

SECTION

LAN

LAN SYSTEM

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PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

INFOID:000000010585248

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.

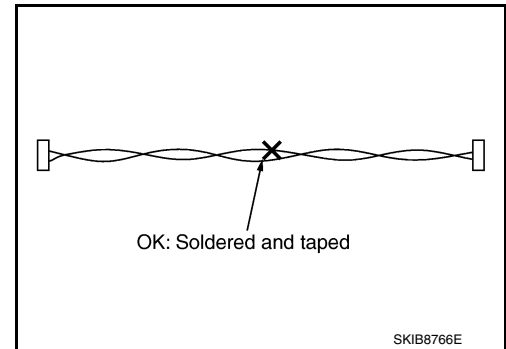
Precautions for Harness Repair

INFOID:000000010585249

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

NOTE:

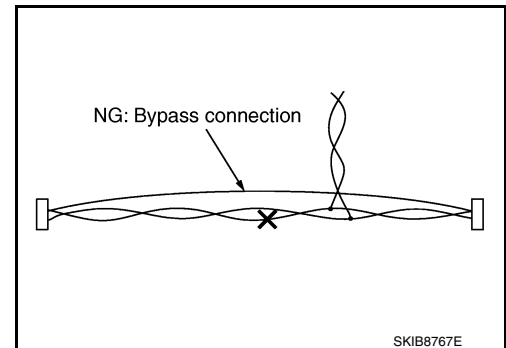
A fray of twisted lines must be within 110 mm (4.33 in).



- 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.

LAN

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

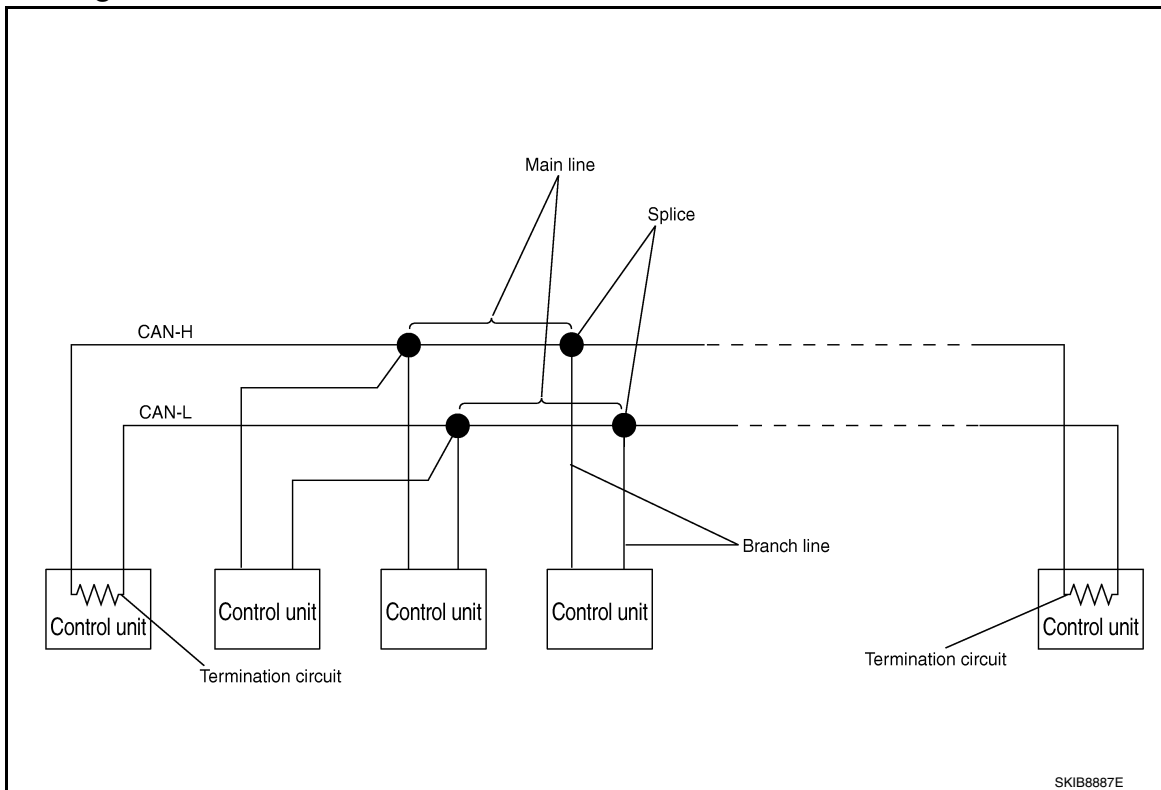
System Description

INFOID:0000000010585250

- 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.

System Diagram

INFOID:0000000010585251



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

Component	Description
Main line	CAN communication line between splices
Branch line	CAN communication line between splice and a control unit
Splice	A point connecting a branch line with a main line
Termination circuit	Refer to LAN-17, "CAN Communication Control Circuit" .

[CAN FUNDAMENTAL]

CAN Communication Control Circuit

The diagram illustrates the internal components of a control unit connected to a CAN bus. The components are arranged in a linear sequence from left to right:

- CAN controller**: The central processing unit for the CAN protocol.
- Transceiver IC**: Converts the digital signals from the controller into the differential voltage levels required for the bus.
- Noise filter**: Filters out high-frequency noise from the bus signals.
- Termination circuit**: Provides the necessary termination resistors to prevent signal reflections on the bus.
- Terminals**: The connection points for the bus wires.
- Connector**: The physical interface that connects the control unit's terminals to the external CAN bus.

The bus lines are labeled **CAN-H** and **CAN-L**. The communication between the CAN controller and the Transceiver IC is labeled **Tx** (transmission) and **Rx** (reception).

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

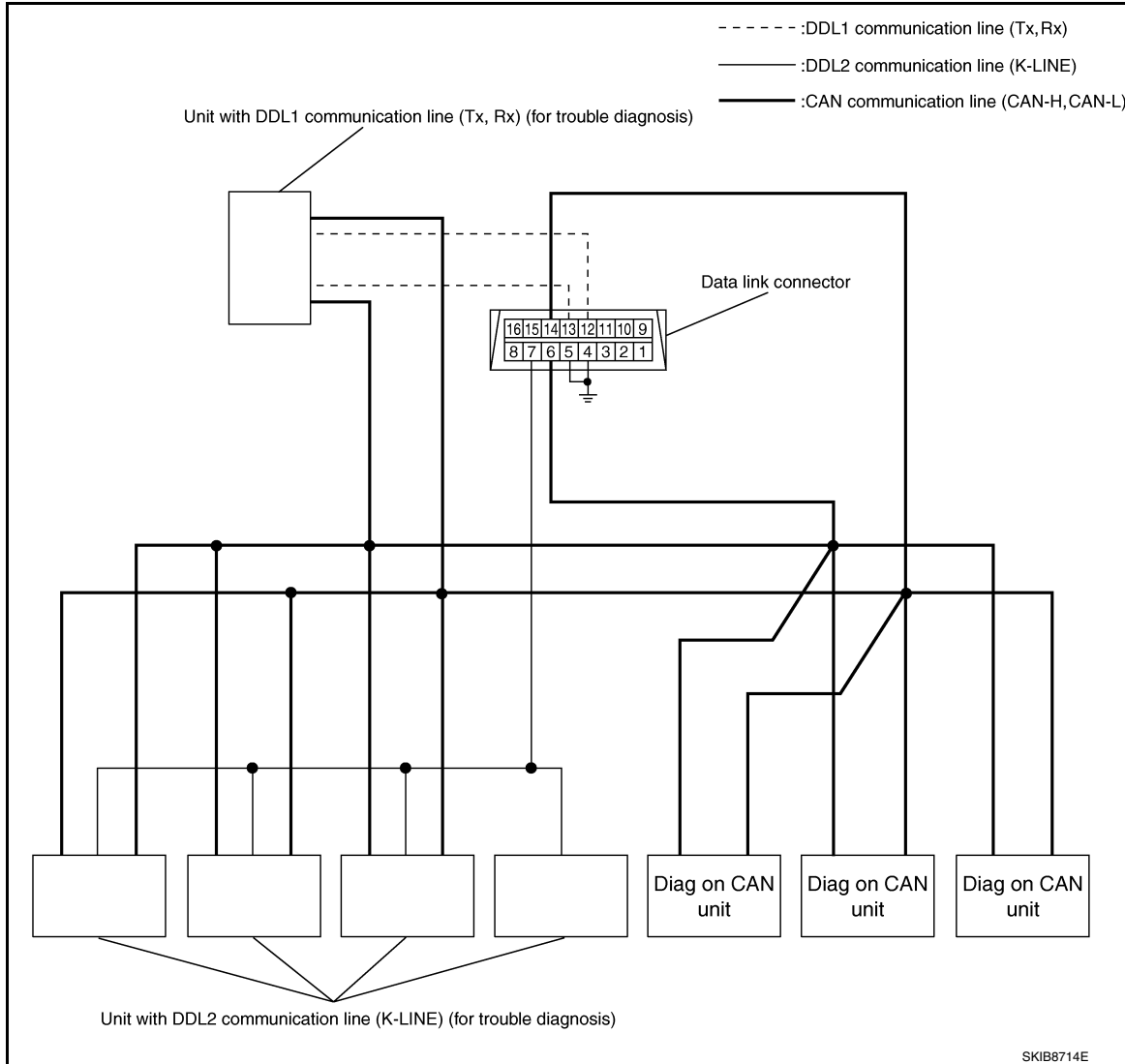
Description

INFOID:0000000010585253

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

System Diagram

INFOID:0000000010585254



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:000000010585255

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:000000010585256

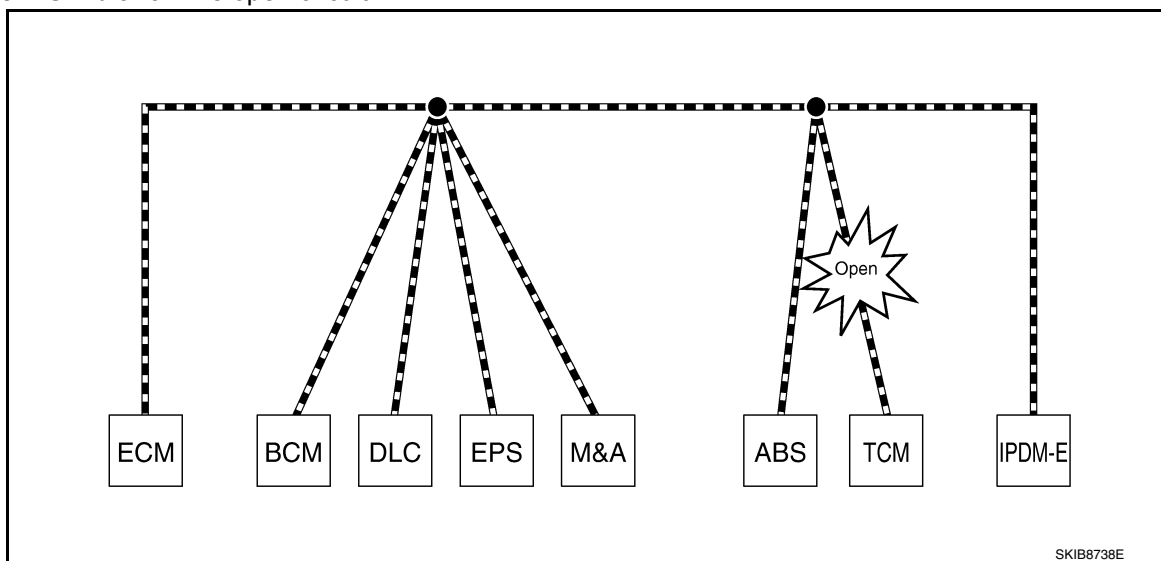
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

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

Example: TCM branch line open circuit



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

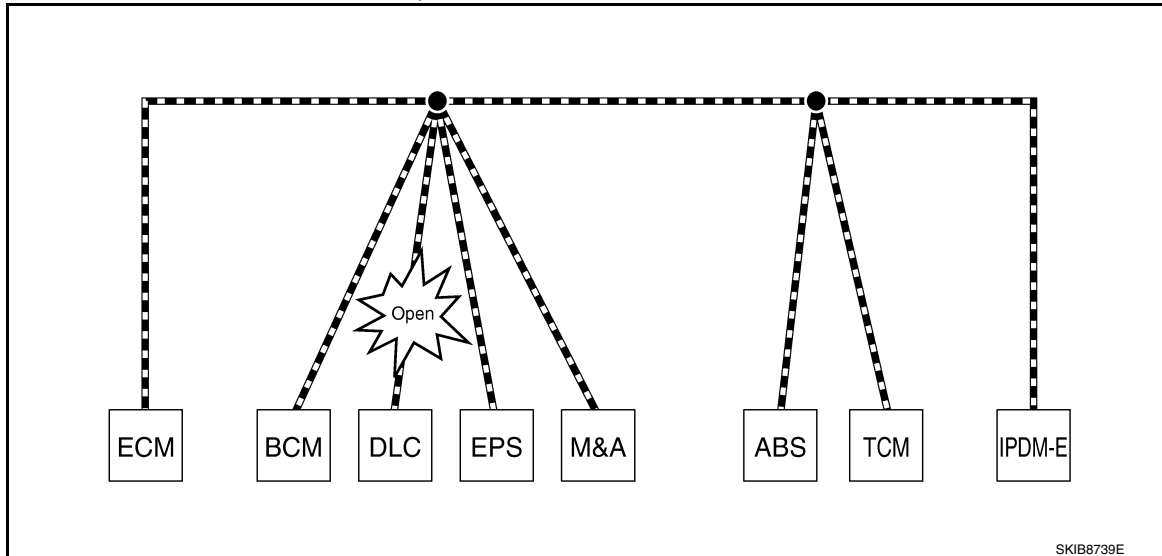
TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

Example: Data link connector branch line open circuit



Unit name	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.

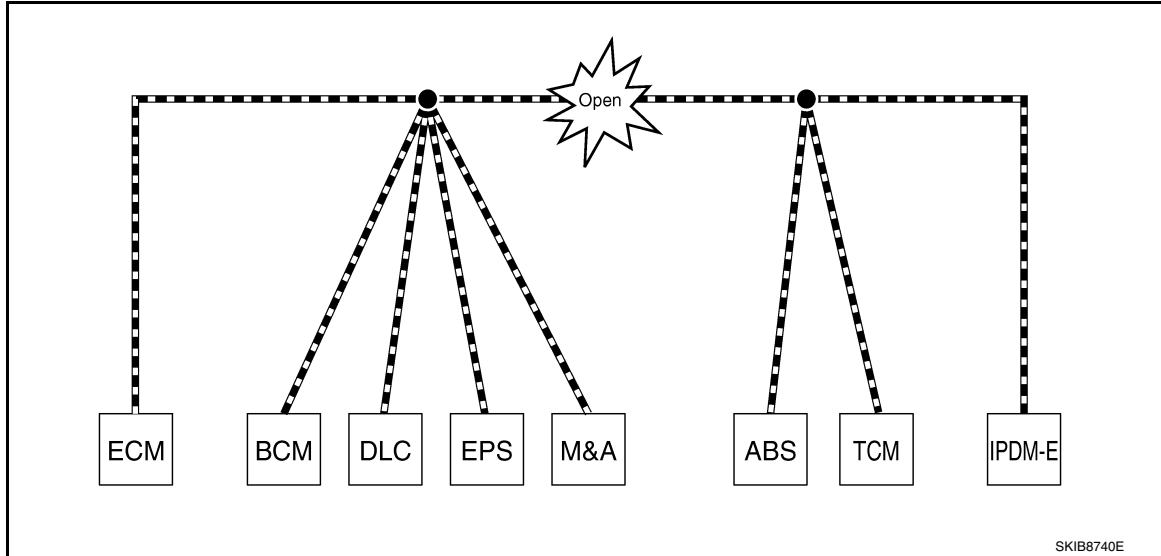
Error	Difference of symptom
Data link connector branch line open circuit	Normal operation.
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

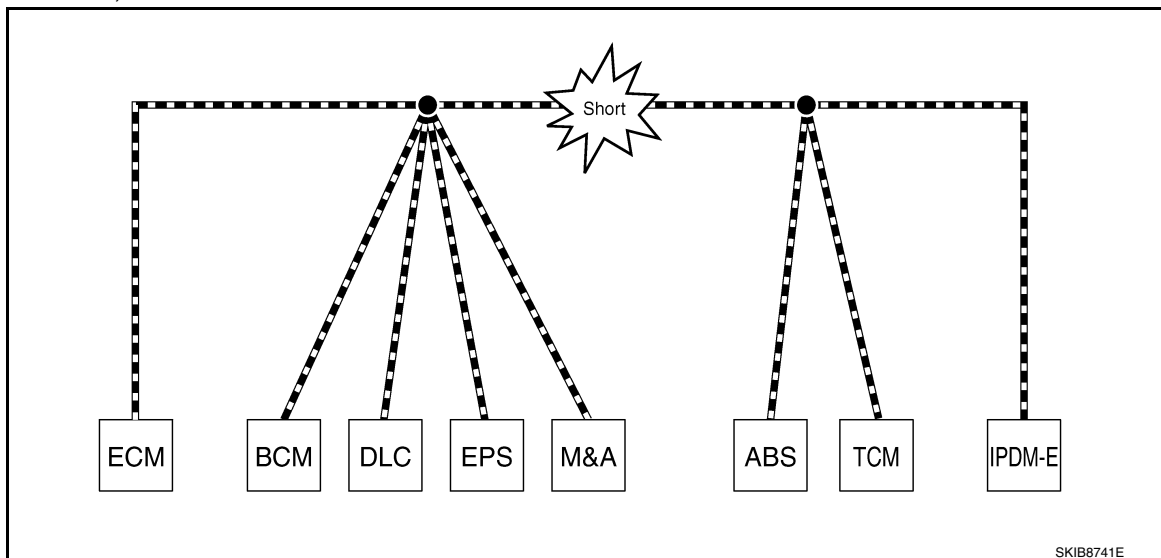
[CAN FUNDAMENTAL]

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



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

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



TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

CAN Diagnosis with CONSULT

INFOID:0000000010585257

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:0000000010585258

If communication signals cannot be transmitted or received among units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT "Self Diagnostic Result" screen.

NOTE:

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

DTC	Self-diagnosis item (CONSULT indication)	DTC detection condition		Inspection/Action
U1000	CAN COMM CIRCUIT	ECM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.	Start the inspection. Refer to the applicable section of the indicated control unit.
		Except for ECM	When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.	
U1001	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission-related diagnosis) for 2 seconds or more.		
U1002	SYSTEM COMM	When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less.		
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for CAN controller of each control unit.		
				Replace the control unit indicating “U1010”.

CAN Diagnostic Support Monitor

INFOID:0000000010585259

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	-

JSMIA0964GB

Without PAST

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

With PAST

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

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

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

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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:000000010585260

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.

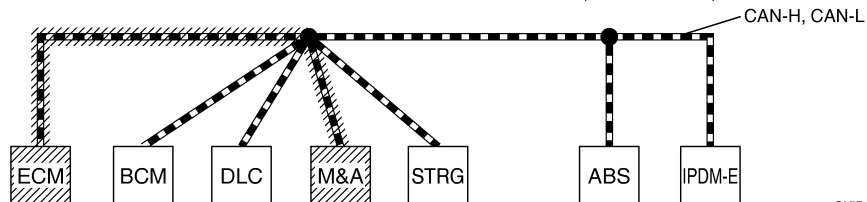
Example: Tachometer does not move even though the engine rotates.

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).



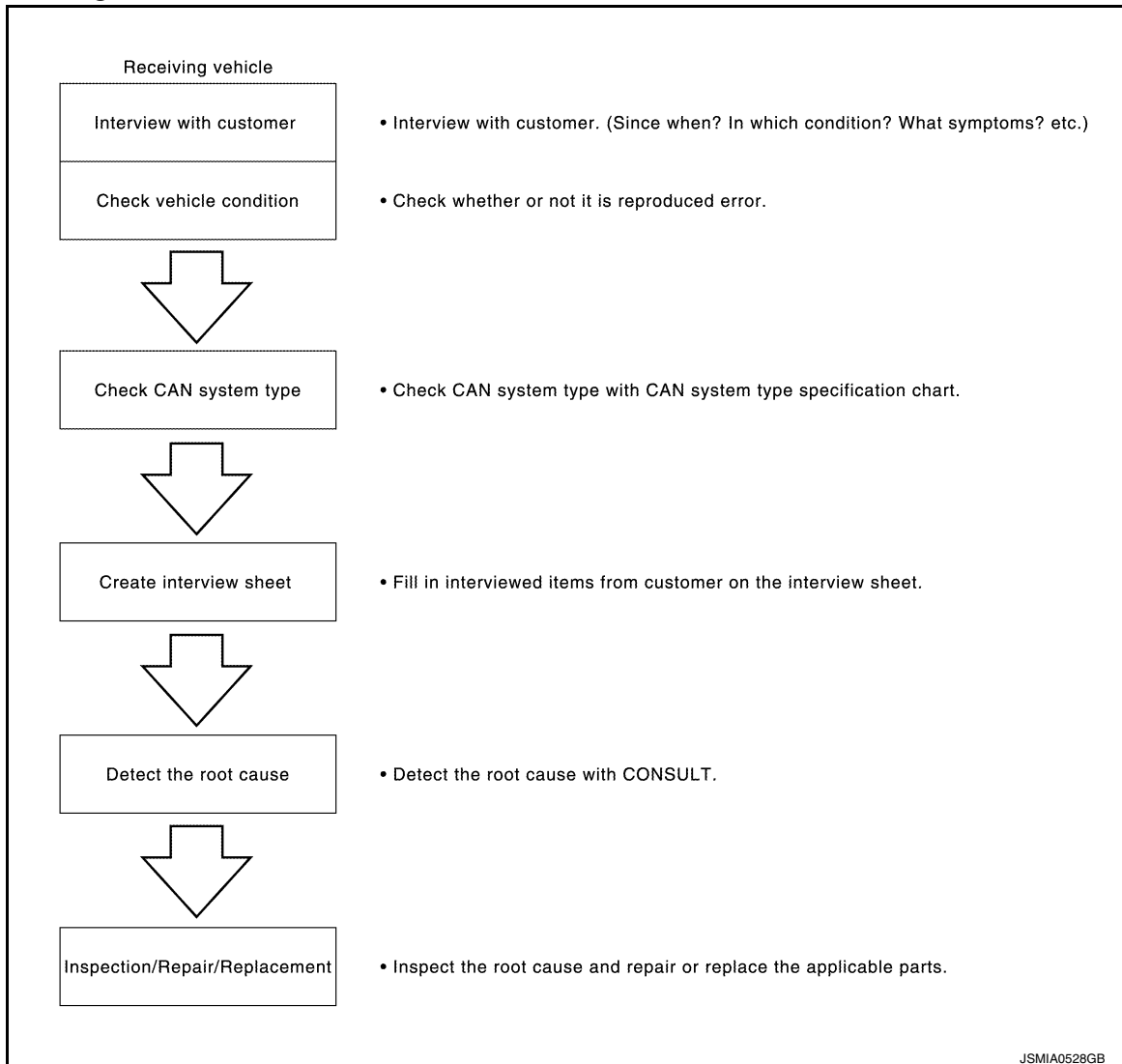
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

INFOID:0000000010585261



Trouble Diagnosis Procedure

INFOID:0000000010585262

INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

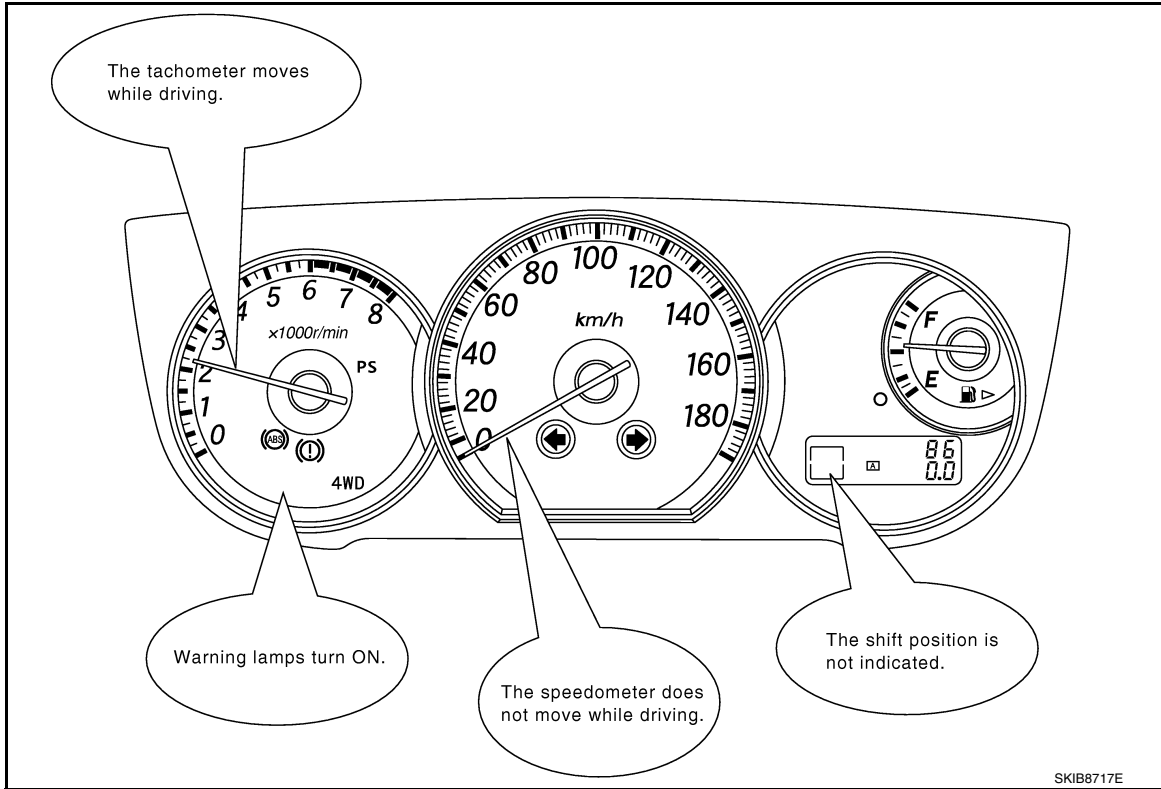
- Check normal units as well as error symptoms.
- Example: Circuit between ECM and the combination meter is judged normal if the customer indicates tachometer functions normally.
- When a CAN communication system error is present, multiple control units may malfunction or go into fail-safe mode.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

Determine CAN system type based on vehicle equipment.

NOTE:

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

CAN System Type Specification Chart (Style A)

NOTE:

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

Check the vehicle equipment with the vehicle identification number plate.

Check the vehicle equipment.

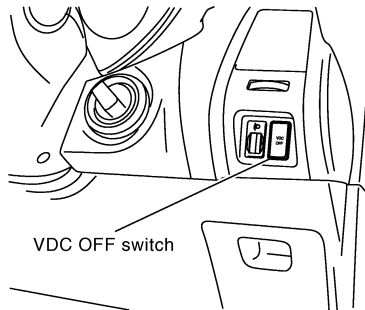
The number indicates the CAN system type of the vehicle.

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

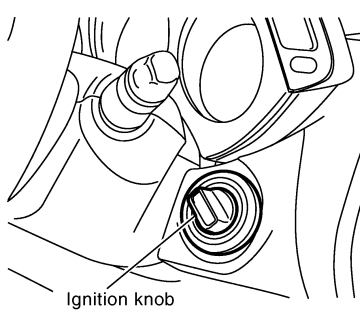
Check CAN system type from the vehicle shape and equipment.

With VDC



VDC OFF switch

With Intelligent Key system



Ignition knob

In the above example,
• Checking VDC OFF switch leads to judge whether or not VDC is equipped.

• Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped.

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

JSMIA0017GB

CAN System Type Specification Chart (Style B)

NOTE:

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

Example:

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

CAN System Specification Chart

Refer to the specification as shown in the chart.

Body type	Sedan		
Axle	2WD		AWD
Engine	HR15DE	MR20DE	HR15DE
Transmission	A/T	CVT	A/T
Brake control		ABS	
Specification chart	XXX SPECIFICATION CHART A	YYY SPECIFICATION CHART B	XXX SPECIFICATION CHART C

x: Applicable

Check the vehicle equipment with the vehicle identification number plate.

Check the vehicle equipment.

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

SPECIFICATION CHART B

Determine CAN system type from the following specification chart.

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

x: Applicable

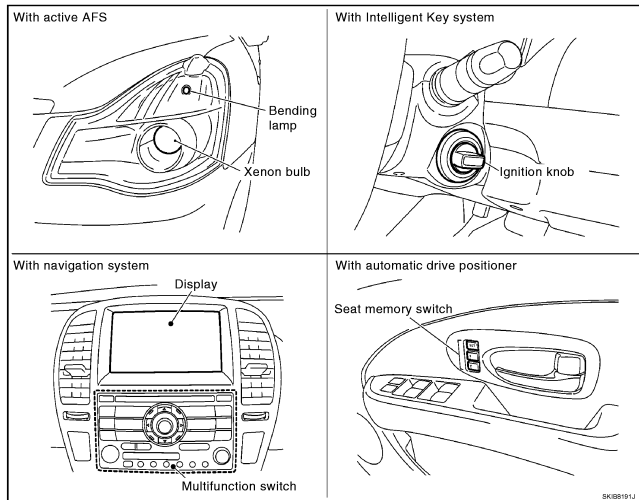
Check the vehicle equipment.

The number indicates the CAN system type of the vehicle.

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



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)	
• Headlamps suddenly turn ON while driving the vehicle. • The engine does not restart after stopping the vehicle and turning the ignition switch OFF. • The cooling fan continues rotating while turning the ignition switch ON.	
Condition at inspection	
Error Symptom: Present / Past	
The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. • The interior lamp does not turn ON.	

JSMIA0019GB

DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution

INFOID:0000000010585263

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to [LAN-25, "Trouble Diagnosis Procedure"](#).

Abbreviation List

INFOID:0000000010585264

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

Abbreviation	Unit name
4WD	AWD control unit
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
ADP	Driver seat control unit
AFS	AFS control unit
APA	Accelerator pedal actuator
AV	AV control unit
AVM	Around view monitor control unit
BCM	BCM
BCU	Brake booster control unit
CGW	CAN gateway
DLC	Data link connector
ECM	ECM
ICC	ICC sensor integrated unit
IPDM-E	IPDM E/R
LANE	Lane camera unit
M&A	Unified meter and A/C amp.
PSB	Pre-crash seat belt control unit
PWBD	Automatic back door control unit
SONAR	Sonar control unit
STRG	Steering angle sensor
TCM	TCM
TPMS	Low tire pressure warning control unit

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010585265

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:0000000010585266

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.

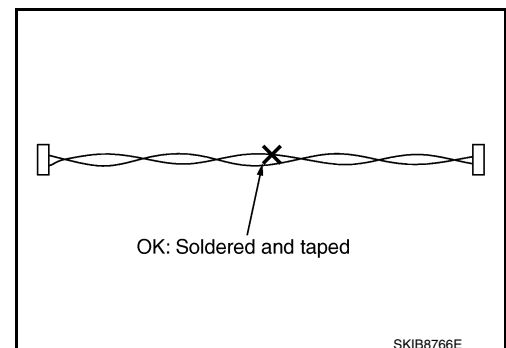
Precautions for Harness Repair

INFOID:0000000010585267

- 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).



PRECAUTIONS

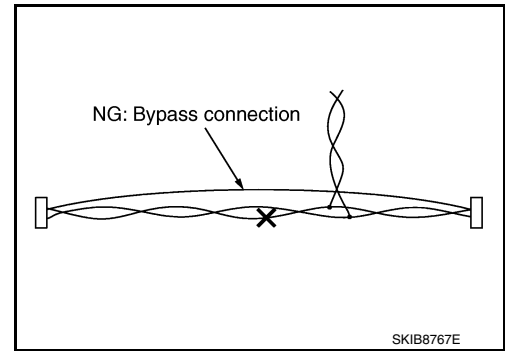
[CAN]

< PRECAUTION >

- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause CAN communication and ITS 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 and ITS communication line.

Precautions for Removing Battery Terminal

INFOID:0000000011010042

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

NOTE:

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

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

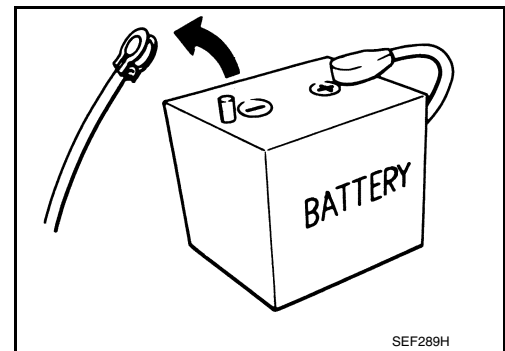
NOTE:

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

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

NOTE:

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



BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

INFOID:0000000010585268

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

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

INFOID:0000000010585269

Determine CAN system type from the following specification chart.

NOTE:

Refer to [LAN-25, "Trouble Diagnosis Procedure"](#) for how to use CAN system specification chart.

Body type	Wagon														
Axle	2WD							AWD							
Engine	VQ37VHR													VK50VE	
Transmission	A/T														
Brake control	VDC														
Automatic drive positioner		×	×	×	×	×	×		×	×	×	×	×	×	×
Active AFS			×		×		×			×		×		×	
Around view monitor				×	×	×	×				×	×	×	×	×
ICC system						×	×						×	×	
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

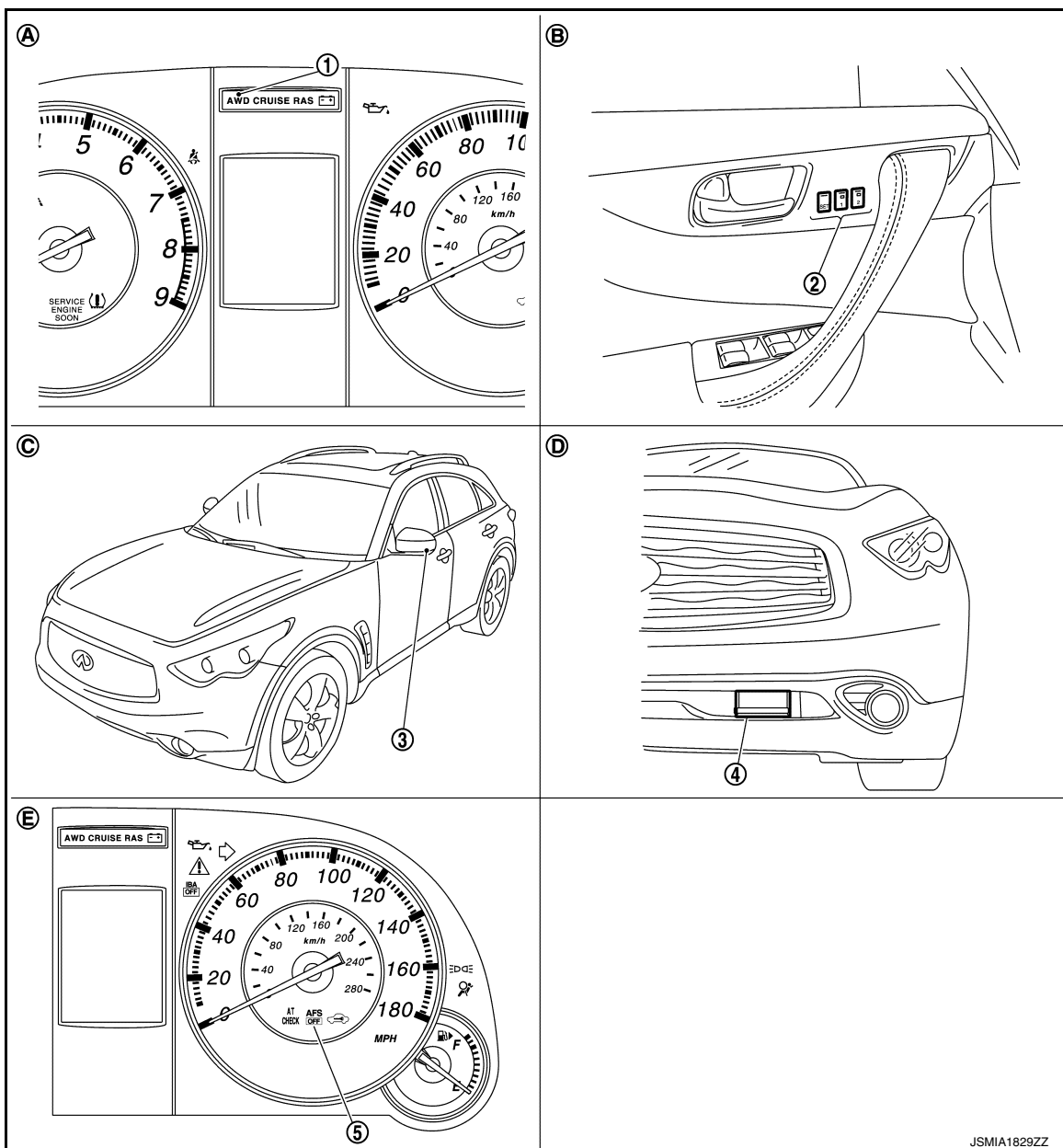
NOTE:

Check CAN system type from the vehicle shape and equipment.

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]



1. AWD warning lamp	2. Seat memory switch	3. Side camera LH
4. ICC sensor integrated unit	5. AFS OFF indicator lamp	
A. AWD models	B. With automatic drive positioner	C. With around view monitor
D. With ICC system	E. With active AFS	

CAN Communication Signal Chart

INFOID:000000010585270

Refer to [LAN-24. "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

NOTE:

Refer to [LAN-30. "Abbreviation List"](#) for the abbreviations of the connecting units.

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

T: Transmit R: Receive

Signal name/Connecting unit	ECM	4WD	TCM	AV	BCM	M&A	STRG	PWBD	TPMS	ADP	AVM	CGW	ABS	IPDM-E	AFS	ICC	LANE	PSB	SONAR
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					
Engine and A/T integrated control signal	T		R																
	R		T																
Engine coolant temperature signal	T		R			R													
Engine speed signal	T	R	R			R							R		R	R			
Engine status signal	T			R	R	R													
Fuel consumption monitor signal	T			R		R													
Fuel filler cap warning display signal	T					R													
ICC brake switch signal	T															R			
ICC prohibition signal	T															R			
ICC steering switch signal	T												R ^{*1}			R			
Malfunctioning indicator lamp signal	T					R													
Power generation command value signal	T													R					
Snow mode switch signal	T												R			R			
	R					T													
Stop lamp switch signal	T															R			
		R	R		T								T						
Wide open throttle position signal	T		R																
AWD signal		T											R						
AWD warning lamp signal		T				R													
A/T CHECK indicator lamp signal			T			R									R				
A/T self-diagnosis signal	R		T																

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	TCM	AV	BCM	M&A	STRG	PWBD	TPMS	ADP	AVM	CGW	ABS	IPDM-E	AFS	ICC	LANE	PSB	SONAR
Current gear position signal			T										R*1			R			
Input speed signal	R		T										R*1			R			
Manual mode indicator signal			T			R													
Manual mode shift refusal signal			T			R													
N range signal			T		R														
Output shaft revolution signal	R		T										R*1			R			
P range signal			T		R					R									
R range signal			T							R									
Shift position signal			T			R		R			R		R		R	R			R
A/C switch/indicator signal				T		R													
				R		T													
Rear window defogger switch signal				T	R														
System selection signal				T												R			
System setting signal				T	R					R									
				R	T														
				R						T									
Automatic back door request signal					T			R											
Back door lock status signal					T			R											
Buzzer output signal					T	R													
													R			T			
Door switch signal				R	T	R				R	R			R				R	
Door unlock signal					T					R									
Front fog light request signal					T						R			R					
Front wiper request signal					T								R*1	R		R			
High beam request signal					T	R					R			R					
Horn reminder signal					T									R					
Ignition switch ON signal					T			R						R				R	
					R									T					
Ignition switch signal					T					R									
Interlock/PNP switch signal					T									R					
					R									T					
Key ID signal					T					R									
Key switch signal					T					R									
Key warning lamp signal					T	R													

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CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	TCM	AV	BCM	M&A	STRG	PWBD	TPMS	ADP	AVM	CGW	ABS	IPDM-E	AFS	ICC	LANE	PSB	SONAR
Low beam request signal					T						R			R					
Meter display signal					T	R										T			
Meter ring illumination request signal					T	R													
Oil pressure switch signal					T	R													
Position light request signal					T	R					R			R					
Rear window defogger control signal	R			R	T									R					
Sleep wake up signal					T	R		R		R		R		R				R	
Starter control relay signal					T									R					
Starter relay status signal					T	R								R					
Starting mode signal					T					R									
Theft warning horn request signal					T									R					
Turn indicator signal					T	R							R				R		
A/C evaporator temperature signal	R					T													
A/C switch signal	R					T													
Blower fan motor switch signal	R					T													
Distance to empty signal				R		T													
Fuel filler cap warning reset signal	R					T													
Fuel level low warning signal				R		T													
Fuel level sensor signal	R					T													
Manual mode shift down signal			R			T													
Manual mode shift up signal			R			T													
Manual mode signal			R			T													
Non-manual mode signal			R			T													
Odometer signal					R	T													
Paddle shifter shift down signal*2			R			T													
Paddle shifter shift up signal*2			R			T													

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	TCM	AV	BCM	M&A	STRG	PWBD	TPMS	ADP	AVM	CGW	ABS	IPDM-E	AFS	ICC	LANE	PSB	SONAR
Parking brake switch signal		R			R	T										R			
Seat belt buckle switch signal					R	T													
Sleep-ready signal					R	T													
					R			T											
					R									T					
Target A/C evaporator temperature signal	R					T													
Vehicle speed signal	R		R	R	R	T		R		R				R	R			R	
	R	R			R	R		R	R		R		T			R	R		R
Wake up signal					R	T		T											
Steering angle sensor malfunction signal							T											R	
Steering angle sensor signal				R			T				R		R		R	R		R	
Steering angle speed signal							T											R	
Steering calibration signal							T											R	
Hazard request signal					R			T	T										
Horn request signal					R				T										
Low tire pressure warning lamp signal					R				T										
					T	R													
Tire pressure data signal				R					T										
TPMS malfunction warning lamp signal					R				T										
					T	R													
Sonar setting change signal											T								R
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							T						
Brake warning lamp signal						R							T						
Front wiper status signal													T				R		
LDP buzzer request signal													T				R		
LDP condition signal													T				R		

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CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	TCM	AV	BCM	M&A	STRG	PWBD	TPMS	ADP	AVM	CGW	ABS	IPDM-E	AFS	ICC	LANE	PSB	SONAR
LDP malfunction signal													T				R		
LDP meter indication request signal													T				R		
LDP operation signal													T				R		
Rear LH wheel speed signal											R		T						
Rear RH wheel speed signal											R		T						
Side G sensor signal			R										T						
TCS malfunction signal													T			R			
TCS operation signal													T			R			
VDC malfunction signal													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							T						
Warning systems switch signal													T			R			
																T	R		
													R				T		
A/C compressor feedback signal	R					R								T					
Detention switch signal					R									T					
Front wiper stop position signal					R									T					
High beam status signal	R													T	R				
Hood switch signal					R									T					
Low beam status signal	R													T	R				
Push-button ignition switch status signal					R									T					
AFS OFF indicator lamp signal						R									T				
IBA OFF indicator lamp signal						R										T			
IBA operation signal																T		R	
ICC operation signal	R												R			T			
ICC warning lamp signal						R										T			
LDP ON signal													R			T			

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	TCM	AV	BCM	M&A	STRG	PWBD	TPMS	ADP	AVM	CGW	ABS	IPDM-E	AFS	ICC	LANE	PSB	SONAR
Target approach warning signal													R			T			
Detected lane condition signal													R				T		
Lane camera status signal													R				T		
Lane departure buzzer operation signal													R				T		
Lane departure warning lamp signal						R							R				T		
LDP ON indicator lamp signal						R							R				T		
LDW operation signal													R				T		
Sonar status signal											R								T

*1: Models with LDP

*2: Models with paddle shifter

NOTE:

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

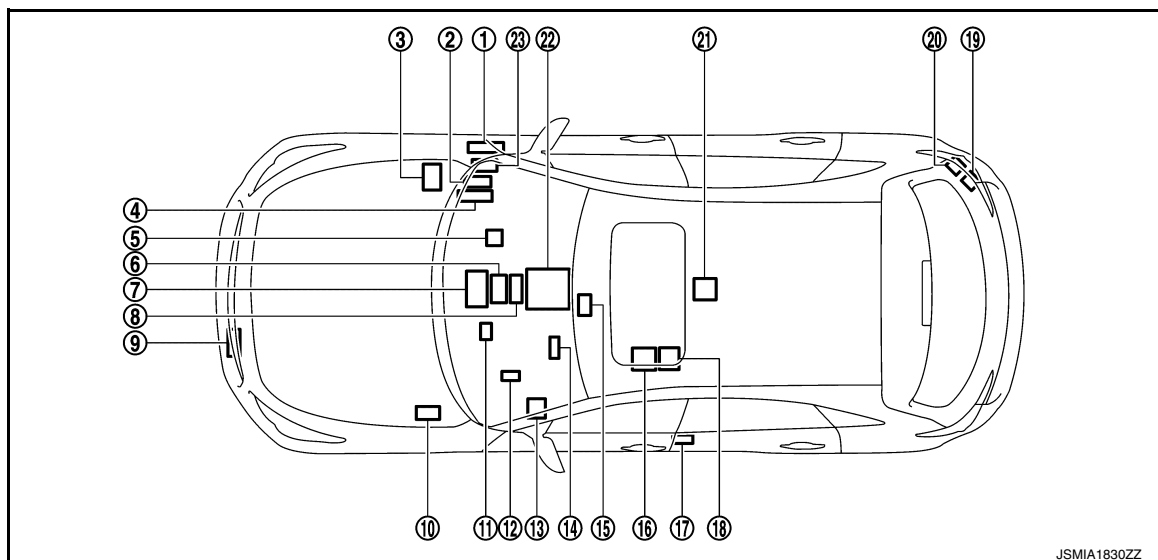
LAN

DTC/CIRCUIT DIAGNOSIS

CAN COMMUNICATION SYSTEM

Component Parts Location

INFOID:0000000010585271



1. BCM M122	2. AWD control unit M105	3. IPDM E/R E6
4. ECM M164: VQ engine models M160: VK engine models	5. Low tire pressure warning control unit M96	6. AV control unit M204: Without navigation system M210: With navigation system
7. Sonar control unit M47	8. Unified meter and A/C amp. M67	9. ICC sensor integrated unit E67
10. ABS actuator and electric unit (control unit) E41	11. Accelerator pedal actuator E115	12. Data link connector M24
13. AFS control unit M16	14. Steering angle sensor M37	15. Lane camera unit R21
16. Driver seat control unit B451	17. Pre-crash seat belt control unit B9	18. Around view monitor control unit B46
19. Brake booster control unit B250	20. Automatic back door control unit B207	21. Air bag diagnosis sensor unit M224
22. A/T assembly F51	23. CAN gateway M125	

Wiring Diagram - CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR)

CAN COMMUNICATION SYSTEM

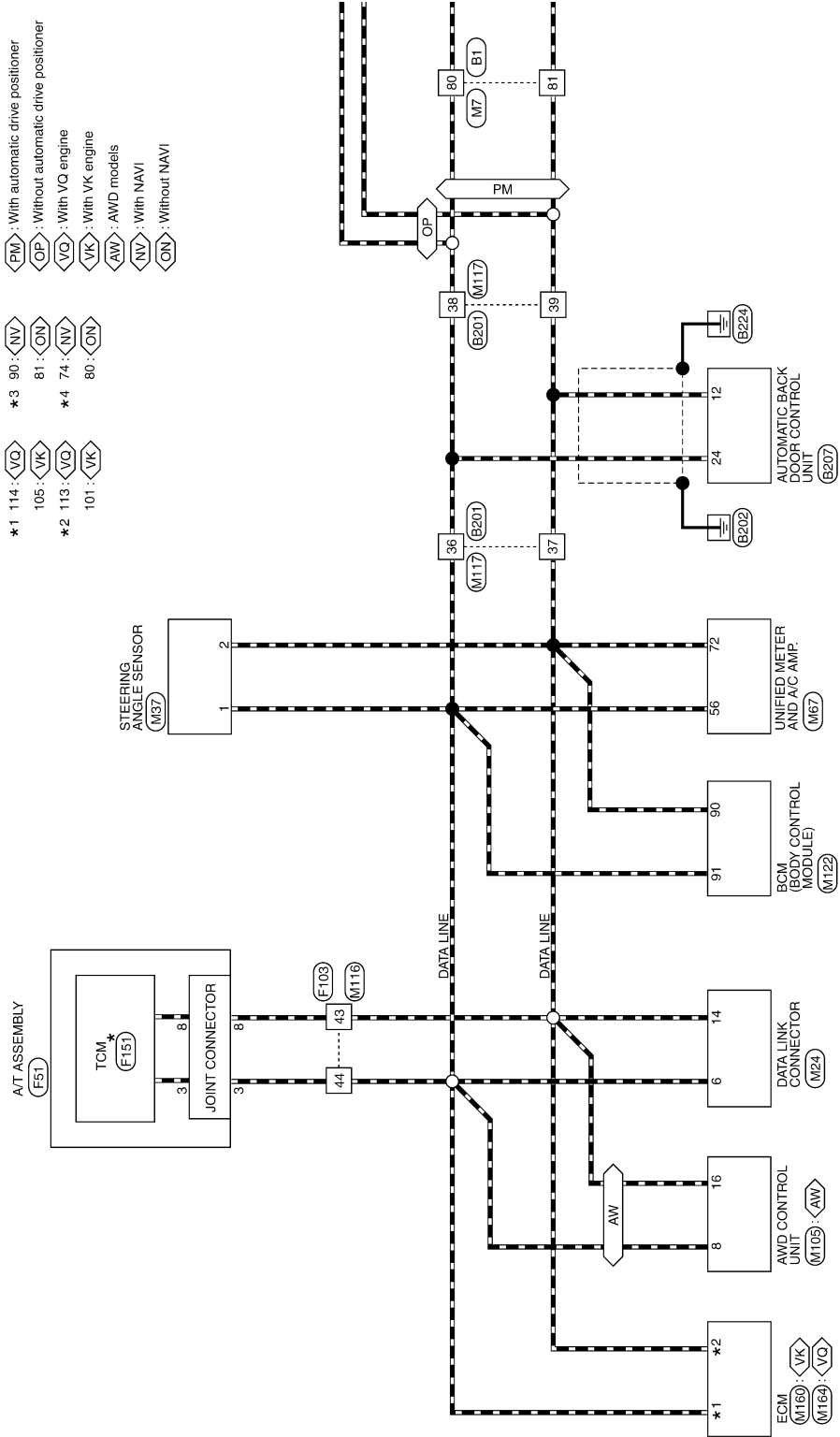
< DTC/CIRCUIT DIAGNOSIS >

[CAN]

OR VK50VE) -

INFOID:000000010585272

CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)



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

2014/03/18

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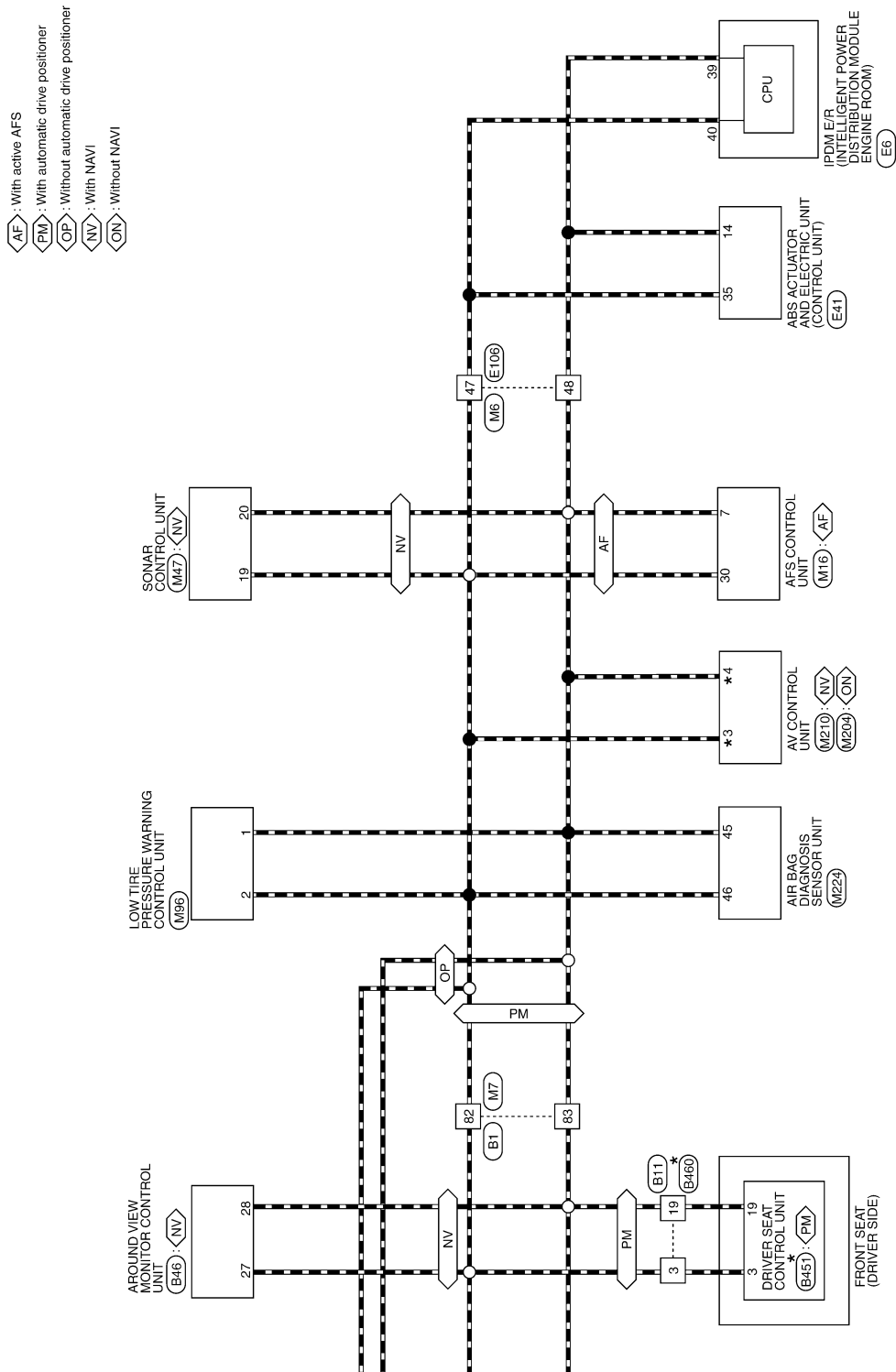
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CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]



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

JRMWF4501GB

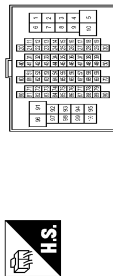
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

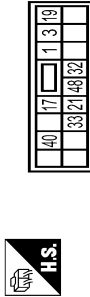
CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

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



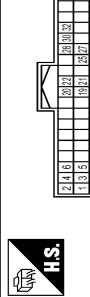
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-
3	W	-
4	G	-
5	P	-
6	BG	-
7	SB	-
8	W	-
9	SB	-
10	B	-
11	G	-
12	R	-
13	L	-
14	W	-
15	Y	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	Y	-
21	W	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
39	B	-
43	SB	-
44	V	-
45	GR	-
51	V	-
52	SB	-
53	SHIELD	-
54	BR	-
55	Y	-
56	SHIELD	-

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



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
3	L	-
17	LG	-
18	P	-
21	Y	-
32	B	-
33	SB	-
40	R	-
48	B	-

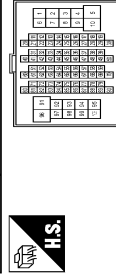
Connector No.	B46
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	BATTERY
3	G	IGNITION SIGNAL
4	LG	ACC
5	LG	-
6	G	-
19	SB	AV COMM (H)
20	LG	AV COMM (L)
21	SB	AV COMM (H)
22	LG	AV COMM (L)

25	BG	REVERSE SIGNAL
27	L	CAN-H
28	P	CAN-L
30	SB	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	R	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-
3	BR	-
4	SB	-
6	BG	-
7	GR	-
8	W	-
10	G	-
11	SHIELD	-
20	L	-
21	P	-
22	GR	-
23	LG	-
24	W	-
25	V	-
26	G	-
27	Y	-
28	SHIELD	-
31	W	-
32	GR	-
33	SB	-
36	L	-
37	P	-
38	L	-
39	P	-
40	V	- [With LCC] - [Without LCC]
41	SB	- [With LCC] - [Without LCC]

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CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

41	Y	-	[Without ICC]
42	V	-	[With ICC]
43	W	-	[Without ICC]
44	BR	-	[With ICC]
45	G	-	-
46	BG	-	[With ICC]
47	SHIELD	-	[Without ICC]
48	L	-	[With ICC]
49	R	-	[Without ICC]
50	SHIELD	-	[With ICC]
51	W	-	-
52	R	-	-
53	G	-	-
54	L	-	-
55	SB	-	-
60	GR	-	-
61	LG	-	-
62	SB	-	-
63	P	-	-
64	BR	-	-
65	BG	-	-
66	Y	-	-
67	W	-	-
69	G	-	-
71	SB	-	-
72	V	-	-
73	LG	-	-
74	W	-	-
75	BR	-	-
76	V	-	-
77	LG	-	-
80	BG	-	-
82	P	-	-
83	Y	-	-
84	R	-	-
85	SB	-	-
86	GR	-	-
87	L	-	-
91	V	-	-
92	W	-	-
93	R	-	-
94	LG	-	-
95	GR	-	-
96	W	-	-

97	G	-
98	BG	-
99	L	-

Connector No.	B207
Connector Name	AUTOMATIC BACK DOOR CONTROL UNIT
Connector Type	AA024FB



1	2	3	4	5	6	7	8	9	10	11	12	13					19	20	21	22	23	24

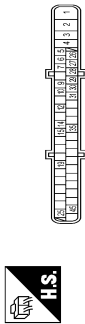
CAN COMMUNICATION SYSTEM

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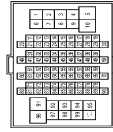
[CAN]

CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BAA42FB-AHZ4-LH



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



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	G	UBVR
3	R	UBVR
4	B	GROUND
5	Y	DS FL
6	B	DP RL
7	BR	DP RL
8	B	DP RL
9	W	DS PR
10	W	DS PR
12	L	VAC
14	P	CANL
15	SHIELD	AGND
19	P	UST
25	Y	BUS-L
26	R	DP FL
27	GR	DS RL
28	G	UZ
29	LG	DS RR
30	SB	BLS
31	R	VDC OFF SW
35	L	CANH
45	B	BUS-H

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	SB	-
4	LG	-
5	Y	-
6	W	-
7	G	-
8	V	-
9	R	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	SB	-
17	L	-
18	P	-
19	G	-
20	W	- [With ICC]
21	Y	- [Without ICC]
22	BR	-
23	R	- [With ICC]
24	V	- [Without ICC]
25	G	-
26	L	- [With ICC]
27	P	- [Without ICC]
28	L	- [Without ICC]
29	Y	- [With ICC]
30	BR	-
31	LG	-
32	RG	-
33	Y	-
34	B	-

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

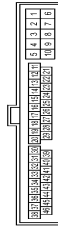
97	W	-
98	SHIELD	-
100	Y	-

Connector No.	F51
Connector Name	AT ASSEMBLY
Connector Type	RK10FG-DGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	IGNITION POWER SUPPLY
2	R	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	L	CANH
4	V	K-LINE
5	B	GROUND
6	Y	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CANL
9	GR	STARTER RELAY [With VO engine]
9	LG	STARTER RELAY [With VK engine]
10	B	GROUND

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK38FW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	W	-
4	GR	- [With VK engine]
4	R	- [With VO engine]

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[CAN]

CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

Connector No.	Signal Name [Specification]
5	B - [With VQ engine]
5	R - [With VK engine]
7	B -
9	W - [With VK engine]
9	Y - [With VQ engine]
10	GR - [With VQ engine]
10	L - [With VK engine]
19	O -
20	Y -
27	L -
28	B -
29	LG -
31	R -
34	LG -
35	BR -
36	W -
37	Y -
38	Y -
43	P -
44	L -
45	Y -
46	V -

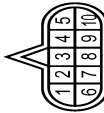


Connector No.	Signal Name [Specification]
M6	WIRE TO WIRE
TH80MW-CS16-TM4	

Terminal No.	Color Of Wire	Signal Name [Specification]
33	Y	-
34	L	-
37	G	-
38	R	-
39	G	-
41	L	-
42	W	-
43	R	-
44	LG	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	BG	-
54	BR	-
55	SB	-
59	SB	-
60	SB	-
61	V	-
62	P	-
63	R	-
64	L	-
65	BG	-
69	V	-
70	SHIELD	-
71	BG	-
72	GR	-
73	W	-
74	SB	-
76	V	-
77	V	-
78	Y	-
80	BG	-
81	L	-
82	W	-
83	Y	-
84	L	-
85	P	-
86	BR	-
87	P	-
88	V	-
89	G	-
90	P	-
91	R	-
92	R	-
93	GR	-

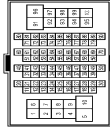
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	LG	- [Without Auto aircon seat]
3	SB	- [With Auto aircon seat]
4	LG	-
5	GR	-
6	W	-
7	G	-
8	W	-
9	P	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	BR	-
17	L	-
18	P	-
19	G	-
20	GR	- [Without ICC]
20	W	- [With ICC]
21	BR	- [Without ICC]
21	R	- [With ICC]
22	L	- [Without ICC]
22	R	- [With ICC]
23	G	-
24	L	- [Without ICC]
24	P	- [With ICC]
25	W	- [Without ICC]
25	Y	- [With ICC]
26	SHIELD	-
28	GR	-
29	V	-
30	BG	-
32	W	-

Connector No.	Signal Name [Specification]
F151	IGNITION POWER SUPPLY
TCM	BACK-UP LAMP RELAY
SPI0FG	STARTER RELAY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	IGNITION POWER SUPPLY
2	B	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	R	CANH
4	O	K-LINE
5	G	GROUND
6	GR	IGNITION POWER SUPPLY
7	L	BACK-UP LAMP RELAY
8	BR	CANL
9	Y	STARTER RELAY
10	W/B	GROUND

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	- [With Auto aircon seat]
1	Y	- [Without Auto aircon seat]
2	B	-
3	W	-
6	P	-
7	V	-
8	BG	-
10	W	-
11	BG	-
12	B	-
13	G	-
14	R	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	R	-
21	LG	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
39	B	-
43	SB	-
44	W	-



Connector No.	Signal Name [Specification]
M7	WIRE TO WIRE
TH80MW-CS16-TM4	

JRMWF4505GB

CAN COMMUNICATION SYSTEM

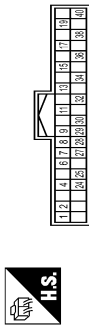
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[CAN]

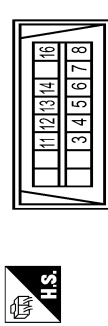
CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

45	B	-
51	V	-
52	LG	-
53	SHIELD	-
54	BR	-
55	Y	-
56	SHIELD	-
57	P	-
58	L	-
59	SHIELD	-
60	L	-
61	BR	-
62	R	-
63	Y	-
64	L	-
65	W	-
66	V	-
67	LG	-
68	Y	-
69	G	-
70	V	-
71	W	-
72	B	-
73	W	-
74	LG	-
75	P	-
76	LG	-
77	SB	-
78	GR	-
79	R	-
80	L	-
81	P	-
82	L	-
83	P	-
84	SB	-
85	W	-
86	Y	-
87	B	-
88	G	-
89	BG	-
91	R	-
92	BG	-
93	BR	-
94	V	-
96	BG	-
97	W	-
98	R	-
99	BG	-

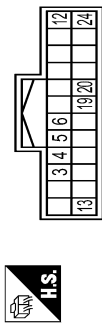
Connector No.	M16
Connector Name	A/S CONTROL UNIT
Connector Type	TH40FW-NH



Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



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

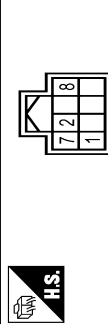


Terminal No.	Color	Wire	Signal Name [Specification]
1	Y	IGN	
2	LG	PSGR	
4	Y	PSVR	
6	W	HSVR	
7	P	CANL	
8	B	PSGR	
9	GR	PSR	
11	R	SMR-1 (-)	
13	B	SMR-2 (-)	
15	G	SMR-1 (+)	
17	W	SMR-2 (+)	
19	SB	AMDSR	
24	V	PSV-L	
25	B	GROUND	
27	BR	PSG-L	
28	SB	HSR	
29	BG	PS-L	
30	L	CAN-H	
32	G	SMR-2 (+)	
34	W	SMR-1 (-)	
36	R	SMR-2 (-)	
38	B	SMR-1 (+)	
40	BG	AMDSL	

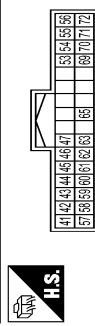
Terminal No.	Color	Wire	Signal Name [Specification]
3	LG	B	-
4	B	-	-
5	B	-	-
6	L	-	-
7	GR	-	-
8	G	-	-
11	SB	-	-
12	P	-	-
13	L	-	-
14	P	-	-
16	BG	-	-

Terminal No.	Color	Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH	
4	R	CORNER SENSOR FRONT RH	
5	W	CORNER SENSOR REAR LH	
6	R	CORNER SENSOR REAR RH	
12	B	SENSOR GND	
13	R	IGN	
19	L	CAN-H	
20	P	CAN-L	
24	B	GROUND	

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



Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FW-NH



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

Terminal No.	Color	Wire	Signal Name [Specification]
41	V	ACC POWER SUPPLY	
42	Y	FUEL LEVEL SENSOR SIGNAL	
43	R	INTAKE SENSOR SIGNAL	
44	LG	IN-VEHICLE SENSOR SIGNAL	
45	P	AMBIENT SENSOR SIGNAL	
46	BG	SUN/LOAD SENSOR SIGNAL	
47	V	CAN SENSOR SIGNAL	
53	G	IGNITION POWER SUPPLY	
54	BG	BATTERY POWER SUPPLY	
55	B	GROUND	
56	L	CAN-H	

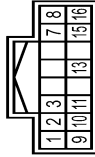
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

57	W	BRAKE FLUID LEVEL SWITCH SIGNAL
58	B	FUEL LEVEL SENSOR GROUND
59	GR	INTAKE SENSOR GROUND
60	L	IN-VEHICLE SENSOR GROUND
61	BR	AMBIENT SENSOR GROUND
62	SB	SUNLOAD SENSOR GROUND
63	R	ION MODE SIGNAL
65	BG	ECV SIGNAL
69	L	A/C LAN SIGNAL
70	R	EACH DOOR MOTOR POWER SUPPLY
71	B	GROUND
72	P	CANL



Connector No.	M96
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH32FM-NH



10	R	-
19	BG	-
20	Y	-
27	L	-
28	B	-
29	LG	-
31	W	-
39	P	-
34	LG	-
35	BR	-
36	W	-
37	Y	-
38	BG	-
43	P	-
44	L	-
45	G	-
46	Y	-

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Wire	Signal Name [Specification]
1	GR	-
2	BR	-
3	V	-
4	SB	-
6	Y	-
7	B	-
8	W	-
10	W	-
11	SHIELD	-
20	R	-
21	G	-
22	GR	-
23	V	-
24	W	-
25	R	-
26	P	-
27	L	-
28	SHIELD	-



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

Terminal No.	Wire	Signal Name [Specification]
2	W	-
3	L	-
4	B	- [With VK engine]
5	R	- [With VQ engine]
6	B	- [With VK engine]
7	R	- [With VQ engine]
8	L	- [With VK engine]
9	R	- [With VQ engine]

31	W	-
32	W	-
33	SB	-
36	L	-
37	P	-
38	L	-
39	P	-
40	V	-
41	SB	- [With ICC]
41	Y	- [Without ICC]
42	V	- [With ICC]
42	W	- [Without ICC]
43	B	- [With ICC]
43	P	- [Without ICC]
44	R	-
45	G	- [Without ICC]
45	L	- [With ICC]
46	BG	- [Without ICC]
46	SHIELD	- [With ICC]
47	B	- [Without ICC]
47	L	- [With ICC]
48	P	- [Without ICC]
48	R	- [With ICC]
49	G	- [Without ICC]
49	W	- [With ICC]
50	SHIELD	-
51	BG	-
52	GR	-
53	G	-
54	L	-
55	P	-
60	LG	-
61	R	-
62	SB	-
63	V	-
64	Y	-
65	BR	-
66	BG	-
67	W	-
69	G	-
71	SB	-
72	V	-
73	V	-
74	LG	-
75	BR	-
76	V	-
77	LG	-
80	R	-
82	Y	-
83	BG	-

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

Terminal No.	Color	Wire	Signal Name [Specification]
84	W	-	BLOWER FAN MOTOR RELAY CONT
85	SB	-	KEYLESS ENTRY RECEIVER POWER SUPPLY
86	B	-	COMBI SW INPUT 1
87	P	-	COMBI SW INPUT 4
91	L	-	COMBI SW INPUT 2
92	L	-	HAZARD SW
93	G	-	-
94	BG	-	-
95	V	-	-
96	G	-	-
97	G	-	-
98	L	-	-
99	LG	-	-

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



91	90									83	82	81	80	79	78	77	76	75	74		

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITHOUT AROUND VIEW MONITOR OR VK50VE)

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

Terminal No.	Color Of Wire	Signal Name [Specification]
39	SHIELD	GND
41	SB	ECZS+
42	Y	SIDE SENS RH2+
44	R	SIDE SENS LH2+
45	P	CAN LO
46	L	CAN HI
47	P	A/B CUTOFF TELLTALE
50	LG	IGN

Connector No.	M224
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	IN28FY-EX



Terminal No.	Color Of Wire	Signal Name [Specification]
23	Y	INFLATOR AS2+
24	Y	INFLATOR AS2-
25	Y	INFLATOR AS1-
26	Y	INFLATOR AS1+
27	B	GND
28	Y	INFLATOR DR2+
29	Y	INFLATOR DR1 & DR2-
30	Y	INFLATOR DR+
31	V	ECZS-
32	BR	SIDE SENS RH2-
34	G	SIDE SENS LH2-
35	P	A/B W/L
38	G	SEATBELT W/L

JRMWF4509GB

CAN COMMUNICATION SYSTEM

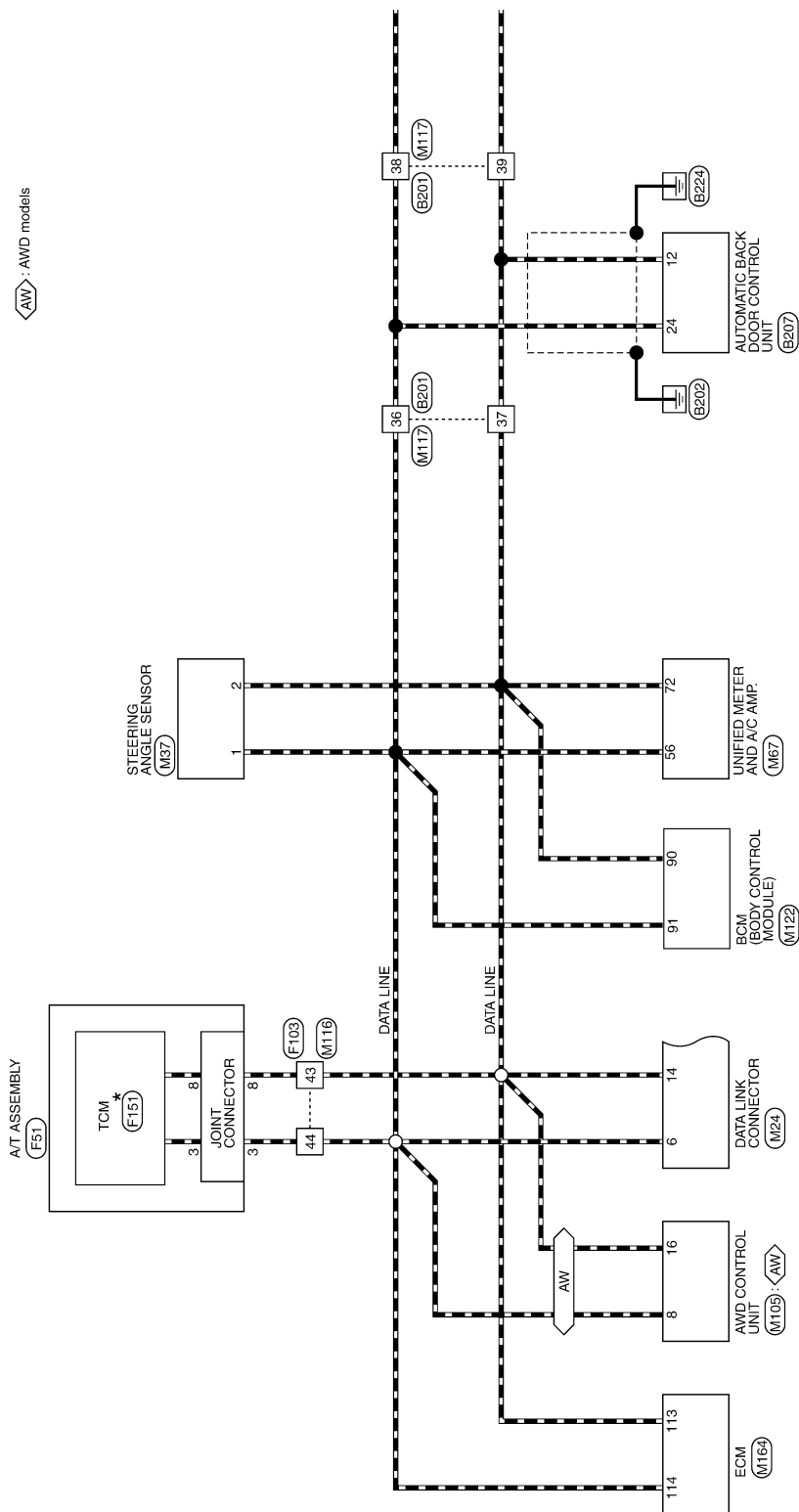
< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Wiring Diagram - CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR) -

INFOID:0000000010585273

CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)



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

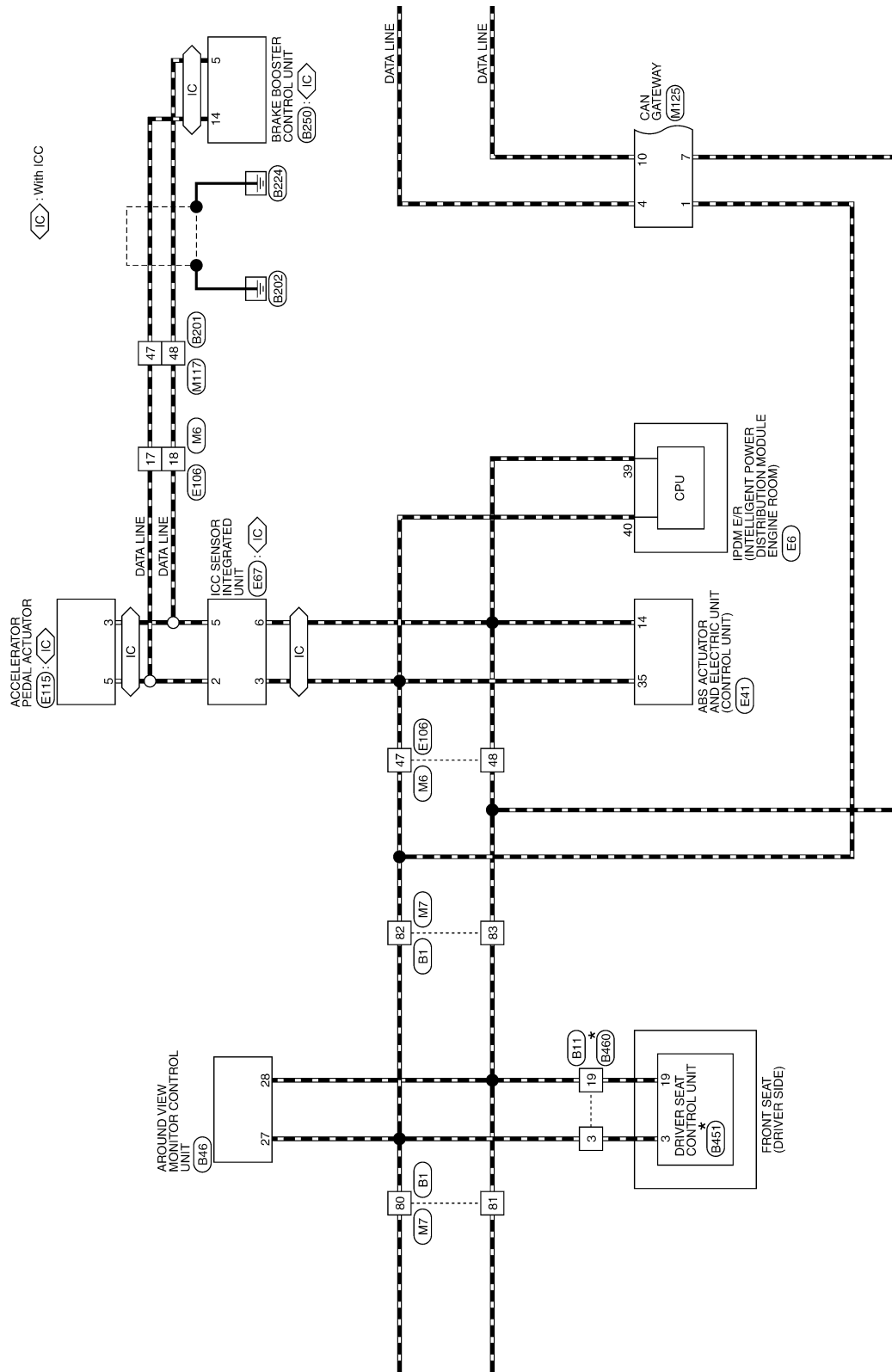
2014/03/18

JRMWF4510GB

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]



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

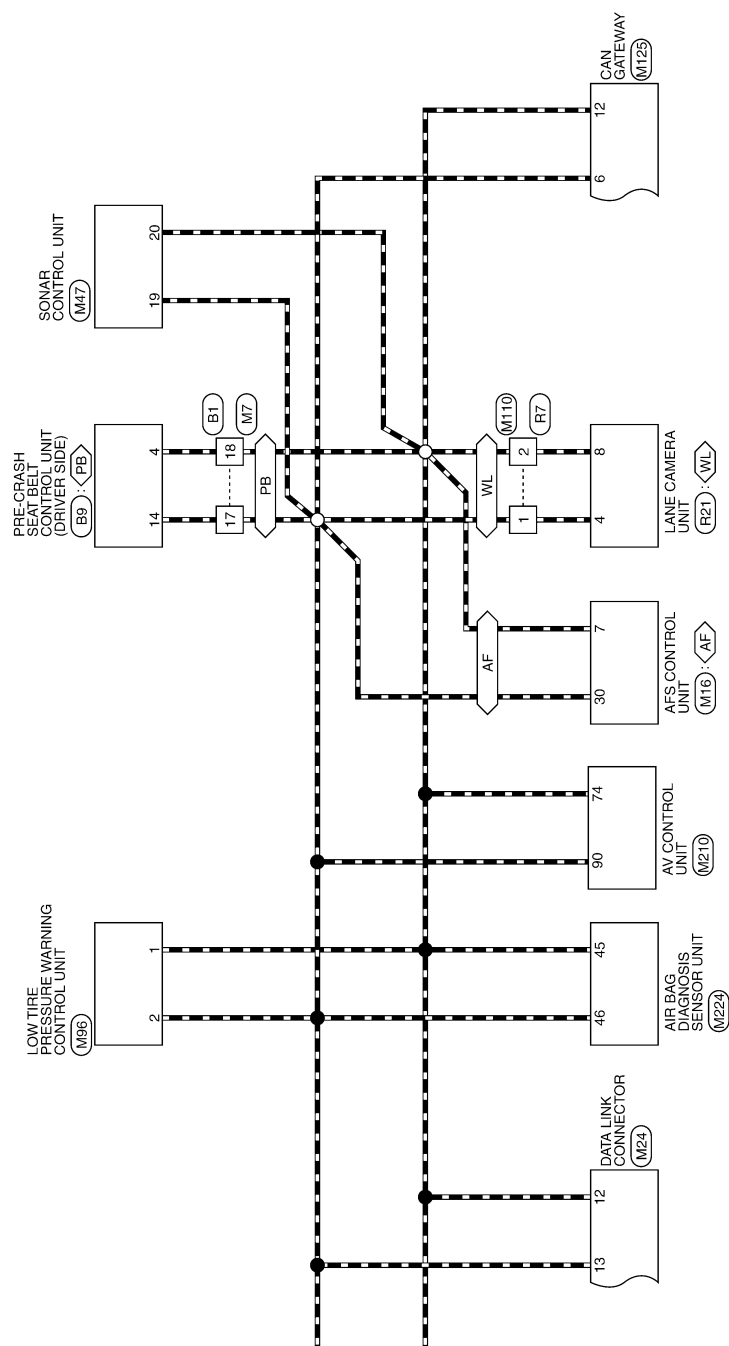
JRMWF4511GB

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

<WL> : With lane departure prevention
 <AF> : With active AFS
 <PB> : With pre-crash seat belt



JRMWF4512GB

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

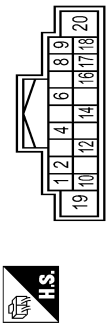
CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

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



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-
3	W	-
4	G	-
5	P	-
6	BG	-
7	SB	-
8	SB	-
9	SB	-
10	B	-
11	G	-
12	R	-
13	W	-
14	W	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	Y	-
21	W	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
39	B	-
43	SB	-
44	V	-
45	GR	-
51	V	-
52	SB	-
53	SHIELD	-
54	BR	-
55	Y	-
56	SHIELD	-

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



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

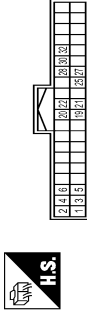
Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
3	L	-
17	LG	-
19	P	-
21	Y	-

32	B	-
33	SB	-
40	R	-
48	B	-

Connector No.	B46
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	BATTERY
3	G	IGNITION SIGNAL
4	LG	ACC
5	LG	-
6	G	-
19	SB	AV COMM (H)
20	LG	AV COMM (L)
21	SB	AV COMM (H)
22	LG	AV COMM (L)
25	BG	REVERSE SIGNAL
27	L	CAN-H
28	P	CAN-L
30	SB	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	R	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

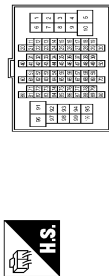
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

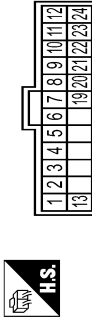
Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	THS9FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	BR	-
4	SB	-
5	BR	-
6	BG	-
7	GR	-
8	W	-
9	G	-
10	G	-
11	SHIELD	-
12	L	-
13	P	-
14	GR	-
15	LG	-
16	W	-
17	V	-
18	G	-
19	Y	-
20	SHIELD	-
21	W	-
22	GR	-
23	LG	-
24	W	-
25	V	-
26	G	-
27	Y	-
28	SHIELD	-
29	W	-
30	GR	-
31	W	-
32	GR	-
33	SB	-
34	L	-
35	P	-
36	L	-
37	P	-
38	L	-
39	P	-
40	LG	- [With ICC]
41	V	- [Without ICC]
42	SB	- [With ICC]
43	W	- [Without ICC]
44	V	- [With ICC]
45	B	- [Without ICC]
46	BR	- [With ICC]

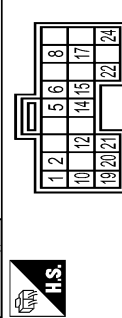
Terminal No.	Color Of Wire	Signal Name [Specification]
47	B	- [Without ICC]
48	L	- [With ICC]
49	P	- [Without ICC]
50	R	- [With ICC]
51	G	- [Without ICC]
52	SHIELD	-
53	W	-
54	R	-
55	G	-
56	L	-
57	SB	-
58	GR	-
59	LG	-
60	SB	-
61	P	-
62	BR	-
63	BG	-
64	Y	-
65	W	-
66	G	-
67	GR	-
68	SB	-
69	L	-
70	P	-
71	LG	-
72	W	-
73	GR	-
74	Y	-
75	BR	-
76	V	-
77	LG	-
78	BG	-
79	P	-
80	Y	-
81	W	-
82	GR	-
83	R	-
84	LG	-
85	GR	-
86	SB	-
87	L	-
88	V	-
89	W	-
90	G	-
91	Y	-
92	R	-
93	LG	-
94	GR	-
95	W	-
96	G	-
97	BG	-
98	L	-
99	L	-

Connector No.	B207
Connector Name	AUTOMATIC BACK DOOR CONTROL UNIT
Connector Type	AA24FB



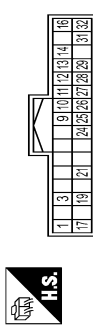
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	TOUCH SENS RH
2	LG	TOUCH SENS LH
3	W	HALF LATCH SW
4	B	AUT UNLK REG
5	L	CLOSE SW
6	W	A-SIGN LH
7	L	B-SIGN LH
8	LG	A-SIGN RH
9	SB	B-SIGN RH
10	BG	MAIN SW
11	G	OPEN SW
12	P	CAN-L
13	BG	TOUCH SENS GND
14	V	POWER LH
15	P	POWER RH
16	G	GROUND
17	Y	DRIVER SW
18	BG	INSIDE CLOSE SW
19	L	CAN-H

Connector No.	B250
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK24FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BATTERY
2	W	BATTERY
3	P	ITS COMM-L
4	SB	RELEASE SW PWR
5	R	BRAKE PRESSURE SEN PWR
6	G	BOOSTER SOL PWR
7	R	BOOSTER SOL GND
8	L	ITS COMM-H
9	V	RELEASE SW (NO)
10	B	BRAKE PRESSURE SEN SIGNAL
11	B	GROUND
12	GR	CHIME SIGNAL
13	BR	RELEASE SW (NO)
14	BG	BRAKE PRESSURE SEN GND

Connector No.	B451
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH32FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	RX
2	RX	CAN-H
3	R/Y	PULSE (RECLINING)
4	W/G	PULSE (RR LIFTING)
5	P/B	SLIDING SW (BACKWARD)
6	BR	RECLINING SW (BACKWARD)
7	LG/R	FRONT LIFTING SW (DOWNWARD)
8	G/B	REAR LIFTING SW (DOWNWARD)
9	O	VCC
10	Y/R	TX
11	V	CAN-L
12	L/Y	P RANGE SW
13	R	PULSE (SLIDING)
14	Y/B	PULSE (RR LIFTING)
15	Y	SLIDING SW (FORWARD)
16	R/G	RECLINING SW (FORWARD)
17	W/B	FRONT LIFTING SW (UPWARD)

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

29	P/L	REAR LIFTING SW (UPWARD)
31	GR	SENSOR GND
32	B/W	GND (SIGNAL)

Connector No.	B460
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-LC



19	3	1	17	40
32	48	21	33	

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	BAA42FB-AI24-LH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
3	R/Y	-
17	Y/R	-
19	V	-
21	L/Y	-
32	B/W	-
33	R	-
40	R/W	-
48	B	-

Connector No.	E5
Connector Name	POWER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH38FW-NH



42	41	40	39
46	45	44	43

Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	B	-
42	Y	-
43	SB	-
44	W	-

Connector No.	E67
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	RS08FB-PR



1	2	3	4	5	6

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	IGNITION
2	L	ITS COM-H
3	L	CAN-H
4	B	GROUND
5	P	ITS COM-L
6	P	CAN-L

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-CS16-TM4



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

Terminal No.	Color	Wire	Signal Name [Specification]
72	G	-	-
73	R	-	-
74	BR	-	-
76	L	-	-
77	W	-	-
78	Y	-	-
80	SB	-	-
81	L	-	-
82	W	-	-
83	LG	-	-
84	GR	-	-
85	G	-	-
86	P	-	-
87	W	-	-
88	BG	-	-
89	LG	-	-
90	BR	-	-
91	GR	-	-
92	BR	-	-
93	SB	-	-
95	Y	-	-
96	W	-	-
97	W	-	-
98	SHIELD	-	-
100	Y	-	-



Connector No.	Signal Name [Specification]
F51	WIRE TO WIRE
Connector Name	Connector Type
AT ASSEMBLY	RK10FG-DGY

Terminal No.	Color	Wire	Signal Name [Specification]
1	Y	-	IGNITION POWER SUPPLY
2	R	-	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	L	-	CAN-H
4	V	-	CAN-L
5	B	-	GROUND
6	Y	-	IGNITION POWER SUPPLY
7	R	-	BACK-UP LAMP RELAY
8	P	-	CAN-L
9	GR	-	STARTER RELAY (With VQ engine)
9	LG	-	STARTER RELAY (With VK engine)
10	B	-	GROUND

Connector No.	Signal Name [Specification]
E115	ACCELERATOR PEDAL ACTUATOR
Connector Name	Connector Type
KDZ06FB	



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

Terminal No.	Color	Wire	Signal Name [Specification]
10	GR	-	- [With VQ engine]
10	L	-	- [With VK engine]
19	O	-	-
20	Y	-	-
27	L	-	-
28	B	-	-
29	LG	-	-
31	R	-	-
34	LG	-	-
35	BR	-	-
36	W	-	-
37	Y	-	-
38	Y	-	-
43	P	-	-
44	L	-	-
45	Y	-	-
46	V	-	-

Connector No.	Signal Name [Specification]
F151	TCM
Connector Name	Connector Type
SP10FG	



Terminal No.	Color	Wire	Signal Name [Specification]
1	W	-	IGNITION POWER SUPPLY
2	B	-	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	R	-	CAN-H
4	O	-	CAN-L
5	G	-	GROUND
6	GR	-	IGNITION POWER SUPPLY
7	L	-	BACK-UP LAMP RELAY
8	BR	-	CAN-L
9	Y	-	STARTER RELAY
10	W/B	-	GROUND

Connector No.	Signal Name [Specification]
M6	WIRE TO WIRE
Connector Name	Connector Type
TH80MW-CS16-TM4	



Terminal No.	Color	Wire	Signal Name [Specification]
1	G	-	-
2	BG	-	-
3	LG	-	- [Without Auto aircon seat]
3	SB	-	- [With Auto aircon seat]
4	LG	-	-
5	GR	-	-
6	W	-	-
7	G	-	-
8	W	-	-
9	P	-	-
10	BR	-	-
11	B	-	-
12	G	-	-
13	R	-	-
14	W	-	-
15	SHIELD	-	-
16	BR	-	-
17	L	-	-
18	P	-	-
19	G	-	-
20	GR	-	- [Without ICC]
20	W	-	- [With ICC]
21	BR	-	- [Without ICC]
21	R	-	- [With ICC]
22	L	-	- [Without ICC]
22	R	-	- [With ICC]
23	G	-	-
24	L	-	- [Without ICC]
24	P	-	- [With ICC]
25	W	-	- [Without ICC]
25	Y	-	- [With ICC]
26	SHIELD	-	-
28	GR	-	-
28	V	-	-
30	BG	-	-
32	W	-	-

JRMWF4516GB

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

33	Y	-
34	L	-
37	G	-
38	R	-
39	G	-
41	L	-
42	W	-
43	R	-
44	LG	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	BG	-
54	BR	-
55	SB	-
59	SB	-
60	SB	-
61	V	-
62	P	-
63	R	-
64	L	-
65	BG	-
69	V	-
70	SHIELD	-
71	BG	-
72	GR	-
73	W	-
74	SB	-
76	V	-
77	V	-
78	Y	-
80	BG	-
81	L	-
82	W	-
83	Y	-
84	L	-
85	P	-
86	BR	-
87	P	-
88	V	-
89	G	-
90	P	-
91	R	-
92	R	-
93	GR	-

95	G	-
96	W	-
97	W	-
98	SHIELD	-
100	Y	-

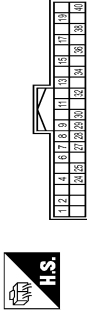
Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	- [With Auto aircon seat]
2	Y	- [Without Auto aircon seat]
3	W	-
6	P	-
7	V	-
8	BG	-
10	W	-
11	BG	-
12	B	-
13	G	-
14	R	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	R	-
21	LG	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
39	B	-
43	SB	-
44	W	-

45	B	-
51	V	-
52	LG	-
53	SHIELD	-
54	BR	-
55	Y	-
56	SHIELD	-
57	P	-
58	L	-
59	SHIELD	-
60	L	-
61	BR	-
62	R	-
63	Y	-
64	L	-
65	W	-
66	V	-
67	LG	-
68	Y	-
69	G	-
70	V	-
71	W	-
72	B	-
73	W	-
74	LG	-
75	P	-
76	LG	-
77	SB	-
78	GR	-
79	R	-
80	L	-
81	P	-
82	L	-
83	P	-
84	SB	-
85	W	-
86	Y	-
87	B	-
88	G	-
89	BG	-
91	R	-
92	BG	-
93	BR	-
94	V	-
96	BG	-
97	W	-
98	R	-
99	BG	-

Connector No.	M16
Connector Name	AFS CONTROL UNIT
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	IGN
2	LG	PSG-R
4	Y	PSG-R
6	W	HSV-R
7	P	CAN-L
8	B	HSG-R
9	GR	PSR
11	R	SMR-1 (-)
13	B	SMR-2 (-)
15	G	SMR-1 (+)
17	W	SMR-2 (+)
19	SB	AMDS-R
24	V	PSV-L
25	B	GROUND
27	BR	PSG-L
28	SB	HSR
29	BG	PSL
30	L	CAN-H
32	G	SMR-2 (+)
34	W	SMR-1 (+)
36	R	SMR-2 (-)
38	B	SMR-1 (-)
40	BG	AMDS-L

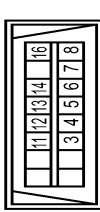
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

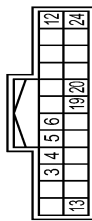
CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



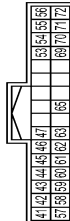
Terminal No.	Color	Wire	Signal Name [Specification]
3	LG	-	-
4	B	-	-
5	B	-	-
6	L	-	-
7	GR	-	-
8	GR	-	-
9	G	-	-
10	SB	-	-
11	P	-	-
12	L	-	-
13	L	-	-
14	P	-	-
15	BG	-	-
16	-	-	-

Connector No.	M47
Connector Name	SOME CONTROL UNIT
Connector Type	TH24FM-NH



Terminal No.	Color	Wire	Signal Name [Specification]
3	W	-	CORNER SENSOR FRONT LH
4	R	-	CORNER SENSOR FRONT RH
5	W	-	CORNER SENSOR REAR LH
6	R	-	CORNER SENSOR REAR RH
12	B	-	SENSOR GND
13	R	-	IGN
19	L	-	CANH
20	P	-	CANL
24	B	-	GROUND

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FM-NH



Terminal No.	Color	Wire	Signal Name [Specification]
41	V	-	ACC POWER SUPPLY
42	Y	-	FUEL LEVEL SENSOR SIGNAL
43	R	-	IN-VEHICLE SENSOR SIGNAL
44	LG	-	IN-VEHICLE SENSOR SIGNAL
45	P	-	AMBIENT SENSOR SIGNAL
46	BG	-	SUNLOAD SENSOR SIGNAL
47	V	-	GAS SENSOR SIGNAL
53	G	-	IGNITION POWER SUPPLY
54	BG	-	BATTERY POWER SUPPLY
55	B	-	GROUND
56	L	-	CANH

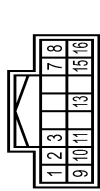
57	W	-	BRAKE FLUID LEVEL SWITCH SIGNAL
58	B	-	FUEL LEVEL SENSOR GROUND
59	GR	-	INTAKE SENSOR GROUND
60	L	-	IN-VEHICLE SENSOR GROUND
61	BR	-	AMBIENT SENSOR GROUND
62	SB	-	SUNLOAD SENSOR GROUND
63	R	-	ION MODE SIGNAL
65	BG	-	ECV SIGNAL
69	L	-	A/C LAN SIGNAL
70	R	-	EACH DOOR MOTOR POWER SUPPLY
71	B	-	GROUND
72	P	-	CANL

Connector No.	M96
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH22FM-NH



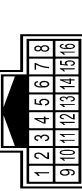
Terminal No.	Color	Wire	Signal Name [Specification]
1	P	-	CAN- (L)
2	L	-	CAN+ (H)
3	BG	-	RR TUNER (SIG)
4	L	-	RL TUNER (SIG)
5	R	-	FR TUNER (SIG)
6	P	-	FL TUNER (SIG)
7	SB	-	RR TUNER (VCC)
8	R	-	RL TUNER (VCC)
9	GR	-	FR TUNER (VCC)
10	G	-	FL TUNER (VCC)
15	Y	-	IGN
19	W	-	RR TUNER (RSSI)
20	BR	-	RL TUNER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

Connector No.	M105
Connector Name	AWD CONTROL UNIT
Connector Type	TH16FW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
1	BR	-	AWD SOL (+)
2	Y	-	AWD SOL (-)
3	W	-	FLUID TEMP (-)
7	GR	-	IGN
8	L	-	CANH
9	BG	-	AWD SOL BAT
10	B	-	GROUND
11	B	-	GROUND
13	LG	-	FLUID TEMP (+)
15	Y	-	BATTERY
16	P	-	CANL

Connector No.	M110
Connector Name	WIPE TO WIRE
Connector Type	TH16MW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
1	L	-	-
2	P	-	-
4	B	-	-
5	W	-	-
6	GR	-	-
7	SB	-	-
8	LG	-	-
9	SHIELD	-	-
10	R	-	-

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

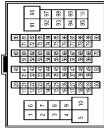
CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

11	G	-
15	R	-
16	V	-

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



Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

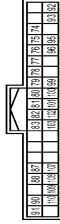


Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	BR	-
3	V	-
4	SB	-
6	V	-
7	B	-
8	W	-
10	W	-
11	SHIELD	-
20	R	-
21	G	-
22	GR	-
23	V	-
24	W	-
25	R	-
26	P	-
27	L	-
28	SHIELD	-
31	W	-
32	W	-
33	SB	-
36	L	-
37	P	-
38	L	-
39	P	-
40	V	-
41	SB	- [With ICC]
41	Y	- [Without ICC]
42	V	- [With ICC]
42	W	- [Without ICC]
43	B	- [With ICC]
43	P	- [Without ICC]
44	R	- [With ICC]
45	G	- [Without ICC]
45	L	- [With ICC]
46	BG	- [With ICC]

Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	-
3	L	-
4	B	- [With VK engine]
4	R	- [With VQ engine]
5	B	- [With VQ engine]
5	R	- [With VK engine]
7	B	-
9	L	- [With VK engine]
9	R	- [With VQ engine]
10	R	-
19	BG	-
20	Y	-
27	L	-
28	B	-
29	LG	-
31	W	-
34	LG	-
35	BR	-
36	W	-
37	Y	-
38	BG	-
43	P	-
44	L	-
45	G	-
46	Y	-

46	SHIELD	- [Without ICC]
47	B	- [Without ICC]
47	L	- [With ICC]
48	P	- [With ICC]
48	R	- [Without ICC]
49	G	- [With ICC]
49	W	- [Without ICC]
50	SHIELD	-
51	BG	-
52	GR	-
53	G	-
54	L	-
55	P	-
60	LG	-
61	R	-
62	SB	-
63	V	-
64	Y	-
65	BR	-
66	BG	-
67	W	-
69	G	-
71	SB	-
72	V	-
73	V	-
74	LG	-
75	BR	-
76	V	-
77	LG	-
80	R	-
82	Y	-
83	BG	-
84	W	-
85	SB	-
86	B	-
87	P	-
91	L	-
92	L	-
93	G	-
94	BG	-
95	V	-
96	G	-
97	G	-
98	L	-
99	LG	-

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
74	SB	PASSENGER DOOR ANT-
75	BR	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT-
77	LG	DRIVER DOOR ANT+
78	Y	ROOM ANT1-
79	BR	ROOM ANT1+
80	GR	NATS ANT AMP-
81	W	NATS ANT AMP+
82	P	IGN RELAY (P/B) CONT
83	GR	KEYLESS ENTRY RECEIVER SIGNAL
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CANL
91	L	CANH
92	LG	KEY SLOT ILL
93	V	ON IND
95	BG	ACC RELAY CONT
96	GR	A/T SHIFT SELECTOR POWER SUPPLY
99	R	SHIFT P
100	G	PASSENGER DOOR REQUEST SW
101	SB	DRIVER DOOR REQUEST SW
102	BG	BLOWER FAN MOTOR RELAY CONT
103	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2
110	G	HAZARD SW

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM (VQ37VHR WITH AROUND VIEW MONITOR)

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FM-NH



Terminal No.	Color	Wire	Signal Name [Specification]
1	L	GR	CANH
3	GR	B	BATTERY
4	L	B	CANH
5	B	GR	GROUND
6	L	GR	CANH
7	P	GR	CANH
9	LG	IGN	IGNITION
10	P	GR	CANH
11	B	GR	GROUND
12	P	GR	CANH

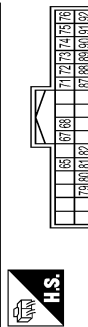
Connector No.	M164
Connector Name	ECM
Connector Type	RH24FGY-R28-R-LHZ



Terminal No.	Color	Wire	Signal Name [Specification]
97	R	ACCELERATOR PEDAL POSITION SENSOR 1	
98	P	ACCELERATOR PEDAL POSITION SENSOR 2 (WITH NAVI)	
99	G	SENSOR POWER SUPPLY Y (WITH NAVI)	
100	W	SENSOR GROUND	
101	SB	ASC/DC STEERING SWITCH	
102	LG	EVAP CONTROL SYSTEM PRESSURE SENSOR	
103	G	SENSOR POWER SUPPLY (WITH NAVI)	
104	L	SENSOR POWER SUPPLY (WITH NAVI)	

104	BR	SENSOR GROUND (WITH NAVI)
105	GR	SENSOR GROUND (WITHOUT NAVI)
106	L	REFRIGERANT PRESSURE SENSOR
107	W	FUEL TANK TEMPERATURE SENSOR
108	BG	SENSOR POWER SUPPLY
109	V	SENSOR GROUND
110	G	PNP SIGNAL
111	R	ENGINE SPEED OUTPUT SIGNAL
112	V	SENSOR GROUND (WITH NAVI) / EVAP CONTROL SYSTEM PRESSURE SENSOR
113	W	SENSOR GROUND (WITHOUT NAVI) / EVAP CONTROL SYSTEM PRESSURE SENSOR
114	P	CAN COMMUNICATION LINE
115	L	CAN COMMUNICATION LINE
116	GR	DATA LINK CONNECTOR
117	LG	EVAP CANISTER VENT CONTROL VALVE
118	P	STOP LAMP SWITCH
119	B	ECM GROUND
120	B	ECM GROUND
121	GR	POWER SUPPLY FOR ECM
122	BR	ASC/DC BRAKE SWITCH
123	B	ECM GROUND

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
65	V	PARKING BRAKE SIGNAL
66	B	COMPOSITE IMAGE SIGNAL GND
67	R	COMPOSITE IMAGE SIGNAL
71	SHIELD	MICROPHONE SHIELD
72	G	MICROPHONE VCC
73	R	COMM (CONT->DISP)
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
77	R	ILLUMINATION
80	G	IGNITION SIGNAL
81	BG	REVERSE SIGNAL
82	R	VEHICLE SPEED SIGNAL (8-PULSE)

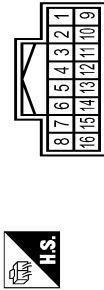
87	R	MICROPHONE SIGNAL
88	B	SHIELD
89	G	COMM (DISP-CONT)
90	L	CANH
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M224
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH28FY-EX



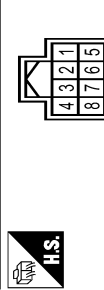
Terminal No.	Color Of Wire	Signal Name [Specification]
23	Y	INFLATOR AS2+
24	Y	INFLATOR AS2-
25	Y	INFLATOR AS1-
26	Y	INFLATOR AS1+
27	B	GND
28	Y	INFLATOR DR2+
29	Y	INFLATOR DR1+DR2-
30	Y	INFLATOR DR+
31	V	EC2S-
32	BR	SIDE SENS RH2+
34	G	SIDE SENS LH2-
35	P	A/B W/L
38	G	SEATBELT W/L
39	SHIELD	GND
41	SB	EC2S+
42	Y	SIDE SENS RH2+
44	R	SIDE SENS LH2+
45	P	CAN L
46	L	CAN H
47	P	A/B CUTOFF TELLTALE
50	T/C	IGN

Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH18FM-NH



Terminal No.	Color	Wire	Signal Name [Specification]
1	L	P	
2	L	P	
4	B		
5	BR		
6	GR		
7	SB		
8	Y		
9	SHIELD		
10	R		
11	G		
15	R		
16	V		

Connector No.	R21
Connector Name	LANE CAMERA UNIT
Connector Type	TH8FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	SB	WARNING SYSTEMS ON INDICATOR
3	V	WARNING SYSTEMS SWITCH
4	L	CANH
5	B	GROUND
6	R	LANE DEPARTURE WARNING BUZZER
7	Y	IGNITION POWER SUPPLY
8	P	CANH

MALFUNCTION AREA CHART

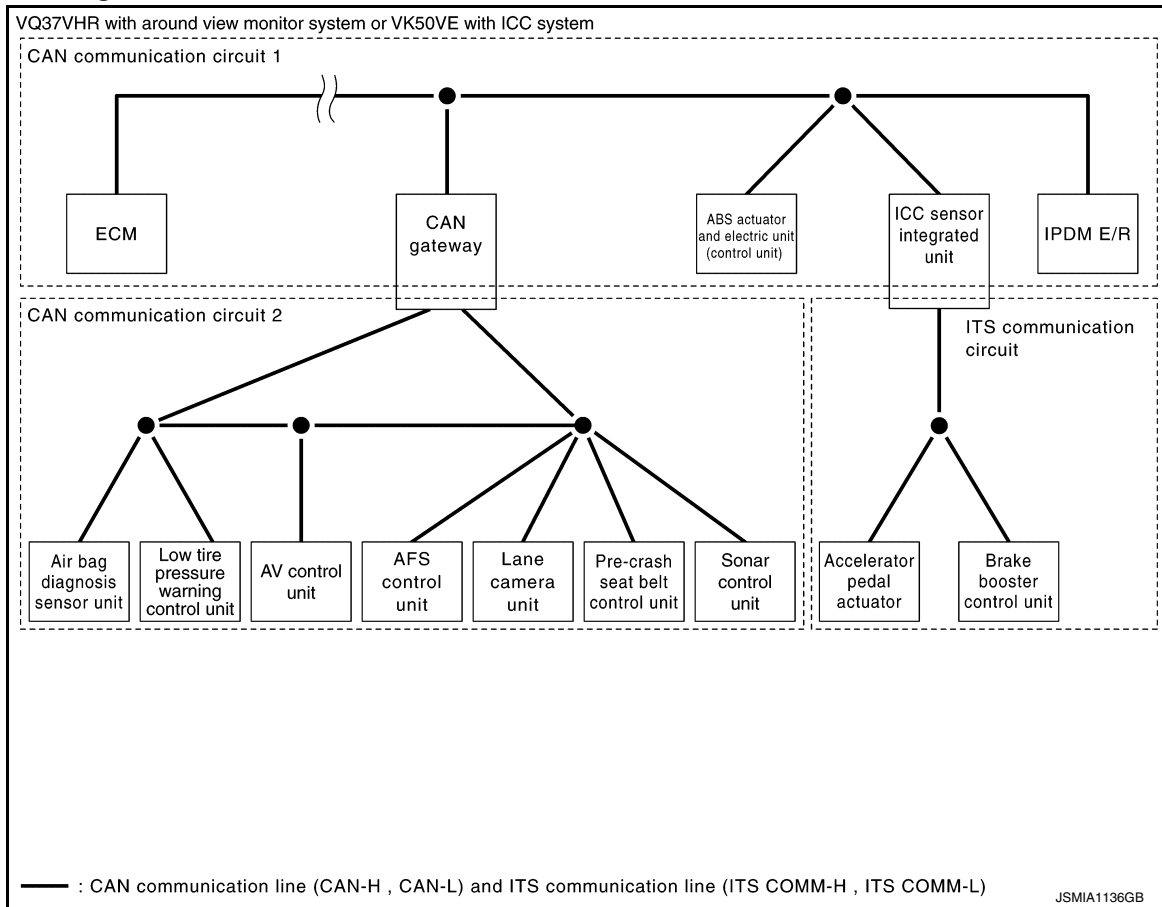
< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MALFUNCTION AREA CHART

System Diagram

INFOID:0000000010585274



CAN Communication Circuit

INFOID:0000000010585275

MAIN LINE

Malfunction area	Reference
Main line between data link connector and unified meter and A/C amp.	LAN-67. "Diagnosis Procedure"
Main line between unified meter and A/C amp. and automatic back door control unit	LAN-68. "Diagnosis Procedure"
Main line between automatic back door control unit and low tire pressure warning control unit	LAN-69. "Diagnosis Procedure"
Main line between automatic back door control unit and driver seat control unit	LAN-70. "Diagnosis Procedure"
Main line between driver seat control unit and low tire pressure warning control unit	LAN-71. "Diagnosis Procedure"
Main line between driver seat control unit and CAN gateway	LAN-72. "Diagnosis Procedure"
Main line between low tire pressure warning control unit and AV control unit	LAN-73. "Diagnosis Procedure"
Main line between AV control unit and AFS control unit	LAN-74. "Diagnosis Procedure"
Main line between AV control unit and sonar control unit	LAN-75. "Diagnosis Procedure"
Main line between AV control unit and ABS actuator and electric unit (control unit)	LAN-76. "Diagnosis Procedure"

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Main line between AFS control unit and ABS actuator and electric unit (control unit)	LAN-77, "Diagnosis Procedure"
Main line between sonar control unit and ABS actuator and electric unit (control unit)	LAN-78, "Diagnosis Procedure"
Main line between CAN gateway and ABS actuator and electric unit (control unit)	LAN-79, "Diagnosis Procedure"
Main line between data link connector and low tire pressure warning control unit	LAN-80, "Diagnosis Procedure"

BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	LAN-81, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-82, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-83, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 1)	LAN-84, "Diagnosis Procedure"
Data link connector branch line circuit (CAN communication circuit 2)	LAN-85, "Diagnosis Procedure"
TCM branch line circuit	LAN-86, "Diagnosis Procedure"
BCM branch line circuit	LAN-87, "Diagnosis Procedure"
Unified meter and A/C amp. branch line circuit	LAN-88, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-89, "Diagnosis Procedure"
Automatic back door control unit branch line circuit	LAN-90, "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-91, "Diagnosis Procedure"
Around view monitor control unit branch line circuit	LAN-92, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 1)	LAN-93, "Diagnosis Procedure"
CAN gateway branch line circuit (CAN communication circuit 2)	LAN-94, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-100, "Diagnosis Procedure"
Sonar control unit branch line circuit	LAN-105, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-95, "Diagnosis Procedure"
ICC sensor integrated unit branch line circuit	LAN-96, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-97, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-98, "Diagnosis Procedure"
Low tire pressure warning control unit branch line circuit	LAN-99, "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-102, "Diagnosis Procedure"
Lane camera unit branch line circuit	LAN-103, "Diagnosis Procedure"
Pre-crash seat belt control unit branch line circuit	LAN-104, "Diagnosis Procedure"

SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit	LAN-108, "Diagnosis Procedure"
CAN communication circuit 1	LAN-110, "Diagnosis Procedure"
CAN communication circuit 2	LAN-112, "Diagnosis Procedure"

ITS Communication Circuit

INFOID:0000000010585276

BRANCH LINE

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Accelerator pedal actuator branch line circuit	LAN-106, "Diagnosis Procedure"
Brake booster control unit branch line circuit	LAN-107, "Diagnosis Procedure"

SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	LAN-114, "Diagnosis Procedure"

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:000000010585277

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000010585278

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN PWBD AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:000000010585279

1.CHECK CONNECTOR

1. Turn the ignition 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

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 B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.		Terminal No.		Continuity
B201		38	36	Existed
		39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M96	2	Existed
	39		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the automatic back door control unit and the low tire pressure warning control unit.

NO >> Repair the main line between the harness connector M117 and the low tire pressure warning control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000010585280

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:000000010585281

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M96	2	Existed
	83		1	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the low tire pressure warning control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000010585282

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000010585283

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

LAN

MAIN LINE BETWEEN AV AND AFS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN AV AND AFS CIRCUIT

Diagnosis Procedure

INFOID:0000000011010043

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - AFS control unit
4. Check the continuity between the AV control unit harness connector and the AFS control unit harness connector.
 - With navigation system

AV control unit harness connector		AFS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M16	30	Existed
	74		7	Existed

- Without navigation system

AV control unit harness connector		AFS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M16	30	Existed
	80		7	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000010585284

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

LAN

MAIN LINE BETWEEN AV AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN AV AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010585285

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AV control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - With navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M6	47	Existed
	74		48	Existed

- Without navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M6	47	Existed
	80		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the 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 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 AFS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN AFS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011010045

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AFS control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AFS control unit harness connector and the harness connector.

AFS control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M16	30	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AFS control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the AFS control unit and the 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 SONAR AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN SONAR AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000010585286

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - Sonar control unit
 - Harness connectors M6 and E106
2. Check the continuity between the sonar control unit harness connector and the harness connector.

Sonar control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M47	19	M6	47	Existed
	20		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the sonar control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the sonar control unit and the 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 CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000010585287

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000010585288

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585289

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585290

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).

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

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

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585291

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

LAN

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010585292

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64. "System Diagram"](#).

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000010585293

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

LAN

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585294

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585295

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

LAN

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585296

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585297

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

LAN

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585298

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

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

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

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585299

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585300

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).

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

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

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000010585303

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

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

LAN

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000010585304

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130. "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585305

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585306

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

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-134, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-175, "Exploded View"](#).

YES (Past error)>>Error was detected in the ICC sensor integrated 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:0000000010585307

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585308

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585309

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.	
M96	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585310

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

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

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585311

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AFS control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AFS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-65. "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-232. "Exploded View"](#).

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

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585312

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of lane camera unit.
3. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R21	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the lane camera unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-301, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-337, "Exploded View"](#).

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

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

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585313

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector B1
 - Harness connector M7
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "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.
3. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-crash seat belt control unit 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 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. Refer to [SBC-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-72, "Exploded View"](#).

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010585314

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

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

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

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010585315

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 accelerator pedal actuator 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 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.		
E115	5	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the accelerator pedal actuator branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-139, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal actuator. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View"](#).
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
NO >> Repair the power supply and the ground circuit.

BCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000010585316

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Brake booster control unit
 - Harness connector B201
 - Harness connector M117
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Brake booster control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B250	14	5	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair or replace (if shield line is open) the brake booster control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the brake booster control unit. Refer to [CCS-134. "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-176. "Exploded View"](#).

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

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

LAN

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010585317

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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.
- VQ engine models

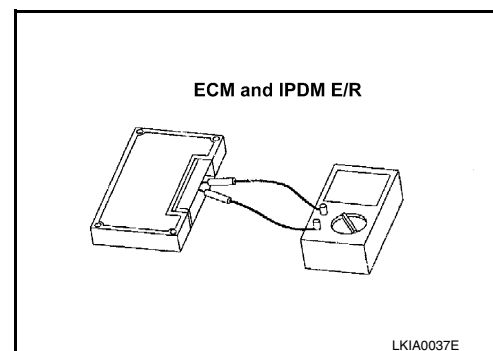
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	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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LAN

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000010585318

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-64. "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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

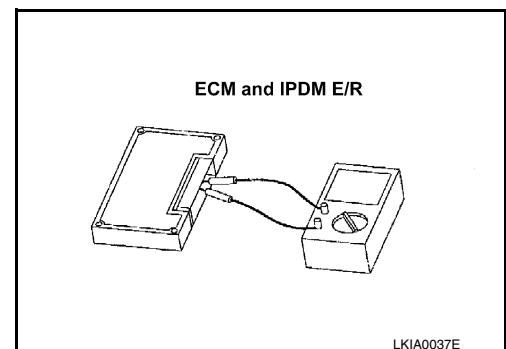
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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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LAN

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000010585319

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-64. "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.		
M24	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

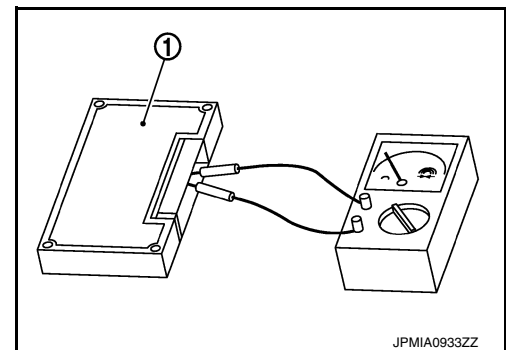
Is the measurement value within the specification?

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.



CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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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ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000010585320

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit has no malfunction.

NOTE:

For identification of CAN communication circuit and ITS communication circuit, refer to [LAN-64, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

2.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the 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 integrated unit
 - Accelerator pedal actuator
 - Harness connector E106
 - Harness connector M6
 - Harness connector M117
 - Harness connector B201
 - Brake booster control unit

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.
 - ICC sensor integrated unit
 - Brake booster control unit
2. Check the continuity between the ICC sensor integrated unit harness connector and the brake booster control unit harness connector.

ICC sensor integrated unit harness connector		Brake booster control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	2	B250	14	Existed
	5		5	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line. (ITS communication line). Refer to [LAN-64, "System Diagram"](#).

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of accelerator pedal actuator.
2. Check the continuity between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Continuity
Connector No.	Terminal No.		
E67	2	5	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

ICC sensor integrated unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
E67	2		Not existed
	5		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ICC sensor integrated unit and the brake booster control unit.
2. Check the resistance between the ICC sensor integrated unit terminals.

1 : ICC sensor integrated unit and brake booster control unit

ICC sensor integrated unit		Resistance (Ω)
Terminal No.		
2	5	Approx. 108 – 132

3. Check the resistance between the brake booster control unit terminals.

Brake booster control unit		Resistance (Ω)
Terminal No.		
14	5	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC sensor integrated unit and/or the brake booster control unit.

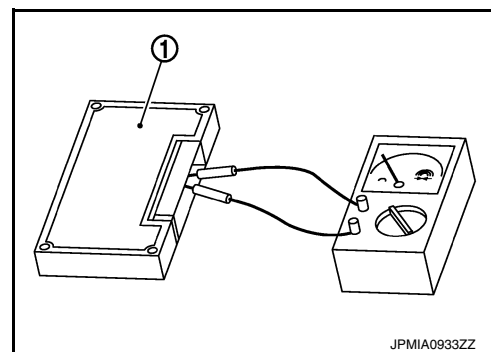
7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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



BASIC INSPECTION

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (CAN GATEWAY)

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (CAN GATEWAY) :

Description

INFOID:0000000010585321

For work procedure, refer to [LAN-116, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(CAN GATEWAY\) : Special Repair Requirement"](#).

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.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (CAN GATEWAY) :

Special Repair Requirement

INFOID:0000000010585322

1. SAVING VEHICLE SPECIFICATION

CONSULT Configuration

Perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to [LAN-116, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(CAN GATEWAY\) : 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-130, "Exploded View"](#).

>> 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-117, "CONFIGURATION \(CAN GATEWAY\) : Special Repair Requirement"](#).

>> WORK END

CONFIGURATION (CAN GATEWAY)

CONFIGURATION (CAN GATEWAY) : Description

INFOID:0000000010585323

Vehicle specification needs to be written with CONSULT because it is not written after replacing CAN gateway. Refer to [LAN-117. "CONFIGURATION \(CAN GATEWAY\) : Special Repair Requirement"](#). Configuration has three functions as follows

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

CAUTION:

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

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

CONFIGURATION (CAN GATEWAY) : Special Repair Requirement

INFOID:0000000010585324

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.

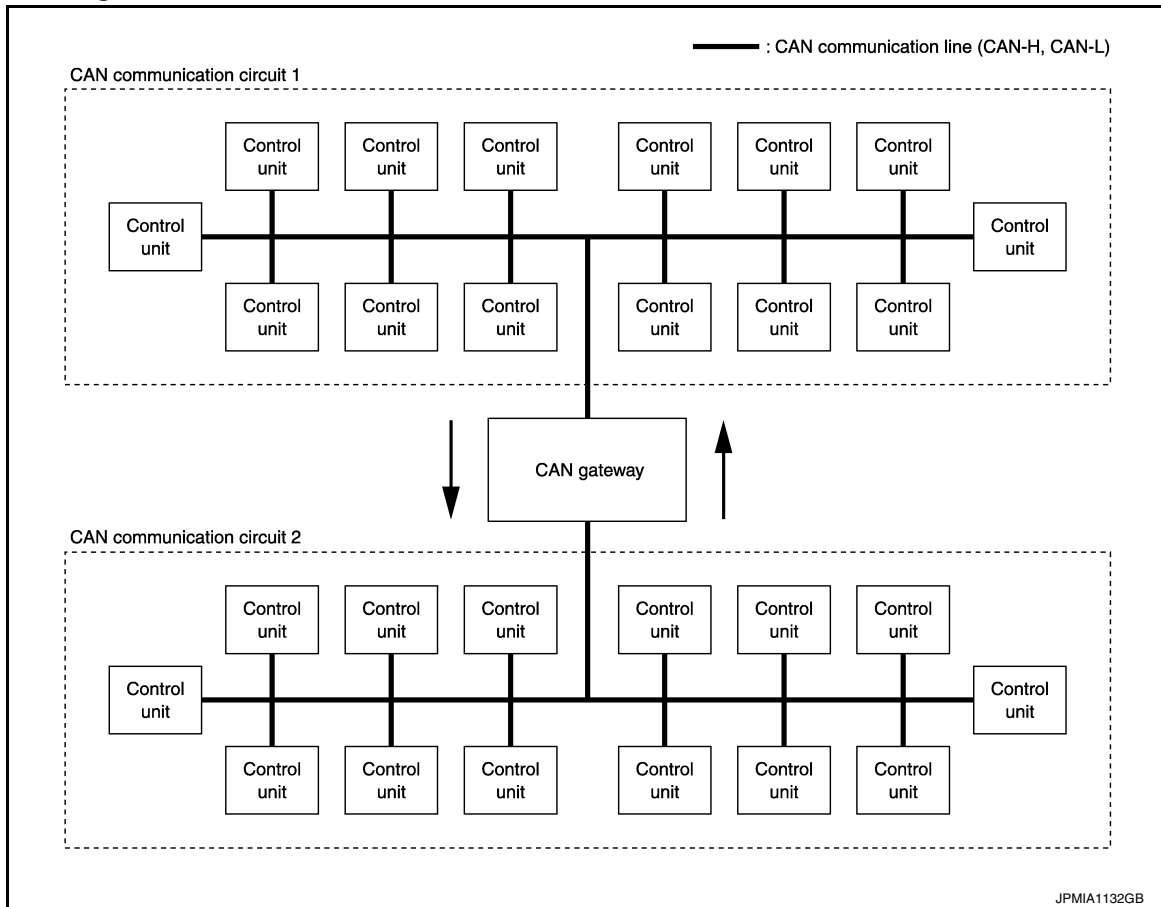
>> WORK END

SYSTEM DESCRIPTION

CAN GATEWAY SYSTEM

System Diagram

INFOID:0000000010585325



System Description

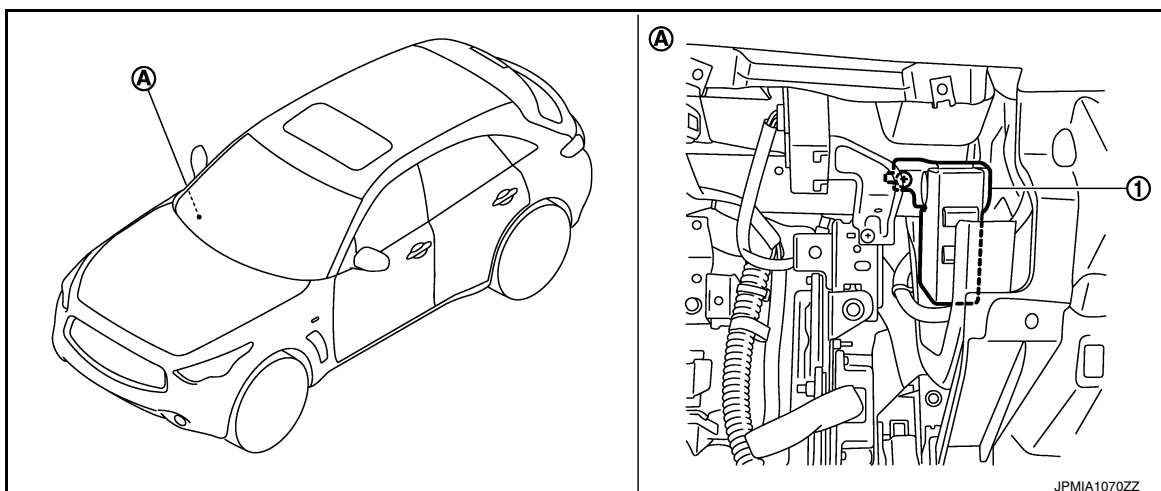
INFOID:0000000010585326

OUTLINE

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

Component Parts Location

INFOID:0000000010585327



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

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DIAGNOSIS SYSTEM (CAN GATEWAY)**CONSULT Function (CAN gateway)**

INFOID:0000000010585328

APPLICATION ITEM

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

Diagnosis mode	Function Description
Ecu Identification	The CAN gateway part number is displayed.
Self Diagnostic Result	Displays the diagnosis results judged by CAN gateway.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing CAN gateway.

SELF DIAGNOSTIC RESULT

Refer to [LAN-128, "DTC Index"](#).

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000010585329

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart. Refer to [LAN-35, "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:0000000010585330

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:0000000010585331

1.PERFORM SELF DIAGNOSTIC

1. Turn the ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result".

Is "U1000: CAN COMM CIRCUIT" displayed?

- YES >> Refer to [LAN-25, "Trouble Diagnosis Flow Chart"](#).
 NO >> Refer to [GI-47, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000010585332

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart. Refer to [LAN-35, "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:0000000010585333

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:0000000010585334

1.REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-130, "Exploded View"](#).

B2600 CONFIG ERROR

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

B2600 CONFIG ERROR

Description

INFOID:0000000010585335

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

DTC Logic

INFOID:0000000010585336

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:0000000010585337

1.REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-130, "Exploded View"](#).

LAN

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000010585338

1.CHECK FUSE

Check that the following fuse are not blown.

Signal name	Fuse No.
Battery power supply	11
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

Check voltage between CAN gateway harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
CAN gateway		Ignition switch	
Connector	Terminal		
M125	3	OFF	Battery voltage
	9	ON	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between CAN gateway harness connector and ground.

CAN gateway		Ground	Continuity
Connector	Terminal		
M125	5		Existed
	11		

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

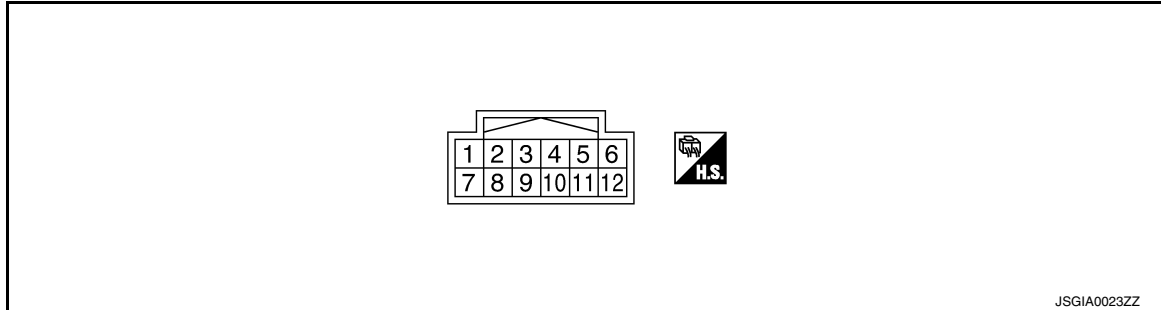
ECU DIAGNOSIS INFORMATION

CAN GATEWAY

Reference Value

INFOID:0000000010585339

TERMINAL LAYOUT



PHYSICAL VALUES

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

LAN

CAN GATEWAY

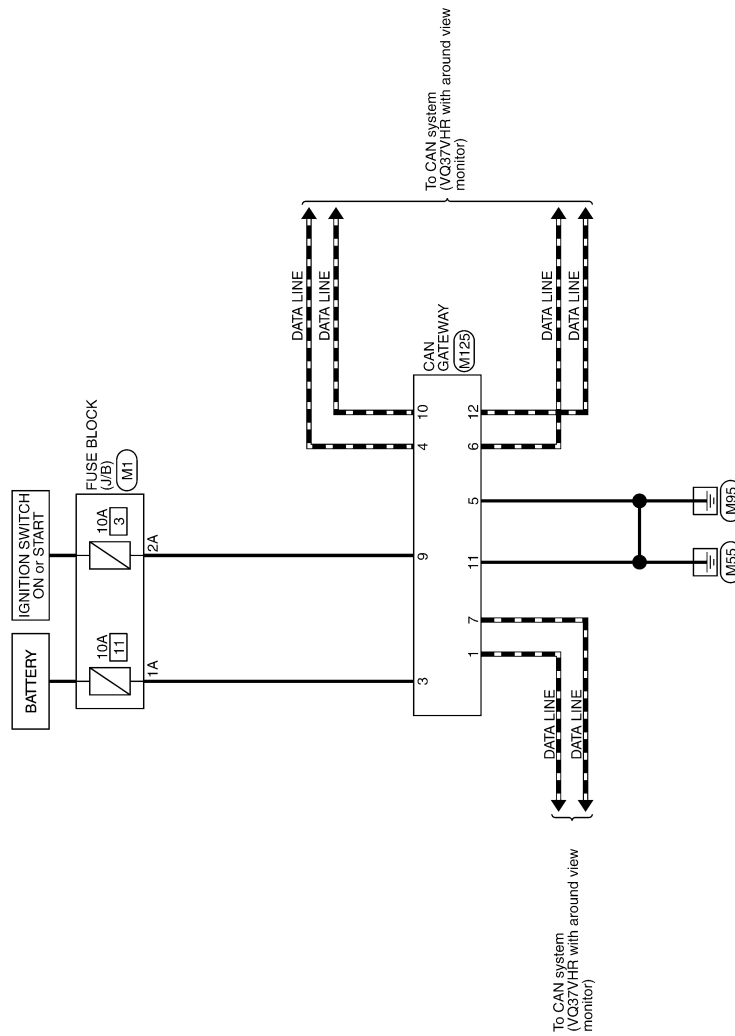
< ECU DIAGNOSIS INFORMATION >

[CAN GATEWAY]

Wiring Diagram - CAN GATEWAY SYSTEM -

INFOID:000000010585340

CAN GATEWAY SYSTEM



2014/03/18

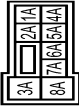
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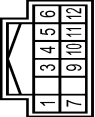
LAN

CAN GATEWAY SYSTEM

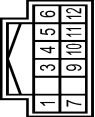
Connector No.	M1
Connector Name	FUSE BLOCK (UB)
Connector Type	NS08FW-M2



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	BG	-
2A	G	-
3A	L	-
4A	R	-
5A	Y	-
6A	Y	-
7A	R	-
8A	L	-



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



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
3	GR	BATTERY
4	L	CANH
5	B	GROUND
6	L	CANH
7	P	CANL
9	LG	IGNITION
10	P	CANL
11	B	GROUND
12	P	CANL

DTC Inspection Priority Chart

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

CAN GATEWAY

< ECU DIAGNOSIS INFORMATION >

[CAN GATEWAY]

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

DTC Index

INFOID:0000000010585342

NOTE:

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

DTC		Fail-safe	Reference
No DTC is detected. Further testing may be required.		—	—
U1000: CAN COMM CIRCUIT		—	LAN-121
U1010: CONTROL UNIT(CAN)		—	LAN-122
B2600: CONFIG ERROR	WRONG DATA	—	LAN-123
	NOT CONFIGURED		

PRECAUTION

PRECAUTIONS

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

INFOID:000000010585343

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Removing Battery Terminal

INFOID:000000011014458

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

NOTE:

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

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

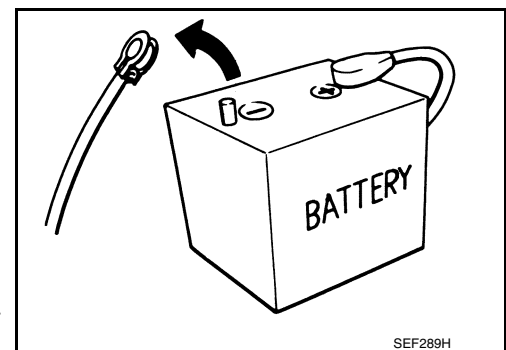
NOTE:

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

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

NOTE:

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



REMOVAL AND INSTALLATION

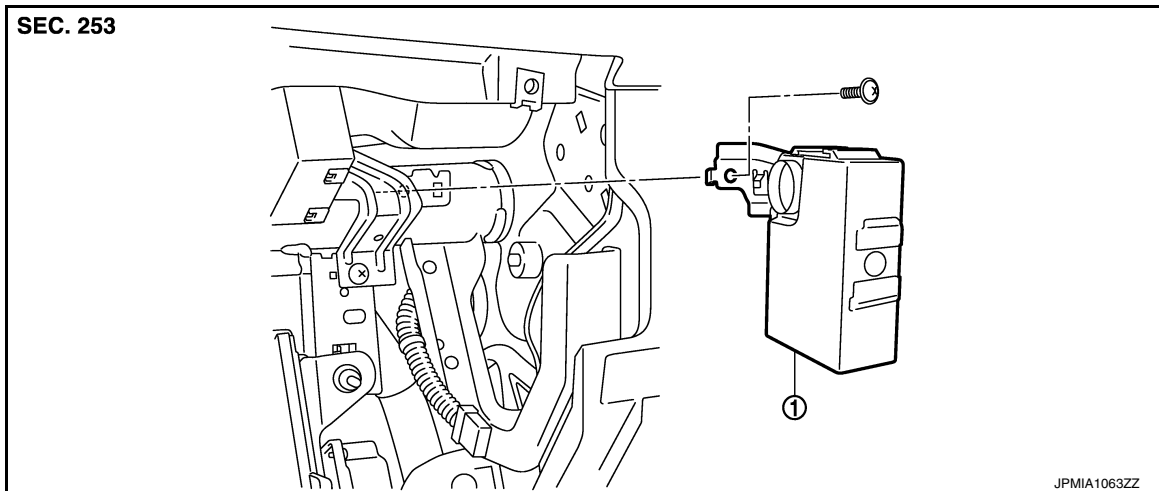
CAN GATEWAY

Exploded View

INFOID:0000000010585344

CAUTION:

Before replacing CAN gateway, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-116, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(CAN GATEWAY\) : Description"](#).



1. CAN gateway

Removal and Installation

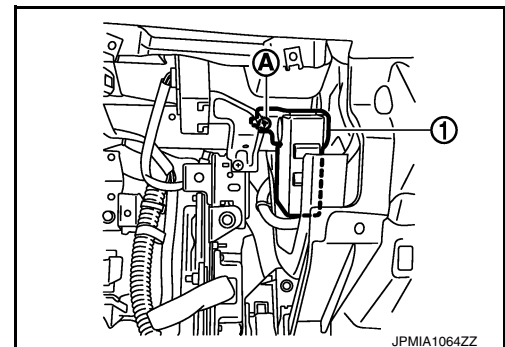
INFOID:0000000010585345

CAUTION:

Before replacing CAN gateway, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-116, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(CAN GATEWAY\) : Description"](#).

REMOVAL

1. Remove instrument lower panel RH. Refer to [IP-12, "Exploded View"](#).
2. Remove CAN gateway mounting screw (A).
3. Remove CAN gateway (1) and disconnect the connector.



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-116, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(CAN GATEWAY\) : Description"](#).

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011014534

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000011014535

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN PWBD AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011014550

1.CHECK CONNECTOR

1. Turn the ignition 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

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 B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M96	2	Existed
	39		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the automatic back door control unit and the low tire pressure warning control unit.

NO >> Repair the main line between the harness connector M117 and the low tire pressure warning control unit.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:000000011014554

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN AV AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011014555

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AV control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - With navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M6	47	Existed
	74		48	Existed

- Without navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M6	47	Existed
	80		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the 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 ABS actuator and electric unit (control unit).

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

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014561

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014562

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

LAN

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014563

1. CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014564

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014565

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014566

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014567

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014569

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014570

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014571

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

LAN

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014572

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014573

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

YES (Past error)>>Error was detected in the AV 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:0000000011014575

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.		
M24	6	14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair 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.
- VQ engine models

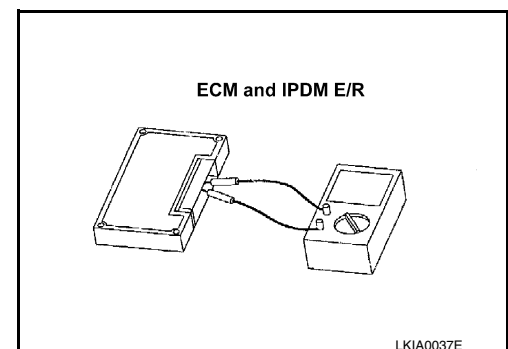
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	Approx. 108 – 132

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

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011014536

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000011014537

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011014538

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011014539

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M96	2	Existed
	83		1	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the low tire pressure warning control unit.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011014540

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

LAN

MAIN LINE BETWEEN AV AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN AV AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000011014556

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AV control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - With navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M6	47	Existed
	74		48	Existed

- Without navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M6	47	Existed
	80		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the 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 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 2)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014591

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014592

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014593

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014594

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014595

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014596

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014597

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the automatic back door control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014598

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014599

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014600

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014601

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

LAN

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014602

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014603

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M204	81	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

YES (Past error)>>Error was detected in the AV 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:0000000011014605

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.		
M24	6	14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair 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.
 - VQ engine models

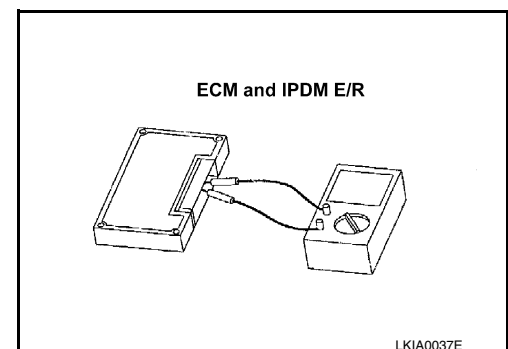
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	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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LAN

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 DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011014466

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000011014467

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011014468

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:000000011014469

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M96	2	Existed
	83		1	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the low tire pressure warning control unit.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011014470

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

LAN

MAIN LINE BETWEEN AV AND AFS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN AV AND AFS CIRCUIT

Diagnosis Procedure

INFOID:000000011014472

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - AFS control unit
4. Check the continuity between the AV control unit harness connector and the AFS control unit harness connector.
 - With navigation system

AV control unit harness connector		AFS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M16	30	Existed
	74		7	Existed

- Without navigation system

AV control unit harness connector		AFS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M16	30	Existed
	80		7	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN AFS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN AFS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011014473

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AFS control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AFS control unit harness connector and the harness connector.

AFS control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M16	30	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AFS control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014474

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014475

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

LAN

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014476

1. CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014477

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

LAN

M&A BRANCH LINE CIRCUIT**Diagnosis Procedure**

INFOID:000000011014478

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014479

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014480

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

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

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

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014481

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

LAN

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014486

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014488

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014489

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014496

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011014497

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M204	81	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

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

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011014498

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AFS control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AFS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-65. "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-232. "Exploded View"](#).

YES (Past error)>>Error was detected in the AFS 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:0000000011014532

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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.
 - VQ engine models

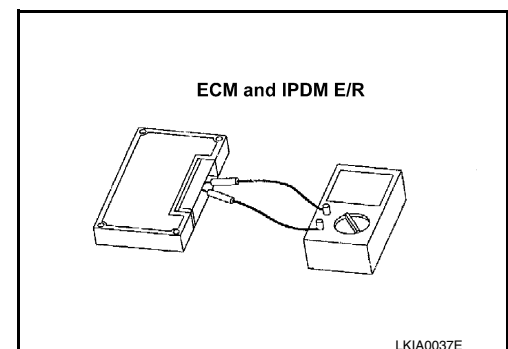
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	Approx. 108 – 132

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

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



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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

Is the measurement value within the specification?

YES >> GO TO 5.

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

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011022508

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000011022509

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011022510

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

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LAN

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011022511

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011022512

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

LAN

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011022513

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011022514

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:000000011022515

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022516

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

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:000000011022517

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64. "System Diagram"](#).

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:0000000011022518

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

LAN

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022519

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022520

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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LAN

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022521

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022522

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

LAN

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022523

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the automatic back door control unit 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:0000000011022524

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

LAN

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022525

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).

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

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

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:0000000011022526

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

3.CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.
- NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).
- NO >> Repair the power supply and the ground circuit.

LAN

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:000000011022527

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130. "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022528

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022530

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022531

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

LAN

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022532

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022533

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022537

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

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

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

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011022540

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-64. "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.	
M24	6	14
		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

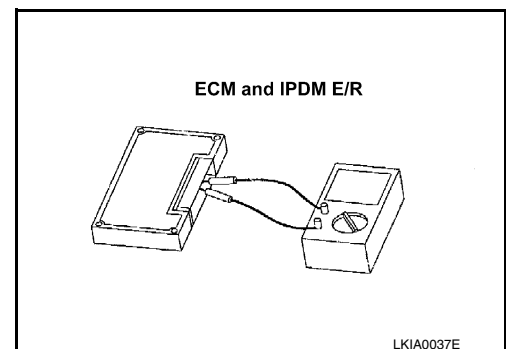
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

5.CHECK SYMPTOM

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

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011022541

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-64. "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.		
M24	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

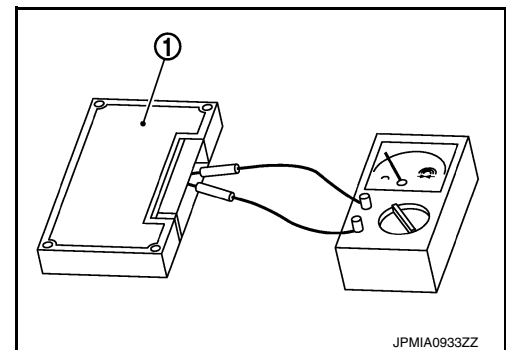
Is the measurement value within the specification?

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.



CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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 DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011022647

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011022648

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011022649

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011022650

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

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MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011022651

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011022652

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

LAN

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000011022653

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011022654

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

LAN

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022655

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

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:0000000011022656

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

LAN

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:000000011022657

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022658

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022659

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022660

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022661

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022662

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the automatic back door control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022663

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022664

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

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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:000000011022665

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3. CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

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

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011022666

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130. "Exploded View"](#).

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

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

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022667

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).

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 5)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022669

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

LAN

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022670

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022671

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022672

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

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

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022673

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AFS control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AFS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-65. "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-232. "Exploded View"](#).

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022676

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

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

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

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011022679

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-64. "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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

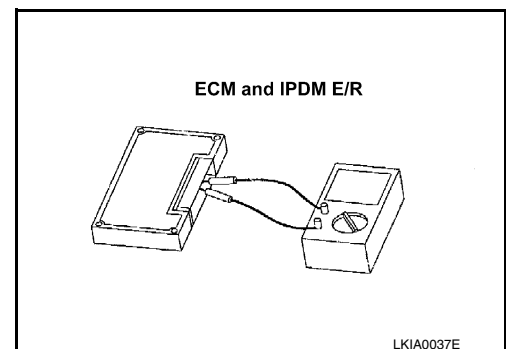
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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:0000000011022680

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-64, "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.		
M24	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

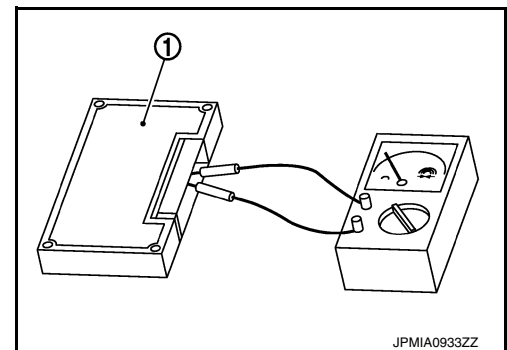
Is the measurement value within the specification?

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.



CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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 DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011022766

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011022767

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011022768

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011022769

1.CHECK CONNECTOR

1. Turn the ignition 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

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		82	80	Existed
		83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

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MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011022770

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011022771

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

LAN

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011022772

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011022773

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

LAN

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022774

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011022775

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

LAN

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000011022776

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022777

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022778

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022779

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022780

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022781

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the automatic back door control unit branch line.
NO >> Repair the power supply and the ground circuit.

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LAN

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022782

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022783

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

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CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000011022784

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

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

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011022785

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130. "Exploded View"](#).

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

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

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LAN

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022786

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
 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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022787

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

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ICC sensor integrated unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-134, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-175, "Exploded View"](#).
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
NO >> Repair the power supply and the ground circuit.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022788

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022789

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022790

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022791

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

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

LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022793

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of lane camera unit.
3. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R21	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the lane camera unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-301, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-337, "Exploded View"](#).

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

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

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022794

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector B1
 - Harness connector M7
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "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.
3. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-crash seat belt control unit 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 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. Refer to [SBC-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-72, "Exploded View"](#).

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022795

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

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

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

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022796

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 accelerator pedal actuator 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 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.		
E115	5	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the accelerator pedal actuator branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-139, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal actuator. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View"](#).
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
NO >> Repair the power supply and the ground circuit.

BCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022797

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Brake booster control unit
 - Harness connector B201
 - Harness connector M117
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Brake booster control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B250	14	5	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair or replace (if shield line is open) the brake booster control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the brake booster control unit. Refer to [CCS-134. "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-176. "Exploded View"](#).

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

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

LAN

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011022798

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-64. "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.	
M24	6	14
		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

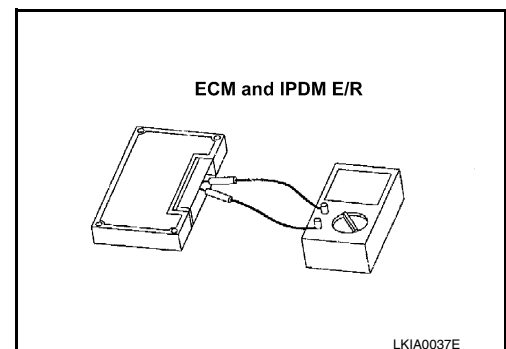
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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 6)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011022799

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-64, "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.		
M24	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

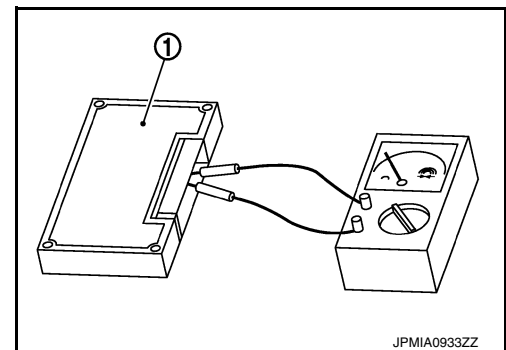
Is the measurement value within the specification?

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.



CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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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ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011022800

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit has no malfunction.

NOTE:

For identification of CAN communication circuit and ITS communication circuit, refer to [LAN-64, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

2.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the 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 integrated unit
 - Accelerator pedal actuator
 - Harness connector E106
 - Harness connector M6
 - Harness connector M117
 - Harness connector B201
 - Brake booster control unit

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.
 - ICC sensor integrated unit
 - Brake booster control unit
2. Check the continuity between the ICC sensor integrated unit harness connector and the brake booster control unit harness connector.

ICC sensor integrated unit harness connector		Brake booster control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	2	B250	14	Existed
	5		5	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line. (ITS communication line). Refer to [LAN-64, "System Diagram"](#).

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of accelerator pedal actuator.
2. Check the continuity between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Continuity
Connector No.	Terminal No.		
E67	2	5	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

ICC sensor integrated unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
E67	2		Not existed
	5		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ICC sensor integrated unit and the brake booster control unit.
2. Check the resistance between the ICC sensor integrated unit terminals.

1 : ICC sensor integrated unit and brake booster control unit

ICC sensor integrated unit		Resistance (Ω)
Terminal No.		
2	5	Approx. 108 – 132

3. Check the resistance between the brake booster control unit terminals.

Brake booster control unit		Resistance (Ω)
Terminal No.		
14	5	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC sensor integrated unit and/or the brake booster control unit.

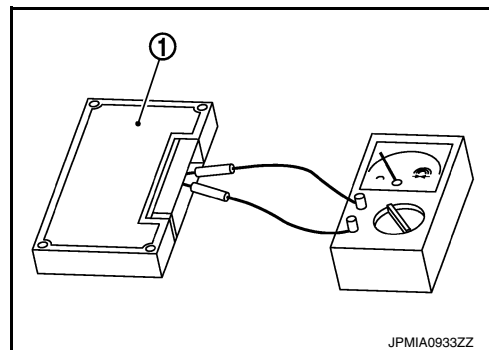
7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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



MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011022347

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011022348

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011022349

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011022350

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

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MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011022351

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011022352

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

LAN

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011022353

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011022354

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

LAN

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022355

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

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:0000000011022356

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

LAN

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:000000011022357

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022358

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022359

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022360

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022361

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022362

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the automatic back door control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022363

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022364

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

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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:000000011022365

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

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

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011022366

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130. "Exploded View"](#).

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

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

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022367

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).

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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022368

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

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ICC sensor integrated unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-134, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-175, "Exploded View"](#).
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
NO >> Repair the power supply and the ground circuit.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022369

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022370

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022373

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022374

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

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

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022375

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AFS control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AFS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-65. "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-232. "Exploded View"](#).

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

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

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022376

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of lane camera unit.
3. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R21	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the lane camera unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-301, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-337, "Exploded View"](#).

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

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

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022377

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector B1
 - Harness connector M7
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "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.
3. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-crash seat belt control unit 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 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. Refer to [SBC-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-72, "Exploded View"](#).

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

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

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SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011022378

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317, "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374, "Exploded View"](#).

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

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

APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011022379

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 accelerator pedal actuator 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 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.		
E115	5	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the accelerator pedal actuator branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-139, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal actuator. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View"](#).
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
NO >> Repair the power supply and the ground circuit.

LAN

BCU BRANCH LINE CIRCUIT**Diagnosis Procedure**

INFOID:000000011022380

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Brake booster control unit
 - Harness connector B201
 - Harness connector M117
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Brake booster control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B250	14	5	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair or replace (if shield line is open) the brake booster control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the brake booster control unit. Refer to [CCS-134. "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-176. "Exploded View"](#).

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

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

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011022438

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-64, "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.	
M24	6	14
		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

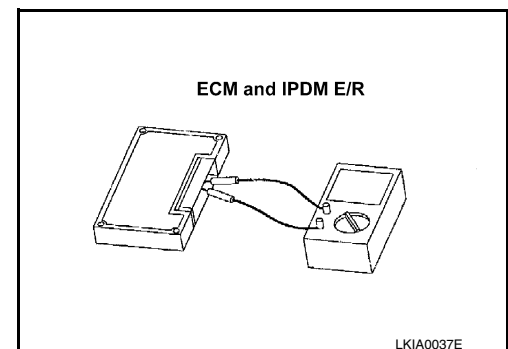
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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:0000000011022439

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-64, "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.	
M24	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

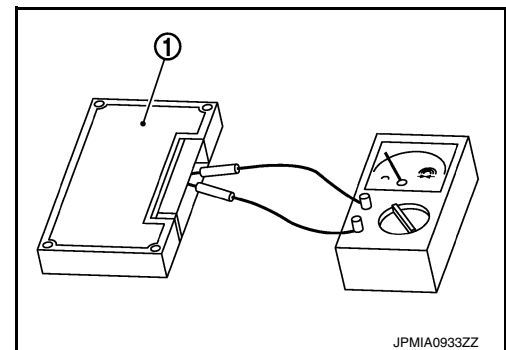
Is the measurement value within the specification?

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.



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CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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.

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011022440

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit has no malfunction.

NOTE:

For identification of CAN communication circuit and ITS communication circuit, refer to [LAN-64, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

2.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the 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 integrated unit
 - Accelerator pedal actuator
 - Harness connector E106
 - Harness connector M6
 - Harness connector M117
 - Harness connector B201
 - Brake booster control unit

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.
 - ICC sensor integrated unit
 - Brake booster control unit
2. Check the continuity between the ICC sensor integrated unit harness connector and the brake booster control unit harness connector.

ICC sensor integrated unit harness connector		Brake booster control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	2	B250	14	Existed
	5		5	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line. (ITS communication line). Refer to [LAN-64, "System Diagram"](#).

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of accelerator pedal actuator.
2. Check the continuity between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Continuity
Connector No.	Terminal No.		
E67	2	5	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

ICC sensor integrated unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
E67	2		Not existed
	5		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ICC sensor integrated unit and the brake booster control unit.
2. Check the resistance between the ICC sensor integrated unit terminals.

1 : ICC sensor integrated unit and brake booster control unit

ICC sensor integrated unit		Resistance (Ω)
Terminal No.		
2	5	Approx. 108 – 132

3. Check the resistance between the brake booster control unit terminals.

Brake booster control unit		Resistance (Ω)
Terminal No.		
14	5	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC sensor integrated unit and/or the brake booster control unit.

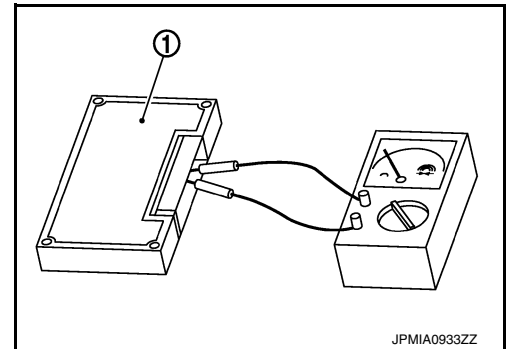
7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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



MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011023447

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000011023448

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN PWBD AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011023449

1.CHECK CONNECTOR

1. Turn the ignition 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

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 B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M96	2	Existed
	39		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the automatic back door control unit and the low tire pressure warning control unit.

NO >> Repair the main line between the harness connector M117 and the low tire pressure warning control unit.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011023450

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN AV AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011023451

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AV control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - With navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M6	47	Existed
	74		48	Existed

- Without navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M6	47	Existed
	80		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the 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 ABS actuator and electric unit (control unit).

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

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011023452

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023465

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).
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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LAN

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023453

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023454

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023455

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023456

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023457

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023458

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the automatic back door control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023459

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

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

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023460

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023461

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023462

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023463

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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

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

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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000011023464

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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.
- VQ engine models

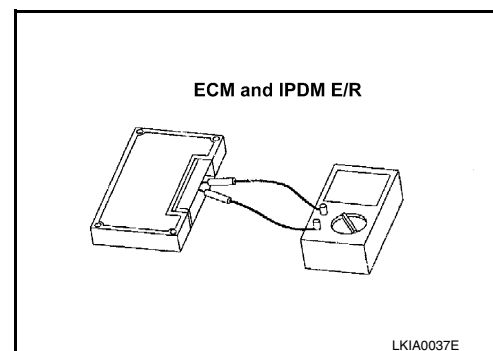
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	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 8)]

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 DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011023466

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011023467

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011023468

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011023469

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M96	2	Existed
	83		1	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the low tire pressure warning control unit.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011023470

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN AV AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011023471

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AV control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - With navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M6	47	Existed
	74		48	Existed

- Without navigation system

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M6	47	Existed
	80		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the 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 ABS actuator and electric unit (control unit).

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

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011023472

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024151

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).
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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LAN

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023473

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023474

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023475

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023476

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023477

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023478

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the automatic back door control unit branch line.
NO >> Repair the power supply and the ground circuit.

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LAN

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023479

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat 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:0000000011023480

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023481

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023482

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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LAN

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023483

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011023484

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M204	81	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

YES (Past error)>>Error was detected in the AV 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:0000000011023485

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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.
 - VQ engine models

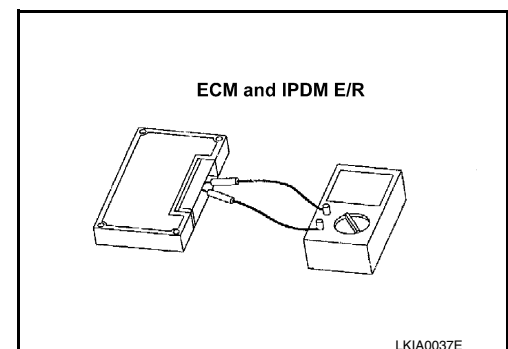
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	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.

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011024152

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000011024153

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011024154

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:000000011024155

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M96	2	Existed
	83		1	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the low tire pressure warning control unit.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011024156

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

LAN

MAIN LINE BETWEEN AV AND AFS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN AV AND AFS CIRCUIT

Diagnosis Procedure

INFOID:0000000011024157

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - AFS control unit
4. Check the continuity between the AV control unit harness connector and the AFS control unit harness connector.
 - With navigation system

AV control unit harness connector		AFS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M16	30	Existed
	74		7	Existed

- Without navigation system

AV control unit harness connector		AFS control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M16	30	Existed
	80		7	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN AFS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN AFS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011024158

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - AFS control unit
 - Harness connectors M6 and E106
2. Check the continuity between the AFS control unit harness connector and the harness connector.

AFS control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M16	30	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AFS control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024159

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024174

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).
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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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024160

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024161

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024162

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024163

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024164

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024165

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the automatic back door control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024166

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024167

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024168

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024169

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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LAN

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024170

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024171

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M204	81	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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

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

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024172

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AFS control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AFS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-65. "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-232. "Exploded View"](#).

YES (Past error)>>Error was detected in the AFS 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:000000011024173

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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.
- VQ engine models

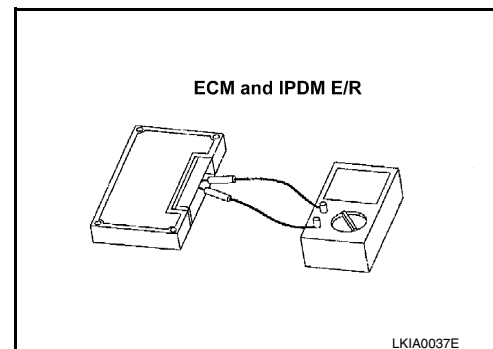
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	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 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.

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MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011024258

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011024259

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000011024260

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011024261

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

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LAN

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011024262

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011024263

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

LAN

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000011024264

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011024265

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

LAN

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024266

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024335

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).
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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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:000000011024267

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64. "System Diagram"](#).

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:0000000011024268

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

LAN

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024269

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024270

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024271

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024272

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

LAN

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024273

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

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

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

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024274

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024275

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).
 YES (Past error)>>Error was detected in the around view monitor control unit branch line.
 NO >> Repair the power supply and the ground circuit.

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:0000000011024276

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

3.CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.
- NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).
- NO >> Repair the power supply and the ground circuit.

LAN

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:000000011024277

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024278

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024279

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024280

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

LAN

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024281

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024282

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024283

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

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

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

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011024284

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-64. "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.	
M24	6	14
		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

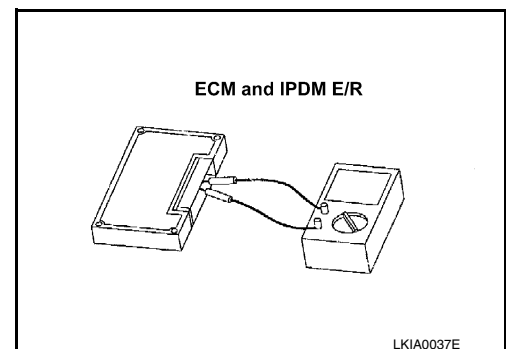
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

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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LAN

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:000000011024285

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-64. "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.		
M24	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

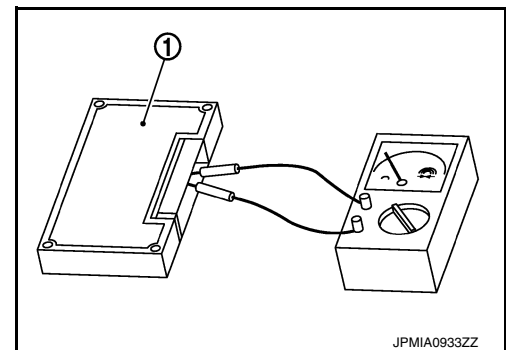
Is the measurement value within the specification?

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.



JPMIA0933ZZ

CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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 DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011024336

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011024337

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011024338

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011024339

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

LAN

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011024340

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011024341

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

LAN

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000011024342

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011024343

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

LAN

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024344

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024688

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).
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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DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:000000011024345

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64. "System Diagram"](#).

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011024346

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

LAN

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024347

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024348

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024349

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024350

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

LAN

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024351

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

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

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

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024352

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024353

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

Diagnosis Procedure

INFOID:0000000011024354

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

3.CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.
NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).
YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).
NO >> Repair the power supply and the ground circuit.

LAN

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:000000011024355

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024356

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024357

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024358

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024359

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024360

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M204	81	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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

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

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024361

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AFS control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AFS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-65. "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-232. "Exploded View"](#).

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024362

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317, "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374, "Exploded View"](#).

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

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

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011024363

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-64, "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.	
M24	6	14
		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

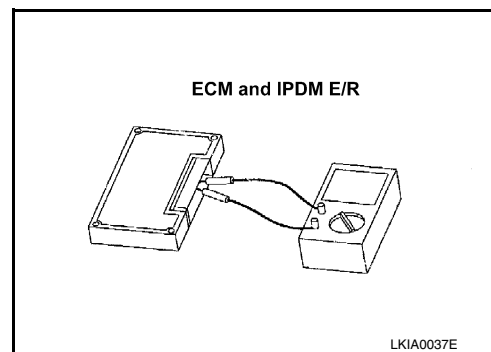
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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 12)]

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000011024364

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-64, "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.	
M24	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

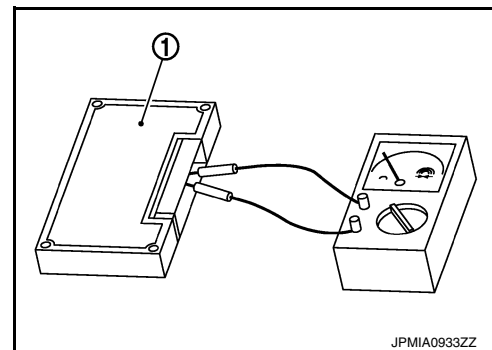
Is the measurement value within the specification?

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.



CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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 DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011024487

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

LAN

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:000000011024488

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011024489

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:000000011024490

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011024491

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

LAN

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011024492

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000011024493

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:000000011024494

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024495

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024689

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).

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

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

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:0000000011024496

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

LAN

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:000000011024497

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024498

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024499

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024500

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

LAN

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024501

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).

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

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

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024502

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

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

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

LAN

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024503

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024504

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).
YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

LAN

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:000000011024505

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3. CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).

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

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

Diagnosis Procedure

INFOID:0000000011024506

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130. "Exploded View"](#).

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

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

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LAN

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024507

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).

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.

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024508

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

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ICC sensor integrated unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-134, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-175, "Exploded View"](#).
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
NO >> Repair the power supply and the ground circuit.

LAN

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024509

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024510

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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LAN

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024511

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024512

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M204	81	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

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

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

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024513

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of lane camera unit.
3. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R21	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the lane camera unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-301, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-337, "Exploded View"](#).

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

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

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024514

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector B1
 - Harness connector M7
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "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.
3. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-crash seat belt control unit 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 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. Refer to [SBC-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-72, "Exploded View"](#).

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024515

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

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

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

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024516

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 accelerator pedal actuator 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 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.		
E115	5	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-139, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal actuator. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View"](#).

YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.

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

BCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024517

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Brake booster control unit
 - Harness connector B201
 - Harness connector M117
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Brake booster control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B250	14	5	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair or replace (if shield line is open) the brake booster control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the brake booster control unit. Refer to [CCS-134. "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-176. "Exploded View"](#).

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

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

LAN

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011024518

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-64. "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.	
M24	6	14
		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

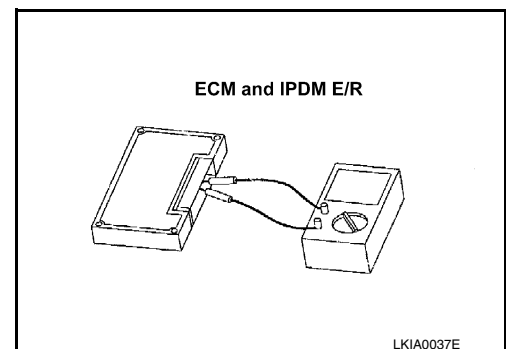
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

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:0000000011024519

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-64, "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.		
M24	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

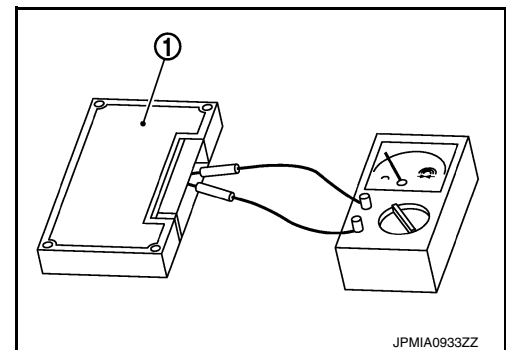
Is the measurement value within the specification?

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.



CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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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ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011024520

1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit has no malfunction.

NOTE:

For identification of CAN communication circuit and ITS communication circuit, refer to [LAN-64, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

2. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the 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 integrated unit
 - Accelerator pedal actuator
 - Harness connector E106
 - Harness connector M6
 - Harness connector M117
 - Harness connector B201
 - Brake booster control unit

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.
 - ICC sensor integrated unit
 - Brake booster control unit
2. Check the continuity between the ICC sensor integrated unit harness connector and the brake booster control unit harness connector.

ICC sensor integrated unit harness connector		Brake booster control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	2	B250	14	Existed
	5		5	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line. (ITS communication line). Refer to [LAN-64, "System Diagram"](#).

4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of accelerator pedal actuator.
2. Check the continuity between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Continuity
Connector No.	Terminal No.		
E67	2	5	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

ICC sensor integrated unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
E67	2		Not existed
	5		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ICC sensor integrated unit and the brake booster control unit.
2. Check the resistance between the ICC sensor integrated unit terminals.

1 : ICC sensor integrated unit and brake booster control unit

ICC sensor integrated unit		Resistance (Ω)
Terminal No.		
2	5	Approx. 108 – 132

3. Check the resistance between the brake booster control unit terminals.

Brake booster control unit		Resistance (Ω)
Terminal No.		
14	5	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC sensor integrated unit and/or the brake booster control unit.

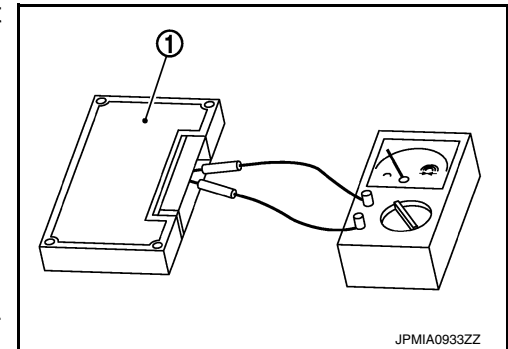
7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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



MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011024523

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011024524

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011024525

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN ADP AND CGW CIRCUIT

Diagnosis Procedure

INFOID:0000000011024526

1.CHECK CONNECTOR

1. Turn the ignition 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

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		82	80	Existed
		83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of CAN gateway.
2. Check the continuity between the harness connector M7 and the CAN gateway harness connector.

Harness connector		CAN gateway harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M125	1	Existed
	83		7	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the CAN gateway.

LAN

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011024527

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011024528

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

LAN

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN CGW AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000011024529

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - CAN gateway
 - Harness connectors M6 and E106
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	M6	47	Existed
	7		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the CAN gateway and the harness connector M6.

3.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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN DLC AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011024530

1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - CAN gateway
 - Low tire pressure warning control unit
4. Check the continuity between the data link connector and the low tire pressure warning control unit harness connector.

Data link connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	13	M96	2	Existed
	12		1	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the low tire pressure warning control unit.

NO >> Repair the main line between the data link connector and the low tire pressure warning control unit.

LAN

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024531

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
- VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024690

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).
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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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:000000011024532

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64. "System Diagram"](#).

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:0000000011024533

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

LAN

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024534

1.CHECK CONNECTOR

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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024535

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024536

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

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

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024537

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024538

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

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

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

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024539

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

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

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

LAN

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024540

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).
 YES (Past error)>>Error was detected in the around view monitor control unit branch line.
 NO >> Repair the power supply and the ground circuit.

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:0000000011024541

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

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

3.CHECK HARNESS FOR OPEN CIRCUIT

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

CAN gateway harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M125	1	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.
- NO >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side).
- NO >> Repair the power supply and the ground circuit.

LAN

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:000000011024542

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 terminals and connectors of the CAN gateway for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-124, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to [LAN-130, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024543

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024544

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

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor integrated unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-134, "ICC SENSOR INTEGRATED UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-175, "Exploded View"](#).

YES (Past error)>>Error was detected in the ICC sensor integrated 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:0000000011024545

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

LAN

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024546

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024547

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

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LAN

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024548

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

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

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

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024549

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AFS control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

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

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AFS control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-65. "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-232. "Exploded View"](#).

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

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

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024550

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of lane camera unit.
3. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R21	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the lane camera unit branch line.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-301, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?YES (Present error)>>Replace the lane camera unit. Refer to [DAS-337, "Exploded View"](#).

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

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

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024551

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector B1
 - Harness connector M7
 - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "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.
3. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-crash seat belt control unit 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 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. Refer to [SBC-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-72, "Exploded View"](#).

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

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

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024552

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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	Existed
	10	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

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

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

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

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

APA BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024553

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 accelerator pedal actuator 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 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.		
E115	5	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the accelerator pedal actuator branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-139, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal actuator. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View"](#).
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
NO >> Repair the power supply and the ground circuit.

BCU BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024554

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Brake booster control unit
 - Harness connector B201
 - Harness connector M117
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

Brake booster control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B250	14	5	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair or replace (if shield line is open) the brake booster control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the brake booster control unit. Refer to [CCS-134. "BRAKE BOOSTER CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-176. "Exploded View"](#).

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

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

LAN

CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

CAN COMMUNICATION CIRCUIT 1

Diagnosis Procedure

INFOID:0000000011024555

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-64. "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.	
M24	6	14
		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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

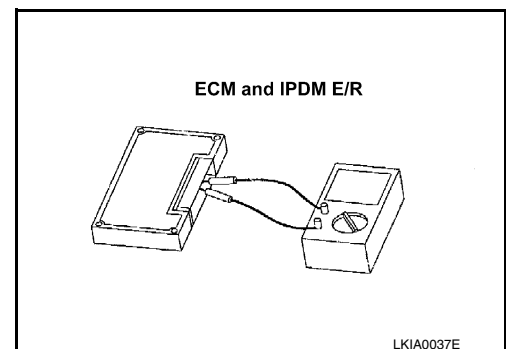
3. Check the resistance between the IPDM E/R terminals.

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

Is the measurement value within the specification?

YES >> GO TO 5.

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



CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

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:000000011024556

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-64, "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.		
M24	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

1 : CAN gateway

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

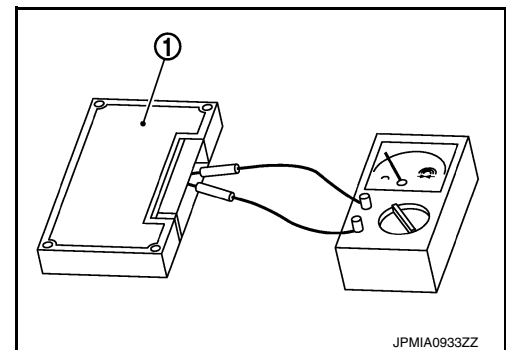
Is the measurement value within the specification?

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.



CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

CAN gateway 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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ITS COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000011024557

1.CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT to see that the CAN communication circuit has no malfunction.

NOTE:

For identification of CAN communication circuit and ITS communication circuit, refer to [LAN-64, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

2.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the 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 integrated unit
 - Accelerator pedal actuator
 - Harness connector E106
 - Harness connector M6
 - Harness connector M117
 - Harness connector B201
 - Brake booster control unit

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.
 - ICC sensor integrated unit
 - Brake booster control unit
2. Check the continuity between the ICC sensor integrated unit harness connector and the brake booster control unit harness connector.

ICC sensor integrated unit harness connector		Brake booster control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	2	B250	14	Existed
	5		5	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line. (ITS communication line). Refer to [LAN-64, "System Diagram"](#).

4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of accelerator pedal actuator.
2. Check the continuity between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Continuity
Connector No.	Terminal No.		
E67	2	5	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ICC sensor integrated unit harness connector and the ground.

ICC sensor integrated unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
E67	2		Not existed
	5		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

6.CHECK TERMINATION CIRCUIT

1. Remove the ICC sensor integrated unit and the brake booster control unit.
2. Check the resistance between the ICC sensor integrated unit terminals.

1 : ICC sensor integrated unit and brake booster control unit

ICC sensor integrated unit		Resistance (Ω)
Terminal No.		
2	5	Approx. 108 – 132

3. Check the resistance between the brake booster control unit terminals.

Brake booster control unit		Resistance (Ω)
Terminal No.		
14	5	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ICC sensor integrated unit and/or the brake booster control unit.

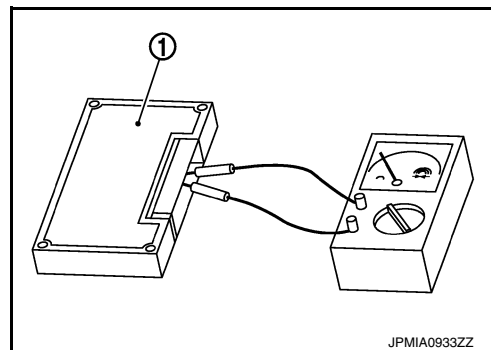
7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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



MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN DLC AND M&A CIRCUIT

Diagnosis Procedure

INFOID:0000000011024692

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - Unified meter and A/C amp.
4. Check the continuity between the data link connector and the unified meter and A/C amp. harness connector.

Data link connector		Unified meter and A/C amp. harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M24	6	M67	56	Existed
	14		72	Existed

Is the 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 unified meter and A/C amp.

NO >> Repair the main line between the data link connector and the unified meter and A/C amp.

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN M&A AND PWBD CIRCUIT

Diagnosis Procedure

INFOID:0000000011024693

1.CHECK CONNECTOR

1. Turn the ignition 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 M117
 - Harness connector B201

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - Unified meter and A/C amp.
 - Harness connectors M117 and B201
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M117	36	Existed
	72		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M117.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	36	38	Existed
	37	39	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the unified meter and A/C amp. and the automatic back door control unit.

NO >> Repair the main line between the harness connector B201 and the automatic back door control unit.

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN PWBD AND ADP CIRCUIT

Diagnosis Procedure

INFOID:0000000011024694

1.CHECK CONNECTOR

1. Turn the ignition 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 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 connectors B201 and M117.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B201	38	36	Existed
	39	37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the automatic back door control unit and the harness connector B201.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M117	38	M7	80	Existed
	39		81	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M7.

4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	80	82	Existed
	81	83	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN ADP AND TPMS CIRCUIT

Diagnosis Procedure

INFOID:0000000011024696

1.CHECK CONNECTOR

1. Turn the ignition 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

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	82	80	Existed
	83	81	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Low tire pressure warning control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	82	M96	2	Existed
	83		1	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector M7 and the low tire pressure warning control unit.

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN TPMS AND AV CIRCUIT

Diagnosis Procedure

INFOID:0000000011024697

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - Low tire pressure warning control unit
 - AV control unit
4. Check the continuity between the low tire pressure warning control unit harness connector and the AV control unit harness connector.
 - Models with navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M210	90	Existed
	1		74	Existed

- Models without navigation system

Low tire pressure warning control unit harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M96	2	M204	81	Existed
	1		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 low tire pressure warning control unit and the AV control unit.

NO >> Repair the main line between the low tire pressure warning control unit and AV control unit.

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN AV AND SONAR CIRCUIT

Diagnosis Procedure

INFOID:0000000011024926

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following connectors.
 - ECM (VQ37VHR without around view monitor or VK50VE)
 - CAN gateway (VQ37VHR with around view monitor)
 - AV control unit
 - Sonar control unit
4. Check the continuity between the AV control unit harness connector and the sonar control unit harness connector.
 - With navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M47	19	Existed
	74		20	Existed

- Without navigation system

AV control unit harness connector		Sonar control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M204	81	M47	19	Existed
	80		20	Existed

Is the 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 sonar control unit.

NO >> Repair the main line between the AV control unit and sonar control unit.

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MAIN LINE BETWEEN SONAR AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN SONAR AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000011024933

1.CHECK CONNECTOR

1. Turn the ignition 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 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.
 - Sonar control unit
 - Harness connectors M6 and E106
2. Check the continuity between the sonar control unit harness connector and the harness connector.

Sonar control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M47	19	M6	47	Existed
	20		48	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the sonar control unit and the harness connector M6.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect connector of the 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	47	E41	35	Existed
	48		14	Existed

Is the inspection result normal?

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

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

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

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024940

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 ECM 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 ECM.
 2. Check the resistance between the ECM harness connector terminals.
- VQ37VHR

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M164	114	113	Approx. 108 – 132

- VK50VE

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M160	105	101	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ECM branch line.

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-175, "Diagnosis Procedure"](#)
- VQ37VHR for MEXICO: [EC-766, "Diagnosis Procedure"](#)
- VK50VE: [EC-1283, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VQ37VHR for USA and CANADA: [EC-29, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VQ37VHR for MEXICO: [EC-639, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)
 - VK50VE: [EC-1133, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#)

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024941

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.		
M105	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-28, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-58, "Exploded View"](#).

YES (Past error)>>Error was detected in the AWD control unit branch line.

NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024942

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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M24	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 >> Repair the data link connector branch line.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024943

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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

Is the 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.		
F51	3	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to the following.
 - VQ engine models: [TM-186, "Removal and Installation"](#)
 - VK engine models: [TM-485, "Removal and Installation"](#)
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 the following.

- VQ engine models: [TM-125, "Diagnosis Procedure"](#)
- VK engine models: [TM-423, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to the following.

- VQ engine models: [TM-186, "Removal and Installation"](#)
- VK engine models: [TM-485, "Removal and Installation"](#)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024944

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-44, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-93, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024945

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 unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [HAC-70, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to [HAC-194, "Exploded View"](#).

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024946

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 steering angle sensor 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 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 >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-114, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-139, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

LAN

PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024947

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 automatic back door 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 automatic back door control unit.
2. Check the resistance between the automatic back door control unit harness connector terminals.

Automatic back door control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B207	24	12	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace body No. 2 harness.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control unit. Refer to [DLK-105, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control unit. Refer to [DLK-364, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the automatic back door control unit branch line.

NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024948

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
 - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-59, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-216, "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

LAN

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011025032

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 around view monitor control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of around view monitor control unit.
2. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B46	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the around view monitor control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-367, "Exploded View"](#).

YES (Past error)>>Error was detected in the around view monitor control unit branch line.

NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024949

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	35	14	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-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-136, "Exploded View"](#).
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.

LAN

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011024950

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-20, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-36, "Exploded View"](#).

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024951

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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>GO TO 3.

NO (Air bag diagnosis sensor unit)>>Replace the main harness.

NO (CAN gateway)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-3, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

LAN

TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

TPMS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024952

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of low tire pressure warning control unit.
3. 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the low tire pressure warning control unit branch line.

4.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-37. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-67. "Exploded View"](#).

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.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011024953

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of AV control unit.
3. 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.		
M204	81	80	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the AV control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Without navigation: [AV-95. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- Navigation: [AV-315. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Without navigation: [AV-130. "Exploded View"](#)
- Navigation: [AV-350. "Exploded View"](#)

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

YES (Past error)>>Error was detected in the AV control unit branch line.

NO >> Repair the power supply and the ground circuit.

SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

SONAR BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000011025033

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Sonar control unit
 - CAN gateway (VQ37VHR with around view monitor)

Is the inspection result normal?

YES (VQ37VHR with around view monitor)>>GO TO 2.

YES (VQ37VHR without around view monitor or VK50VE)>>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
	10	12
		Existed
		Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway (VQ37VHR with around view monitor).
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M47	19	20
		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-317. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-374. "Exploded View"](#).

YES (Past error)>>Error was detected in the sonar control unit branch line.

NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000011024955

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.		
M24	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.
- VQ engine models

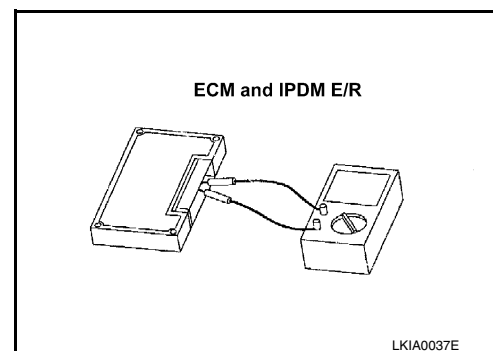
ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

- VK engine models

ECM		Resistance (Ω)
Terminal No.		
105	101	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 15)]

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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