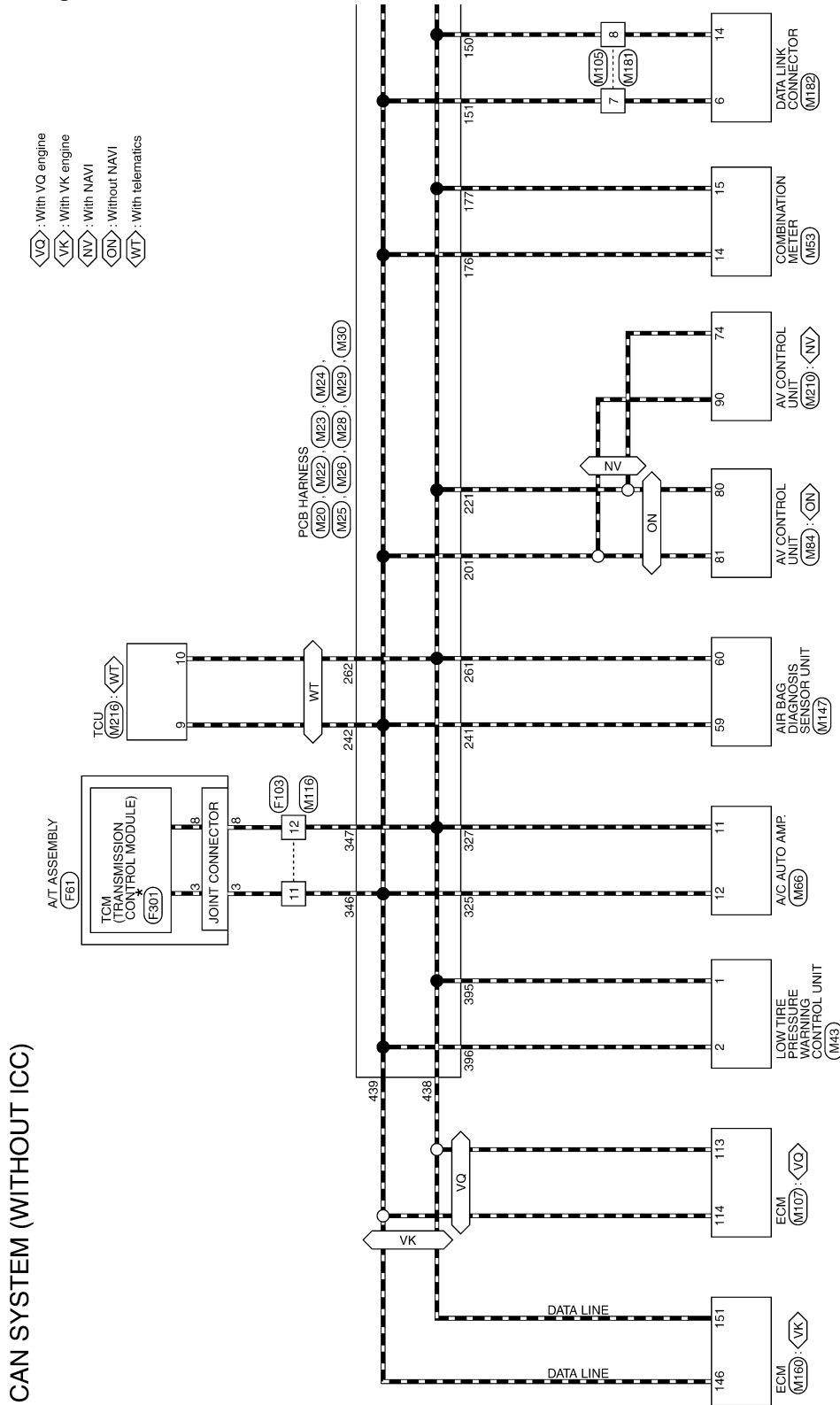
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CAN SYSTEM (WITHOUT ICC)

Wiring Diagram

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

CAN SYSTEM (WITHOUT ICC)

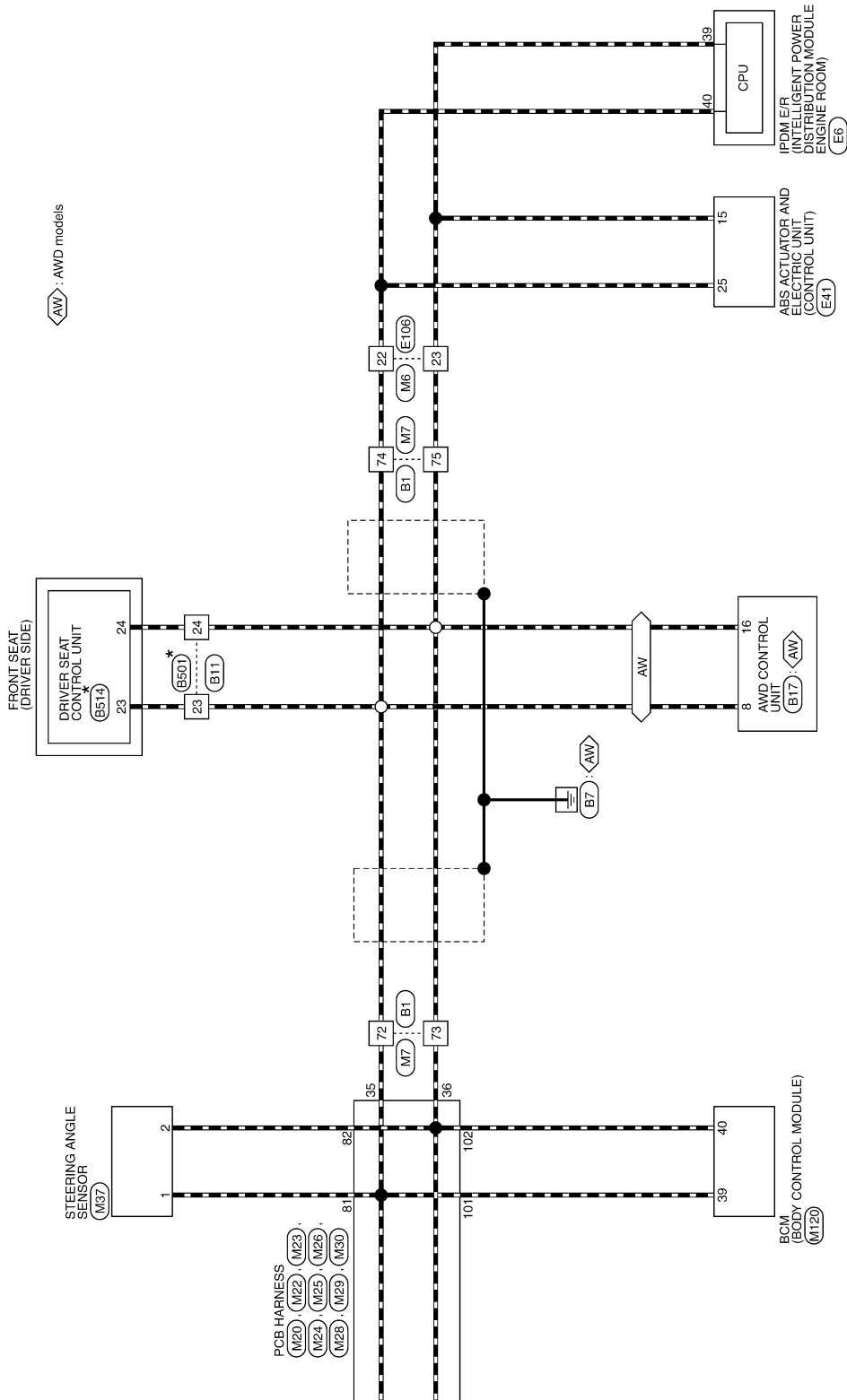
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CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]



AW : AWD models

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

JRMWE8227GB

CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITHOUT ICC)

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80PW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	LG	-
3	BR	-
4	LG	-
5	P	-
6	V	-
7	GR	-
8	Y	-
9	LG	-
10	V	-
11	GR	- [With climate controlled seat] - [With heated seat]
12	GR	- [With heated seat] - [With climate controlled seat]
13	BR	-
14	R	-
15	O	-
16	V	-
17	B	-
18	R	-
19	W	-
20	R	-
21	B	-
22	LG	-
23	V	-
24	Y	-
25	G	-
26	GR	-
27	SB	-
28	W	-
29	O	-
30	W	-
31	SHIELD	-
32	SHIELD	-
33	R	-
34	L	-
35	R	-

36	G	-
37	SB	-
38	SHIELD	-
39	CS	-
40	SHIELD	-
41	SHIELD	-
42	W/L	-
43	L	-
44	B	-
45	W	-
47	O	-
48	Y	-
49	BR	-
50	SB	-
51	V	-
52	LG	-
53	G	-
54	BR	-
55	LG	-
58	Y	-
60	W	-
61	B	-
62	LG	-
63	V	-
65	O	-
66	BR	-
67	V	-
68	LG	-
69	GR	-
70	R	-
71	O	-
72	P	-
74	L	-
75	P	-
76	Y	-
77	R	-
78	W	-
79	G	-
80	L	-
81	LG	-
82	BR	-
83	SB	-
84	Y	-
85	R	-
86	W	-
87	C	-
88	GR	-
89	GR	-
90	G	-
91	SB	-
92	G	-
95	Y	-

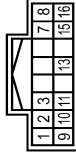
37	O	-
38	CS	-
39	CS	-

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS18PW-CS



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

Connector No.	B17
Connector Name	AWD CONTROL UNIT
Connector Type	TH80PW-NH



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

Connector No.	B501
Connector Name	WIRE TO WIRE
Connector Type	NS18PW-CS



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

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CAN SYSTEM (WITHOUT ICC)

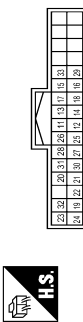
< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITHOUT ICC)

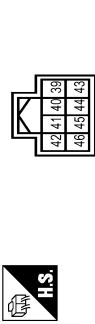
29	BR	-	-
30	BR/W	-	-
31	BR/W	-	-
32	W/L	-	-
35	W/Y	-	-
40	W/G	-	-
41	GR	-	-

Connector No.	BS14
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH8PFW-NH



Terminal No.	Color	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	L/G	R	FRONT LIFTER SW (DOWNWARD)
18	L/R	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	B	-	SET SW (REAR LIFT)
30	BR	-	PULSE (REAR LIFT)
31	BR/W	-	PULSE (REAR LIFT)
32	W/L	-	UART TX (RX)
33	W	-	POWER SUPPLY (ENCODER)

Connector No.	E6
Connector Name	W/LAS IN WHEEL LOCK POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	TH8PFW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
42	L	-	CAN-L
43	L	-	CAN-H
44	B	-	S-GND
46	Y	-	MOTOR FAN RLY CONT [With VK engine]
47	Y	-	MOTOR FAN RLY CONT [With VG engine]
48	SB	-	DETENT SW
44	GR	-	HORN RLY [With VK engine]
44	LG	-	HORN RLY [With VG engine]
45	G	-	HORN SW
48	BR	-	START CONT

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT CONTROL UNIT
Connector Type	SAZ28P-SZ4-U



Terminal No.	Color	Wire	Signal Name [Specification]
1	B/W	-	ECU(GND)
2	B	-	MOTOR(GND)
3	G	-	STOP LAMP SW
4	G	-	MOTOR(GND)
5	SB	-	STOP LAMP SW
6	Y	-	CANM(-)
7	W	-	R-LH SENSIGNAL
8	G	-	R-LH SEMPPOWER
9	BR	-	F-RH SENSIGNAL
10	B	-	F-RH SEMPPOWER

28	L/O	-	-
29	W/L	-	-
31	BR	-	-
32	G	-	-
33	O	-	-
34	Y	-	-
41	BR	-	-
44	W	-	-
45	L	-	-
46	GR	-	-
47	Y	-	-
48	G	-	-
49	O	-	-
80	LG	-	-
81	W	-	-
82	Y	-	-
83	Y	-	-
84	L	-	-
85	L	-	-
86	L	-	-
87	V	-	-
88	BR	-	-
89	LG	-	-
90	W	-	-
91	Y	-	-
92	P	-	-
93	LG	-	-
94	BR	-	-
95	W	-	-
97	R	-	-
98	Y	-	-
99	Y	-	-
100	Y	-	-

13	LG	-	VAC SENSIGNAL
15	P	-	CAN-L
16	B	-	CANM(+)
17	Y	-	R-RH SENSIGNAL
18	BR	-	R-RH SEMPPOWER
19	SB	-	F-LH SENSIGNAL
20	O	-	F-LH SEMPPOWER
25	L	-	CAN-H
28	V	-	VAC SENSIGNAL
30	R	-	VAC OFF SW
32	SHIELD	-	VAC SENSIGNAL
34	G	-	IGN(POWER)

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH8PFW-GS18-TM4



Terminal No.	Color	Wire	Signal Name [Specification]
1	W	-	-
2	W	-	-
3	SB	-	-
4	LG	-	-
5	O	-	-
7	GR	-	-
8	G	-	-
9	Y	-	-
10	BR	-	-
11	SB	-	-
12	V	-	-
13	GR	-	-
14	GR	-	-
15	V	-	-
16	V	-	-
17	GR	-	-
18	V	-	-
20	BR	-	-
21	P	-	-
22	L	-	-
23	P	-	-
27	SHIELD	-	-

CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITHOUT ICC)

Connector No.	F101
Connector Name	A/T ASSEMBLY
Connector Type	HK10FEG-D0Y



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	POWER SUPPLY (BACK UP)
2	R	POWER SUPPLY (BACK UP)
3	L	HEV SYSTEM CAN-H
4	V	K-LINE
5	B	GND
6	G	POWER SUPPLY (IGN)
7	SB	BACK-UP LAMP RELAY
8	P	HEV SYSTEM CAN-L
9	BR	P/N SIGNAL [Without paddle shifter]
9	LG	P/N SIGNAL [With paddle shifter]
10	B	GROUND

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK3BFM-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	G	-
4	B	- [With VK engine]
5	B	- [With VO engine]
5	B	- [With VO engine]
7	GR	- [With VK engine]
7	LG	-
8	Y	-
9	SB	- [With VO engine]

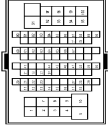
8	W	- [With VK engine]
9	BR	- [With VK engine]
10	L	- [With VO engine]
11	L	-
12	P	-
13	V	-
14	SP	-
15	R	-
16	W	-
17	GR	-
18	LG	-
21	LG	-
22	B	-
23	G	-
24	BR	-
25	O	-

Connector No.	F301
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



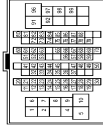
Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	VIGN
2	-	BATT
3	-	CAN-H
4	-	K-LINE
5	-	GND
6	-	VIGN
7	-	REV LAMP RLY
8	-	CAN-L
9	-	START RLY
10	-	GND

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH8BMM-GS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-
3	L	-
4	V	-
4	LS	-
5	W	-
6	LG	-
7	BR	-
8	G	-
9	Y	-
10	W	-
11	R	-
12	V	-
13	LG	-
14	L	-
15	V	-
16	B	-
17	Y	-
18	V	-
19	Y	-
20	SR	-
21	BR	-
22	L	-
23	P	-
27	SHIELD	-
28	V	-
29	SB	-
31	EG	-
32	P	-
33	R	-
34	EG	-
41	BR	-
45	V	-
46	RG	-
47	G	-
48	V	-
49	BR	-
50	W	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH8BMM-GS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	Y	-
4	BR	-
5	P	-

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CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITHOUT ICC)

8	R	--	--	--	--
9	V	--	--	--	--
10	V	--	--	--	--
11	L	--	--	--	--
12	GR	--	--	--	--
13	BR	--	--	--	--
14	GR	--	--	--	--
15	BG	--	--	--	--
16	V	--	--	--	--
17	BG	--	--	--	--
18	W	--	--	--	--
19	W	--	--	--	--
20	GR	--	--	--	--
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	L	--	--	--	--
35	P	--	--	--	--
36	BG	--	--	--	--
37	SB	--	--	--	--
41	SB	--	--	--	--
42	V	--	--	--	--
43	L	--	--	--	--
44	B	--	--	--	--
45	W	--	--	--	--
47	L	--	--	--	--
48	LG	--	--	--	--
49	BR	--	--	--	--
50	V	--	--	--	--
51	V	--	--	--	--
52	P	--	--	--	--
53	BG	--	--	--	--
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	V	--	--	--	--
78	SB	--	--	--	--
79	V	--	--	--	--
80	BR	--	--	--	--
81	LG	--	--	--	--
82	BR	--	--	--	--
83	BG	--	--	--	--
84	B	--	--	--	--
85	W	--	--	--	--
86	G	--	--	--	--
87	R	--	--	--	--
88	G	--	--	--	--
91	W	--	--	--	--
92	G	--	--	--	--
93	BG	--	--	--	--
96	Y	--	--	--	--
98	LG	--	--	--	--

Terminal No.	Color Of Wire	Signal Name [Specification]
81	L	--
82	P	--
84	B	--
85	B	--
86	B	--
87	B	--
88	B	--
89	V	--
91	V	--
92	V	--
93	B	--
94	B	--
95	LG	--



Terminal No.	Color Of Wire	Signal Name [Specification]
81	L	--
82	P	--
84	B	--
85	B	--
86	B	--
87	B	--
88	B	--
89	V	--
91	V	--
92	V	--
93	B	--
94	B	--
95	LG	--



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



Terminal No.	Color Of Wire	Signal Name [Specification]
86	BR	--
87	G	--
88	G	--
89	G	--
100	G	--
101	L	--
102	P	--
103	B	--
104	BR	--
105	R	--
107	Y	--
108	Y	--
109	BR	--
110	Y	--
111	Y	--
112	B	--
113	B	--
114	L	--
116	B	--
117	B	--
118	B	--
119	G	--
120	V	--

Connector No.	M21
Connector Name	PCB HARNESS
Connector Type	TH40FP-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
121	R	--
122	V	--
123	BG	--
124	BG	--
125	BG	--
130	BL	--
131	SB	--
132	LG	--
133	L	--
135	P	--
137	Y	--

CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITHOUT ICC)

138	L	-
139	P	-
140	Y	-
141	W	-
142	W	-
143	W	-
144	P	-
145	B	-
146	B	-
147	B	-
148	L	-
149	B	-
150	P	-
151	L	-
152	B	-
153	W	-
154	W	-
155	W	-
156	W	-
157	W	-
158	R	-
159	R	-

Connector No.	M24
Connector Name	PCB HARNESS
Connector Type	TH40PW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
161	BG	-
162	BG	-
163	G	-
164	V	-
165	V	-
166	R	-
167	G	-
168	R	-
169	B	-
170	B	-
171	B	-
172	B	-
173	W	-
174	W	-
175	B	-
176	L	-

177	P	-
178	Y	-
179	L	-
180	LG	-
181	LG	-
182	BR	- [With VQ engine or with VK engine without LOO] - [With VK engine with LOO]
183	R	-
184	G	-
185	P	-
186	V	-
187	L	-
188	Y	-
189	B	-
190	G	-
191	G	-
192	G	-
193	SB	-
194	BR	-
195	SB	-
196	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	-
207	Y	-
208	G	-
209	G	-
210	L	-
211	P	-
212	SHIELD	-
213	G	-
214	R	-

214	SHIELD	-
215	V	- [Without BOSE system] - [With BOSE system]
216	V	- [Without BOSE system] - [With BOSE system]
217	LG	- [Without BOSE system] - [With BOSE system]
218	SHIELD	-
219	BR	-
220	BR	-
221	P	-
222	LG	-
223	SB	-
224	SB	-
225	G	-
226	G	-
227	G	-
228	V	-
229	BR	-
230	BR	-
231	SB	-
232	V	-
233	L	-
235	B	-
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	-
244	R	-
245	B	-
246	B	-
247	B	-
252	B	-
253	B	-
254	B	- [With heated seat]

254	W	- [With climate controlled seat]
255	B	-
256	R	-
259	L	-
260	BIG	-
261	P	-
262	P	-
269	GR	-
270	Y	-
271	BR	-
272	G	-
273	R	-
274	R	-
275	Y	-
276	B	-
277	B	-
278	R	-
279	R	-
280	Y	-

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



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

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CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITHOUT ICC)

343	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	TH40PE-NH



Terminal No.	Color	Wire	Signal Name [Specification]
365	W	-	-
366	W	-	-
367	B	-	-
368	G	-	-
373	BR	BG	-
374	BG	BG	-
375	BG	BG	-
376	V	-	-
377	V	-	-
378	B	-	-
379	R	-	-
380	R	-	-
381	G	-	-
382	V	-	-
383	GR	-	-
385	R	-	-
386	L	-	-
400	V	-	-

Connector No.	M30
Connector Name	PCB HARNESS
Connector Type	TH40FEW-NH



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

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH80FEW-NH



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

Connector No.	MA3
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH20FEW-NH



Terminal No.	Color	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
18	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.	MES
Connector Name	COMBINATION METER
Connector Type	TH40FEW-NH



Terminal No.	Color	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	G	-	ENTER SWITCH GROUND
9	G	-	ILLUMINATION CONTROL SWITCH SIGNAL (2)
10	GR	-	ILLUMINATION CONTROL SWITCH SIGNAL (3)
11	L	-	TRIP RESET SWITCH SIGNAL
12	B	-	GROUND
14	L	-	CAN-H
15	P	-	CAN-L
16	R	-	AIR BAG 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	G	-	WASHER FLUID LEVEL SWITCH SIGNAL
32	G	-	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	EG	-	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 SHIF DOWN SIGNAL

CAN SYSTEM (WITHOUT ICC)

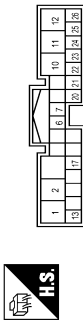
[CAN]

< WIRING DIAGRAM >

CAN SYSTEM (WITHOUT ICC)

39	L	MANUAL MODE SHIF-UP SIGNAL
40	Y	MANUAL MODE SIGNAL

Connector No.	M166
Connector Name	A/C AUTO AMP.
Connector Type	TH26FW-TB6



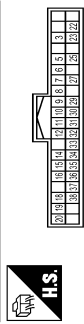
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
6	R	BLOWER MOTOR F/B SIGNAL
7	L	POWER TRANSDUCER CONTROL SIGNAL
10	B	GROUND
11	P	CAN-L
12	L	CAN-H
13	V	ACC POWER SUPPLY
17	BG	ECV CONTROL SIGNAL
20	R	HUMIDITY SENSOR (SCK) SIGNAL
21	Y	HUMIDITY SENSOR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

Connector No.	M164
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
75	LG	AV COM1 (L)
76	SB	AV COM1 (R)
77	SB	AV COM1 (L)
78	LG	AV COM1 (L)
80	P	CAN-L
81	L	CAN-H
82	BR	SW GND
84	LG	SHIELD
86	P	TEL VOICE SIGNAL (+)
87	P	TEL VOICE SIGNAL (-)
88	L	VEHICLE SPEED (8-PULSE)
92	R	PARKING BRAKE
94	BG	REVERSE
95	W	IGNITION
96	SB	DISK EJECT SIGNAL

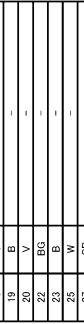
Connector No.	M105
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH



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

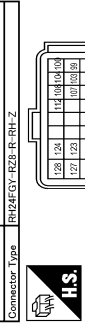
8	P	
9	W	
10	W	
11	W	
12	SB	
14	SB	
15	BR	
16	V	
18	G	
19	B	
20	V	
22	BG	
23	B	
25	W	
27	SB	
28	B	
30	B	
31	BR	
32	L	
33	P	
34	LG	
35	W	
36	LG	
37	L	
38	R	

Connector No.	M107
Connector Name	ECM
Connector Type	RH24EY-R2B-F-RH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
128	L	1st lock of lock
127	L	1st lock of lock
126	L	1st lock of lock
125	L	1st lock of lock
124	L	1st lock of lock
123	L	1st lock of lock
122	L	1st lock of lock
121	L	1st lock of lock
120	L	1st lock of lock
119	L	1st lock of lock
118	L	1st lock of lock
117	L	1st lock of lock
116	L	1st lock of lock
115	L	1st lock of lock
114	L	1st lock of lock
113	L	1st lock of lock
112	V	1st lock of lock
111	V	1st lock of lock
110	V	1st lock of lock
109	BR	1st lock of lock
108	V	1st lock of lock
107	V	1st lock of lock
106	V	1st lock of lock
105	V	1st lock of lock
104	V	1st lock of lock
103	V	1st lock of lock
102	V	1st lock of lock
101	V	1st lock of lock
100	V	1st lock of lock
99	V	1st lock of lock
98	V	1st lock of lock
97	V	1st lock of lock
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94	V	1st lock of lock
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69	V	1st lock of lock
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43	V	1st lock of lock
42	V	1st lock of lock
41	V	1st lock of lock
40	V	1st lock of lock
39	V	1st lock of lock
38	V	1st lock of lock
37	V	1st lock of lock
36	V	1st lock of lock
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17	V	1st lock of lock
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12	V	1st lock of lock
11	V	1st lock of lock
10	V	1st lock of lock
9	V	1st lock of lock
8	V	1st lock of lock
7	V	1st lock of lock
6	V	1st lock of lock
5	V	1st lock of lock
4	V	1st lock of lock
3	V	1st lock of lock
2	V	1st lock of lock

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK3BMW-NS10

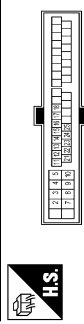


Terminal No.	Color Of Wire	Signal Name [Specification]
2	SB	
3	Y	
4	B	
5	B	
7	W	
8	Y	
9	SB	
10	SB	
11	SB	
12	P	
13	V	
14	R	
15	Y	
16	SB	

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

Terminal No.	Color Of Wire	Signal Name [Specification]
105	LG	REFRIGERANT PRESSURE SENSOR
106	LG	FUEL TANK PRESSURE SENSOR
107	BG	ASCOD FTRPRES/FTPRES
108	V	ASCOD FTRPRES/FTPRES
109	BR	ASCOD SW
110	V	TRANSMISSION RANGE SWITCH
111	V	ENGINE SPEED SIGNAL OUTPUT
112	V	GND4 FTRPRES/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	ASCOD SW
127	B	ECM GROUND
128	B	ECM GROUND

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK3BMW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	SB	
3	Y	
4	B	
5	B	
7	W	
8	Y	
9	SB	
10	SB	
11	SB	
12	P	
13	V	
14	R	
15	Y	
16	SB	

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

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JRMWE8234GB

CAN SYSTEM (WITHOUT ICC)

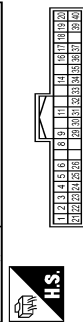
< WIRING DIAGRAM >

[CAN]

CAN SYSTEM (WITHOUT ICC)

17	BR	COMBI SW OUTPUT 2
18	BR	COMBI SW OUTPUT 1
21	LG	P POSITION
22	BR	CAN-H
23	W	CAN-L
24	W	
25	BG	

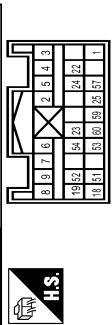
Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40PB-NH



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	L	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW L
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	R	RECEIVER PWR SPLY
20	BR	KYLS ENT RECEIVER COMM
21	P	NATS ANT AMP
22	GR	KYLS ENT RECEIVER RSSI
23	G	SECURITY IND CONT
24	L	DUNGLE LINK
25	G	SECURITY IND CONT
28	G	1-KEY IDENTIFICATION
29	G	HAZARD SW
30	O	TR LID OPEN 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

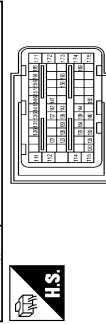
36	Y	COMBI SW OUTPUT 2
37	LG	COMBI SW OUTPUT 1
38	R	P POSITION
39	L	CAN-H
40	P	CAN-L

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	DRT (+)
4	Y	DRT (-) DRZ (-)
5	Y	DRZ (+)
6	Y	AST (+)
7	Y	AST (-)
8	Y	ASZ (+)
9	Y	ASZ (-)
18	SB	STOP LAMP SW L
19	V	ECZS (+)
22	SHIELD	ECZS (-)
23	R	GND
24	G	AIR BAG W/L
25	R	SEAT BELT
51	G	CUTOFF TELL TALE
52	R	SATELLITE RHZ (-)
53	P	SATELLITE RHZ (+)
54	L	SATELLITE RHZ (-)
57	L	IVCS
59	L	CAN-H
60	P	CAN-L

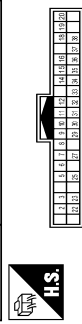
Connector No.	M169
Connector Name	ECM
Connector Type	MABSEFB-MEB1D-1H



Terminal No.	Color Of Wire	Signal Name [Specification]
112	W	FUEL INJECTOR POWER SUPPLY
113	W	FUEL INJECTOR POWER SUPPLY
114	B	ECM GROUND
115	B	ECM GROUND
120	G	EYAP CANISTER VENT CONTROL VALVE
122	V	VEHICLE MOTOR RELAY (ABS/ET BRAKE CONTROL MODULE)
123	BG	THROTTLE CONTROL MOTOR RELAY
124	P	FUEL PUMP CONTROL MODULE (FPOM)
128	SB	ACCELERATOR PEDAL POSITION SENSOR 2
129	B	ASCOD STEERING SWITCH
129	BR	SENSOR GROUND (Without ICC)
130	Y	SENSOR GROUND
131	L	SENSOR POWER SUPPLY
132	L	SENSOR POWER SUPPLY
134	P	FUEL TANK TEMPERATURE SENSOR
136	R	ACCELERATOR PEDAL POSITION SENSOR 1
137	G	BATTERY CURRENT SENSOR
138	P	BATTERY CURRENT SENSOR
139	BG	BATTERY TEMPERATURE SENSOR
140	W	SENSOR GROUND
141	G	IGNITION SWITCH
142	GR	FUEL PUMP CONTROL MODULE (FPOM) CHECK
143	P	FUEL TANK PRESSURE SENSOR
144	LG	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	BR	ASCOD BRAKE SWITCH
150	V	SENSOR GROUND
151	V	SENSOR GROUND
158	W	POWER SUPPLY FOR CAN (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	S	THROTTLE CONTROL MOTOR POWER SUPPLY
174	S	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	W	
12	LG	
14	SB	
15	BR	
16	V	
18	G	
19	B	
20	V	
22	BG	
23	B	
25	W	
27	SB	
29	B	
30	R	
31	BR	
32	W	
33	P	
34	LG	
35	W	
36	LG	
37	L	
38	R	

JRMWE8235GB

CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

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CAN SYSTEM (WITHOUT ICC)

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



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	M-CAN L
2	G	EARTH
3	B	EARTH
4	W	CAN-H
5	R	CAN-H
6	BK	KLINGE
7	V	IGN SW
8	LG	M-CAN H
9	SB	M-CAN H
10	M-CAN H	M-CAN H
11	M-CAN L	M-CAN L
12	P	CAN-H
13	L	CAN-H
14	P	CAN-L
15	W	POWER
16	P	POWER

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH3FW-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	GND
8	L	CAN-H
9	L	CAN-H
10	P	CAN-L
11	G	MICROPHONE VCC
12	R	MICROPHONE SIGNAL
13	G	MICROPHONE SHIELD
14	G	MICROPHONE VCC
15	G	MICROPHONE SIGNAL
16	G	MICROPHONE SHIELD
17	G	SGS sol. switch
18	BR	SGS sol. switch LED signal

75	LG	AV COMM (L)
76	G	EARTH
77	SB	IMAGES SIGNAL
78	W	IGNITION SIGNAL
79	BK	REVERSE SIGNAL
80	BK	REVERSE SIGNAL
81	R	VEHICLE SPEED SIGNAL (8-PULSE)
82	R	SHIELD
83	B	COMPOSITE IMAGE SYNC SIGNAL
84	R	MICROPHONE SIGNAL
85	SHIELD	SHIELD
86	Y	COMM (DISP->CONT)
87	L	CAN-H
88	SB	AV COMM (R)
89	SB	AV COMM (R)

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	GND
8	L	CAN-H
9	L	CAN-H
10	P	CAN-L
11	G	MICROPHONE VCC
12	R	MICROPHONE SIGNAL
13	G	MICROPHONE SHIELD
14	G	MICROPHONE VCC
15	G	MICROPHONE SIGNAL
16	G	MICROPHONE SHIELD
17	G	SGS sol. switch
18	BR	SGS sol. switch LED signal

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

INFOID:0000000010101291

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

MALFUNCTION AREA CHART

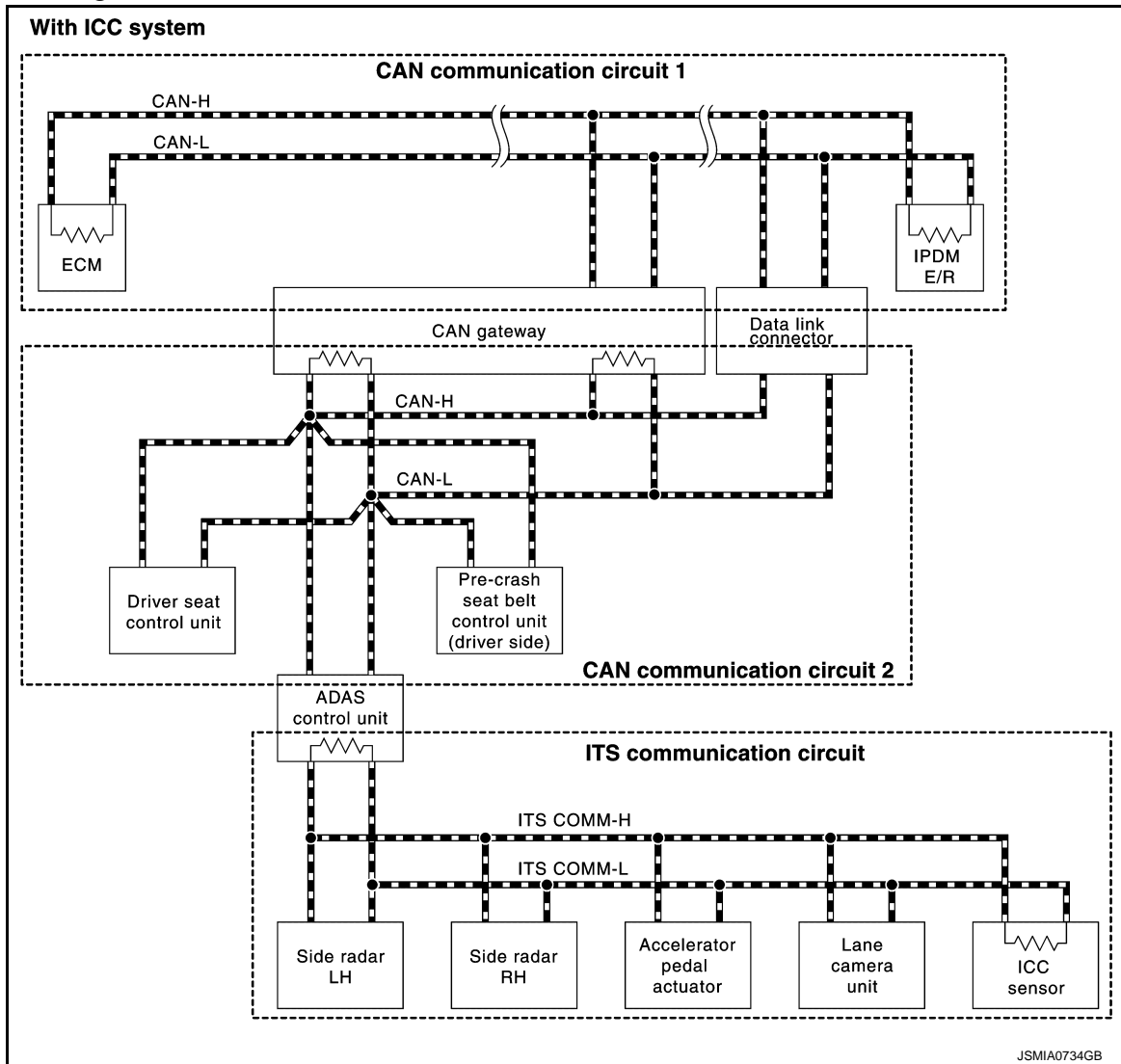
< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DTC/CIRCUIT DIAGNOSIS

MALFUNCTION AREA CHART

System Diagram



CAN Communication Circuit

INFOID:0000000010101293

MAIN LINE

Malfunction area	Reference
Main line between low tire pressure warning control unit and A/C auto amp.	LAN-70, "Diagnosis Procedure"
Main line between A/C auto amp. and air bag diagnosis sensor unit	LAN-71, "Diagnosis Procedure"
Main line between air bag diagnosis sensor unit and AV control unit	LAN-72, "Diagnosis Procedure"
Main line between AV control unit and combination meter	LAN-73, "Diagnosis Procedure"
Main line between combination meter and data link connector	LAN-74, "Diagnosis Procedure"
Main line between data link connector and BCM	LAN-75, "Diagnosis Procedure"
Main line between BCM and ABS actuator and electric unit (control unit)	LAN-76, "Diagnosis Procedure"
Main line between BCM and AWD control unit	LAN-78, "Diagnosis Procedure"
Main line between BCM and driver seat control unit	LAN-79, "Diagnosis Procedure"

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Main line between AWD control unit and ABS actuator and electric unit (control unit)	LAN-80, "Diagnosis Procedure"
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-82, "Diagnosis Procedure"
Main line between data link connector and driver seat control unit	LAN-84, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	LAN-89, "Diagnosis Procedure"
Low tire pressure warning control unit branch line circuit	LAN-91, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-92, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-93, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-94, "Diagnosis Procedure"
TCM branch line circuit	LAN-95, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-97, "Diagnosis Procedure"
TCU branch line circuit	LAN-98, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-99, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-101, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 1)	LAN-103, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 2)	LAN-104, "Diagnosis Procedure"
BCM branch line circuit	LAN-105, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-106, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-107, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-108, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-109, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-110, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-111, "Diagnosis Procedure"
ADAS control unit branch line circuit	LAN-112, "Diagnosis Procedure"
Pre-crash seat belt control unit (driver side) branch line circuit	LAN-113, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit (Without ICC system)	LAN-119, "Diagnosis Procedure"
CAN communication circuit 1 (With ICC system)	LAN-121, "Diagnosis Procedure"
CAN communication circuit 2 (With ICC system)	LAN-123, "Diagnosis Procedure"

ITS Communication Circuit

INFOID:0000000010101294

MAIN LINE

Malfunction area	Reference
Main line between side radar LH and side radar RH	LAN-85, "Diagnosis Procedure"
Main line between side radar RH and accelerator pedal actuator	LAN-86, "Diagnosis Procedure"
Main line between accelerator pedal actuator and lane camera unit	LAN-88, "Diagnosis Procedure"

BRANCH LINE

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Side radar LH branch line circuit	LAN-114. "Diagnosis Procedure"
Side radar RH branch line circuit	LAN-115. "Diagnosis Procedure"
Accelerator pedal actuator branch line circuit	LAN-116. "Diagnosis Procedure"
Lane camera unit branch line circuit	LAN-117. "Diagnosis Procedure"
ICC sensor branch line circuit	LAN-118. "Diagnosis Procedure"

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SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	LAN-125. "Diagnosis Procedure"

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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000010101295

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 A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010101296

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010101297

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010101298

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010101299

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010101300

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010101301

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M20 and PCB harness side connector
 - Harness connector M7
 - Harness connector B1
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

YES >> GO TO 5.

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

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

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

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

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		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 BCM and the ABS actuator and electric unit (control unit).

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

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MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000010101302

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010101303

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M7.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.
NO-1 >> AWD models: Replace the body harness.
NO-2 >> 2WD models: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010101305

1. CHECK CONNECTOR

1. Turn the ignition 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).

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010101306

1. CHECK CONNECTOR

1. Turn the ignition 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-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

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

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010101308

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the 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 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	24	M7	34	Existed
	27		35	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	32	Existed
	35	33	Existed

Is the 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 driver seat control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000010101309

1. CHECK CONNECTOR

1. Turn the ignition 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.

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MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000010101310

1.CHECK CONNECTOR

1. Turn the ignition 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.	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.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000010101311

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

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101312

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101313

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010101314

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-67, "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)

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010101315

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-67, "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.

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101316

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101317

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101318

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.

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TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101319

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395. "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-404. "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.

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101320

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101321

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101322

1. CHECK CONNECTOR

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010101323

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

LAN

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010101324

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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	140	Existed
	12		139	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101325

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101326

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101327

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.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101329

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101330

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.		
E104	30	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-90, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-131, "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.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101331

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101332

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:00000001010101333

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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.		
B50	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-67, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-68, "Removal and Installation"](#).

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

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

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101334

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-51, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101335

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-578, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-595, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the side radar LH branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101336

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-581, "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-579, "SIDE RADAR RH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-595, "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.

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APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:00000001010101337

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Accelerator pedal actuator
 - Harness connector M151
 - Harness connector M150
 - Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 actuator. Refer to [DAS-205, "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 actuator branch line.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.
2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

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

Is the inspection result normal?

YES >> Replace the PCB harness.

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101338

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-409, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-425, "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.

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LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010101339

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
E67	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-163, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-181, "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.	
E67	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010101340

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

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CAN COMMUNICATION CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000010101341

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-67. "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.

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CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000010101342

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-67. "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	Not existed
	12	

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.

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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010101343

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-67. "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.	
B50	7	E67	3	Existed
	8		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the following harness connectors.
 - Side radar LH
 - Side radar RH
 - 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.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

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

Is the inspection result normal?

YES >> GO TO 7.

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

7.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.

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

8.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

PRECAUTION

PRECAUTIONS

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

INFOID:000000010285562

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 of Battery Terminal

INFOID:000000010285564

- 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.

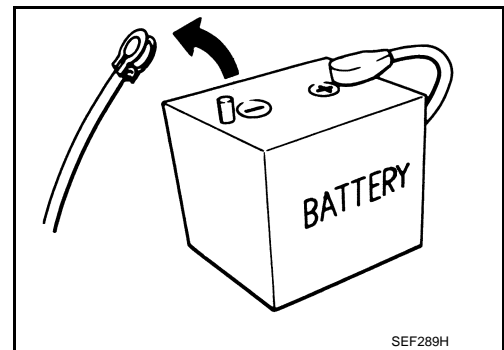
NOTE:

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.



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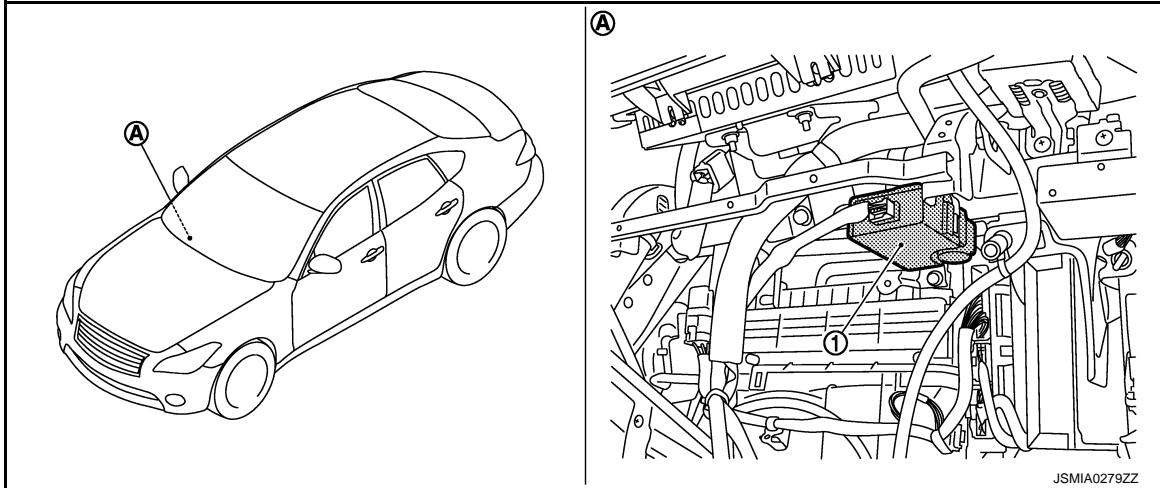
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000010101345

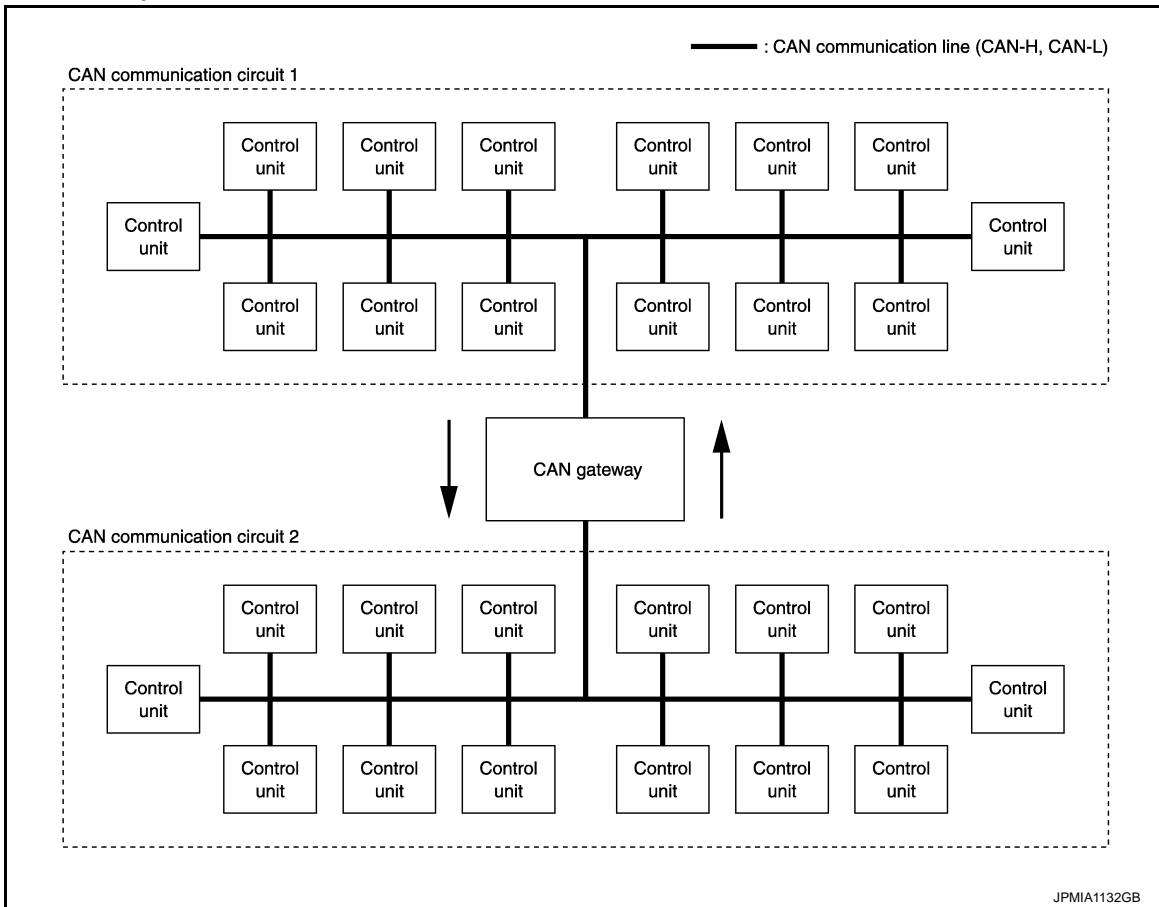


- 1. CAN gateway
- A. Over the glove box

SYSTEM

System Description

INFOID:000000010101346



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

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DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

[CAN GATEWAY]

DIAGNOSIS SYSTEM (CAN GATEWAY)

CONSULT Function

INFOID:000000010101347

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	<ul style="list-style-type: none">• Read and save the vehicle specification.• Write the vehicle specification when replacing CAN gateway.

SELF DIAGNOSTIC RESULT

Refer to [LAN-131, "DTC Index"](#).

CAN GATEWAY

< ECU DIAGNOSIS INFORMATION >

[CAN GATEWAY]

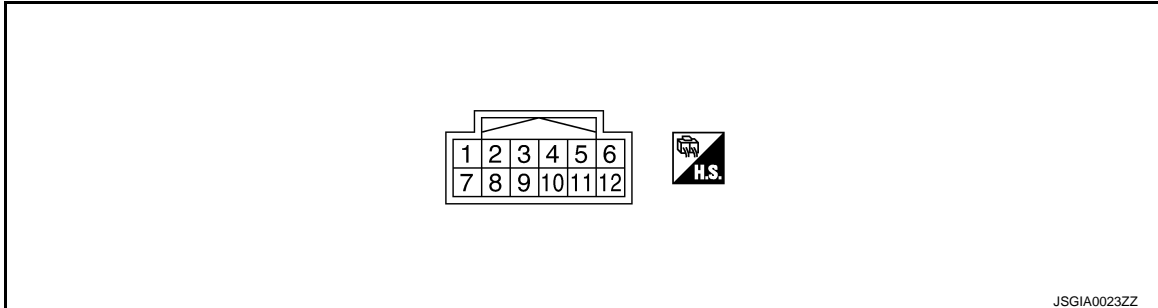
ECU DIAGNOSIS INFORMATION

CAN GATEWAY

Reference Value

INFOID:0000000010101348

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:0000000010101349

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

Priority	DTC
1	<ul style="list-style-type: none"> B2600: CONFIG ERROR U1010: CONTROL UNIT(CAN)
2	U1000: CAN COMM CIRCUIT

DTC Index

INFOID:0000000010101350

NOTE:

CAN GATEWAY

[CAN GATEWAY]

< ECU DIAGNOSIS INFORMATION >

- The details of time display are as follows.
 - CRNT: A malfunction is detected now
 - PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame Data).
 - The number is 0 when is detected now
 - The number increases like 1 → 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-137
U1010: CONTROL UNIT(CAN)		LAN-138
B2600: CONFIG ERROR	WRONG DATA	LAN-139
	NOT CONFIGURED	

CAN GATEWAY SYSTEM

< WIRING DIAGRAM >

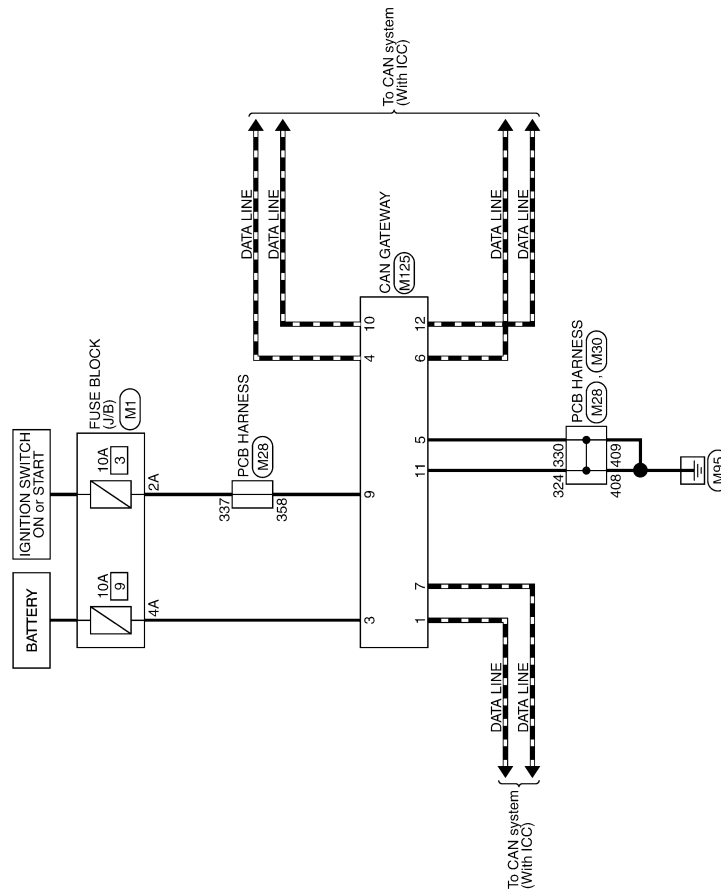
[CAN GATEWAY]

WIRING DIAGRAM

CAN GATEWAY SYSTEM

Wiring Diagram

INFOID:0000000010101351



CAN GATEWAY SYSTEM

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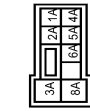
CAN GATEWAY SYSTEM

< WIRING DIAGRAM >

[CAN GATEWAY]

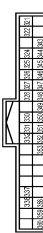
CAN GATEWAY SYSTEM

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



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

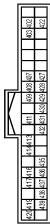
Connector No.	M28
Connector Name	PCB HARNESS
Connector Type	TH40PW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
321	V	-	-
322	V	-	-
324	B	-	-
325	L	-	-
326	P	-	-
327	V	-	-
328	B	-	-
330	B	-	-
331	V	-	-
332	V	-	-
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	-	-

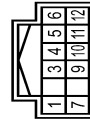
Connector No.	M30
Connector Name	PCB HARNESS
Connector Type	TH40PW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
402	R	-	-
403	R	-	-
407	V	-	-
408	B	-	-
409	B	-	-
411	B	-	-
413	Y	-	-
414	BR	-	-
416	LG	-	-
417	B	-	-
419	SB	-	-
420	SHIELD	-	-
421	V	-	-
422	P	-	-
426	V	-	-
428	P	-	-
430	LG	-	-
431	B	-	-
432	Y	-	-

435	V	-	-
438	RG	-	-
437	B	-	-
438	P	-	-
439	L	-	-

Connector No.	M25
Connector Name	CAN GATEWAY
Connector Type	TH12PW-NH



Terminal No.	Color	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
11	L	-	CAN-L
12	P	-	CAN-L

BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

Description

INFOID:0000000010101352

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:0000000010101353

1. SAVING VEHICLE SPECIFICATION

ⓂCONSULT Configuration

Perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-136. "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-141. "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-136. "Work Procedure"](#).

>> WORK END

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CONFIGURATION (CAN GATEWAY)

Description

INFOID:000000010101354

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	<ul style="list-style-type: none"> 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:000000010101355

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:0000000010101356

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-34, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

DTC Logic

INFOID:0000000010101357

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:0000000010101358

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-24, "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-47, "Intermittent Incident"](#).

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U1010 CONTROL UNIT (CAN)

Description

INFOID:000000010101359

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-34, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000010101360

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:000000010101361

1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).

B2600 CONFIG ERROR

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

B2600 CONFIG ERROR

Description

INFOID:000000010101362

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

DTC Logic

INFOID:000000010101363

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:000000010101364

1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000010101365

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	Battery voltage
Connector	Terminal		
M125	3	OFF	
	9	ON	

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:000000010101366

CAUTION:

Before replacing CAN gateway, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-135, "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-135, "Description"](#).

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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285569

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 A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285570

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285571

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285572

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285573

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285574

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285577

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285580

1. CHECK CONNECTOR

1. Turn the ignition 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-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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- 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285586

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285587

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285590

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285591

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285592

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.

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TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285593

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395. "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-404. "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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285594

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285595

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285596

1. CHECK CONNECTOR

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285599

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285600

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285603

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285605

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285606

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010285614

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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.

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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285623

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 A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285624

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285625

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285626

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285627

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285628

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285629

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M20 and PCB harness side connector
 - Harness connector M7
 - Harness connector B1
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

YES >> GO TO 5.

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

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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 6.
NO >> Repair the main line between the harness connectors M7 and M6.

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6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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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

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Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the ABS actuator and electric unit (control unit).
NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285636

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the 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 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	24	M7	34	Existed
	27		35	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	32	Existed
	35	33	Existed

Is the 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 driver seat control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000010285637

1. CHECK CONNECTOR

1. Turn the ignition 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.

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MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000010285638

1.CHECK CONNECTOR

1. Turn the ignition 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.	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.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000010285639

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285640

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285641

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010285642

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-67, "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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010285643

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-140. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-67. "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.

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285644

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285645

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285646

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.

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TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285647

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395. "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-404. "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.

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285648

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285649

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010285651

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010285652

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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	Approx. 54 – 66
	12	

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-67. "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	140	Existed
	12		139	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.

LAN

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285653

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285654

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285657

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285658

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.		
E104	30	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-90, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-131, "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.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285659

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285660

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285661

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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.		
B50	14	15	Approx. 54 – 66

Is the measurement value within the specification?

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

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-67, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-68, "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:000000010285662

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-51, "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.

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RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285663

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-578, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-595, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the side radar LH branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285664

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-581, "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-579, "SIDE RADAR RH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-595, "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.

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APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285665

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Accelerator pedal actuator
 - Harness connector M151
 - Harness connector M150
 - Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 actuator. Refer to [DAS-205, "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 actuator branch line.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.
2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

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

Is the inspection result normal?

YES >> Replace the PCB harness.

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285666

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-409, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-425, "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.

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LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285667

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
E67	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-163, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-181, "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.	
E67	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000010285669

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-67. "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.

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CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000010285670

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-67. "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	Not existed
	12	

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.

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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010285671

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-67. "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.	
B50	7	E67	3	Existed
	8		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the following harness connectors.
 - Side radar LH
 - Side radar RH
 - 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.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

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

Is the inspection result normal?

YES >> GO TO 7.

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

7.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.

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

8.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285675

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.

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285676

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285677

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285678

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285679

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285680

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285683

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair the main line between the harness connectors M20 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.
NO-1 >> AWD models: Replace the body harness.
NO-2 >> 2WD models: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285686

1. CHECK CONNECTOR

1. Turn the ignition 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-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

- 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).

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285692

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

M107	114	M30	439	Existed
	113		438	Existed

A

- VK56VD

B

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M160	146	M30	439	Existed
	151		438	Existed

C

Is the inspection result normal?

D

YES >> Replace the PCB harness.

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

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

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TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285693

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285696

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175. "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285697

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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.

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285698

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.

TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285699

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-404, "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.

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285700

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285701

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285702

1. CHECK CONNECTOR

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285705

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285706

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285709

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285711

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285712

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the driver seat control unit branch line.
 NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010285720

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

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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285727

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.

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285728

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285729

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285730

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285731

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285732

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285733

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M20 and PCB harness side connector
 - Harness connector M7
 - Harness connector B1
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

YES >> GO TO 5.

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

5.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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 6.

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

6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		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 BCM and the ABS actuator and electric unit (control unit).

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

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285740

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the 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 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	24	M7	34	Existed
	27		35	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	32	Existed
	35	33	Existed

Is the 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 driver seat control unit.

NO >> Replace the body harness.

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MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000010285741

1. CHECK CONNECTOR

1. Turn the ignition 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000010285742

1.CHECK CONNECTOR

1. Turn the ignition 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.	Connector No.	
38	M150	11	M150	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.

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MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000010285743

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.

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285744

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

M107	114	M30	439	Existed
	113		438	Existed

A

- VK56VD

B

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M160	146	M30	439	Existed
	151		438	Existed

C

Is the inspection result normal?

D

YES >> Replace the PCB harness.

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

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

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TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285745

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010285746

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-67, "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.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010285747

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-140. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-67. "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.

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285748

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175. "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285749

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285750

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.

TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285751

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-404, "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.

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285752

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278. "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-124. "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-305. "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285753

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010285755

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010285756

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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	140	Existed
	12		139	Existed

Is the inspection result normal?

YES >> Replace the PCB harness.

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285757

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285758

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285761

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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.

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AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285762

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.		
E104	30	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-90, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-131, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285763

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285764

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the driver seat control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285765

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
	10	12
		Existed
		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-67, "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.	
B50	14	15
		Approx. 54 – 66

Is the measurement value within the specification?

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

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-67, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-68, "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.

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PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285766

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-51, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010285767

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-578, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-595, "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.

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RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285768

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-581. "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-579. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-595. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285769

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Accelerator pedal actuator
 - Harness connector M151
 - Harness connector M150
 - Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 actuator. Refer to [DAS-205, "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 actuator branch line.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.
2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

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

Is the inspection result normal?

YES >> Replace the PCB harness.

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285770

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-409, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-425, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285771

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
E67	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-163, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-181, "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.	
E67	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.

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CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000010285773

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-67. "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.

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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.

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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000010285774

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-67. "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	Not existed
	12	

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.

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010285775

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-67. "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.	
B50	7	E67	3	Existed
	8		6	Existed

Is the inspection result normal?

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

4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the following harness connectors.
 - Side radar LH
 - Side radar RH
 - 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.		
B50	7	8	Not existed

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

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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.

C

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

D

ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

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F

3. Check the resistance between the ICC sensor terminals.

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

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H

Is the inspection result normal?

YES >> GO TO 7.

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

I

7.CHECK SYMPTOM

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

J

Inspection result

Reproduced>>GO TO 8.

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

K

8.CHECK UNIT REPRODUCTION

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

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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.

N

NOTE:

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

O

Inspection result

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

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

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LAN

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285781

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 A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285782

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285783

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285784

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285785

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285786

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285789

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285792

1. CHECK CONNECTOR

1. Turn the ignition 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-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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- 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285798

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285799

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285802

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285803

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285804

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.

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285806

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278. "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-124. "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-305. "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285807

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285808

1. CHECK CONNECTOR

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285811

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285812

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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.

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4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285813

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285815

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285817

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285818

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010285826

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285843

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 A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285844

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285845

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285846

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285847

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285848

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285851

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285892

1. CHECK CONNECTOR

1. Turn the ignition 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-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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- 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285860

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285861

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285864

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285865

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285866

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.

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TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285867

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395. "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-404. "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.

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285868

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285869

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285870

1. CHECK CONNECTOR

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285873

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285874

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285875

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.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285877

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285879

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285880

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010285888

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

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CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285897

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.

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285898

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285899

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285900

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285901

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285902

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000010285904

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit.

NO >> Replace the body harness.

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MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285907

1. CHECK CONNECTOR

1. Turn the ignition 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).

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285910

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the 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 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	24	M7	34	Existed
	27		35	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	32	Existed
	35	33	Existed

Is the 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 driver seat control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000010285911

1. CHECK CONNECTOR

1. Turn the ignition 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.

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MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000010285912

1.CHECK CONNECTOR

1. Turn the ignition 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.	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.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000010285913

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285914

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285915

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010285916

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-67, "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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010285917

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-140. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-67. "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.

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285918

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285919

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285920

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.

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TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285921

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395. "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-404. "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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285922

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285923

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010285925

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010285926

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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	140	Existed
	12		139	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.

LAN

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285927

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285928

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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.

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4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285929

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285931

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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.

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285932

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.		
E104	30	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-90, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-131, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285933

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285934

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285935

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
	10	12
		Existed
		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-67, "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.	
B50	14	15
		Approx. 54 – 66

Is the measurement value within the specification?

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

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-67, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-68, "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.

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PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285936

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-51, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285937

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-578, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-595, "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.

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RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285938

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-581. "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-579. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-595. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285939

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Accelerator pedal actuator
 - Harness connector M151
 - Harness connector M150
 - Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 actuator. Refer to [DAS-205, "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 actuator branch line.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.
2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

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

Is the inspection result normal?

YES >> Replace the PCB harness.

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285940

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-409, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the lane camera unit. Refer to [DAS-425, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285941

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
E67	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-163, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-181, "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.	
E67	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.

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CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000010285943

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-67. "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.

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.

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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000010285944

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-67. "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	Not existed
	12	

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.

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010285945

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-67. "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.	
B50	7	E67	3	Existed
	8		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the following harness connectors.
 - Side radar LH
 - Side radar RH
 - 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.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

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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.

C

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

D

ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

E
F

3. Check the resistance between the ICC sensor terminals.

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

G
H

Is the inspection result normal?

YES >> GO TO 7.

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

I

7.CHECK SYMPTOM

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

J

Inspection result

Reproduced>>GO TO 8.

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

K

8.CHECK UNIT REPRODUCTION

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

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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.

N

NOTE:

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

O

Inspection result

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

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

P

LAN

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010285968

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 A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010285969

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010285970

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010285971

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010285972

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010285973

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010285976

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010285979

1. CHECK CONNECTOR

1. Turn the ignition 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-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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- 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285985

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285986

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285989

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285990

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285991

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.

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TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285992

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395. "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-404. "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.

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285993

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285994

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285995

1. CHECK CONNECTOR

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285998

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010285999

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286000

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.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286002

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286004

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286005

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the driver seat control unit branch line.
 NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010286013

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

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CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 8)]

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010286025

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.

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010286026

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010286027

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010286028

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010286029

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010286030

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000010286032

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit.

NO >> Replace the body harness.

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MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010286035

1. CHECK CONNECTOR

1. Turn the ignition 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).

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010286038

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the 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 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	24	M7	34	Existed
	27		35	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	32	Existed
	35	33	Existed

Is the 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 driver seat control unit.

NO >> Replace the body harness.

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000010286039

1. CHECK CONNECTOR

1. Turn the ignition 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.

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MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000010286040

1.CHECK CONNECTOR

1. Turn the ignition 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.	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.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000010286041

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286042

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286043

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010286044

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-67, "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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010286045

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-67, "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.

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286046

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286047

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286048

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.

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TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286049

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-395. "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-404. "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.

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286050

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286051

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010286053

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010286054

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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	Approx. 54 – 66
	12	

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-67. "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	140	Existed
	12		139	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.

LAN

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286055

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286056

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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.

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4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286057

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286059

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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.

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286060

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.		
E104	30	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-90, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-131, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286061

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286062

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286063

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
	10	12
		Existed
		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-67, "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.	
B50	14	15
		Approx. 54 – 66

Is the measurement value within the specification?

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

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-67, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-68, "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.

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LAN

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286064

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-51, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286065

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-578, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-595, "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.

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RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286066

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-581. "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-579. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-595. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286067

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Accelerator pedal actuator
 - Harness connector M151
 - Harness connector M150
 - Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 actuator. Refer to [DAS-205, "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 actuator branch line.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.
2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

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

Is the inspection result normal?

YES >> Replace the PCB harness.

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286068

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-409, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-425, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286069

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.		
E67	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-163, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-181, "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.	
E67	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.

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CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000010286071

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-67. "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.

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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.

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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000010286072

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-67. "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	Not existed
	12	

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.

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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.

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010286073

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-67. "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.	
B50	7	E67	3	Existed
	8		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the following harness connectors.
 - Side radar LH
 - Side radar RH
 - 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.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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

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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.

C

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

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ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

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3. Check the resistance between the ICC sensor terminals.

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

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Is the inspection result normal?

YES >> GO TO 7.

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

I

7.CHECK SYMPTOM

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

J

Inspection result

Reproduced>>GO TO 8.

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

K

8.CHECK UNIT REPRODUCTION

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

L

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.

N

NOTE:

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

O

Inspection result

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

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

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LAN

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010286082

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 A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010286083

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010286084

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010286085

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010286086

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010286087

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010286090

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010286093

1. CHECK CONNECTOR

1. Turn the ignition 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-1 >> AWD models: Replace the body harness.

NO-2 >> 2WD models: Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

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- 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286099

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

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.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286100

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

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HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286103

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286104

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286105

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.

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286107

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278. "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-124. "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-305. "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

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.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286108

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286109

1. CHECK CONNECTOR

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286112

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286113

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286116

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286118

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010286119

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the driver seat control unit branch line.
 NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010286127

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

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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 50)]

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.

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:0000000010286144

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.

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MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000010286145

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 auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010286146

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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010286147

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		15	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000010286148

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000010286149

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

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

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

NO >> Replace the PCB harness.

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010286150

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M20 and PCB harness side connector
 - Harness connector M7
 - Harness connector B1
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - BCM
 - Harness connector M20
2. Check the continuity between the BCM harness connector and the PCB harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

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

Is the inspection result normal?

YES >> GO TO 5.

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

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

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 6.

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

6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		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 BCM and the ABS actuator and electric unit (control unit).

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

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000010286157

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the 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 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	24	M7	34	Existed
	27		35	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	34	32	Existed
	35	33	Existed

Is the 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 driver seat control unit.

NO >> Replace the body harness.

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MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000010286158

1.CHECK CONNECTOR

1. Turn the ignition 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000010286159

1. CHECK CONNECTOR

1. Turn the ignition 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.	Connector No.	
38	M150	11	M151	Existed
40		10		Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

NO >> Replace the PCB harness.

MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000010286160

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.

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286161

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 for USA and Canada: [EC-200, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-713, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1166, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1744, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-557, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-974, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1566, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-2033, "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.	

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

M107	114	M30	439	Existed
	113		438	Existed

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- VK56VD

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ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M160	146	M30	439	Existed
	151		438	Existed

C

Is the inspection result normal?

D

YES >> Replace the PCB harness.

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

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

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TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286162

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67. "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.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010286163

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-140, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-67, "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.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010286164

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-140. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-141. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-67. "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.

HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286165

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-175. "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.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286166

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-191, "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-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-191, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

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.

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A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286167

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286169

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-92, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-278, "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-124, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-305, "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 BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286170

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-72. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-92. "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.

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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010286172

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010286173

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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	140	Existed
	12		139	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.

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286174

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-83. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to [BCS-90. "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.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286175

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-54. "Wiring Diagram"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-153. "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.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286178

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-128, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-150, "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:000000010286179

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.		
E104	30	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-90, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-131, "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.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286180

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-34, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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:000000010286181

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-72, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-145, "Removal and Installation"](#).

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

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

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LAN

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286182

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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.		
B50	14	15	Approx. 54 – 66

Is the measurement value within the specification?

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

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-67, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-68, "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:000000010286183

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-67, "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-51, "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.

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RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286184

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-578, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-595, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the side radar LH branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286185

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-581, "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-579, "SIDE RADAR RH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-595, "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.

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APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286186

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Accelerator pedal actuator
 - Harness connector M151
 - Harness connector M150
 - Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 actuator. Refer to [DAS-205, "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 actuator branch line.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.
2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

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

Is the inspection result normal?

YES >> Replace the PCB harness.

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286187

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-409, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-425, "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.

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LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010286188

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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.	
E67	3	Approx. 108 – 132
	6	

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-163, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-181, "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.	
E67	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000010286190

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-67. "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.

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CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000010286191

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-67. "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	Not existed
	12	

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.

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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

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:000000010286192

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-67. "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.	
B50	7	E67	3	Existed
	8		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the following harness connectors.
 - Side radar LH
 - Side radar RH
 - 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.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 51)]

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

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the ICC sensor terminals.

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

Is the inspection result normal?

YES >> GO TO 7.

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

7.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 8.

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

8.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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