

SECTION LAN
LAN SYSTEM

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Diagnosis Procedure	456	Diagnosis Procedure	480	
ADP BRANCH LINE CIRCUIT	457	BCM BRANCH LINE CIRCUIT	481	
Diagnosis Procedure	457	Diagnosis Procedure	481	
CAN COMMUNICATION CIRCUIT	458			
Diagnosis Procedure	458			
CAN SYSTEM (TYPE 10)				
DTC/CIRCUIT DIAGNOSIS	460			

STRG BRANCH LINE CIRCUIT	482	MAIN LINE BETWEEN RDR-R AND APA CIR-	500
Diagnosis Procedure	482	CUIT	500
4WD BRANCH LINE CIRCUIT	483	Diagnosis Procedure	500
Diagnosis Procedure	483	MAIN LINE BETWEEN APA AND LANE CIR-	502
ABS BRANCH LINE CIRCUIT	484	CUIT	502
Diagnosis Procedure	484	Diagnosis Procedure	502
IPDM-E BRANCH LINE CIRCUIT	485	ECM BRANCH LINE CIRCUIT	503
Diagnosis Procedure	485	Diagnosis Procedure	503
ADP BRANCH LINE CIRCUIT	486	TPMS BRANCH LINE CIRCUIT	505
Diagnosis Procedure	486	Diagnosis Procedure	505
CAN COMMUNICATION CIRCUIT	487	CGW BRANCH LINE CIRCUIT (CAN COM-	506
Diagnosis Procedure	487	MUNICATION CIRCUIT 1)	506
CAN SYSTEM (TYPE 11)		Diagnosis Procedure	506
DTC/CIRCUIT DIAGNOSIS	489	CGW BRANCH LINE CIRCUIT (CAN COM-	507
MAIN LINE BETWEEN TPMS AND HVAC		MUNICATION CIRCUIT 2)	507
CIRCUIT	489	Diagnosis Procedure	507
Diagnosis Procedure	489	HVAC BRANCH LINE CIRCUIT	508
MAIN LINE BETWEEN HVAC AND A-BAG		Diagnosis Procedure	508
CIRCUIT	490	TCM BRANCH LINE CIRCUIT	509
Diagnosis Procedure	490	Diagnosis Procedure	509
MAIN LINE BETWEEN A-BAG AND AV CIR-		A-BAG BRANCH LINE CIRCUIT	511
CUIT	491	Diagnosis Procedure	511
Diagnosis Procedure	491	TCU BRANCH LINE CIRCUIT	512
MAIN LINE BETWEEN AV AND M&A CIR-		Diagnosis Procedure	512
CUIT	492	AV BRANCH LINE CIRCUIT	513
Diagnosis Procedure	492	Diagnosis Procedure	513
MAIN LINE BETWEEN M&A AND DLC CIR-		M&A BRANCH LINE CIRCUIT	515
CUIT	493	Diagnosis Procedure	515
Diagnosis Procedure	493	DLC BRANCH LINE CIRCUIT (CAN COMMU-	516
MAIN LINE BETWEEN DLC AND BCM CIR-		UNICATION CIRCUIT 1)	516
CUIT	494	Diagnosis Procedure	516
Diagnosis Procedure	494	DLC BRANCH LINE CIRCUIT (CAN COMMU-	517
MAIN LINE BETWEEN BCM AND 4WD CIR-		UNICATION CIRCUIT 2)	517
CUIT	495	Diagnosis Procedure	517
Diagnosis Procedure	495	BCM BRANCH LINE CIRCUIT	518
MAIN LINE BETWEEN 4WD AND ABS CIR-		Diagnosis Procedure	518
CUIT	496	STRG BRANCH LINE CIRCUIT	519
Diagnosis Procedure	496	Diagnosis Procedure	519
MAIN LINE BETWEEN DLC AND ADP CIR-		4WD BRANCH LINE CIRCUIT	520
CUIT	498	Diagnosis Procedure	520
Diagnosis Procedure	498	ABS BRANCH LINE CIRCUIT	521
MAIN LINE BETWEEN RDR-L AND RDR-R		Diagnosis Procedure	521
CIRCUIT	499	AFS BRANCH LINE CIRCUIT	522
Diagnosis Procedure	499	Diagnosis Procedure	522

IPDM-E BRANCH LINE CIRCUIT	523	MAIN LINE BETWEEN BCM AND 4WD CIRCUIT	544	A
Diagnosis Procedure	523	Diagnosis Procedure	544	
ADP BRANCH LINE CIRCUIT	524	MAIN LINE BETWEEN 4WD AND ABS CIRCUIT	545	B
Diagnosis Procedure	524	Diagnosis Procedure	545	
ICC BRANCH LINE CIRCUIT	525	ECM BRANCH LINE CIRCUIT	547	C
Diagnosis Procedure	525	Diagnosis Procedure	547	
PSB BRANCH LINE CIRCUIT	526	TPMS BRANCH LINE CIRCUIT	549	D
Diagnosis Procedure	526	Diagnosis Procedure	549	
RDR-L BRANCH LINE CIRCUIT	527	HVAC BRANCH LINE CIRCUIT	550	E
Diagnosis Procedure	527	Diagnosis Procedure	550	
RDR-R BRANCH LINE CIRCUIT	528	TCM BRANCH LINE CIRCUIT	551	F
Diagnosis Procedure	528	Diagnosis Procedure	551	
APA BRANCH LINE CIRCUIT	529	A-BAG BRANCH LINE CIRCUIT	553	G
Diagnosis Procedure	529	Diagnosis Procedure	553	
LANE BRANCH LINE CIRCUIT	530	TCU BRANCH LINE CIRCUIT	554	H
Diagnosis Procedure	530	Diagnosis Procedure	554	
LASER BRANCH LINE CIRCUIT	531	AV BRANCH LINE CIRCUIT	555	I
Diagnosis Procedure	531	Diagnosis Procedure	555	
CAN COMMUNICATION CIRCUIT 1	532	M&A BRANCH LINE CIRCUIT	557	J
Diagnosis Procedure	532	Diagnosis Procedure	557	
CAN COMMUNICATION CIRCUIT 2	534	DLC BRANCH LINE CIRCUIT	558	K
Diagnosis Procedure	534	Diagnosis Procedure	558	
ITS COMMUNICATION CIRCUIT	536	BCM BRANCH LINE CIRCUIT	559	L
Diagnosis Procedure	536	Diagnosis Procedure	559	
CAN SYSTEM (TYPE 12)				
DTC/CIRCUIT DIAGNOSIS	538	STRG BRANCH LINE CIRCUIT	560	
MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT	538	Diagnosis Procedure	560	
Diagnosis Procedure	538	4WD BRANCH LINE CIRCUIT	561	
MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT	539	Diagnosis Procedure	561	
Diagnosis Procedure	539	ABS BRANCH LINE CIRCUIT	562	LAN
MAIN LINE BETWEEN A-BAG AND AV CIRCUIT	540	Diagnosis Procedure	562	
Diagnosis Procedure	540	IPDM-E BRANCH LINE CIRCUIT	563	N
MAIN LINE BETWEEN AV AND M&A CIRCUIT	541	Diagnosis Procedure	563	
Diagnosis Procedure	541	ADP BRANCH LINE CIRCUIT	564	O
MAIN LINE BETWEEN M&A AND DLC CIRCUIT	542	Diagnosis Procedure	564	
Diagnosis Procedure	542	CAN COMMUNICATION CIRCUIT	565	P
MAIN LINE BETWEEN DLC AND BCM CIRCUIT	543	Diagnosis Procedure	565	
Diagnosis Procedure	543	CAN SYSTEM (TYPE 13)		
MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT	567	DTC/CIRCUIT DIAGNOSIS	567	
Diagnosis Procedure	567	MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT	567	
		Diagnosis Procedure	567	

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT	568	Diagnosis Procedure	568
Diagnosis Procedure	568	A-BAG BRANCH LINE CIRCUIT	589
MAIN LINE BETWEEN A-BAG AND AV CIRCUIT	569	Diagnosis Procedure	589
Diagnosis Procedure	569	TCU BRANCH LINE CIRCUIT	590
MAIN LINE BETWEEN AV AND M&A CIRCUIT	570	Diagnosis Procedure	590
Diagnosis Procedure	570	AV BRANCH LINE CIRCUIT	591
MAIN LINE BETWEEN M&A AND DLC CIRCUIT	571	Diagnosis Procedure	591
Diagnosis Procedure	571	M&A BRANCH LINE CIRCUIT	593
MAIN LINE BETWEEN DLC AND BCM CIRCUIT	572	Diagnosis Procedure	593
Diagnosis Procedure	572	DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)	594
MAIN LINE BETWEEN BCM AND 4WD CIRCUIT	573	Diagnosis Procedure	594
Diagnosis Procedure	573	DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)	595
MAIN LINE BETWEEN 4WD AND ABS CIRCUIT	574	Diagnosis Procedure	595
Diagnosis Procedure	574	BCM BRANCH LINE CIRCUIT	596
MAIN LINE BETWEEN DLC AND ADP CIRCUIT	576	Diagnosis Procedure	596
Diagnosis Procedure	576	STRG BRANCH LINE CIRCUIT	597
MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT	577	Diagnosis Procedure	597
Diagnosis Procedure	577	4WD BRANCH LINE CIRCUIT	598
MAIN LINE BETWEEN RDR-R AND APA CIRCUIT	578	Diagnosis Procedure	598
Diagnosis Procedure	578	ABS BRANCH LINE CIRCUIT	599
MAIN LINE BETWEEN APA AND LANE CIRCUIT	580	Diagnosis Procedure	599
Diagnosis Procedure	580	AFS BRANCH LINE CIRCUIT	600
ECM BRANCH LINE CIRCUIT	581	Diagnosis Procedure	600
Diagnosis Procedure	581	IPDM-E BRANCH LINE CIRCUIT	601
TPMS BRANCH LINE CIRCUIT	583	Diagnosis Procedure	601
Diagnosis Procedure	583	ADP BRANCH LINE CIRCUIT	602
CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)	584	Diagnosis Procedure	602
Diagnosis Procedure	584	ICC BRANCH LINE CIRCUIT	603
CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)	585	Diagnosis Procedure	603
Diagnosis Procedure	585	PSB BRANCH LINE CIRCUIT	604
HVAC BRANCH LINE CIRCUIT	586	Diagnosis Procedure	604
Diagnosis Procedure	586	RDR-L BRANCH LINE CIRCUIT	605
TCM BRANCH LINE CIRCUIT	587	Diagnosis Procedure	605
		RDR-R BRANCH LINE CIRCUIT	606
		Diagnosis Procedure	606
		APA BRANCH LINE CIRCUIT	607
		Diagnosis Procedure	607
		LANE BRANCH LINE CIRCUIT	608
		Diagnosis Procedure	608
		LASER BRANCH LINE CIRCUIT	609
		Diagnosis Procedure	609

CAN COMMUNICATION CIRCUIT 1	610	CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)	632	A
Diagnosis Procedure	610	Diagnosis Procedure	632	
CAN COMMUNICATION CIRCUIT 2	612	CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)	633	B
Diagnosis Procedure	612	Diagnosis Procedure	633	
ITS COMMUNICATION CIRCUIT	614	HVAC BRANCH LINE CIRCUIT	634	C
Diagnosis Procedure	614	Diagnosis Procedure	634	
CAN SYSTEM (TYPE 14)				
DTC/CIRCUIT DIAGNOSIS	616	TCM BRANCH LINE CIRCUIT	635	D
MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT	616	Diagnosis Procedure	635	
Diagnosis Procedure	616	A-BAG BRANCH LINE CIRCUIT	637	E
MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT	617	Diagnosis Procedure	637	
Diagnosis Procedure	617	AV BRANCH LINE CIRCUIT	638	F
MAIN LINE BETWEEN A-BAG AND AV CIRCUIT	618	Diagnosis Procedure	638	
Diagnosis Procedure	618	M&A BRANCH LINE CIRCUIT	640	G
MAIN LINE BETWEEN AV AND M&A CIRCUIT	619	Diagnosis Procedure	640	
Diagnosis Procedure	619	DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)	641	H
MAIN LINE BETWEEN M&A AND DLC CIRCUIT	620	Diagnosis Procedure	641	
Diagnosis Procedure	620	DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)	642	I
MAIN LINE BETWEEN DLC AND BCM CIRCUIT	621	Diagnosis Procedure	642	
Diagnosis Procedure	621	BCM BRANCH LINE CIRCUIT	643	J
MAIN LINE BETWEEN BCM AND ABS CIRCUIT	622	Diagnosis Procedure	643	
Diagnosis Procedure	622	STRG BRANCH LINE CIRCUIT	644	K
MAIN LINE BETWEEN DLC AND ADP CIRCUIT	624	Diagnosis Procedure	644	
Diagnosis Procedure	624	ABS BRANCH LINE CIRCUIT	645	L
MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT	625	Diagnosis Procedure	645	
Diagnosis Procedure	625	AFS BRANCH LINE CIRCUIT	646	
MAIN LINE BETWEEN RDR-R AND APA CIRCUIT	626	Diagnosis Procedure	646	
Diagnosis Procedure	626	IPDM-E BRANCH LINE CIRCUIT	647	LAN
MAIN LINE BETWEEN APA AND LANE CIRCUIT	628	Diagnosis Procedure	647	
Diagnosis Procedure	628	ADP BRANCH LINE CIRCUIT	648	N
ECM BRANCH LINE CIRCUIT	629	Diagnosis Procedure	648	
Diagnosis Procedure	629	ICC BRANCH LINE CIRCUIT	649	O
TPMS BRANCH LINE CIRCUIT	631	Diagnosis Procedure	649	
Diagnosis Procedure	631	PSB BRANCH LINE CIRCUIT	650	P
		Diagnosis Procedure	650	
		RDR-L BRANCH LINE CIRCUIT	651	
		Diagnosis Procedure	651	
		RDR-R BRANCH LINE CIRCUIT	652	
		Diagnosis Procedure	652	
		APA BRANCH LINE CIRCUIT	653	
		Diagnosis Procedure	653	

LANE BRANCH LINE CIRCUIT	654	Diagnosis Procedure	656
Diagnosis Procedure	654		
LASER BRANCH LINE CIRCUIT	655	CAN COMMUNICATION CIRCUIT 2	658
Diagnosis Procedure	655	Diagnosis Procedure	658
CAN COMMUNICATION CIRCUIT 1	656	ITS COMMUNICATION CIRCUIT	660
		Diagnosis Procedure	660

PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

INFOID:000000008133174

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.

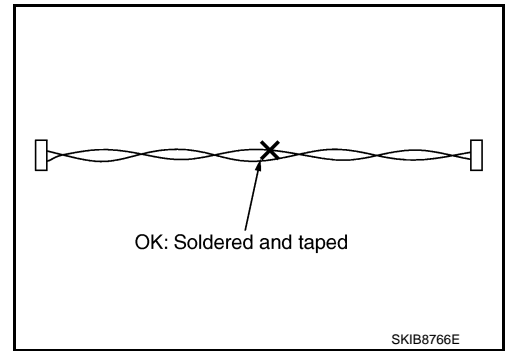
Precautions for Harness Repair

INFOID:000000008133175

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

NOTE:

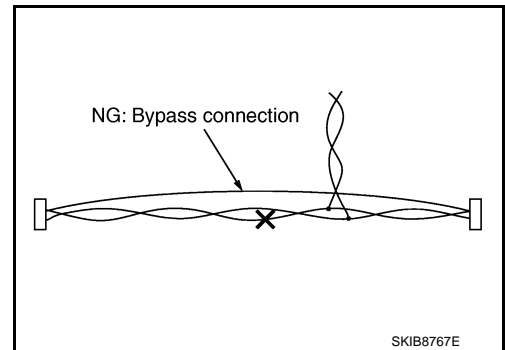
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

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



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

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SYSTEM DESCRIPTION

SYSTEM

CAN COMMUNICATION SYSTEM

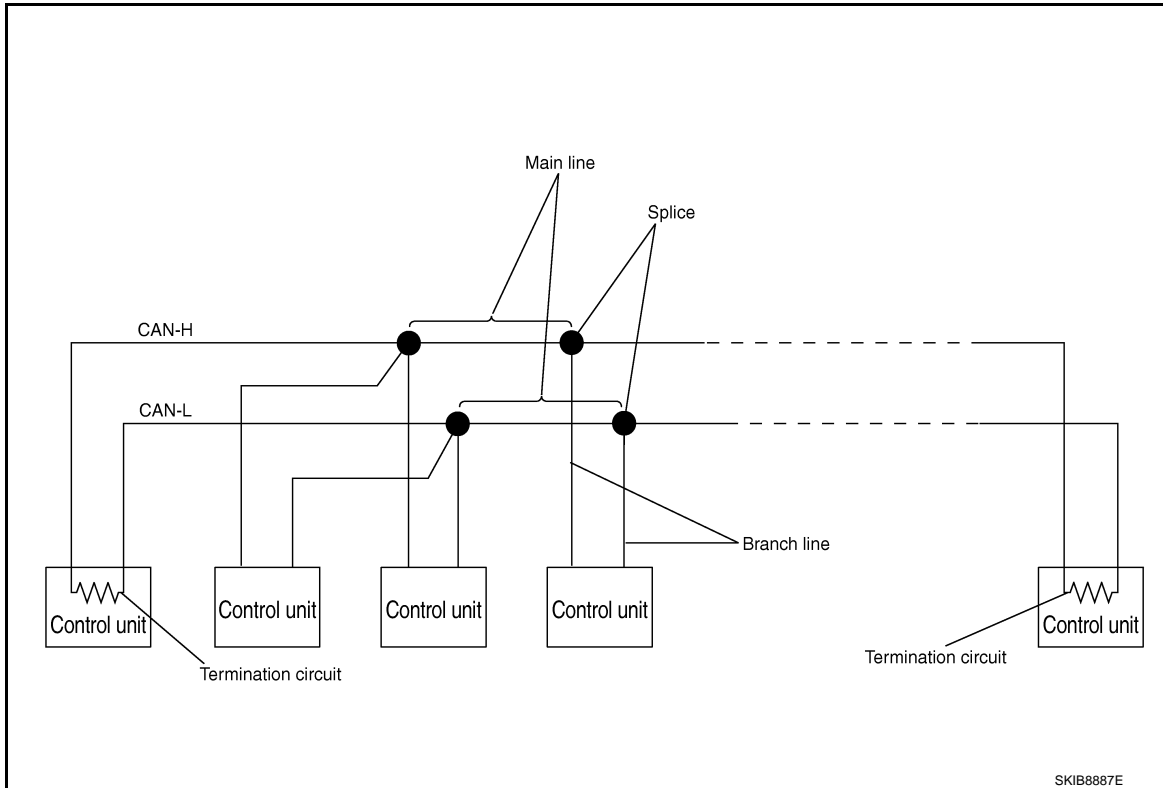
CAN COMMUNICATION SYSTEM : System Description

INFOID:000000008133176

- 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:000000008133177

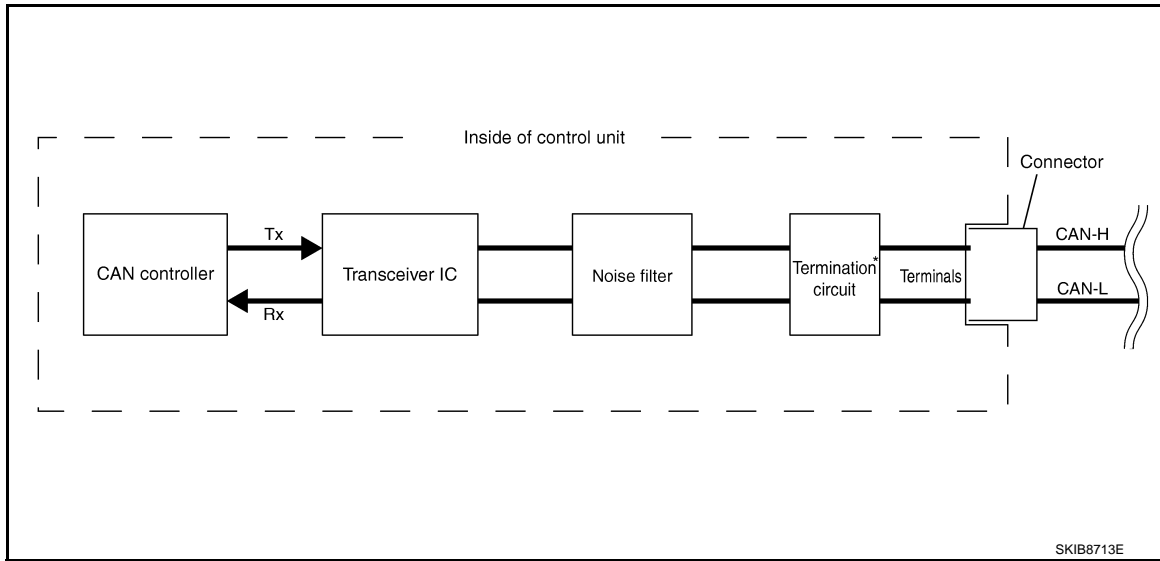


Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

Component	Description
Main line	CAN communication line between splices
Branch line	CAN communication line between splice and a control unit
Splice	A point connecting a branch line with a main line
Termination circuit	Refer to LAN-19, "CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit" .

CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit

INFOID:000000008133178



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:000000008133179

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

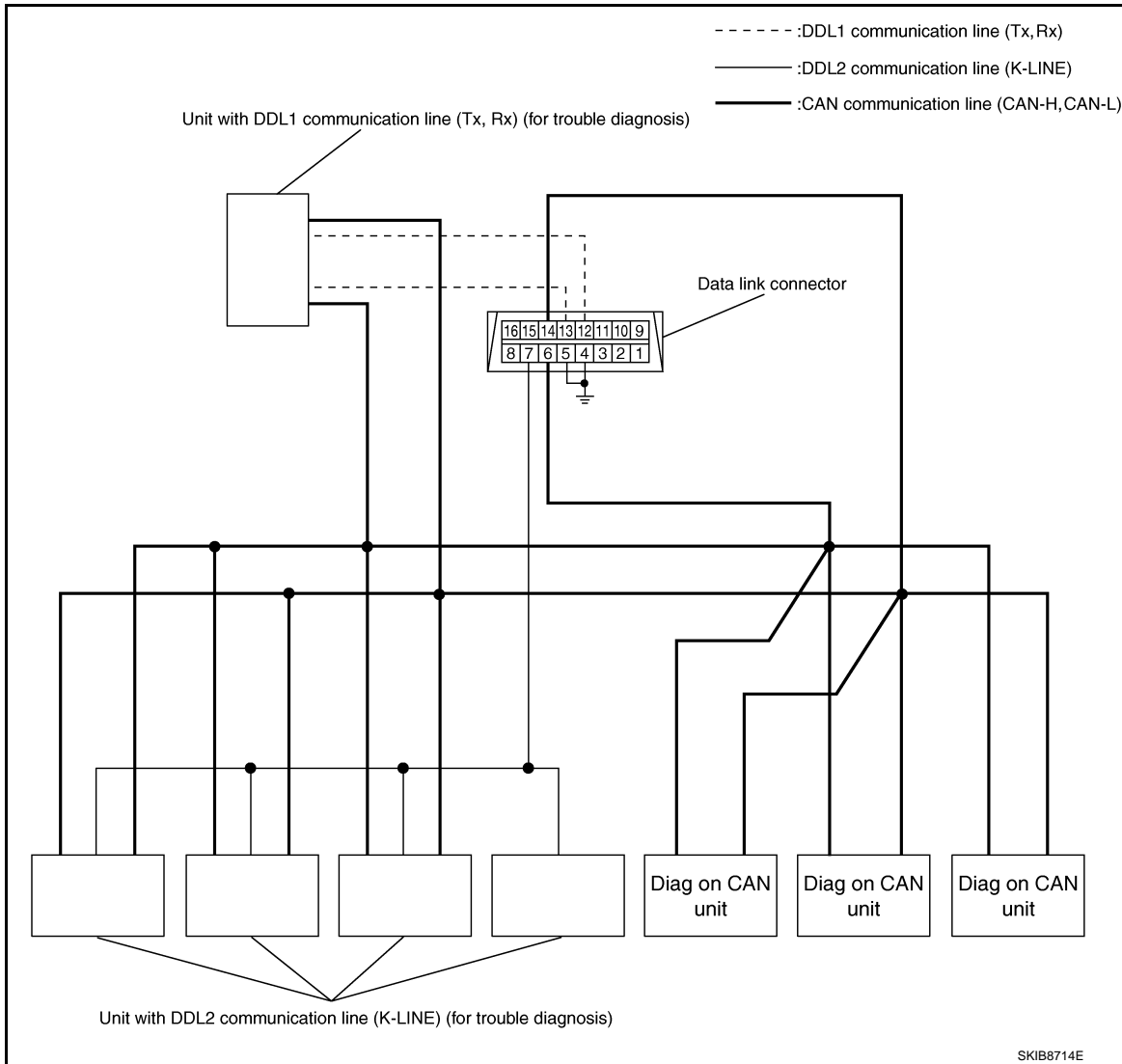
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DIAG ON CAN : System Diagram

INFOID:000000008133180



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

TROUBLE DIAGNOSIS

Condition of Error Detection

INFOID:000000008133181

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:000000008133182

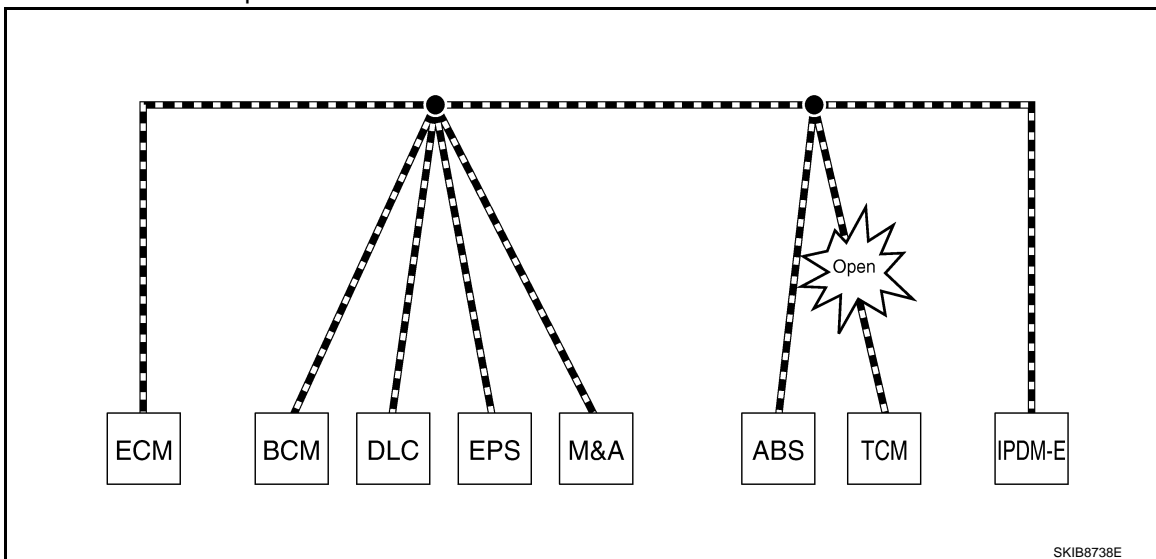
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to [LAN-32, "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.

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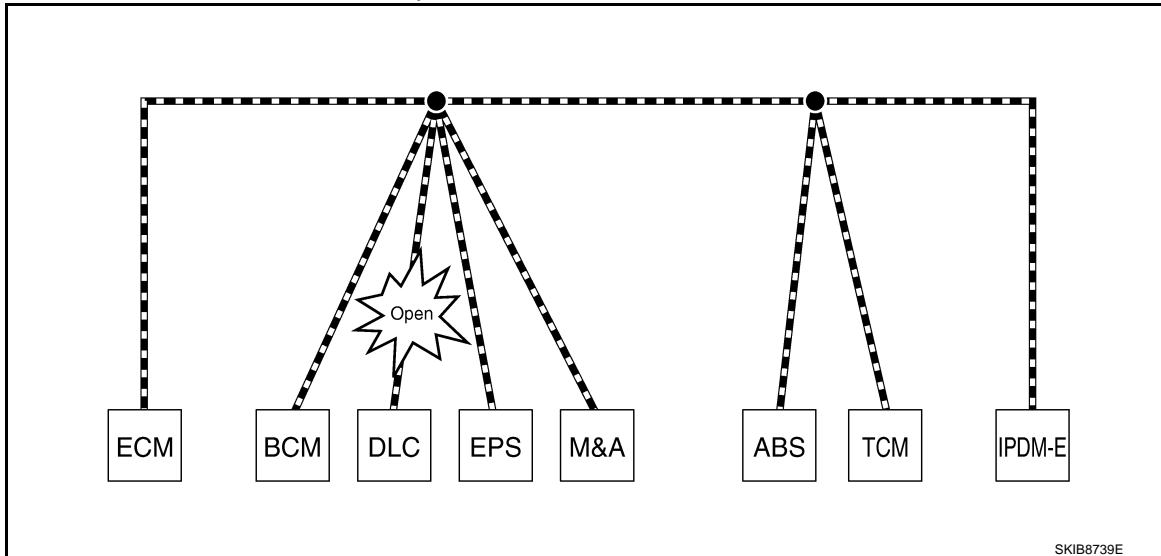
TROUBLE DIAGNOSIS

< 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.

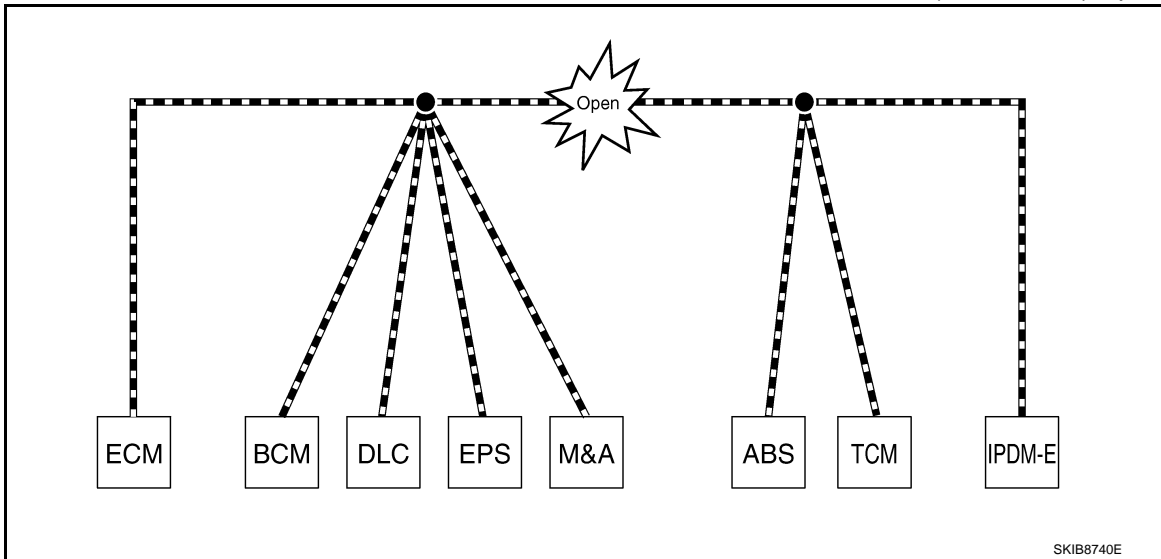
Error	Difference of symptom
Data link connector branch line open circuit	Normal operation.
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

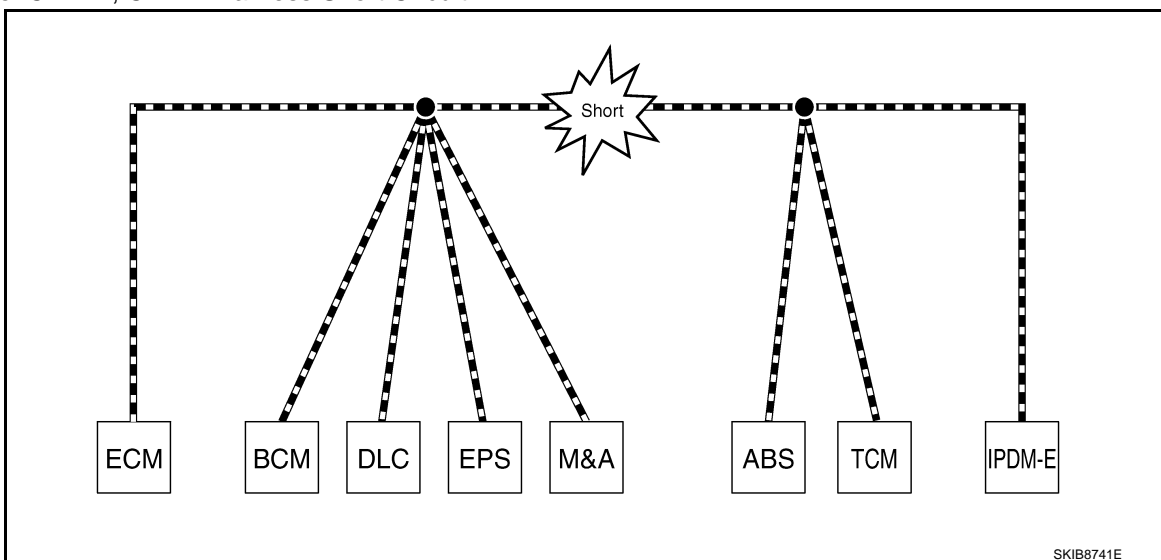
[CAN FUNDAMENTAL]

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



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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:000000008133183

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:000000008133184

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:000000008133185

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)

How to Use CAN Communication Signal Chart

INFOID:000000008133186

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

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

T: Transmit R: Receive

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

No communication between ECM and M&A.

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

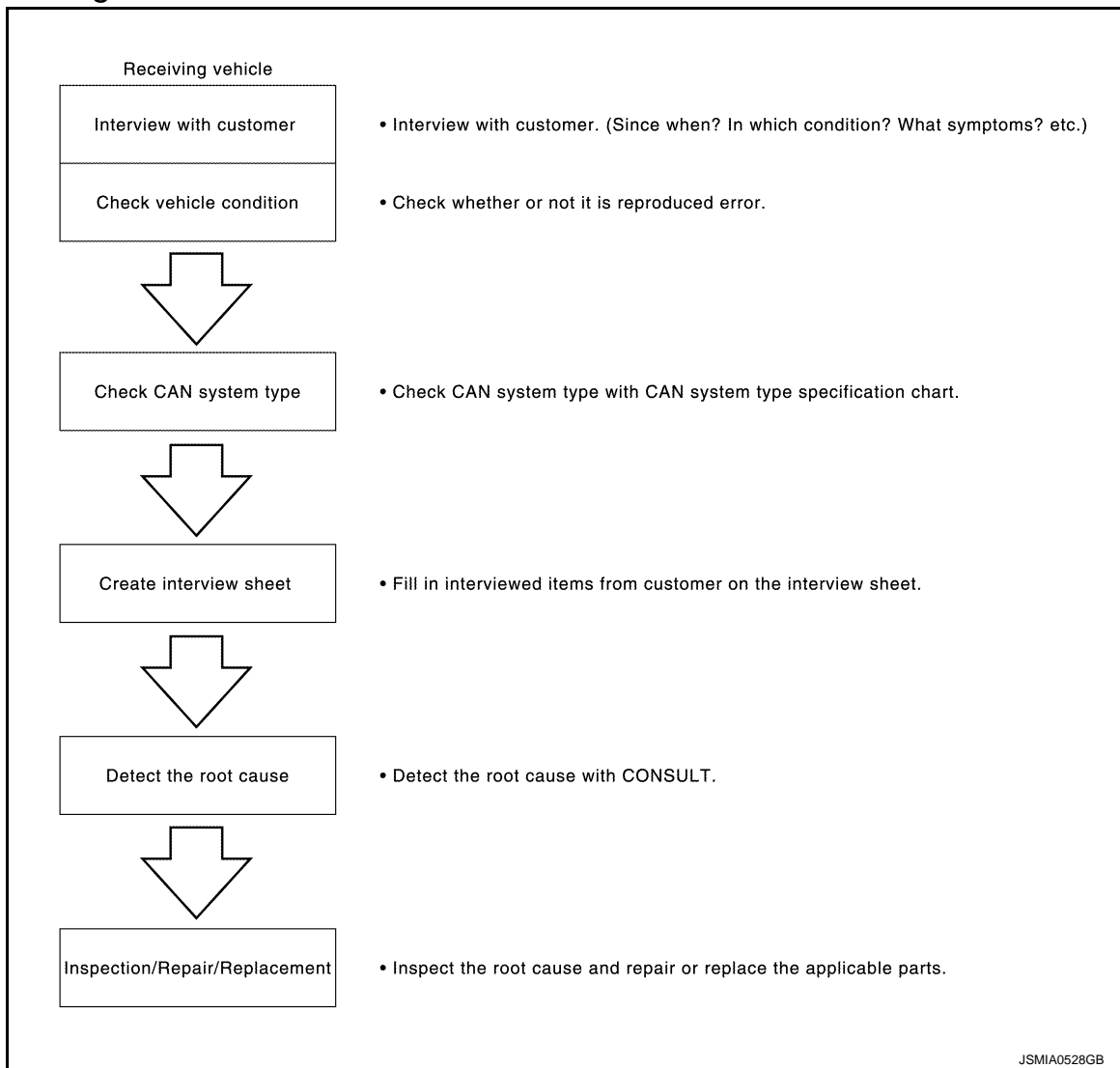
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

INFOID:000000008133187



Trouble Diagnosis Procedure

INFOID:000000008133188

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.

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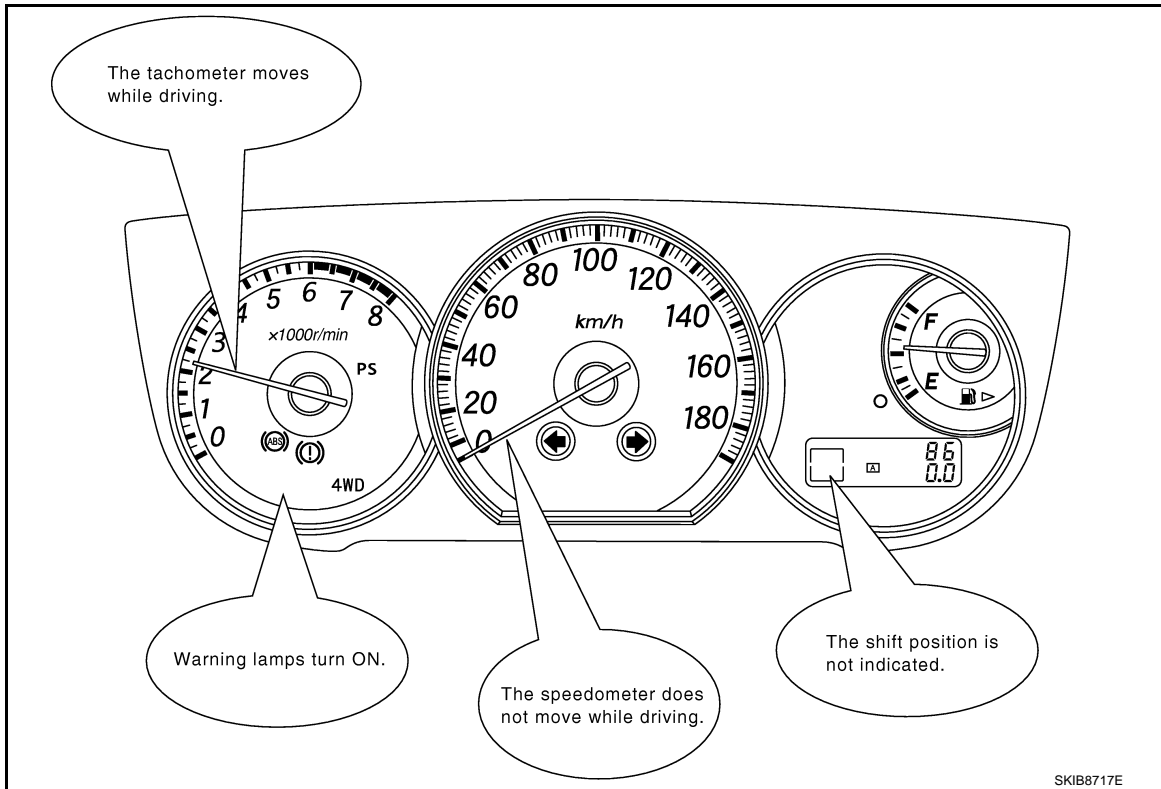
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DIAGNOSIS AND REPAIR WORKFLOW

< 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:

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.)

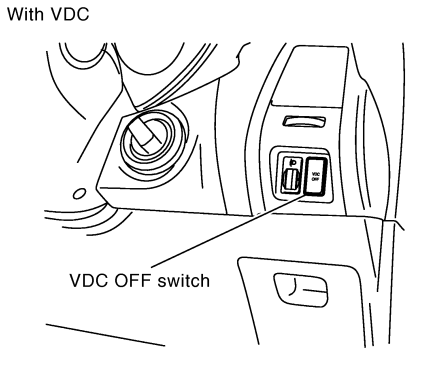
CAN System Specification Chart
Determine CAN system type from the following specification chart.

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

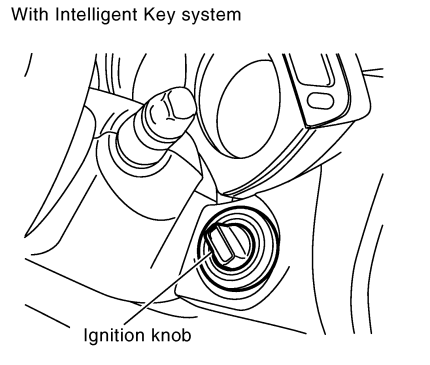
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION
NOTE:
Check CAN system type from the vehicle shape and equipment.

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:

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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: 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	AT	CVT	AT
Brake control	ABS		
Specification chart	XXX SPECIFICATION CHART A	YYY SPECIFICATION CHART B	XXX SPECIFICATION CHART C

Check the vehicle equipment with the vehicle identification number plate.

Check the vehicle equipment.

Select the applicable vehicle equipment. Refer to the specification chart.

x: Applicable

SPECIFICATION CHART B

Determine CAN system type from the following specification chart.

Body type	Sedan											
Axle	2WD											
Engine	MR20DE											
Transmission	CVT											
Brake control	ABS											
Active AFS	x			x	x			x	x	x		
Intelligent Key system		x		x		x	x	x	x	x		
Navigation system			x			x	x		x	x		
Automatic drive positioner								x	x	x		
CAN system type	9	10	11	12	13	14	15	16	17	18	19	20
CAN communication signal chart	XXX SPECIFICATION CHART A											

Check the vehicle equipment.

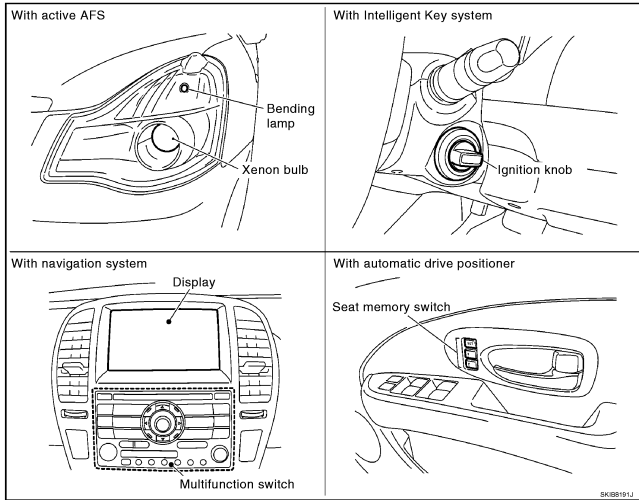
The number indicates the CAN system type of the vehicle.

x: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



In the above example,

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

[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.	

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DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

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HOW TO USE THIS SECTION

< HOW TO USE THIS MANUAL >

[CAN]

HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution

INFOID:000000008133189

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to [LAN-27, "Trouble Diagnosis Procedure"](#).

Abbreviation List

INFOID:000000008133190

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)
RAS	4WAS main control unit
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

PRECAUTION

PRECAUTIONS

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

INFOID:000000008133191

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Trouble Diagnosis

INFOID:000000008133192

CAUTION:

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

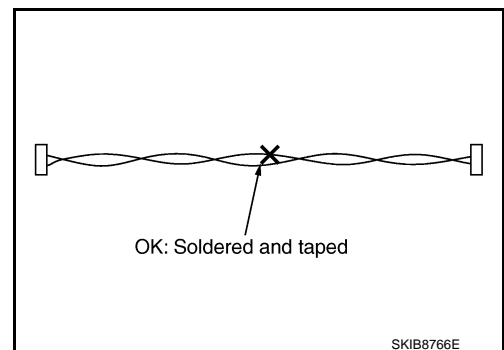
Precautions for Harness Repair

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

NOTE:

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



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PRECAUTIONS

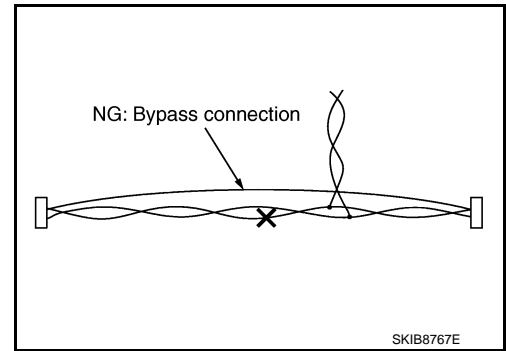
< PRECAUTION >

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- 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.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

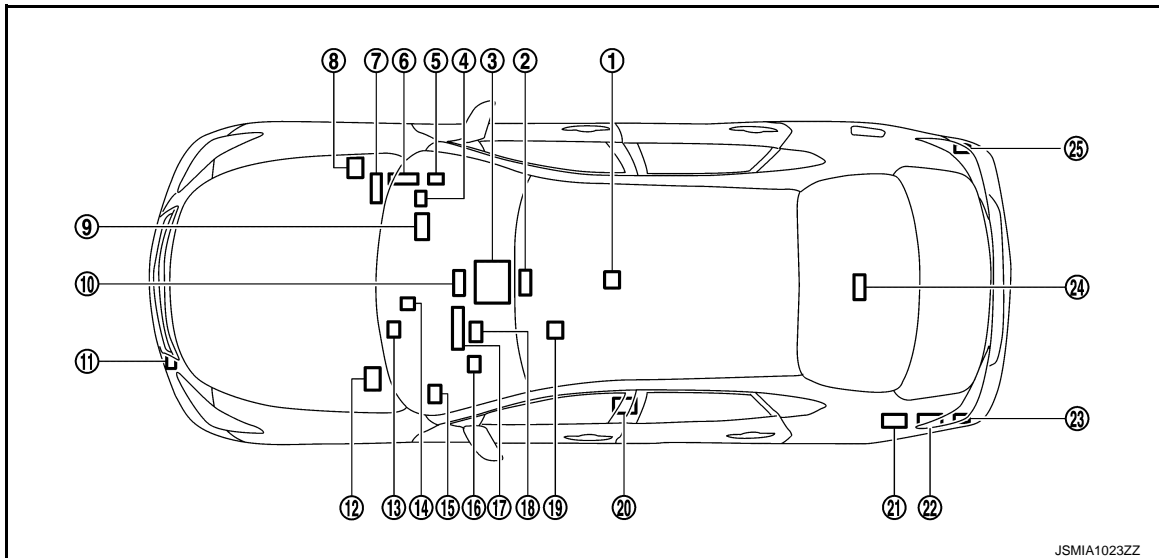
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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- | | | |
|----------------------------------|--|---|
| 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. 4WAS main control unit |
| 22. AWD control unit | 23. Side radar LH | 24. ADAS control unit |
| 25. Side radar RH | | |

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[CAN]

SYSTEM

CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : CAN System Specification Chart

INFOID:000000008133195

Determine CAN system type from the following specification chart.

NOTE:

Refer to [LAN-27. "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		×	×	×	×	×		×	×		×	×	×	×
4WAS			×		×				×					
Active AFS				×	×		×	×	×			×		×
CAN system type	1	2	3	4	5	6	14	7	8	9	10	11	12	13
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										×	×	×	×	×
4WAS main control unit			×		×				×					
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×
AFS control unit				×	×		×	×	×			×		×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Driver seat control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ADAS control unit				×	×		×	×	×			×		×
Pre-crash seat belt control unit (driver side)				×	×		×	×	×			×		×
ITS communication unit														
ADAS control unit				×	×		×	×	×			×		×
Side radar LH				×	×		×	×	×			×		×
Side radar RH				×	×		×	×	×			×		×
Accelerator pedal actuator				×	×		×	×	×			×		×
Lane camera unit				×	×		×	×	×			×		×
ICC sensor				×	×		×	×	×			×		×

×: Applicable

SYSTEM

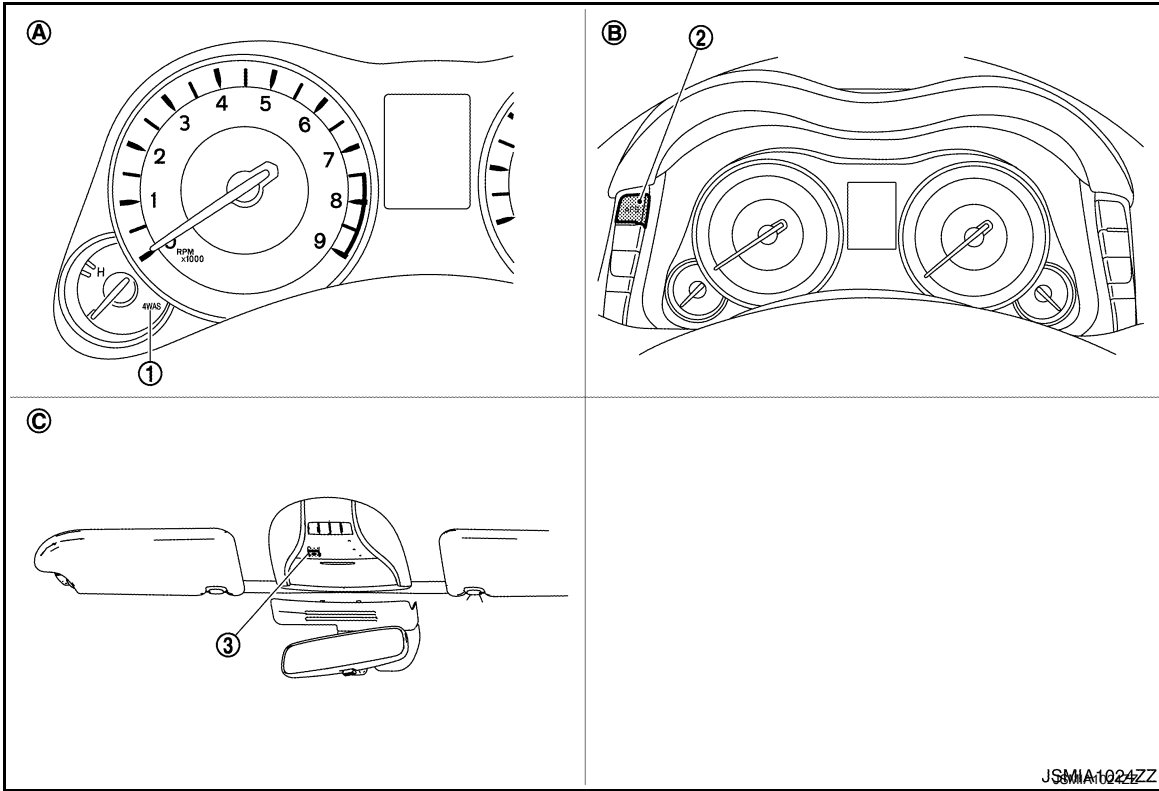
[CAN]

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VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



- 1. 4WAS warning lamp
- 2. AFS switch
- 3. Telematics switch
- A. With 4WAS
- B. With active AFS
- C. With telematics system

CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

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Refer to [LAN-26, "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

NOTE:

Refer to [LAN-32, "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	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB	LAN
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		

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDME	ADP	ICC	PSB
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			R	
Engine status signal	T						R	R	R	R									
Fuel consumption monitor signal	T							R	R										
ICC brake switch signal	T																	R	
ICC operation signal	T				R														
	R													R				T	
ICC prohibition signal	T																	R	
ICC steering switch signal	T																	R	
Malfunctioning indicator lamp signal	T						R		R										
N idle instruction signal	R				T														
	T				R														
Oil pressure warning lamp signal	T								R										
Power generation command value signal	T															R			
Snow mode switch signal	T													R				R	
	T																	R	
Stop lamp switch signal					R					T									
												R		T				R	
Wide open throttle position signal	T				R														
Buzzer request signal		T								R									
									R	T									
Low tire pressure warning lamp signal									R	T									
		T						R	R	R									
Tire pressure data signal		T						R											
A/C display signal				T				R											
A/C evaporator temperature signal	R			T															
A/C ON signal	R			T															
Ambient sensor signal				T					R										
Blower fan ON signal	R			T															
ECO mode signal				T	R				R									R	
	R				T														
SNOW mode signal				T	R				R									R	
	R				T														

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB			
SPORT mode signal				T	R				R				R						R		A	
	R				T																B	
STANDARD mode signal				T	R				R				R						R		C	
	R				T																	
Target A/C evaporator temperature signal	R			T																		
A/T CHECK indicator lamp signal					T				R						R						D	
A/T self-diagnosis signal	R				T																	
Current gear position signal	R				T														R		E	
Drive mode select signal	R				T														R			
Input speed signal					T														R			
Manual mode shift refusal signal					T				R												F	
N range signal					T					R				R								G
Next gear position signal	R				T																	
Output shaft revolution signal	R				T														R			
P range signal					T					R												H
R range signal					T									R								
Shift position signal					T				R						R		R	R				I
Shift schedule signal	R				T																	
Car crash information signal						T	R															
Door lock/unlock request signal							T			R												J
Sleep-ready signal							T			R												
									T	R												K
										R						T						
Wake up signal							T			R												
									T	R												L
A/C switch operation signal				R				T														
Rear window defogger switch signal								T		R												LAN
System selection signal								T											R			
System setting signal								T		R												
								R		T												N
Voice recognition signal				R				T														
Brake fluid level switch signal									T					R								O
Distance to empty signal								R	T													
Fuel level low warning signal								R	T													
Fuel level sensor signal	R								T													P
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												

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDME	ADP	ICC	PSB
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	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	
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		

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	TPMS	CGW	HVAC	TCM	A-BAG	TCU	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB	
Theft warning horn request signal										T						R				A
Trunk switch signal									R	T										B
Turn indicator signal					R				R	T									R	C
Steering angle sensor malfunction signal											T								R	R
Steering angle sensor signal								R			T		R	R	R				R	R
Steering angle speed signal											T								R	R
Steering calibration signal											T									R
AWD signal												T		R						
AWD warning lamp signal									R			T								
4WAS signal													T	R						
4WAS warning lamp signal									R				T							
A/T shift schedule change demand signal					R									T						
ABS malfunction signal														T					R	
ABS operation signal					R									T					R	R
ABS warning lamp signal							R		R					T					R	
Brake warning lamp signal								R	R	T				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						LAN
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				P
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	

SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

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

CAN SYSTEM (WITH ICC)

[CAN]


< WIRING DIAGRAM >

WIRING DIAGRAM

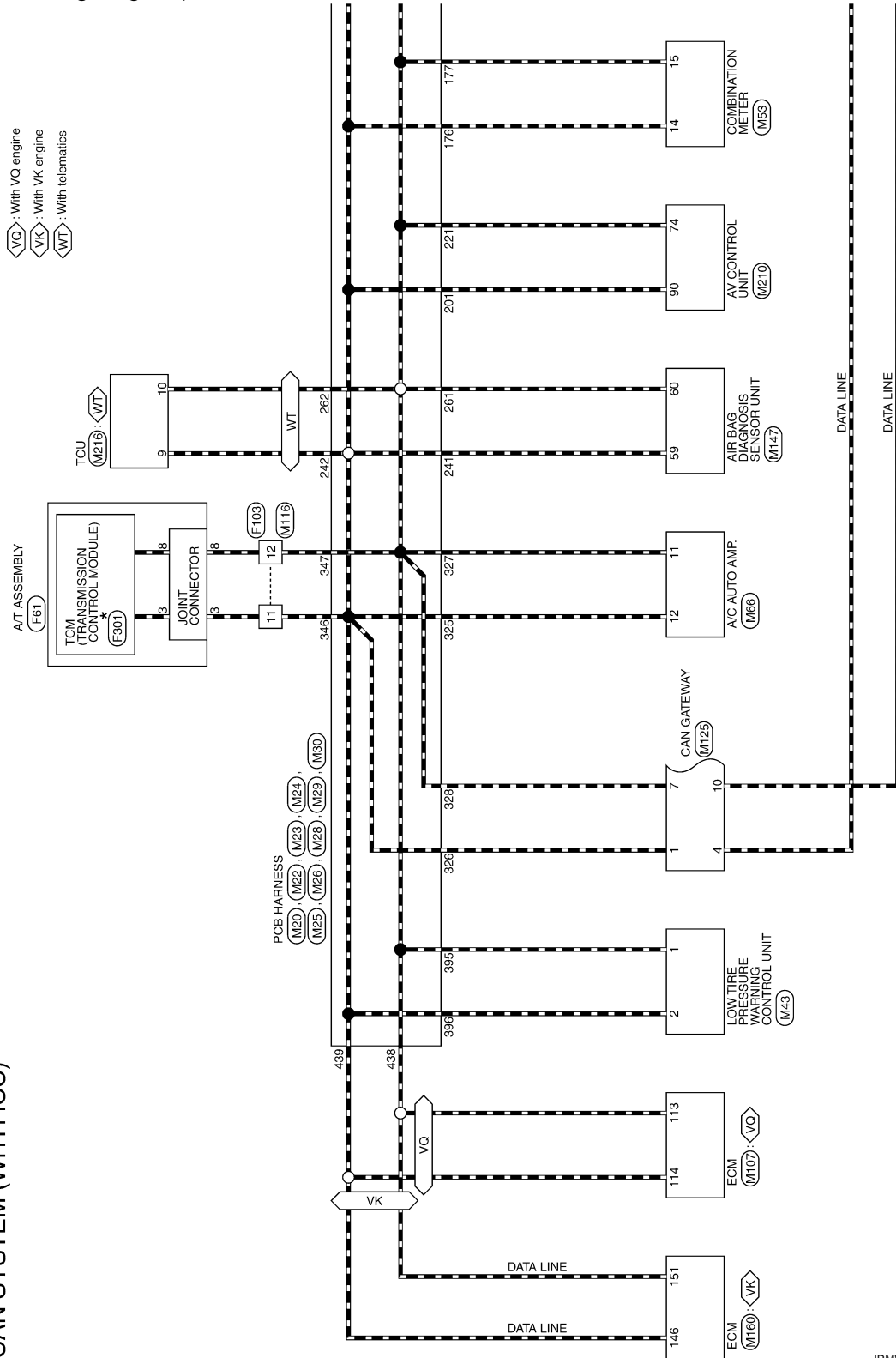
CAN SYSTEM (WITH ICC)

Wiring Diagram

INFOID:000000008133197

For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-12. "Connector Information"](#).

CAN SYSTEM (WITH ICC)



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

2012/02/27

JRMWC9495GB

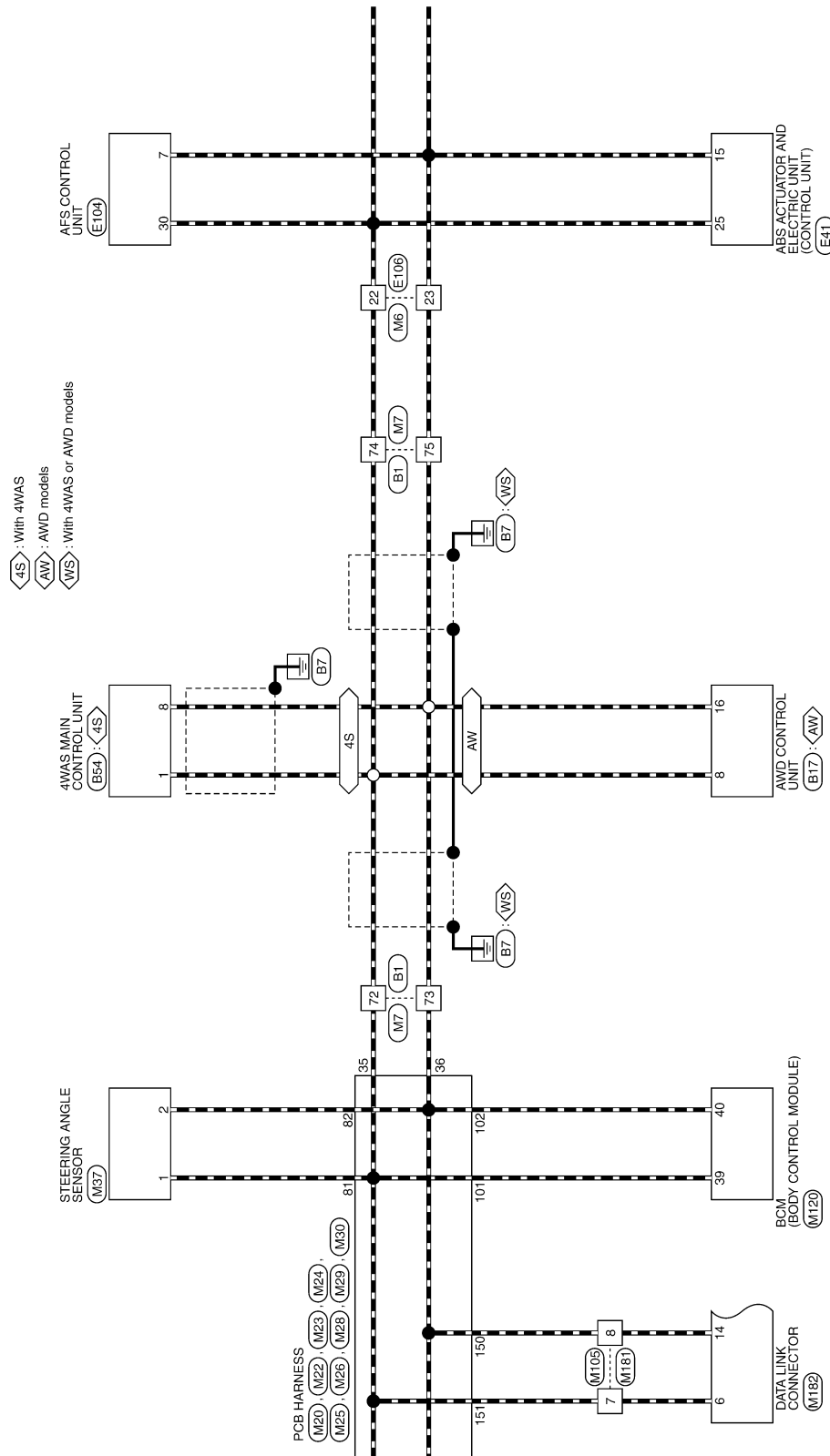
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CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

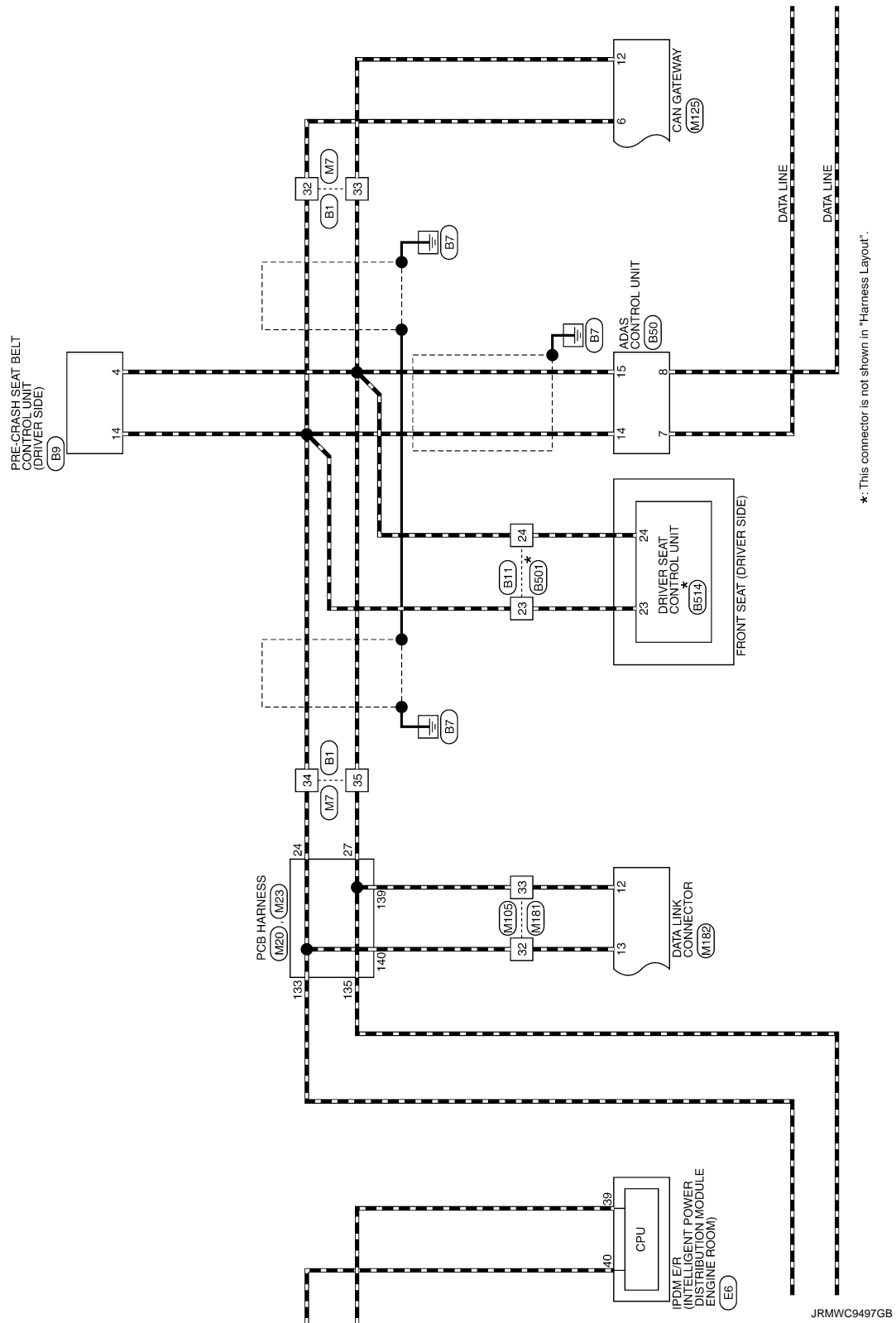


JRMWC9496GB

CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]



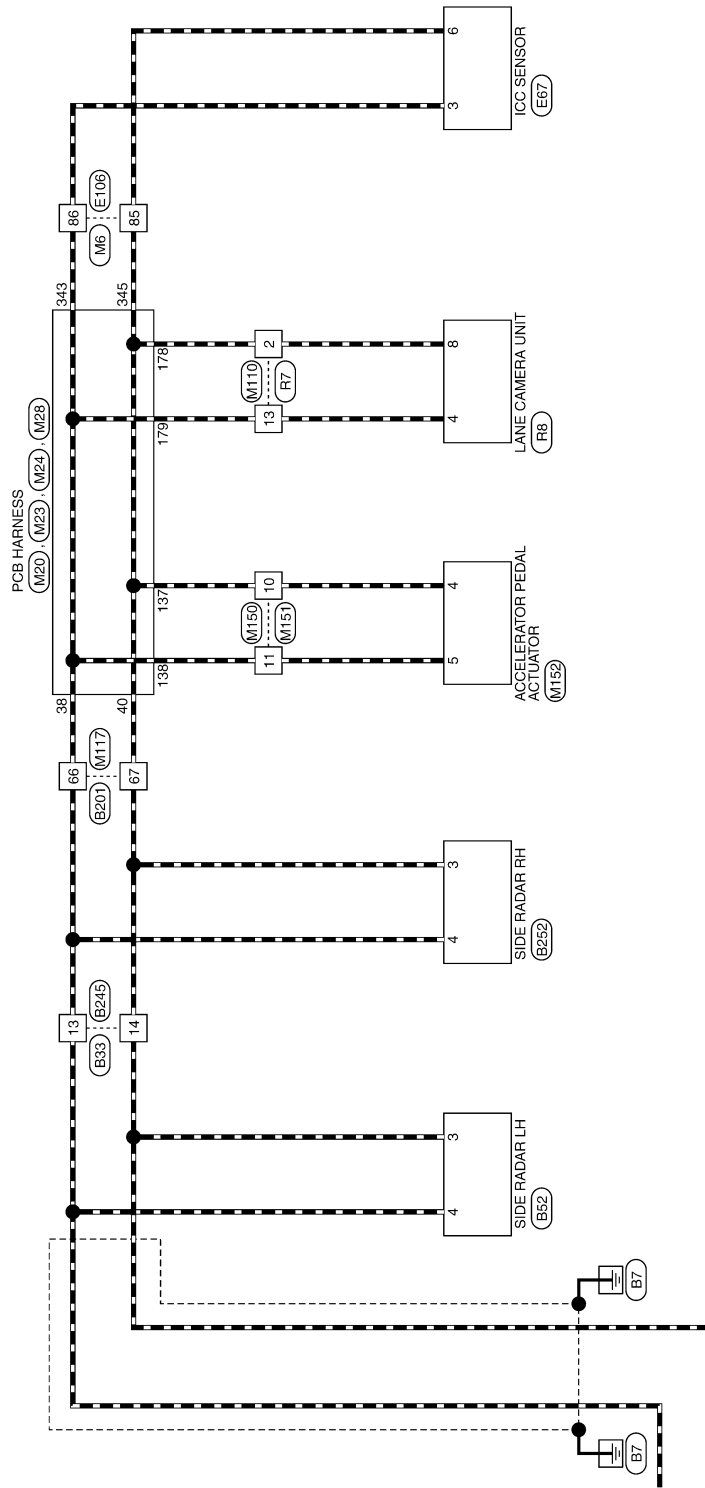
*: This connector is not shown in "Harness Layout".

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CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]



JRMWC9498GB

CAN SYSTEM (WITHOUT ICC)


[CAN]

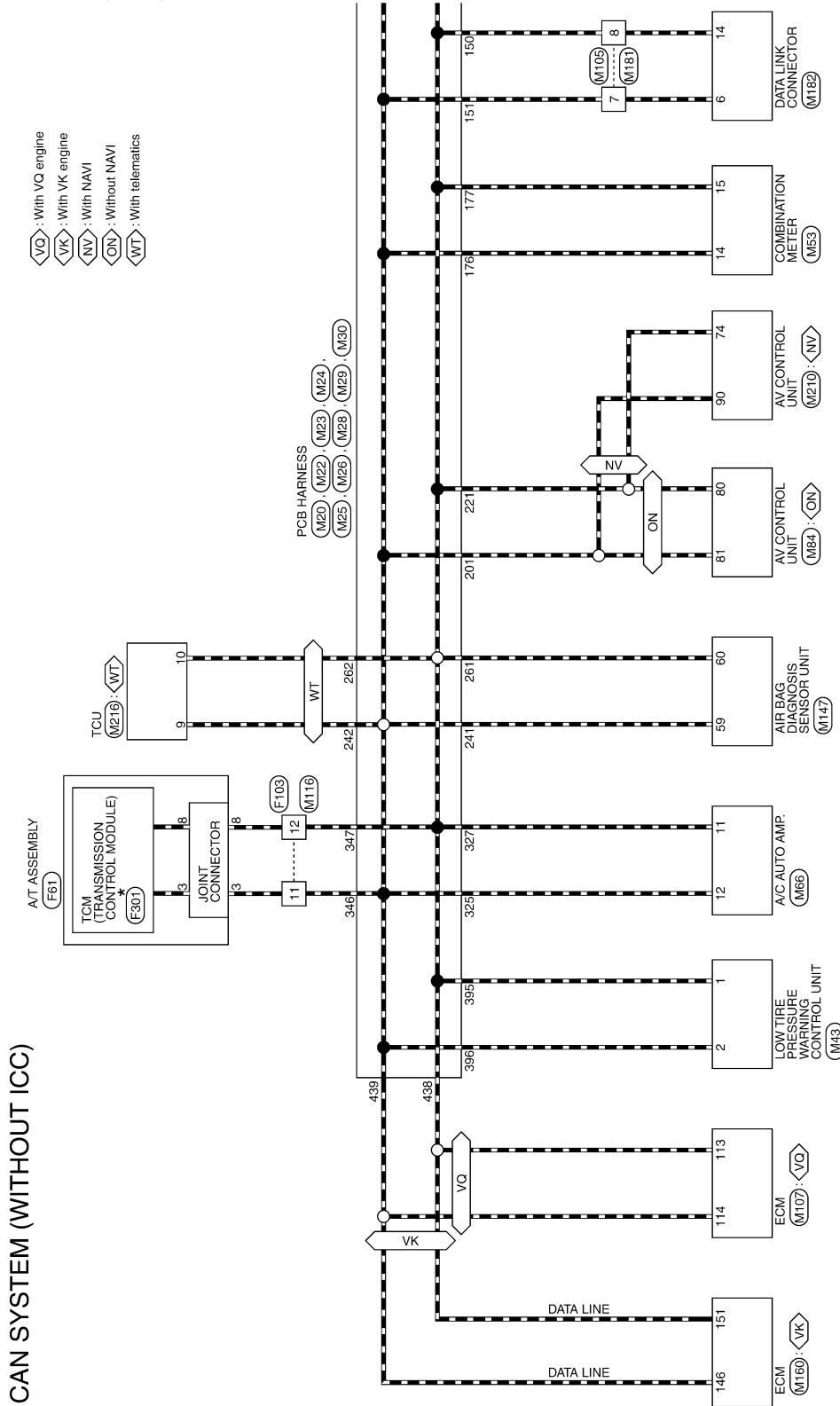
< WIRING DIAGRAM >

CAN SYSTEM (WITHOUT ICC)

Wiring Diagram

INFOID:000000008133198

For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-12, "Connector Information"](#).



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

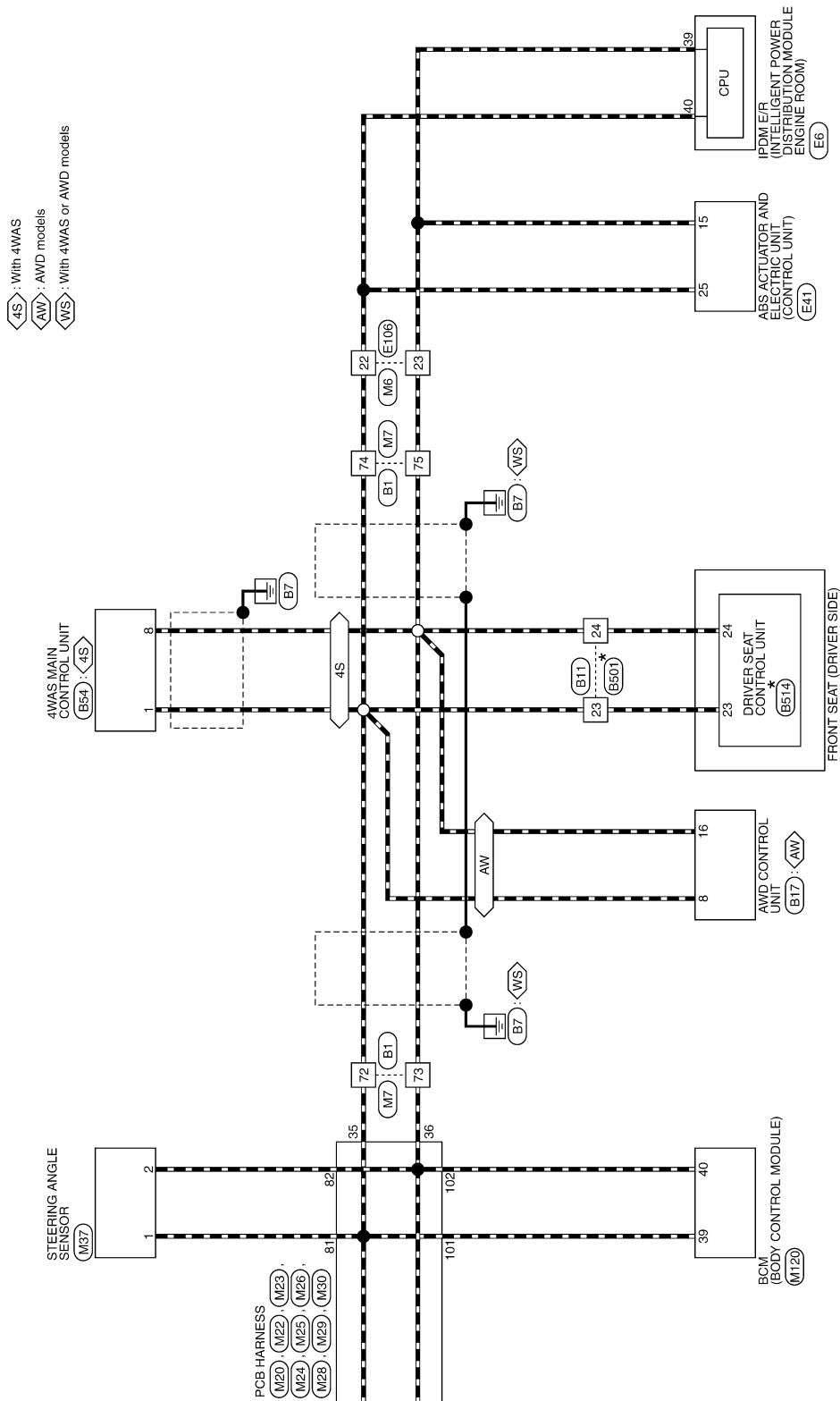
CAN SYSTEM (WITHOUT ICC)

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CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]



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

JRMWC9500GB

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

INFOID:000000008133199

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

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MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

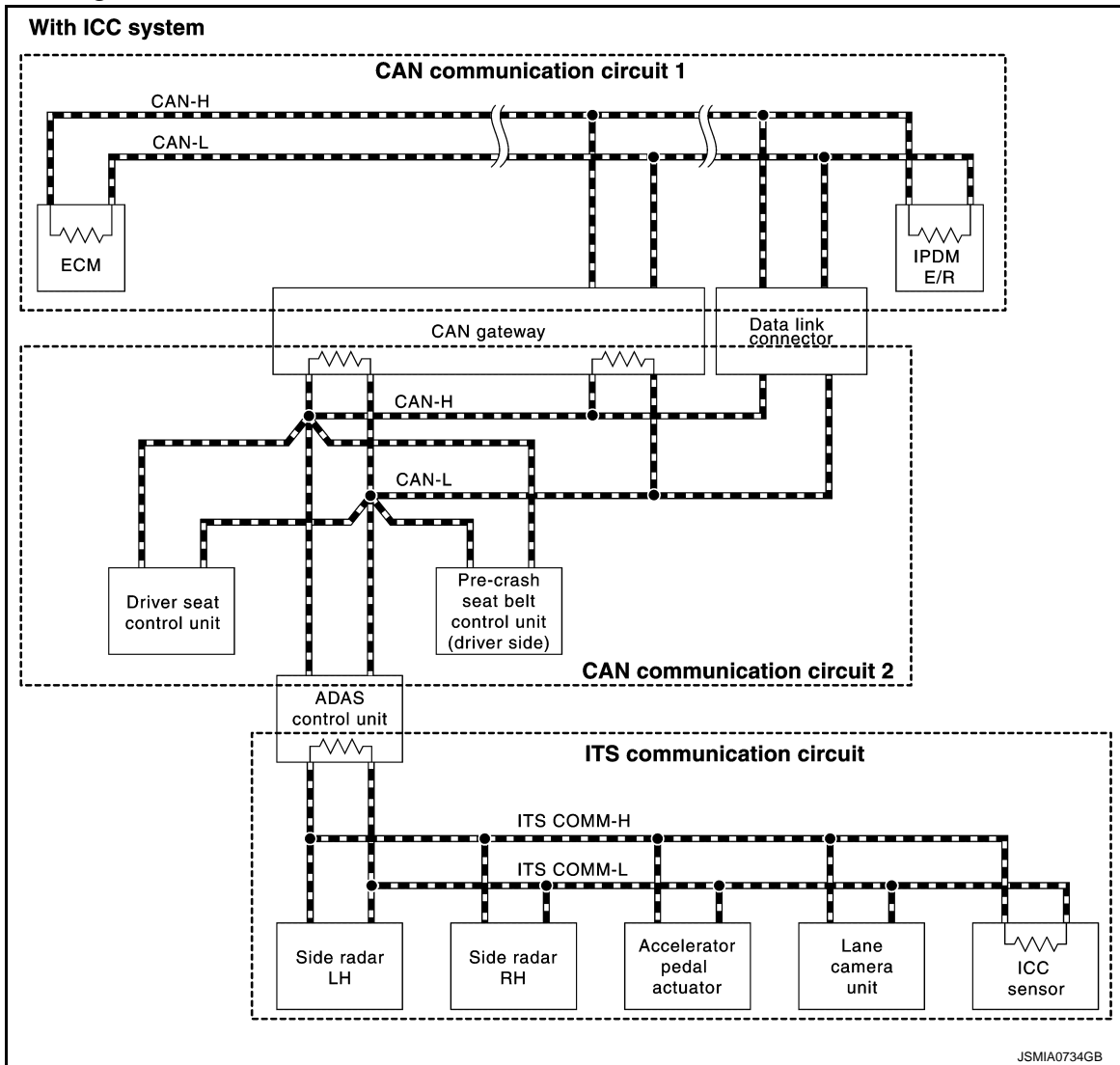
[CAN]

DTC/CIRCUIT DIAGNOSIS

MALFUNCTION AREA CHART

System Diagram

INFOID:000000008133200



CAN Communication Circuit

INFOID:000000008133201

MAIN LINE

Malfunction area	Reference
Main line between low tire pressure warning control unit and A/C auto amp.	LAN-53, "Diagnosis Procedure"
Main line between A/C auto amp. and air bag diagnosis sensor unit	LAN-54, "Diagnosis Procedure"
Main line between air bag diagnosis sensor unit and AV control unit	LAN-55, "Diagnosis Procedure"
Main line between AV control unit and combination meter	LAN-56, "Diagnosis Procedure"
Main line between combination meter and data link connector	LAN-57, "Diagnosis Procedure"
Main line between data link connector and BCM	LAN-58, "Diagnosis Procedure"
Main line between BCM and ABS actuator and electric unit (control unit)	LAN-59, "Diagnosis Procedure"
Main line between BCM and AWD control unit	LAN-61, "Diagnosis Procedure"
Main line between BCM and driver seat control unit	LAN-62, "Diagnosis Procedure"

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Main line between BCM and 4WAS main control unit	LAN-63, "Diagnosis Procedure"
Main line between AWD control unit and ABS actuator and electric unit (control unit)	LAN-64, "Diagnosis Procedure"
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-66, "Diagnosis Procedure"
Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)	LAN-68, "Diagnosis Procedure"
Main line between data link connector and driver seat control unit	LAN-70, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	LAN-75, "Diagnosis Procedure"
Low tire pressure warning control unit branch line circuit	LAN-77, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-78, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-79, "Diagnosis Procedure"
A/C auto amp. branch line circuit	LAN-80, "Diagnosis Procedure"
TCM branch line circuit	LAN-81, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-83, "Diagnosis Procedure"
TCU branch line circuit	LAN-84, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-85, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-87, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 1)	LAN-89, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 2)	LAN-90, "Diagnosis Procedure"
BCM branch line circuit	LAN-91, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-92, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-93, "Diagnosis Procedure"
4WAS main control unit branch line circuit	LAN-94, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-95, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-96, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-97, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-98, "Diagnosis Procedure"
ADAS control unit branch line circuit	LAN-99, "Diagnosis Procedure"
Pre-crash seat belt control unit (driver side) branch line circuit	LAN-100, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit (Without ICC system)	LAN-106, "Diagnosis Procedure"
CAN communication circuit 1 (With ICC system)	LAN-108, "Diagnosis Procedure"
CAN communication circuit 2 (With ICC system)	LAN-110, "Diagnosis Procedure"

ITS Communication Circuit

INFOID:000000008133202

MAIN LINE

Malfunction area	Reference
Main line between side radar LH and side radar RH	LAN-71, "Diagnosis Procedure"
Main line between side radar RH and accelerator pedal actuator	LAN-72, "Diagnosis Procedure"
Main line between accelerator pedal actuator and lane camera unit	LAN-74, "Diagnosis Procedure"

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

BRANCH LINE

Malfunction area	Reference
Side radar LH branch line circuit	LAN-101. "Diagnosis Procedure"
Side radar RH branch line circuit	LAN-102. "Diagnosis Procedure"
Accelerator pedal actuator branch line circuit	LAN-103. "Diagnosis Procedure"
Lane camera unit branch line circuit	LAN-104. "Diagnosis Procedure"
ICC sensor branch line circuit	LAN-105. "Diagnosis Procedure"

SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	LAN-112. "Diagnosis Procedure"

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008133203

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]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008133204

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

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008133205

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]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008133206

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]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008133207

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]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008133208

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]

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008133209

1. CHECK CONNECTOR

1. Turn the ignition 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).

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000008133210

1. CHECK CONNECTOR

1. Turn the ignition 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 BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008133211

1. CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000008133212

1. CHECK CONNECTOR

1. Turn the ignition 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 4WAS main control unit.
NO >> Replace the body harness.

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MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008133213

1. CHECK CONNECTOR

1. Turn the ignition 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008133214

1. CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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 RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008133215

1. CHECK CONNECTOR

1. Turn the ignition 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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS 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 DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008133216

1.CHECK CONNECTOR

1. Turn the ignition 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:000000008133217

1. CHECK CONNECTOR

1. Turn the ignition 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:000000008133218

1.CHECK CONNECTOR

1. Turn the ignition 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	40	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:000000008133219

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:000000008133220

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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:000000008133221

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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:000000008133222

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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:000000008133223

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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:000000008133224

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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:000000008133225

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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:000000008133226

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-24. "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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LAN

TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486648

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-343, "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:000000008133227

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265, "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:000000008133228

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133229

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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:000000008133230

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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:000000008133231

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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:000000008133232

1. CHECK CONNECTOR

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

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-79. "Removal and Installation"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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:000000008133233

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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:000000008133234

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-43, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

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RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133235

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the 4WAS main control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 4WAS main control unit.
2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-160, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-174, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133236

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133237

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133238

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133239

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008133240

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133241

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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:000000008133242

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-513, "SIDE RADAR LH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "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]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133243

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-516. "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-514. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530. "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]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133244

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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:000000008133245

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008133246

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008133247

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

[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.

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CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008133248

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-50. "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]

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]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008133249

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-50. "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]

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]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008133250

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-50. "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]

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

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.

P

LAN

PRECAUTION

PRECAUTIONS

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

INFOID:000000008133251

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.

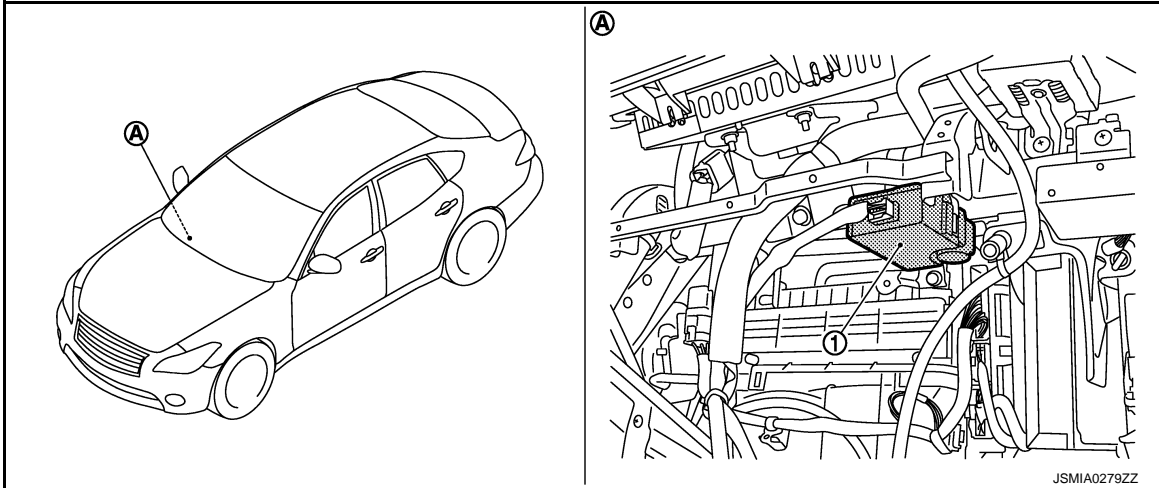
- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious 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.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000008133252



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

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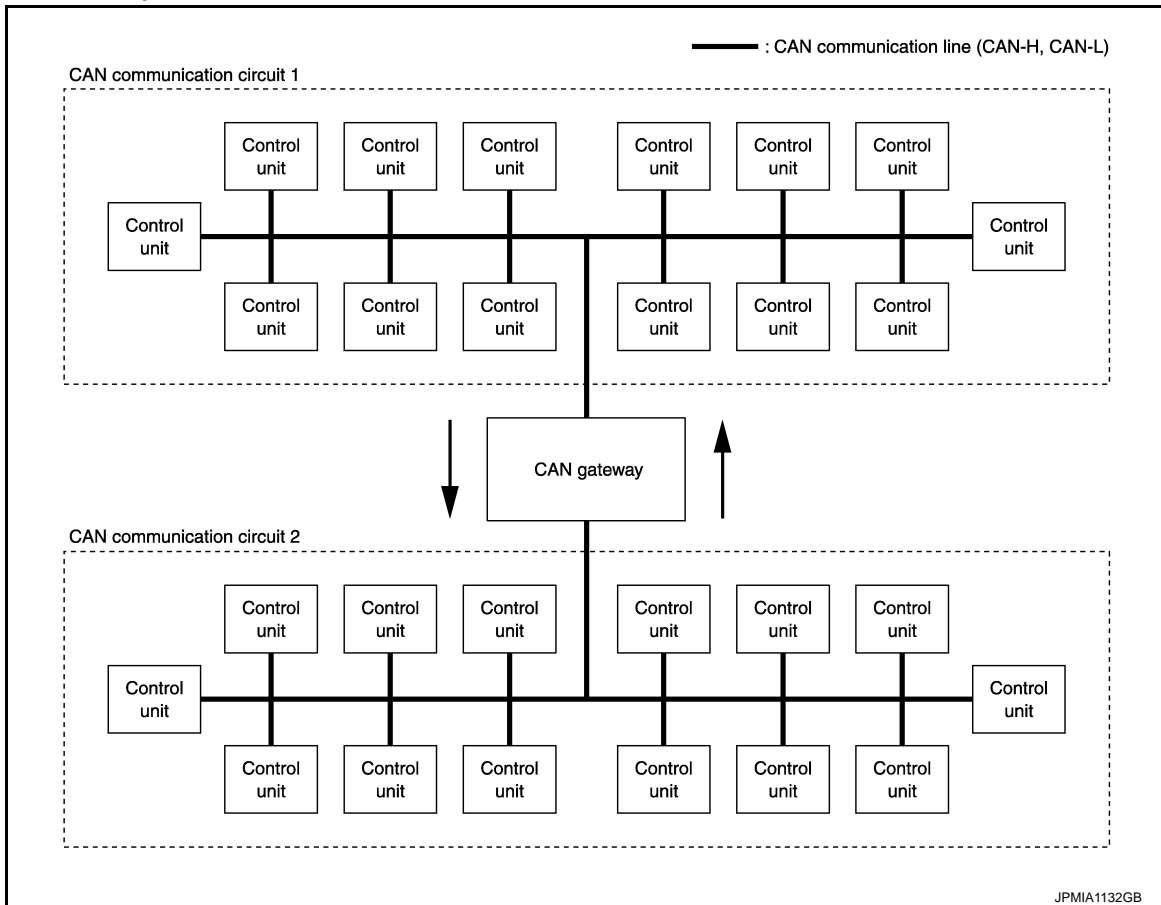
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SYSTEM

System Description

INFOID:000000008133253



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

DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

[CAN GATEWAY]

DIAGNOSIS SYSTEM (CAN GATEWAY)

CONSULT Function

INFOID:000000008133254

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-118, "DTC Index"](#).

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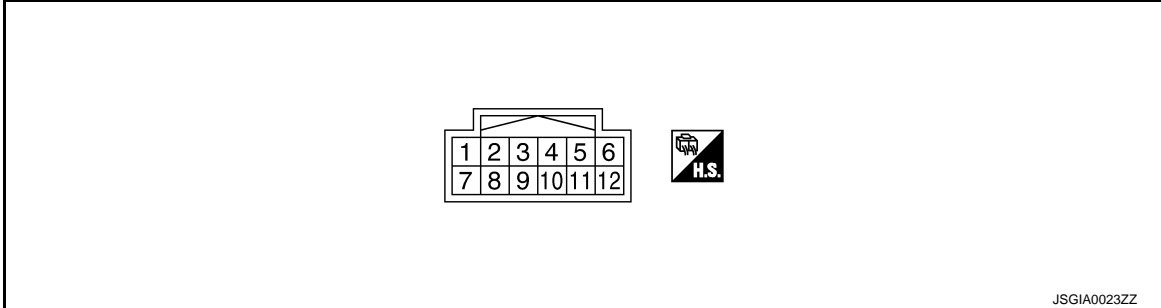
ECU DIAGNOSIS INFORMATION

CAN GATEWAY

Reference Value

INFOID:000000008133255

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:000000008133256

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:000000008133257

NOTE:

CAN GATEWAY

< ECU DIAGNOSIS INFORMATION >

[CAN GATEWAY]

- 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-123
U1010: CONTROL UNIT(CAN)		LAN-124
B2600: CONFIG ERROR	WRONG DATA	LAN-125
	NOT CONFIGURED	

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
LAN

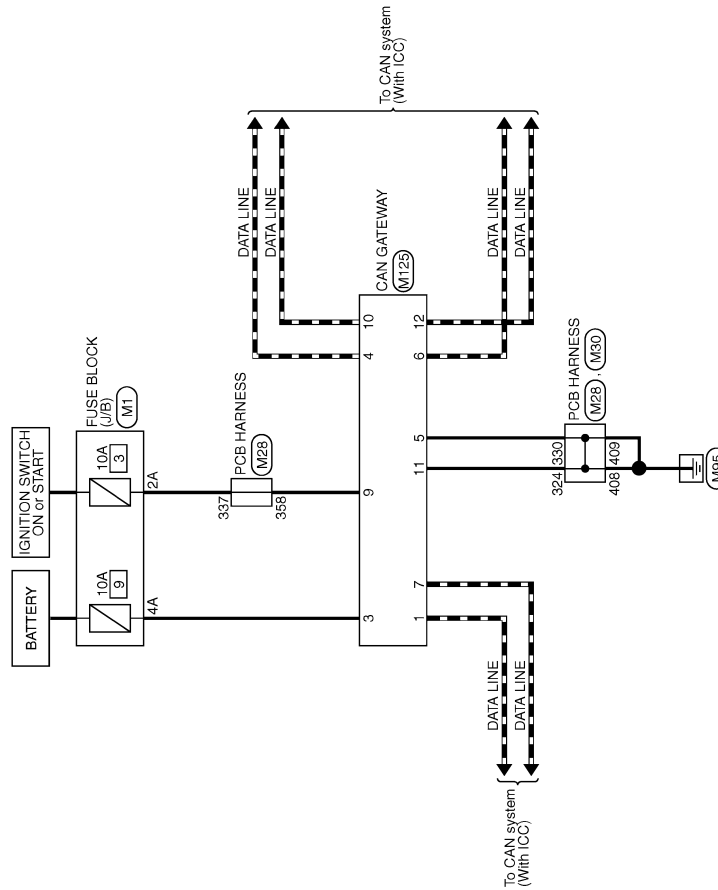
WIRING DIAGRAM

CAN GATEWAY SYSTEM

Wiring Diagram

INFOID:000000008133258

For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-12. "Connector Information"](#).



CAN GATEWAY SYSTEM

2010/12/14

JCMWA7318GB

BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

Description

INFOID:000000008133259

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:000000008133260

1.SAVING VEHICLE SPECIFICATION

ⓂCONSULT Configuration

Perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-122. "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-127. "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-122. "Work Procedure"](#).

>> WORK END

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LAN

CONFIGURATION (CAN GATEWAY)

Description

INFOID:000000008133261

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:000000008133262

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:000000008133263

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-37, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000008133264

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:000000008133265

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-27, "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

LAN

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000008133266

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-37. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000008133267

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:000000008133268

1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).

B2600 CONFIG ERROR

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

B2600 CONFIG ERROR

Description

INFOID:000000008133269

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

DTC Logic

INFOID:000000008133270

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:000000008133271

1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-127, "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:000000008133272

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:000000008133273

CAUTION:

Before replacing CAN gateway, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-121, "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-121, "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:000000008486652

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:000000008486653

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:000000008486654

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:000000008486655

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:000000008486656

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:000000008486657

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:000000008486660

1.CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008486663

1. CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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)]

-
- 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:000000008486669

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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:000000008486670

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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:000000008486673

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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:000000008486674

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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:000000008486675

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-24. "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 1)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486677

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238. "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-105. "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265. "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.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486678

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 1)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486679

1. CHECK CONNECTOR

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486682

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 1)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486683

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 1)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486686

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-120. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142. "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 1)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486688

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 1)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486689

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008486697

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 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.

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:000000008486704

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 2)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008486705

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 2)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008486706

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 2)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008486707

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 2)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008486708

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 2)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008486709

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 2)]

MAIN LINE BETWEEN BCM AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008486712

1.CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.
NO-2 >> 2WD models without 4WAS: Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008486715

1. CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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 2)]

- 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 2)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486721

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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

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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 2)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486722

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 2)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486725

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133. "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163. "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 2)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486726

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 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.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486727

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-24. "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 2)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486728

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 2)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486729

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238. "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-105. "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265. "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.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486730

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 2)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486731

1. CHECK CONNECTOR

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486734

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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:000000008486735

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 2)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486738

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-120. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142. "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 2)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486740

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 2)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486741

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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 2)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008486749

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 2)]

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the “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 3)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008486756

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:000000008486757

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:000000008486758

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:000000008486759

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:000000008486760

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:000000008486761

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:000000008486764

1.CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008486767

1. CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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:000000008486773

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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

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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 3)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486774

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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:000000008486777

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133. "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163. "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:000000008486778

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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:000000008486779

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-24. "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:000000008486780

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-343, "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:000000008486781

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238. "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-105. "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265. "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:000000008486782

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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:000000008486783

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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:000000008486786

1.CHECK CONNECTOR

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

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-79. "Removal and Installation"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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:000000008486787

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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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RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486789

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the 4WAS main control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 4WAS main control unit.
2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-160, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-174, "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486790

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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 3)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486792

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 3)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486793

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008486801

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 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.

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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:000000008486809

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 4)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008486810

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 4)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008486811

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 4)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008486812

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 4)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008486813

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 4)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008486814

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 4)]

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008486815

1. CHECK CONNECTOR

1. Turn the ignition 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 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).

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008486822

1. CHECK CONNECTOR

1. Turn the ignition 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 4)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000008486823

1.CHECK CONNECTOR

1. Turn the ignition 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 4)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000008486824

1.CHECK CONNECTOR

1. Turn the ignition 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 4)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000008486825

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 4)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486826

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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

- 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 4)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486827

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 4)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008486828

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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 4)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008486829

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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:000000008486830

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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 4)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486831

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 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.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486832

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-24. "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 4)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486833

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 4)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486834

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265, "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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486835

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 4)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008486837

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 4)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008486838

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 4)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486839

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 4)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486840

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 4)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486843

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-120. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142. "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 4)]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486844

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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 4)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486845

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 4)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486846

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008486847

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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 SYSTEM (TYPE 4)]

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486848

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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 4)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486849

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-513, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "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 4)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486850

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-516, "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-514, "SIDE RADAR RH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530, "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 4)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486851

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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:000000008486852

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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 4)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486853

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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 4)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008486855

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-50. "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 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.

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008486856

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-50. "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 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.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008486857

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-50. "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 4)]

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 5)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008486861

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 5)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008486862

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 5)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008486863

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 5)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008486864

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 5)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008486865

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 5)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008486866

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 RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000008486870

1. CHECK CONNECTOR

1. Turn the ignition 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 4WAS main control unit.

NO >> Replace the body harness.

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008486873

1. CHECK CONNECTOR

1. Turn the ignition 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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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 5)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008486874

1.CHECK CONNECTOR

1. Turn the ignition 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 5)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000008486875

1.CHECK CONNECTOR

1. Turn the ignition 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 5)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000008486876

1.CHECK CONNECTOR

1. Turn the ignition 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	40	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 5)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000008486877

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 5)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486878

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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:000000008486879

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 5)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008486880

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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 5)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008486881

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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 5)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486882

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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:000000008486883

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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:000000008486884

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-24. "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 5)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486885

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 5)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486886

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265, "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.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486887

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 5)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008486889

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 5)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008486890

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 5)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486891

1. CHECK CONNECTOR

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

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-79. "Removal and Installation"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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:000000008486892

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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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RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486894

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the 4WAS main control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 4WAS main control unit.
2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-160, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-174, "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486895

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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 5)]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486896

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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 5)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486897

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 5)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486898

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008486899

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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:000000008486900

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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 5)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486901

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-513, "SIDE RADAR LH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "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 5)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486902

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-516. "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-514. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530. "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 5)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486903

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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 5)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486904

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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 5)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486905

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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 5)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008486907

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-50. "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 5)]

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 5)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008486908

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-50. "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 5)]

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 5)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008486909

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-50. "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 5)]

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.

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 6)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008486919

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:000000008486920

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:000000008486921

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:000000008486922

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:000000008486923

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:000000008486924

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:000000008486927

1. CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008486930

1. CHECK CONNECTOR

1. Turn the ignition 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 >> With 4WAS or AWD models: Replace the body harness.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		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)]

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:000000008486936

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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:000000008486937

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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:000000008486940

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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:000000008486941

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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:000000008486942

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-24. "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:000000008486943

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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:000000008486944

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-265, "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:000000008486945

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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:000000008486946

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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:000000008486949

1.CHECK CONNECTOR

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

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-79. "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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:000000008486950

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 6)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486953

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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 6)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486955

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 6)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486956

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008486964

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 6)]

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 7)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008486971

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 7)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008486972

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 7)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008486973

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 7)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008486974

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 7)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008486975

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 7)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008486976

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 7)]

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008486977

1. CHECK CONNECTOR

1. Turn the ignition 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 7)]

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 7)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008486984

1. CHECK CONNECTOR

1. Turn the ignition 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:000000008486985

1. CHECK CONNECTOR

1. Turn the ignition 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:000000008486986

1.CHECK CONNECTOR

1. Turn the ignition 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:000000008486987

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:000000008486988

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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:000000008486989

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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:000000008486990

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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:000000008486991

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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:000000008486992

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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:000000008486993

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 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:000000008486994

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-24. "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:000000008486995

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 7)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008486996

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265, "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:000000008486997

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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:000000008486999

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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:000000008487000

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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:000000008487001

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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:000000008487002

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 7)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487005

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-120. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142. "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 7)]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487006

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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 7)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487007

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 7)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487008

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008487009

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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:000000008487010

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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 7)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487011

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-513, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the side radar LH branch line.
NO >> Repair the power supply and the ground circuit.

RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487012

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-516. "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-514. "SIDE RADAR RH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530. "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 7)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487013

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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:000000008487014

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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 7)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487015

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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 7)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008487017

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-50. "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 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.

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008487018

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-50. "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 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.

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008487019

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-50. "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 7)]

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 8)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008487023

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 8)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008487024

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 8)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008487025

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 8)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008487026

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 8)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008487027

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 8)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008487028

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 RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN BCM AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000008487032

1. CHECK CONNECTOR

1. Turn the ignition 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 4WAS main control unit.
NO >> Replace the body harness.

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008487035

1. CHECK CONNECTOR

1. Turn the ignition 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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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 8)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008487036

1.CHECK CONNECTOR

1. Turn the ignition 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 8)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000008487037

1.CHECK CONNECTOR

1. Turn the ignition 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 8)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000008487038

1.CHECK CONNECTOR

1. Turn the ignition 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 8)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000008487039

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 8)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487040

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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:000000008487041

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 8)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008487042

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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 8)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008487043

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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 8)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487044

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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:000000008487045

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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:000000008487046

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-24. "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:000000008487047

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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:000000008487048

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-265, "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:000000008487049

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 8)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008487051

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 8)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008487052

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 8)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487053

1. CHECK CONNECTOR

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

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-79. "Removal and Installation"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 8)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487054

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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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RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487056

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the 4WAS main control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 4WAS main control unit.
2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-160, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-174, "Removal and Installation"](#).
 YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487057

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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 8)]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487058

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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 8)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487059

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 8)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487060

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008487061

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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:000000008487062

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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 8)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487063

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-513, "SIDE RADAR LH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "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 8)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487064

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-516. "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-514. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530. "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 8)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487065

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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 8)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487066

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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 8)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487067

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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 8)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008487069

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-50. "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 8)]

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 8)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008487070

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-50. "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 8)]

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 8)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008487071

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-50. "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 8)]

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

A
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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

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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.

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.

P

LAN

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:000000008487075

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 9)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008487076

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 9)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008487077

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 9)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008487078

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 9)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008487079

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 9)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008487080

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 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000008487082

1. CHECK CONNECTOR

1. Turn the ignition 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 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008487085

1. CHECK CONNECTOR

1. Turn the ignition 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).

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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).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487092

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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:000000008487093

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 9)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487096

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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:000000008487097

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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:000000008487098

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-24. "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 9)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487100

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238. "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-105. "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265. "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.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487101

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 9)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487102

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 9)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487105

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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:000000008487106

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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:000000008487107

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-43, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487109

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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 9)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487111

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 9)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487112

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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 9)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008487120

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 9)]

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 10)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008487127

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 10)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008487128

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 10)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008487129

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 10)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008487130

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 10)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008487131

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 10)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008487132

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 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000008487134

1. CHECK CONNECTOR

1. Turn the ignition 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 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008487137

1. CHECK CONNECTOR

1. Turn the ignition 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).

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MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487144

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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 10)]

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 10)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487145

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 10)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487148

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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 10)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487149

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 10)]

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 10)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487150

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-24. "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 10)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487151

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 10)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487152

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-265, "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 10)]

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 10)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487153

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 10)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487154

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 10)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487157

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 10)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487158

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 10)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487159

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-43, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487161

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-120. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142. "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 10)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487163

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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:000000008487164

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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 10)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008487172

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 10)]

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 11)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008487179

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 11)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008487180

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 11)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008487181

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 11)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008487182

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 11)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008487183

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 11)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008487184

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 11)]

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000008487186

1. CHECK CONNECTOR

1. Turn the ignition 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 11)]

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008487189

1. CHECK CONNECTOR

1. Turn the ignition 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 11)]

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 11)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008487192

1. CHECK CONNECTOR

1. Turn the ignition 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 11)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000008487193

1. CHECK CONNECTOR

1. Turn the ignition 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 11)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000008487194

1.CHECK CONNECTOR

1. Turn the ignition 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 11)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000008487195

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 11)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487196

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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 11)]

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 11)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487197

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 11)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008487198

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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 11)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008487199

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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 11)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487200

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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 11)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487201

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 11)]

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 11)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487202

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-24. "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 11)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487203

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 11)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487204

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265, "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

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

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 11)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487205

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 11)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008487207

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 11)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008487208

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 11)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487209

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 11)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487210

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 11)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487211

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-43, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487213

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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:000000008487214

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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 11)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487215

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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:000000008487216

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008487217

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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:000000008487218

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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 11)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487219

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-513, "SIDE RADAR LH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "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 11)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487220

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-516. "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-514. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530. "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 11)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487221

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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 11)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487222

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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 11)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487223

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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 11)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008487225

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-50. "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 11)]

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 11)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008487226

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-50. "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 11)]

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 11)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008487227

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-50. "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 11)]

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	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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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 12)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008487238

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 12)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008487239

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 12)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008487240

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 12)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008487241

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 12)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008487242

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 12)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008487243

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 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000008487245

1.CHECK CONNECTOR

1. Turn the ignition 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 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008487248

1. CHECK CONNECTOR

1. Turn the ignition 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).

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MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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 12)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487255

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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 12)]

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 12)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487256

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 12)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487259

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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 12)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487260

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 12)]

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 12)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487261

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-24. "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 12)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487262

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 12)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487263

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265, "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 12)]

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 12)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487264

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 12)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487265

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 12)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487268

1. CHECK CONNECTOR

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

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-79. "Removal and Installation"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 12)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487269

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 12)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487270

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-43, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487272

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-120. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142. "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 12)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487274

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 12)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487275

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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 12)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008487283

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 12)]

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 13)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008487290

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 13)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008487291

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 13)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008487292

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 13)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008487293

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 13)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008487294

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 13)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008487295

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 13)]

MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

Diagnosis Procedure

INFOID:000000008487297

1. CHECK CONNECTOR

1. Turn the ignition 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 13)]

MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008487300

1. CHECK CONNECTOR

1. Turn the ignition 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 13)]

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 13)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008487303

1.CHECK CONNECTOR

1. Turn the ignition 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 13)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000008487304

1.CHECK CONNECTOR

1. Turn the ignition 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 13)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000008487305

1.CHECK CONNECTOR

1. Turn the ignition 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 13)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000008487306

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 13)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487307

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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 13)]

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 13)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487308

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 13)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008487309

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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 13)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008487310

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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 13)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487311

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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 13)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487312

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 13)]

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 13)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487313

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-24. "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 13)]

TCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487314

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-334, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-343, "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 13)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487315

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238, "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-105, "Removal and Installation"](#)
 - BOSE audio with navigation system: [AV-265, "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 13)]

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 13)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487316

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 13)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008487318

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 13)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008487319

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 13)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487320

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

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

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 13)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487321

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 13)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487322

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-43, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487324

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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:000000008487325

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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 13)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487326

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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 13)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487327

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008487328

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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:000000008487329

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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 13)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487330

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-513, "SIDE RADAR LH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "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 13)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487331

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-516. "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-514. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530. "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 13)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487332

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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 13)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487333

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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 13)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008487334

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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 13)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008487336

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-50. "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 13)]

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 13)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008487337

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-50. "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 13)]

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 13)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008487338

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-50. "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 13)]

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	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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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 14)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

Diagnosis Procedure

INFOID:000000008489145

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 14)]

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Diagnosis Procedure

INFOID:000000008489146

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 14)]

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000008489147

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 14)]

MAIN LINE BETWEEN AV AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000008489148

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 14)]

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008489149

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 14)]

MAIN LINE BETWEEN DLC AND BCM CIRCUIT

Diagnosis Procedure

INFOID:000000008489150

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 14)]

MAIN LINE BETWEEN BCM AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008489151

1. CHECK CONNECTOR

1. Turn the ignition 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 14)]

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 DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008489158

1. CHECK CONNECTOR

1. Turn the ignition 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 14)]

MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

Diagnosis Procedure

INFOID:000000008489159

1. CHECK CONNECTOR

1. Turn the ignition 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 14)]

MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

Diagnosis Procedure

INFOID:000000008489160

1.CHECK CONNECTOR

1. Turn the ignition 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 14)]

NO >> Replace the PCB harness.

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MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN APA AND LANE CIRCUIT

Diagnosis Procedure

INFOID:000000008489161

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 14)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489162

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-182, "Diagnosis Procedure"](#)
- VQ37VHR for Mexico: [EC-677, "Diagnosis Procedure"](#)
- VK56VD for USA and Canada: [EC-1108, "Diagnosis Procedure"](#)
- VK56VD for Mexico: [EC-1663, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and Canada: [EC-539, "Removal and Installation"](#)
- VQ37VHR for Mexico: [EC-938, "Removal and Installation"](#)
- VK56VD for USA and Canada: [EC-1508, "Removal and Installation"](#)
- VK56VD for Mexico: [EC-1952, "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 14)]

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 14)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489163

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-44. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-59. "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 14)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008489164

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-126, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-50, "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 14)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008489165

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-126. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-127. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-50. "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 14)]

HVAC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489166

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-133, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-163, "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 14)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489167

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-183, "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-152, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-183, "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 14)]

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 14)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489168

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-24. "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 14)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489170

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-73. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation system: [AV-238. "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-105. "Removal and Installation"](#)
- BOSE audio with navigation system: [AV-265. "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 14)]

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:000000008489171

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-59. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-79. "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 14)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000008489173

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 14)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000008489174

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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 14)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489175

1.CHECK CONNECTOR

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

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-79. "Removal and Installation"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.
2. Check the continuity between the BCM harness connector and the harness connector.

BCM 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 14)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489176

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-145. "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 14)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489179

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-120, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-142, "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:000000008489180

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-73, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-114, "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 14)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489181

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-31, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-32, "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:000000008489182

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-61, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-134, "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:000000008489183

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-55, "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:000000008489184

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-50, "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-46, "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 14)]

RDR-L BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489185

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-513, "SIDE RADAR LH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-530, "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 14)]

RDR-R BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489186

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-516. "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-514. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-530. "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 14)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489187

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-179, "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 14)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489188

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-357, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-373, "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 14)]

LASER BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008489189

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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-153, "ICC SENSOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-171, "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 14)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:000000008489191

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-50. "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 14)]

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 14)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000008489192

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-50. "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 14)]

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 14)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008489193

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-50. "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 14)]

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

A
B

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.

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.

P

LAN