

D

CONTENTS

CAN FUNDAMENTAL	PRECAUTIONS22
PRECAUTION6	Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-
PRECAUTIONS 6	SIONER"
Precautions for Trouble Diagnosis6	Precautions for Trouble Diagnosis22 Precautions for Harness Repair22
Precautions for Harness Repair6	·
FUNCTION DIAGNOSIS7	BASIC INSPECTION24
CAN COMMUNICATION OVOTEM	DIAGNOSIS AND REPAIR WORKFLOW24
CAN COMMUNICATION SYSTEM7	Interview Sheet24
System Description	FUNCTION DIAGNOSIS25
System Diagram7 CAN Communication Control Circuit8	FUNCTION DIAGNOSIS25
	CAN COMMUNICATION SYSTEM25
DIAG ON CAN9	CAN System Specification Chart25
Description9	CAN Communication Signal Chart25
System Diagram9	COMPONENT DIA CNOCIC
TROUBLE DIAGNOSIS10	COMPONENT DIAGNOSIS29
Condition of Error Detection10	CAN COMMUNICATION SYSTEM29
Symptom When Error Occurs in CAN Communi-	Component Parts Location29
cation System10	Wiring Diagram — CAN SYSTEM —30
CAN Diagnosis with CONSULT-III13	MALEUNCTION ADEA CHART
Self-Diagnosis13	MALFUNCTION AREA CHART34 Main Line34
CAN Diagnostic Support Monitor13	Branch Line34
How to Use CAN Communication Signal Chart15	Short Circuit34
BASIC INSPECTION16	MAIN LINE BETWEEN DLC AND ABS CIR-
DIAGNOSIS AND REPAIR WORKFLOW16	CUIT35
Trouble Diagnosis Flow Chart16	Diagnosis Procedure35
Trouble Diagnosis Procedure	
CAN	MAIN LINE BETWEEN DLC AND TCM CIR-CUIT36
HOW TO USE THIS MANUAL21	Diagnosis Procedure36
HOW TO USE THIS SECTION21	ECM BRANCH LINE CIRCUIT37
Caution21	Diagnosis Procedure37
Abbreviation List21	A-BAG BRANCH LINE CIRCUIT38
DDECAUTION 22	Diagnosis Procedure

AV BRANCH LINE CIRCUIT Diagnosis Procedure		BCM BRANCH LINE CIRCUIT Diagnosis Procedure	
BCM BRANCH LINE CIRCUIT		DLC BRANCH LINE CIRCUIT	
Diagnosis Procedure		Diagnosis Procedure	
DLC BRANCH LINE CIRCUIT		M&A BRANCH LINE CIRCUIT Diagnosis Procedure	
· ·		· ·	
M&A BRANCH LINE CIRCUIT Diagnosis Procedure		ABS BRANCH LINE CIRCUIT Diagnosis Procedure	
STRG BRANCH LINE CIRCUIT	43	IPDM-E BRANCH LINE CIRCUIT	64
Diagnosis Procedure	43	Diagnosis Procedure	64
ABS BRANCH LINE CIRCUIT		CAN COMMUNICATION CIRCUIT	
Diagnosis Procedure	44	Diagnosis Procedure CAN SYSTEM (TYPE 3)	65
TCM BRANCH LINE CIRCUIT		,	
Diagnosis Procedure	45	COMPONENT DIAGNOSIS	67
IPDM-E BRANCH LINE CIRCUIT		MAIN LINE BETWEEN DLC AND TCM CIR-	
Diagnosis Procedure	46	CUIT	
CAN COMMUNICATION CIRCUIT		Diagnosis Procedure	
Diagnosis Procedure CAN SYSTEM (TYPE 1)	47	ECM BRANCH LINE CIRCUIT	
•		Diagnosis Procedure	
COMPONENT DIAGNOSIS	49	A-BAG BRANCH LINE CIRCUIT	
ECM BRANCH LINE CIRCUIT	49	Diagnosis Procedure	69
Diagnosis Procedure	49	BCM BRANCH LINE CIRCUIT	
A-BAG BRANCH LINE CIRCUIT	50	Diagnosis Procedure	70
Diagnosis Procedure	50	DLC BRANCH LINE CIRCUIT	
BCM BRANCH LINE CIRCUIT	51	Diagnosis Procedure	71
Diagnosis Procedure	51	M&A BRANCH LINE CIRCUIT	
DLC BRANCH LINE CIRCUIT	52	Diagnosis Procedure	72
Diagnosis Procedure		TCM BRANCH LINE CIRCUIT	73
M&A BRANCH LINE CIRCUIT	53	Diagnosis Procedure	73
Diagnosis Procedure		IPDM-E BRANCH LINE CIRCUIT	74
IPDM-E BRANCH LINE CIRCUIT	54	Diagnosis Procedure	74
Diagnosis Procedure		CAN COMMUNICATION CIRCUIT	75
CAN COMMUNICATION CIRCUIT	55	Diagnosis Procedure	75
Diagnosis Procedure		CAN SYSTEM (TYPE 4)	
CAN SYSTEM (TYPE 2)		COMPONENT DIAGNOSIS	77
COMPONENT DIAGNOSIS	57	MAIN LINE BETWEEN DLC AND TCM CIR- CUIT	77
MAIN LINE BETWEEN DLC AND ABS CIR-		Diagnosis Procedure	
CUIT Diagnosis Procedure		ECM BRANCH LINE CIRCUIT	
· ·		Diagnosis Procedure	
ECM BRANCH LINE CIRCUIT Diagnosis Procedure		A-BAG BRANCH LINE CIRCUIT	
· ·		Diagnosis Procedure	
A-BAG BRANCH LINE CIRCUIT Diagnosis Procedure		AV BRANCH LINE CIRCUIT	
Diagnosis i 10050015	บฮ	AY DIMINUIT LINE CIRCUIT	ou

Diagnosis Procedure	
BCM BRANCH LINE CIRCUIT	Diagnosis Procedure101
Diagnosis Procedure	
· ·	Diagnosis Procedure
DLC BRANCH LINE CIRCUIT	82
Diagnosis Procedure	
M&A BRANCH LINE CIRCUIT	Diagnosis Procedure103
Diagnosis Procedure	83 DLC BRANCH LINE CIRCUIT104
TCM BRANCH LINE CIRCUIT	Diagnosis Procedure104
Diagnosis Procedure	
	Diagnosis Procedure 105
IPDM-E BRANCH LINE CIRCUIT	85
Diagnosis Procedure	
CAN COMMUNICATION CIRCUIT	Diagnosis Procedure106
Diagnosis Procedure	
CAN SYSTEM (TYPE 5)	Diagnosis Procedure107
	•
COMPONENT DIAGNOSIS	
MAIN LINE BETWEEN DLC AND ABS CIR-	Diagnosis Procedure108
CUIT	88 CAN COMMUNICATION CIRCUIT109
Diagnosis Procedure	88 Diagnosis Procedure109
	CAN SYSTEM (TYPE 7)
ECM BRANCH LINE CIRCUIT	
Diagnosis Procedure	89 COMPONENT DIAGNOSIS111
A-BAG BRANCH LINE CIRCUIT	90 MAIN LINE BETWEEN DLC AND ABS CIR-
Diagnosis Procedure	90 CUIT111
BCM BRANCH LINE CIRCUIT	Diagnosis Procedure111
Diagnosis Procedure	
Diagnosis i rocedure	Diagnosis Procedure112
DLC BRANCH LINE CIRCUIT	92
Diagnosis Procedure	
M&A BRANCH LINE CIRCUIT	Diagnosis Procedure113
Diagnosis Procedure	
· ·	Diagnosis Procedure 114
ABS BRANCH LINE CIRCUIT	
Diagnosis Procedure	94 DLC BRANCH LINE CIRCUIT115 Diagnosis Procedure115
TCM BRANCH LINE CIRCUIT	95
Diagnosis Procedure	95 M&A BRANCH LINE CIRCUIT116
IPDM-E BRANCH LINE CIRCUIT	Diagnosis Procedure116
Diagnosis Procedure	
	Diagnosis Procedure 117
CAN COMMUNICATION CIRCUIT	97
Diagnosis Procedure	
CAN SYSTEM (TYPE 6)	Diagnosis Procedure118
COMPONENT DIAGNOSIS	99 CAN COMMUNICATION CIRCUIT119 Diagnosis Procedure119
MAIN LINE BETWEEN DLC AND ABS CIR-	CAN SYSTEM (TYPE 8)
CUIT	99
Diagnosis Procedure	
ECM DDANCH LINE CIDCUIT	OO MAIN LINE DETWEEN DI C AND ADS OID
Diagnosis Procedure1	
Diagnosis i 1000uli 5 1	·· · · · · · · · · · · · · · · · · · ·

Diagnosis Procedure121	COMPONENT DIAGNOSIS143
ECM BRANCH LINE CIRCUIT 122 Diagnosis Procedure	MAIN LINE BETWEEN DLC AND ABS CIR-
•	CUIT143 Diagnosis Procedure143
A-BAG BRANCH LINE CIRCUIT 123 Diagnosis Procedure	
· ·	ECM BRANCH LINE CIRCUIT144 Diagnosis Procedure144
AV BRANCH LINE CIRCUIT 124	•
Diagnosis Procedure124	A-BAG BRANCH LINE CIRCUIT145 Diagnosis Procedure145
BCM BRANCH LINE CIRCUIT 125	•
Diagnosis Procedure125	AV BRANCH LINE CIRCUIT146 Diagnosis Procedure146
DLC BRANCH LINE CIRCUIT 126	· ·
Diagnosis Procedure126	BCM BRANCH LINE CIRCUIT147
M&A BRANCH LINE CIRCUIT 127	Diagnosis Procedure
Diagnosis Procedure127	DLC BRANCH LINE CIRCUIT148
ABS BRANCH LINE CIRCUIT128	Diagnosis Procedure
Diagnosis Procedure128	M&A BRANCH LINE CIRCUIT149
IPDM-E BRANCH LINE CIRCUIT129	Diagnosis Procedure149
Diagnosis Procedure129	STRG BRANCH LINE CIRCUIT150
CAN COMMUNICATION CIRCUIT 130	Diagnosis Procedure
Diagnosis Procedure130	ABS BRANCH LINE CIRCUIT151
CAN SYSTEM (TYPE 9)	Diagnosis Procedure 151
COMPONENT DIAGNOSIS132	IPDM-E BRANCH LINE CIRCUIT152
MAIN LINE BETWEEN DLC AND ABS CIR-	Diagnosis Procedure 152
CUIT 132	CAN COMMUNICATION CIRCUIT153
Diagnosis Procedure132	Diagnosis Procedure
ECM BRANCH LINE CIRCUIT133	CAN SYSTEM (TYPE 11)
Diagnosis Procedure133	COMPONENT DIAGNOSIS155
A-BAG BRANCH LINE CIRCUIT134	MAIN LINE BETWEEN DLC AND ABS CIR-
Diagnosis Procedure134	CUIT155
BCM BRANCH LINE CIRCUIT 135	Diagnosis Procedure 155
Diagnosis Procedure135	ECM BRANCH LINE CIRCUIT156
DLC BRANCH LINE CIRCUIT 136	Diagnosis Procedure
Diagnosis Procedure	A-BAG BRANCH LINE CIRCUIT157
M&A BRANCH LINE CIRCUIT 137	Diagnosis Procedure
Diagnosis Procedure	BCM BRANCH LINE CIRCUIT158
· ·	Diagnosis Procedure
STRG BRANCH LINE CIRCUIT 138 Diagnosis Procedure	DLC BRANCH LINE CIRCUIT159
· ·	Diagnosis Procedure
ABS BRANCH LINE CIRCUIT 139 Diagnosis Procedure	· ·
· ·	M&A BRANCH LINE CIRCUIT160 Diagnosis Procedure160
IPDM-E BRANCH LINE CIRCUIT	· ·
Diagnosis Procedure140	ABS BRANCH LINE CIRCUIT161 Diagnosis Procedure161
CAN COMMUNICATION CIRCUIT 141	· ·
Diagnosis Procedure141 CAN SYSTEM (TYPE 10)	TCM BRANCH LINE CIRCUIT162
5, 11 5 1 5 1 Em (1 1 1 E 10)	Diagnosis Procedure 162

IPDM-E BRANCH LINE CIRCUIT163 Diagnosis Procedure	DLC BRANCH LINE CIRCUIT Diagnosis Procedure		А
CAN COMMUNICATION CIRCUIT164 Diagnosis Procedure	M&A BRANCH LINE CIRCUIT Diagnosis Procedure	183	
CAN SYSTEM (TYPE 12) COMPONENT DIAGNOSIS166	STRG BRANCH LINE CIRCUIT Diagnosis Procedure	184	В
MAIN LINE BETWEEN DLC AND ABS CIR- CUIT166	ABS BRANCH LINE CIRCUIT Diagnosis Procedure		С
Diagnosis Procedure	TCM BRANCH LINE CIRCUIT Diagnosis Procedure		D
ECM BRANCH LINE CIRCUIT167 Diagnosis Procedure167	IPDM-E BRANCH LINE CIRCUIT	187	Е
A-BAG BRANCH LINE CIRCUIT168 Diagnosis Procedure	Diagnosis Procedure CAN COMMUNICATION CIRCUIT		_
AV BRANCH LINE CIRCUIT169 Diagnosis Procedure169	Diagnosis ProcedureCAN SYSTEM (TYPE 14)		F
BCM BRANCH LINE CIRCUIT170 Diagnosis Procedure170	COMPONENT DIAGNOSIS	190	G
DLC BRANCH LINE CIRCUIT171 Diagnosis Procedure171	MAIN LINE BETWEEN DLC AND ABS C CUIT Diagnosis Procedure	190	Н
M&A BRANCH LINE CIRCUIT	ECM BRANCH LINE CIRCUIT Diagnosis Procedure		I
ABS BRANCH LINE CIRCUIT173 Diagnosis Procedure173	A-BAG BRANCH LINE CIRCUIT Diagnosis Procedure		
TCM BRANCH LINE CIRCUIT174 Diagnosis Procedure174	AV BRANCH LINE CIRCUIT Diagnosis Procedure		J
IPDM-E BRANCH LINE CIRCUIT175 Diagnosis Procedure	BCM BRANCH LINE CIRCUIT Diagnosis Procedure		Κ
CAN COMMUNICATION CIRCUIT176 Diagnosis Procedure	DLC BRANCH LINE CIRCUIT Diagnosis Procedure		L
CAN SYSTEM (TYPE 13) COMPONENT DIAGNOSIS178	M&A BRANCH LINE CIRCUIT Diagnosis Procedure		LAN
MAIN LINE BETWEEN DLC AND ABS CIR- CUIT178	STRG BRANCH LINE CIRCUIT Diagnosis Procedure		N
Diagnosis Procedure178 ECM BRANCH LINE CIRCUIT179	ABS BRANCH LINE CIRCUIT Diagnosis Procedure		
Diagnosis Procedure179	TCM BRANCH LINE CIRCUIT Diagnosis Procedure		0
A-BAG BRANCH LINE CIRCUIT180 Diagnosis Procedure180	IPDM-E BRANCH LINE CIRCUIT		Р
BCM BRANCH LINE CIRCUIT181 Diagnosis Procedure181	Diagnosis Procedure CAN COMMUNICATION CIRCUIT		
	Diagnosis Procedure		

PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

INFOID:0000000000994470

CAUTION:

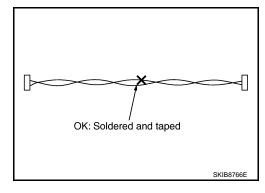
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

Precautions for Harness Repair

INFOID:0000000000994471

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

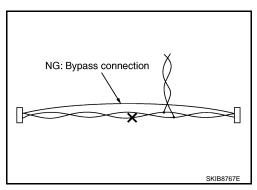
A fray of twisted lines must be within 110 mm (4.33 in).



• Bypass connection is never allowed at the repaired area.

NOTE:

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



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

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FUNCTION DIAGNOSIS

CAN COMMUNICATION SYSTEM

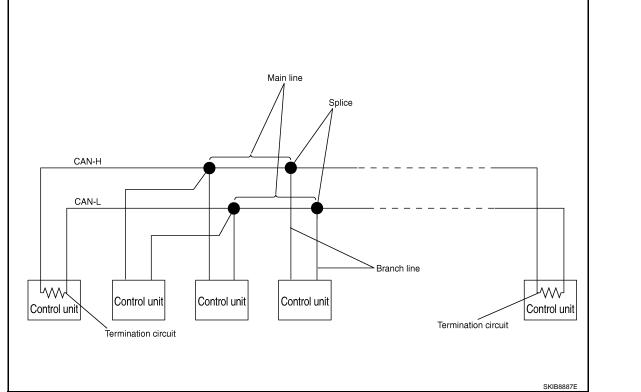
System Description

 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:0000000000994473



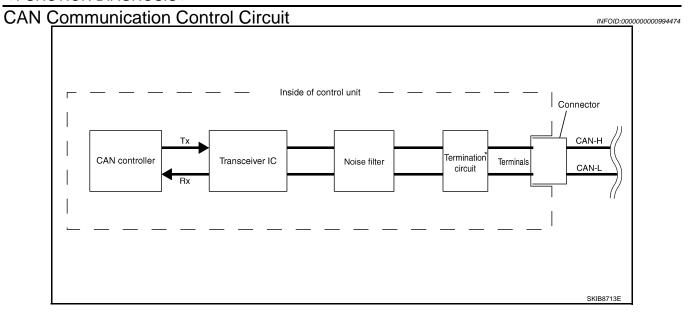
Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential 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-8, "CAN Communication Control Circuit".

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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.

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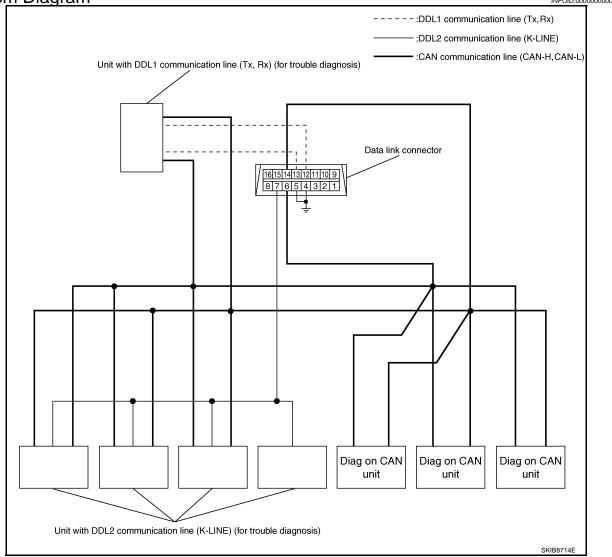
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DIAG ON CAN

Description INFOID:000000000994475

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

System Diagram INFOID:000000000994476



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

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TROUBLE DIAGNOSIS

Condition of Error Detection

INFOID:0000000000994477

"U1000" or "U1001" is indicated on SELF-DIAG RESULTS on CONSULT-III if 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 INDICATED "U1000" OR "U1001" 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.

NOTE:

CAN communication system is normal if "U1000" or "U1001" is indicated on SELF-DIAG RESULTS of CON-SULT-III under the above conditions. Erase the memory of the self-diagnosis of each unit.

Symptom When Error Occurs in CAN Communication System

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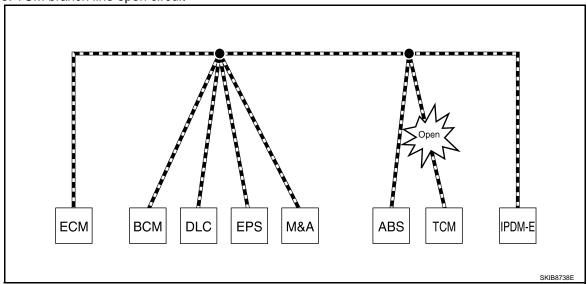
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to LAN-21, "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

< FUNCTION DIAGNOSIS >

[CAN FUNDAMENTAL]

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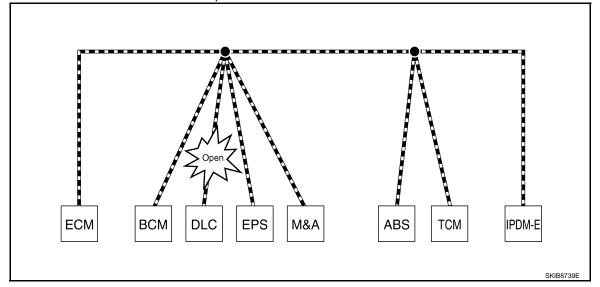
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Unit name	Symptom
EPS control unit	Normal operation.
Combination meter	Shift position indicator and OD OFF indicator turn OFF. Warning lamps turn ON.
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R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

Example: Data link connector branch line open circuit



Unit name	Symptom
ECM	
BCM	
EPS control unit	
Combination meter	Normal operation.
ABS actuator and electric unit (control unit)	
TCM	7
IPDM E/R	7

NOTE:

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

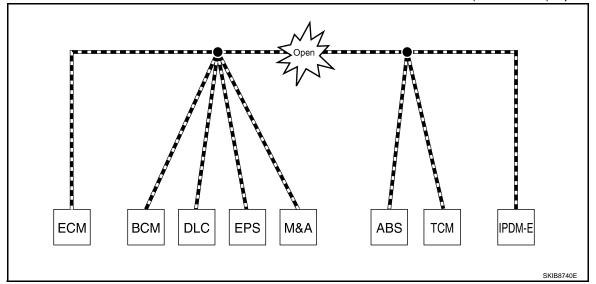
Error	Difference of symptom
Data link connector branch line open circuit	Normal operation.
CAN-H, CAN-L harness short-circuit	Most the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.

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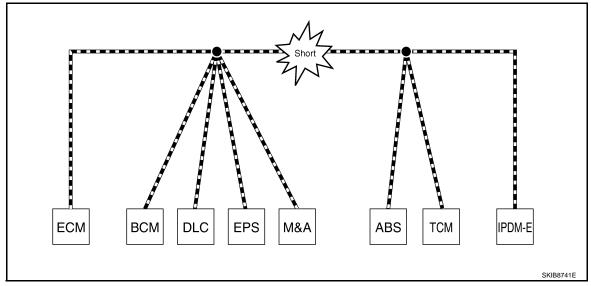
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Example: Main Line Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Open Circuit



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



[CAN FUNDAMENTAL]

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Unit name	Symptom
ECM	 Engine torque limiting is affected, and shift harshness increases. Engine speed drops.
всм	 Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. The room lamp does not turn ON. The engine does not start (if an error or malfunction occurs while turning the ignition switch is OFF.) The steering lock does not release (if an error or malfunction occurs while turning the ignition switch is 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-III

INFOID:0000000000994479

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

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

Self-Diagnosis

INFOID:0000000000994480

DTC	Self-diagnosis item (CONSULT-III indication)	DTC detection condition	Inspection/Action		
U1000	CAN COMM CIRCUIT	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.			
01000	CAN COMM CIRCUIT	When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.	Start the inspection. Refer to the applicable sec-		
U1001	CAN COMM CIRCUIT	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

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MONITOR ITEM (CONSULT-III)

LAN-13

Example: CAN DIAG SUPPORT MNTR indication

Without PAST With PAST **ECM ECM** | PRSNT PAST INITIAL DIAG OK TRANSMIT DIAG ОК OK TRANSMIT DIAG OK VDC/TCS/ABS METER/M&A TCM OK OK OK VDC/TCS/ABS UNKWN BCM/SEC OK OK METER/M&A icc OK ICC UNKWN HVAC ОК BCM/SEC TCM ОК OK IPDM E/R OK EPS OK IPDM E/R e4WD AWD/4WD ОК JSMIA0015GB

Without PAST

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

With PAST

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

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

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

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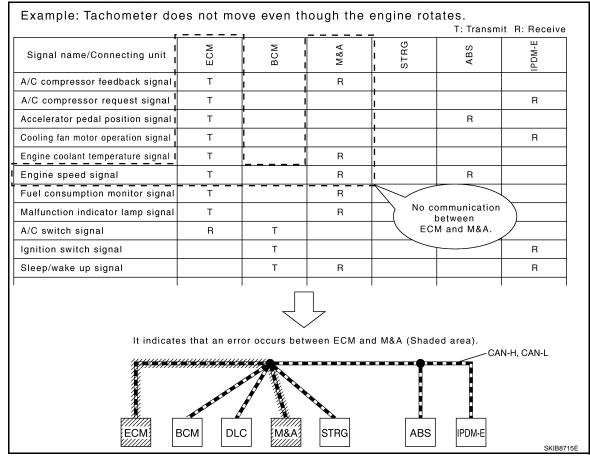
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Item	Result indi- cated	Error counter	Description
	OK	0	Normal at present
CAN_COMM (Initial diagnosis)	NG	1 – 50	Control unit error (The number indicates how many times diagnosis has been run.)
	OK	0	Normal at present
CAN_CIRC_1 (Transmission diagnosis)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

How to Use CAN Communication Signal Chart

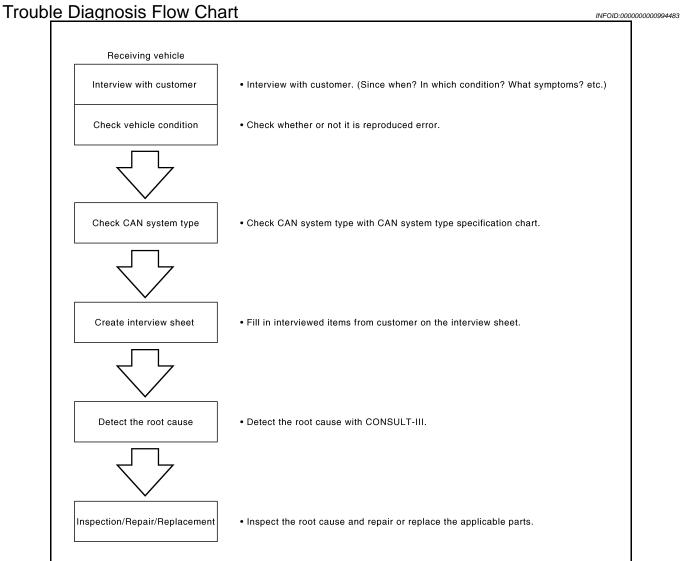
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The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW



Trouble Diagnosis Procedure

INFOID:0000000000994484

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 failsafe mode.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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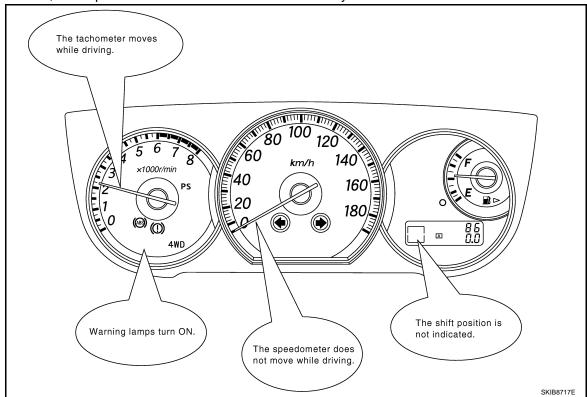
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• Indication of the combination meter is important to detect the root cause because it is the most obvious from the customer, and it performs CAN communication with many units.



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

Never turn the ignition switch OFF or disconnect the battery cable while the reproducing the error. The error may temporarily correct itself, making it difficult to determine the root cause.

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

NOTE:

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

CAN System Type Specification Chart (Style A)

NOTE:

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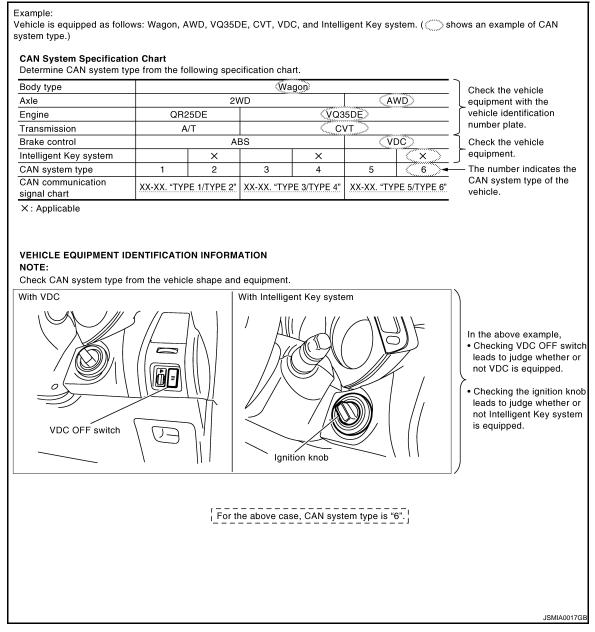
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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



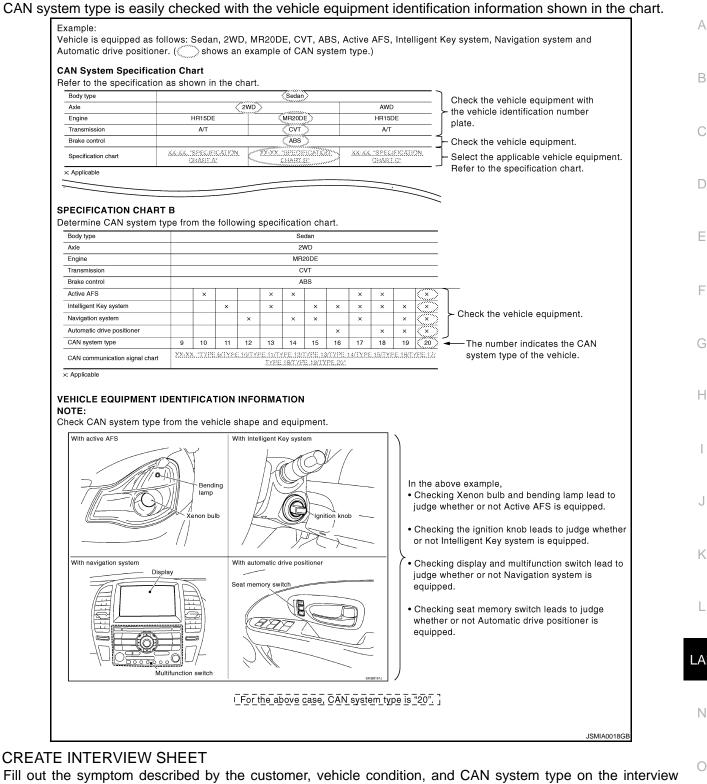
CAN System Type Specification Chart (Style B)

NOTE:

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]



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Interview Sheet (Example)

CAN Communication System Diagnosis Interview Shee	et
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.	
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DETECT THE ROOT CAUSE

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

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HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution INFOID:000000000994485

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to LAN-16, "Trouble Diagnosis Procedure".

Abbreviation List

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

Abbreviation	Unit name
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
AV	AV control unit
ВСМ	BCM
DLC	Data link connector
ECM	ECM
IPDM-E	IPDM E/R
M&A	Combination meter
STRG	Steering angle sensor
ТСМ	TCM

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< PRECAUTION > [CAN]

PRECAUTION

PRECAUTIONS

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

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

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal
 injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag
 Module, see the SRC section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

Precautions for Trouble Diagnosis

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CAUTION:

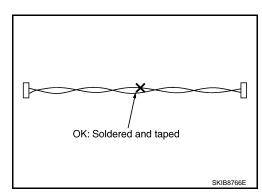
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

Precautions for Harness Repair

INFOID:0000000000994489

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

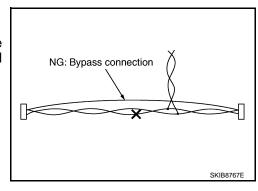
A fray of twisted lines must be within 110 mm (4.33 in).



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.



PRECAUTIONS

[CAN] < PRECAUTION >

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

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

nterv	view Sheet	INFOID:00000000000994
	CAN Communication System Diagnosis Interview Shee	t
	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	

INFOID:0000000000994491

FUNCTION DIAGNOSIS

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

Determine CAN system type from the following specification chart.

NOTE:

Refer to LAN-16, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

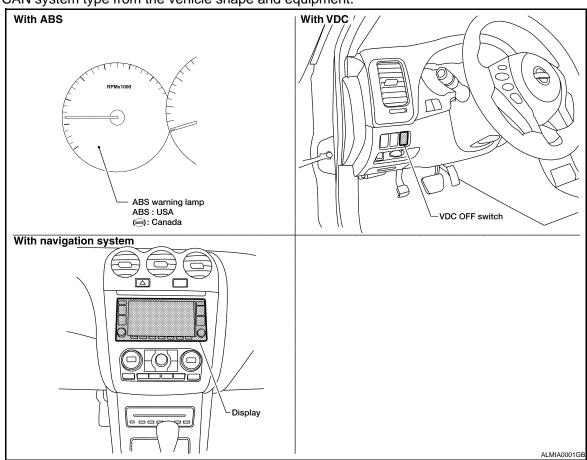
Body type		Sedan												
Axle		2WD												
Engine	QR25DE VQ35DE													
Transmission	N	1/T	CVT			M/T				CVT				
Brake control	1	ABS	-		- ABS		T	TCS VDC		DC	TCS		VDC	
Navigation system				×		×		×		×		×		×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Start CAN Diagnosis (CONSULT-III)	1	2	3	4	5	6	7	8	9	10	11	12	13	14

^{×:} Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



CAN Communication Signal Chart

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Refer to <u>LAN-15</u>, "<u>How to Use CAN Communication Signal Chart"</u> for how to use CAN communication signal chart.

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Refer to LAN-21, "Abbreviation List" for the abbreviations of the connecting units.

				J		T: 1	Transmit	R: Receive
Signal name/Connecting unit	ECM	BCM	TCM	AV	M&A	STRG*2	ABS	IPDM-E
A/C compressor request signal	Т							R
Accelerator pedal position signal	Т		R				R	
ASCD operation signal	Т		R					
ASCD status signal	Т				R			
Closed throttle position signal	Т		R					
Cooling fan speed request signal	Т							R
Engine coolant temperature signal	Т		R		R			
Engine speed signal	Т		R		R		R	
Engine status signal	Т	R		R				
Fuel consumption monitor signal	Т			R	R			
Malfunctioning indicator lamp signal	Т				R			
Power generation command value signal	Т							R
Wide open throttle position signal	Т		R					
A/C switch signal	R	Т						
ACC signal		Т						
AT 1 : (1 :		Т						R
AT device (detent switch) signal		R						Т
Blower fan motor switch signal	R	Т						
Buzzer output signal		Т			R			
Day time running light request signal		Т						R
Door switch signal		Т		R	R			R
Front fog light request signal		Т			R			R
Front wiper request signal		Т						R
High beam request signal		Т			R			R
Horn reminder signal		Т						R
Ignition switch ON signal		Т						R
		Т						R
Interlock/PNP switch signal		R						Т
Key warning signal		Т			R			
Low beam request signal		Т						R
Meter display signal		Т			R			
		Т			R			
Oil pressure switch signal		R						Т
Position light request signal		Т			R			R
Rear window defogger switch signal		Т						R
Sleep wake up signal		Т			R			R
Starter control relay signal		Т						R
System setting signal		T		R				
Theft warning horn request signal		R T		Т				R
Tire pressure data signal		T			R			- 1
The pressure data signal		'			IX			

CAN COMMUNICATION SYSTEM

< FUNCTION DIAGNOSIS >

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FUNCTION DIAGNOSIS >								[0/111]
Signal name/Connecting unit	ECM	BCM	TCM	AV	M&A	STRG*2	ABS	IPDM-E
Trunk switch signal		Т		R				
Turn indicator signal		Т			R			
Current gear position signal			Т				R	
CVT CHECK indicator lamp signal			Т		R			
CVT position indicator signal			Т		R		R	
CVT self-diagnosis signal	R		Т					
Input shaft revolution signal	R		Т				R*2	
Manual mode indicator signal			Т		R		R*2	
N range signal		R	Т					
Output shaft revolution signal	R		Т				R*2	
P range signal		R	Т				R	
Distance to empty signal				R	Т			
Fuel level low warning signal				R	Т			
Fuel level sensor signal	R				Т			
Manual mode shift down signal			R		Т			
Manual mode shift up signal			R		Т			
Manual mode signal			R		Т			
Market information signal				R	Т			
Not manual mode signal			R		Т			
Parking brake switch signal		R			Т		R*2	
Seat belt buckle switch signal		R			Т			
Vehicle speed signal	R	R	R	R	T R		Т	R
Steering angle sensor signal*2						Т	R	
A/T shift schedule change demand signal*1			R				Т	
ABS operation signal			R				T	
ABS warning lamp signal					R		T	
Brake warning lamp signal					R		T	
SLIP indicator lamp signal*3					R		T	
VDC OFF indicator lamp signal*2					R		Т	
Front wiper stop position signal		R						Т
High beam status signal	R							T
Hood switch signal		R						T
Low beam status signal	R							Т
Push-button ignition switch status signal		R						Т
Rear window defogger control signal	R	-						T
Starter relay status signal		R						Т
		R						Т
Steering lock relay signal		Т						R
Stooring look unit status sizzal		R						Т
Steering lock unit status signal		Т						R

^{*1:} QR25DE models

CAN COMMUNICATION SYSTEM

[CAN]

< FUNCTION DIAGNOSIS >

NOTE:

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

^{*2:} Models with VDC

^{*3:} Models with VDC/TCS

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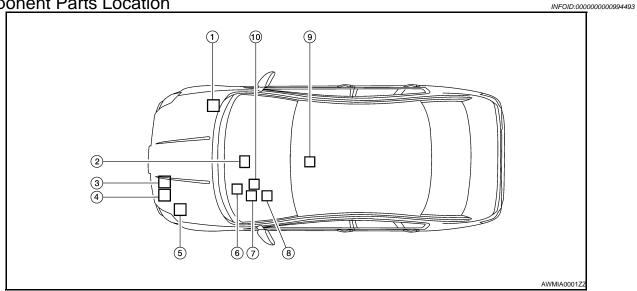
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COMPONENT DIAGNOSIS

CAN COMMUNICATION SYSTEM

Component Parts Location



- ABS actuator and electric unit (con- 2. 1. trol unit) E26
- ECM E10 4.
- 7. Combination meter M24
- 10. Data link connector M22
- AV control unit M46
- 5. IPDM E/R E17
- Steering angle sensor M53
- 3. TCM F16
- 6. BCM M19
- 9. Air bag diagnosis sensor unit M35

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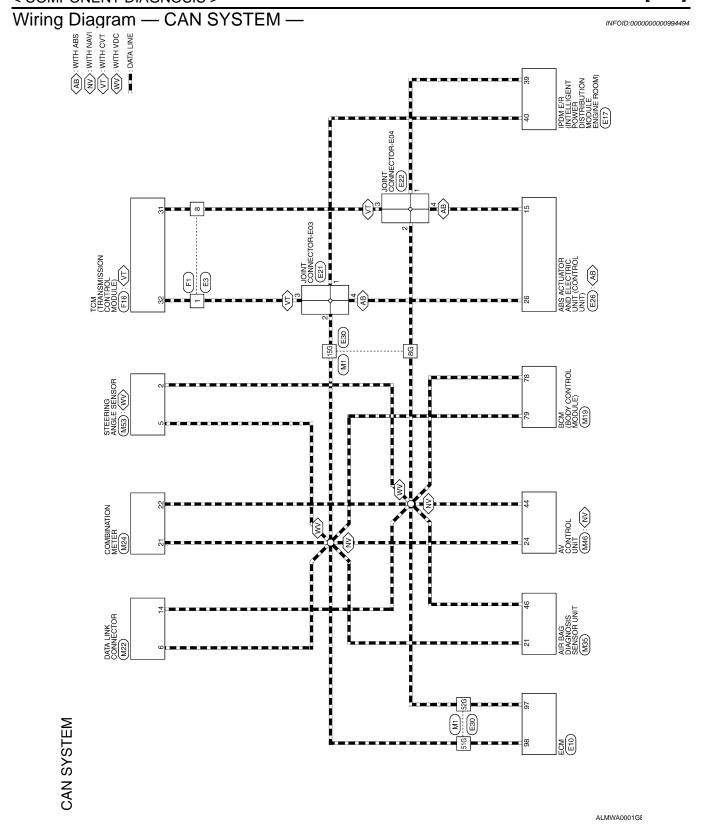
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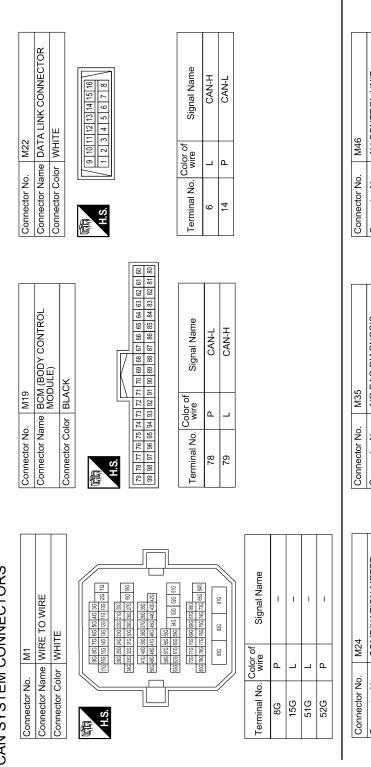
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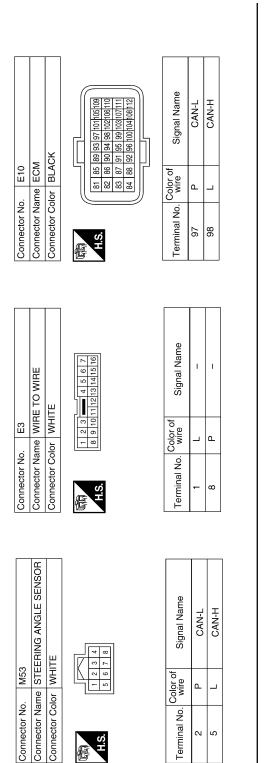
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CAN SYSTEM CONNECTORS



M46	Connector Name AV CONTROL UNIT	HITE			88 5	0 20 20 20 20 20 20 20	of Signal Name	CAN-H	CAN-L
	ame A	olor			26 27 28	40 4/ 48	Color o	_	۵
Connector No.	Connector N	Connector Color WHITE		哥 H.S.	21 22 23 24 25 26 27 28	41 42 43 44 45	Terminal No. wire	24	44
. M35	Connector Name AIR BAG DIAGNOSIS	SENSOR UNIT	lor YELLOW	24 49 1	18		Solor of Signal Name	L CAN-H	P CAN-I
	lame AIR BAG	SENSOR	Connector Color TELLOW	21	16 12 15			_	۵
Connector No.	Connector	1000	Connector		E.S.		Terminal No. wire	21	46
			ı		18 19 20	37 38 39 40			
	Connector Name COMBINATION METER	TE			9 10 11 12 13 14 15 16 17	29 30 31 32 33 34 35 36	Signal Name	CAN-H	CAN-L
M24	ne CON	Connector Color WHITE			8 / 9	26 27 28	erminal No. wire	_	۵
Connector No.	tor Nar	tor Col			3 4 5	23 24 25	al No.	21	22



52	Connector Name JOINT CONNECTOR-E04	HITE		4 3 2 1 0	f Signal Name	ı	1	ı	ı
E22	ne JC	or			Solor of wire	Д	۵	۵	۵
Connector No.	Connector Nar	Connector Color WHITE	Œ	H.S.	Terminal No. wire	-	2	က	4
	Connector Name JOINT CONNECTOR-E03	IITE		4 3 2 1 1	Signal Name	ı	ı	ı	ı
E21	lo Io	or WH	Į.	4	color of wire	7	_	_	_
Connector No.	Connector Nan	Connector Color WHITE		H.S.	Terminal No. wire	-	2	ဇ	4
			_			•		•	•
	M E/R (INTELLIGENT	WER DISTRIBUTION DULE ENGINE ROOM)	ITE	42 41 40 39 46 45 44 43	Signal Name	CAN-L	CAN-H		
E17	e IPD	20	r WHI	42 4	Color of wire	۵	Г		
Connector No.	Connector Nan	MOM	Connector Color	H.S.	Terminal No.	39	40		

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Connector No.E30Connector No.F1Connector NameWIRE TO WIREConnector NameWIRE TO WIREConnector ColorWHITEConnector ColorWHITE		166 1872 1882 1882 1883 1	1 Not 1956 1956 1956 1956 1956 1956 1956 1956	-	Terminal No. Wire Signal Name	- d 98	15G L –	51G L –	52G P –
Connector Name ABS ACTUATOR AND ADDRESS AND	ctor Color	H.S. 1 2 3 4 16 17 18 19 20 21 22 23 4 5 6 7 7 8 9 10 11 12	Terminal No. Color of Signal Name	15 P CAN-L 26 L CAN-H					

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		ı ⊢		43	_			JE		
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		l s	8 8	19	6	Ш	L	a	ż	O AN-H
		ő	8	18	8	li	7	l igi	ပြ	2
		37	27	17	7	Ш		S		
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b		2	3 8	12	7	Ш		ု ္ပ		
징		<u> </u>	2	Ξ	-	IJ	J			t
Connector (H.S.		=	1	,	Terminal No	31	32
	Connector Color BLACK	<u> </u>	BLACK BLACK	BLACK 33 34 35 36 37 38 39 40 23 24 25 26 27 28 29 30	BLACK 33 34 35 36 57 38 39 40 47 52 28 27 28 29 30 45 13 14 15 16 17 18 19 20 43	BLACK State State	33 94 35 36 37 38 39 40 47 - 23 24 25 26 27 28 29 30 45 13 14 15 16 17 18 19 20 43 3 4 5 6 7 8 8 9 10 41	BLACK 33 34 35 36 37 38 39 40 47 23 24 25 26 27 28 29 30 45 13 14 15 16 17 18 19 20 43 3 4 5 6 7 8 9 10 41	33 44 55 57 28 29 40 47 4 5 5 6 7 8 9 10 41 41 41 5 6 7 8 8 9 10 41 41 41 5 6 7 8 8 9 10 41 41 41 61 61 7 8 9 10 41 41 41 61 61 7 8 9 10 41 41 41 61 61 7 8 9 10 41 41 41 61 61 7 8 9 10 41 41 41 61 61 7 8 9 10 41 41 41 61 61 7 8 9 10 41 41 41 61 7 8 9 10 41 41 61 7 8 9 10 41 41 61 7 8 9 10 41 41 61 7 8 9 10 41 41 61 7 8 9 10 41 7 8 9 10 7 8	38 34 35 36 37 38 39 40 47

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MALFUNCTION AREA CHART

Main Line

Malfunction Area	Reference
Main line between data link connector and ABS actuator and electric unit (control unit)	LAN-35, "Diagnosis Procedure"
Main line between data link connector and TCM	LAN-36, "Diagnosis Procedure"

Branch Line

Malfunction Area	Reference
ECM branch line circuit	LAN-37, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-38, "Diagnosis Procedure"
AV control unit branch line circuit	LAN-39, "Diagnosis Procedure"
BCM branch line circuit	LAN-40, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-41, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-42, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-43, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-44, "Diagnosis Procedure"
TCM branch line circuit	LAN-45, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-46, "Diagnosis Procedure"

Short Circuit

Malfunction Area	Reference			
CAN communication circuit	LAN-47, "Diagnosis Procedure"			

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MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994498

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 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 ele harness	Continuity	
Connector No.	Terminal No.	Connector No.	Connector No. Terminal No.	
E30	E30 E26		26	Existed
	8G	E20	15	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000000994499

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3..

NO >> Repair the main line between the data link connector and the harness connector M1.

3.check harness continuity (open circuit)

- 1. Disconnect the harness connectors F1 and E3.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E30	15G	E3	1	Existed
E30	8G	ES	8	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and E3.

ECM BRANCH LINE CIRCUIT [CAN] < COMPONENT DIAGNOSIS > ECM BRANCH LINE CIRCUIT Α Diagnosis Procedure INFOID:0000000000994500 INSPECTION PROCEDURE В 1. CHECK CONNECTOR Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). D ECM connector Harness connector E30 Harness connector M1 Is the inspection result normal? Е YES >> GO TO 2... NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F Disconnect the connector of ECM. Check the resistance between the ECM harness connector terminals. 2. ECM harness connector Resistance (Ω) Connector No. Terminal No. Н E10 97 98 Approx. 108 - 132 Is the measurement value within the specification? >> GO TO 3.. YES NO >> Repair the ECM branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of ECM. Refer to the following. QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>" QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure" VQ engine models: <u>EC-150</u>, "<u>Diagnosis Procedure</u>" K Is the inspection result normal? YES (Present error)>>•Replace the ECM. Refer to the following. - QR engine models for California: EC-535, "ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT: Special Repair Requirement" - QR engine models except for California: EC-1050, "ADDITIONAL SERVICE WHEN REPLAC-LAN

- ING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: EC-27, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT Special Repair Requirement"

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

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

INFOID:0000000000994501

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

1. 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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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994502

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		110013181100 (22)
M46	24	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to AV-186, "AV CONTROL UNIT: Diagnosis Procedure".

Is the inspection result normal?

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

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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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994503

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 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

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

	BCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M19	M19 79 78		

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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994504

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		1\esistance (22)
M22	6	Approx. 54 – 66	

Is the measurement value within the specification?

YES (Present error)>>Check the 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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AGNOSIS > [CAN]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994505

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

C	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	21	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

STRG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN]

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994506

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.

Ste	Steering angle sensor harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M53	5	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 <u>BRC-196, "Wiring Diagram"</u>.

Is it normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-223, "Removal and Installation" .

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

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

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994507

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E26	26 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3...

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-41, "Wiring Diagram"
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: BRC-196, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "Exploded View"

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

TCM BRANCH LINE CIRCUIT [CAN] < COMPONENT DIAGNOSIS > TCM BRANCH LINE CIRCUIT Α Diagnosis Procedure INFOID:0000000000994508 INSPECTION PROCEDURE В 1. CHECK CONNECTOR Turn the ignition switch OFF. C Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side). D TCM connector Harness connector F1 Harness connector E3 Е Is the inspection result normal? YES >> GO TO 2... NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT F Disconnect the connector of TCM. Check the resistance between the TCM harness connector terminals. 2. TCM harness connector Resistance (Ω) Connector No. Terminal No. Н F16 32 31 Approx. 54 - 66 Is the measurement value within the specification? YES >> GO TO 3.. NO >> Repair the TCM branch line. 3.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the TCM. Refer to the following. QR25DE models: TM-339, "Wiring Diagram — CVT CONTROL SYSTEM – VQ35DE models: TM-186, "Wiring Diagram — CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"

- VQ35DE models: TM-228, "Exploded View"

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

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

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994509

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of IPDM E/R.
- Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		110333141100 (22)
E17	E17 40 39		

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-18, "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.

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994510

INSPECTION PROCEDURE

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		Continuity
M22	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			Continuity
Connector No.	Terminal No.	Ground	
Moo	6	Giodila	Not existed
M22	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

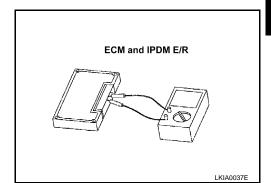
f 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- 1. Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Terminal No.			
98	97	Approx. 108 – 132	

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

IPDM E/R		Resistance (Ω)
Terminal No.		resistance (22)
40	39	Approx. 108 – 132



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN]

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.

ECM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

COMPONENT DIAGNOSIS

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994511

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.
- Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Termi	1\esistance (\(\frac{1}{2}\)	
E10 98 97			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 ECM. Refer to the following.

- QR engine models for California: EC-652, "Diagnosis Procedure"
- QR engine models expect for California: <u>EC-1160</u>, "<u>Diagnosis Procedure</u>"
- VQ engine models: <u>EC-150</u>, "<u>Diagnosis Procedure</u>"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT</u>: Special Repair Requirement"
- QR engine models except for California: <u>EC-1050</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT</u>: <u>Special Repair Requirement</u>"
- VQ engine models: <u>EC-27</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT</u>: <u>Special Repair Requirement</u>"

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

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

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A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994512

1. 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.

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994513

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		116313181106 (22)
M19	79	78	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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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INFOID:0000000000994514

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		1\esistance (22)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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.

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994515

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector		Resistance (Ω)
Connector No.	Terminal No.		ivesisiance (22)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994516

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		110333141100 (22)
E17	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994517

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INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		Continuity
M22	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Ground	Not existed
IVIZZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

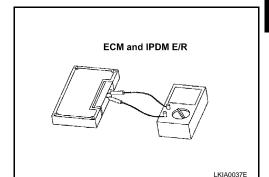
4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (O)	
Terminal No.		Resistance (Ω)	
98	97	Approx. 108 – 132	

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

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



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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 ABS CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994518

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	Data link connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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		ectric unit (control unit) connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
E30	8G	E20	15	Existed

Is the inspection result normal?

NO

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 ABS actuator and electric unit (control unit).

>> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994519

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		110333141100 (22)
E10	98	97	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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : <u>Special Repair Requirement</u>"

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

A-BAG BRANCH LINE CIRCUIT	
< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 2)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000000994520
1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to SRC-3, "Work Flow".	_
s the inspection result normal?	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994521

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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			
Connector No.	Termi	Resistance (Ω)		
M19	79	78	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 $\underline{\text{BCS-33, "Diagnosis Procedure"}}$.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994522

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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		
Connector No.	Termi	Resistance (Ω)	
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994523

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector			
Connector No.	Termi	Resistance (Ω)		
M24	21	22	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994524

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi	1103/314/100 (22)	
E26	26	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 the following.

- Models with ABS: BRC-41, "Wiring Diagram"
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: <u>BRC-196</u>, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "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.

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[CAN SYSTEM (TYPE 2)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994525

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		rvesisiance (22)
E17	40	Approx. 108 – 132	

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994526

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INSPECTION PROCEDURE

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Continuity	
M22	6	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Giouna	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

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Terminal No.			
98	97	Approx. 108 – 132	

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

IPDM E/R		Resistance (Ω)	
Terminal No.		resistance (22)	
40	39	Approx. 108 – 132	

ECM and IPDM E/R

Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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 TCM CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000000994527

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	Data link connector		Harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
Maa	6	- M1	15G	Existed
IVIZZ	M22 14		8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

3.check harness continuity (open circuit)

- 1. Disconnect the harness connectors F1 and E3.
- 2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E20	15G	F0.	1	Existed
E30	8G	E3	8	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and E3.

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994528

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

ECM harness connector			Resistance (Ω)
Connector No.	Termi	1100001000 (22)	
E10	98	97	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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : <u>Special Repair Requirement</u>"

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

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)] < COMPONENT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT Α Diagnosis Procedure INFOID:0000000000994529 1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT В Check the air bag diagnosis sensor unit. Refer to SRC-3, "Work Flow". Is the inspection result normal? C YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. D Е F G Н J K L

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< COMPONENT DIAGNOSIS >

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994530

[CAN SYSTEM (TYPE 3)]

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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

- Disconnect the connector of BCM.
- Check the resistance between the BCM harness connector terminals.

	Resistance (Ω)		
Connector No.	Terminal No.		resistance (22)
M19	79	78	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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994531

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.

	Resistance (Ω)		
Connector No.	Terminal No.		ixesistance (22)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994532

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- Check the resistance between the combination meter harness connector terminals.

Co	Resistance (Ω)		
Connector No.	Terminal No.		resistance (22)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

TCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994533

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		itesistance (22)
F16	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring <u>Diagram</u> <u>CVT CONTROL SYSTEM</u> —"
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

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

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[CAN SYSTEM (TYPE 3)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994534

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		110333141100 (22)
E17	40 39		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994535

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INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication 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.		Continuity
M22	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Ground	Not existed
IVIZZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

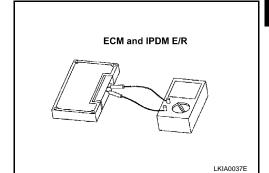
4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Termin	nal No.	Resistance (22)	
98	97	Approx. 108 – 132	

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

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



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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 TCM CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:0000000000994536

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness connector		Harness connector Continuity		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity		
M22	6	M1	15G	Existed		
IVIZZ	14	IVII	8G	Existed		

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- Disconnect the harness connectors F1 and E3.
- 2. Check the continuity between the harness connectors.

Harness	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
E30	15G	E3 -	1	Existed
E30	8G		8	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and E3.

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994537

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		116313181106 (22)
E10	98 97		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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : <u>Special Repair Requirement</u>"

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

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A-BAG BRANCH LINE CIRCUIT < COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 4)]	
A-BAG BRANCH LINE CIRCUIT		
Diagnosis Procedure	INFOID:000000000994538	1
1. 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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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994539

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		116313181106 (22)
M46	24	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to AV-186, "AV CONTROL UNIT: Diagnosis Procedure".

Is the inspection result normal?

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

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994540

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		rvesisiance (22)
M19	79 78		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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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INFOID:0000000000994541

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.	Termi	1\esistance (22)	
M22	6	Approx. 54 – 66	

Is the measurement value within the specification?

YES (Present error)>>Check the 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.

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994542

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Termi	resistance (22)	
M24	21 22		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994543

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

TCM harness connector			Resistance (Ω)
Connector No.	Termi	110333141100 (22)	
F16	32	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring Diagram <u>CVT CONTROL SYSTEM</u> —
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

IPDM-E BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994544

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.	Termi	Tresistance (22)	
E17	40	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-18, "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.

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994545

INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector			
Connector No.	Termi	Continuity		
M22	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Ground	Not existed
IVI22	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

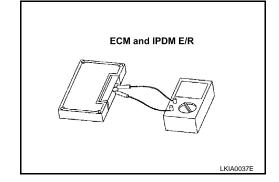
4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Terminal No.			
98	97	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.

 ${f 5.}$ CHECK SYMPTOM

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Α 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. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication system. D 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. 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. Н K

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[CAN SYSTEM (TYPE 5)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994546

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	Data link connector Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	N/1	15G	Existed
IVIZZ	14	M1	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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		
Connector No.	Terminal No.	Connector No.	Terminal No.		
E30	15G	E26	26	Existed	
E30	8G	E20	15	Existed	

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994547

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

 ECM harness connector
 Resistance (Ω)

 Connector No.
 Terminal No.
 97
 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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: EC-1160, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLAC-ING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT Special Repair Requirement"

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

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

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A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994548

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to <u>SRC-3, "Work Flow"</u>. <u>Is the inspection result normal?</u>

YES >> Replace the main harness.

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994549

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		rtesisiance (22)
M19	79	78	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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994550

[CAN SYSTEM (TYPE 5)]

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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		
Connector No.	Termi	Resistance (Ω)	
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

YES (Past error)>>Error was detected in the data link connector branch line circuit.

>> Repair the data link connector branch line. NO

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994551

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994552

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.		Resistance (Ω)
E26	26	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3...

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: <u>BRC-41</u>, "Wiring <u>Diagram"</u>
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: BRC-196, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "Exploded View"

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

TCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994553

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		110013141100 (22)
F16	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring Diagram CVT CONTROL SYSTEM —"
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

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

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[CAN SYSTEM (TYPE 5)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994554

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		1103/314/100 (22)
E17	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994555

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INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication 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.		Continuity
M22	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Ground	Not existed
IVIZZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

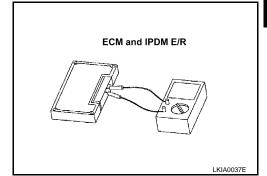
4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (O)	
Terminal No.		Resistance (Ω)	
98	97	Approx. 108 – 132	

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

IPDM E/R		Resistance (Ω)
Terminal No.		resistance (22)
40	39	Approx. 108 – 132



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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 ABS CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness	connector	Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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		onnector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.			
E30	15G	E26	26	Existed		
E30	8G	E20	15	Existed		

Is the inspection result normal?

NO

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 ABS actuator and electric unit (control unit).

>> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994557

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

	ECM harness connector		Resistance (Ω)
Connector No.	Terminal No.		rvesisiance (22)
E10	98	97	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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

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

A-BAG BRANCH LINE CIRCUIT	[CAN SYSTEM (TYPE 6)]
< COMPONENT DIAGNOSIS > A-BAG BRANCH LINE CIRCUIT	[CAN 3131EM (11FE 0)]
Diagnosis Procedure	INFOID:000000000994558
1. 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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INFOID:0000000000994559

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		110313141100 (32)
M46	24	44	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to <u>AV-186, "AV CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

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

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994560

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 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.		rtesisiance (22)
M19	79	78	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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994561

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		ixesistance (12)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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.

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994562

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		rtesisiance (22)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994563

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		110010101100 (22)
E26	26	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3...

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-41, "Wiring Diagram"
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: BRC-196, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "Exploded View"

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

TCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994564

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		1(63)3(4)106 (52)
F16	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring Diagram CVT CONTROL SYSTEM —"
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

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

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[CAN SYSTEM (TYPE 6)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994565

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		110013101100 (22)
E17	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994566

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INSPECTION PROCEDURE

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		Continuity
M22	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			Continuity
Connector No.	Terminal No.	Ground	
M22	6	Giodila	Not existed
IVIZZ	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.
- Check the resistance between the ECM terminals.

ECM		Resistance (O)	
Terminal No.		Resistance (Ω)	
98	97	Approx. 108 – 132	

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

IPDM E/R		Resistance (Ω)
Terminal No.		resistance (22)
40 39		Approx. 108 – 132

ECM and IPDM E/R

Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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 ABS CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994567

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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.	
E20	15G	Eac	26	Existed
E30	E30 E26	E20	15	Existed

Is the inspection result normal?

NO

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 ABS actuator and electric unit (control unit).

>> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994568

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
E10	98 97		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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

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

A-BAG BRANCH LINE CIRCUIT	
< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 7)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000000994569
1. 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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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994570

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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		
Connector No.	Terminal No.		Resistance (Ω)
M19	79	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 $\underline{\sf BCS\text{-}33,\,"Diagnosis\ Procedure"}$.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994571

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		1\esistance (22)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994572

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
M24	21 22		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994573

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		rvesistance (22)
E26	26 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: <u>BRC-41</u>, "Wiring <u>Diagram"</u>
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: <u>BRC-196</u>, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "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.

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< COMPONENT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994574

[CAN SYSTEM (TYPE 7)]

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of IPDM E/R.
- Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		110313141100 (22)
E17	40	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-18, "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.

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994575

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INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication 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.		Continuity
M22	6	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Giodila	Not existed
IVIZZ	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.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Terminal No.			
98	97	Approx. 108 – 132	

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

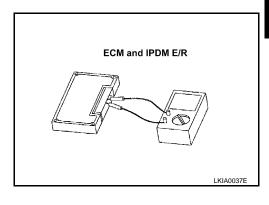
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132



YES >> GO TO 5..

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

 $\mathbf{5}.$ CHECK SYMPTOM



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< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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 ABS CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994576

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	N/1	15G	Existed
IVIZZ	14	M1	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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	Harness connector		ABS actuator and electric unit (control unit) harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	Eac	26	Existed
E30	8G	E26	15	Existed

Is the inspection result normal?

NO

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 ABS actuator and electric unit (control unit).

>> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994577

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		1100001000 (22)
E10	98	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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : <u>Special Repair Requirement</u>"

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

A-BAG BRANCH LINE CIRCUIT	
< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 8)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:0000000000994578
1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-3, "Work Flow"</u> . <u>Is the inspection result normal?</u>	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994579

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M46	24	Approx. 54 – 66	

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to AV-186, "AV CONTROL UNIT: Diagnosis Procedure".

Is the inspection result normal?

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

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994580

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		11033311100 (22)
M19	79	78	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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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INFOID:0000000000994581

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		1\esistance (22)
M22	6	Approx. 54 – 66	

Is the measurement value within the specification?

YES (Present error)>>Check the 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.

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994582

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	21 22		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994583

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Termi	Resistance (Ω)	
E26	26	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 the following.

- Models with ABS: <u>BRC-41</u>, "Wiring <u>Diagram"</u>
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: BRC-196, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "Exploded View"

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

IPDM-E BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994584

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		Tresistance (22)
E17	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-18, "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.

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Diagnosis Procedure

INFOID:0000000000994585

INSPECTION PROCEDURE

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Continuity	
M22	6	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	Data link connector		Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6		Not existed
IVIZZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

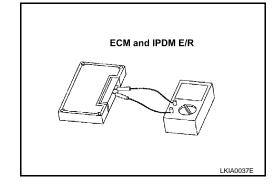
f 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

EG	CM	Resistance (Ω)	
Terminal No.		Resistance (12)	
98 97		Approx. 108 – 132	

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

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



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Α 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. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication system. D 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. 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. Н K

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[CAN SYSTEM (TYPE 9)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994586

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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	Harness connector ABS actuator and electric unit (control unit) harness connector		Continuity	
Connector No.	Terminal No.	Connector No. Terminal No.		
E30	15G	E26	26	Existed
L30	8G		15	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

 ECM harness connector
 Resistance (Ω)

 Connector No.
 Terminal No.
 97
 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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: EC-1160, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLAC-ING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT Special Repair Requirement"</u>

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

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

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A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994588

1. 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.

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994589

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		resistance (12)
M19	79	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 $\underline{BCS-33}$, "Diagnosis Procedure" .

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994590

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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		
Connector No.	Termi	Resistance (Ω)	
M22	6	Approx. 54 – 66	

Is the measurement value within the specification?

YES (Present error)>>Check the 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.

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994591

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
M24	21 22		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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[CAN SYSTEM (TYPE 9)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994592

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.

Ste	Resistance (Ω)		
Connector No.	Termi	110313141100 (22)	
M53	5 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 <u>BRC-196, "Wiring Diagram"</u>.

Is it normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-223, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994593

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		1103/314/100 (22)
E26	26 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: <u>BRC-41</u>, "Wiring <u>Diagram"</u>
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: BRC-196, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "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.

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[CAN SYSTEM (TYPE 9)]

INFOID:0000000000994594

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

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1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		110333141100 (22)
E17	40 39		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994595

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INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication 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.		Continuity
M22	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			Continuity	
Connector No.	Terminal No.	Ground	Continuity	
M22	6	Giound	Not existed	
IVIZZ	14		Not existed	

Is the inspection result normal?

YES >> GO TO 4..

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

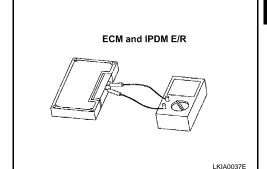
f 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Terminal No.			
98 97		Approx. 108 – 132	

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

IPDM E/R		Resistance (Ω)	
Terminal No.		11.6515(81106 (22)	
40 39		Approx. 108 – 132	



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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 ABS CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994596

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

3.check harness continuity (open circuit)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 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.	
E30	15G	E26	26	Existed
E30	8G	E20	15	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit

>> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994597

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
E10	98 97		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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLAC-ING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : <u>Special Repair Requirement</u>"

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

A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 10)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000000994598
1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	E
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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INFOID:0000000000994599

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

	AV control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.		116313181106 (22)
M46	24	44	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to <u>AV-186, "AV CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

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

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994600

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		1100001000 (22)
M19	79	78	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 $\underline{BCS-33}$, "Diagnosis Procedure" .

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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< COMPONENT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994601

[CAN SYSTEM (TYPE 10)]

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		1\esistance (22)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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.

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994602

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector		Resistance (Ω)	
Connector No.	Terminal No.		ivesisiance (22)
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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STRG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994603

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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.

Ste	Steering angle sensor harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M53	5	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 <u>BRC-196, "Wiring Diagram"</u>.

Is it normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-223, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994604

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		rvesistance (22)
E26	26	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: <u>BRC-41</u>, "Wiring <u>Diagram"</u>
- Models with TCS: <u>BRC-104, "Wiring Diagram"</u>
- Models with VDC: <u>BRC-196, "Wiring Diagram"</u>

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "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.

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IPDM-E BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994605

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		116313181106 (22)
E17	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994606

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INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication 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.		Continuity
M22	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6	Ground	Not existed
IVIZZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

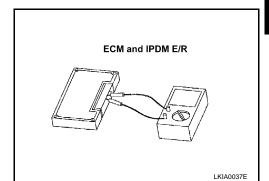
4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- 1. Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)
Terminal No.		ixesistance (22)
98	97	Approx. 108 – 132

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

IPDI	И E/R	Resistance (Ω)
Termi	nal No.	resistance (22)
40	39	Approx. 108 – 132



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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 ABS CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994607

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 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 M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No. Terminal No.		Continuity
M22	6	- M1	15G	Existed
IVIZZ	14		8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

3.check harness continuity (open circuit)

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

Harness	connector		ectric unit (control unit) connector	Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.		
E30	15G	E26	26	Existed	
230	8G	L20	15	Existed	

Is the inspection result normal?

NO

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 ABS actuator and electric unit (control unit).

>> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

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INFOID:0000000000994608

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		resistance (22)
E10	98	97	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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: <u>EC-1160</u>, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : <u>Special Repair Requirement</u>"

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

A-BAG BRANCH LINE CIRCUIT

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< COMPONENT DIAGNOSIS >	[CAN SYSTEM (TYPE 11)]
A-BAG BRANCH LINE CIRCUIT	
Diagnosis Procedure	INFOID:000000000994609
1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT	
Check the air bag diagnosis sensor unit. Refer to <u>SRC-3</u> , "Work Flow". <u>Is the inspection result normal?</u>	
YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction.	
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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994610

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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		
Connector No.	Termi	Resistance (Ω)	
M19	79	78	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 $\underline{\sf BCS\text{-}33,\,"Diagnosis\ Procedure"}$.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994611

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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		
Connector No.	Terminal No.		Resistance (Ω)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994612

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

C	Combination meter harness connector		
Connector No.	Termi	Resistance (Ω)	
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994613

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi	1103/314/100 (22)	
E26	26	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: <u>BRC-41</u>, "Wiring <u>Diagram"</u>
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: <u>BRC-196</u>, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "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.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994614

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	TCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
F16	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring Diagram <u>CVT CONTROL SYSTEM</u> —
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

IPDM-E BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994615

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		1(63)3(4)106 (52)
E17	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-18, "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.

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994616

INSPECTION PROCEDURE

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector			
Connector No.	Termi	Continuity		
M22	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6		Not existed
IVIZZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

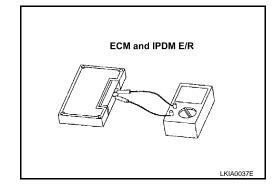
4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- 2. Check the resistance between the ECM terminals.

ECM		Resistance (Ω)
Terminal No.		resistance (22)
98	97	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.

${f 5.}$ CHECK SYMPTOM

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Α 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. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication system. D 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. 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. Н K

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[CAN SYSTEM (TYPE 12)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994617

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link connector		Harness connector		Continuity	
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity	
M22	6	M1	15G	Existed	
IVIZZ	14		8G	Existed	

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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	Harness connector		ABS actuator and electric unit (control unit) harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
L30	8G	L20	15	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994618

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

 ECM harness connector
 Resistance (Ω)

 Connector No.
 Terminal No.

 E10
 98
 97
 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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: EC-1160, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLAC-ING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT Special Repair Requirement"

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

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

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A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994619

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to <u>SRC-3, "Work Flow"</u>. <u>Is the inspection result normal?</u>

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994620

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

	AV control unit harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M46	24	44	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to AV-186, "AV CONTROL UNIT: Diagnosis Procedure".

Is the inspection result normal?

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

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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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994621

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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

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

	BCM harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M19	79	78	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 $\underline{\sf BCS-33,\,"Diagnosis\,Procedure"}$.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994622

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		1\esistance (22)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994623

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Termi	resistance (22)	
M24	21	22	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994624

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Termi	110333141100 (22)	
E26	26	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3...

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: <u>BRC-41</u>, "Wiring <u>Diagram"</u>
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: <u>BRC-196</u>, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "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.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994625

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

	TCM harness connector		
Connector No.	Termi	Resistance (Ω)	
F16	32	31	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring Diagram <u>CVT CONTROL SYSTEM</u> —
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

IPDM-E BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994626

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.	Termi	Tresistance (22)	
E17	40	39	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. 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.

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:0000000000994627

INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

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

	Continuity		
Connector No.	Terminal No.		Continuity
M22	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			Continuity	
Connector No.	Terminal No.	Ground	Continuity	
M22	6	Ground	Not existed	
	14		Not existed	

Is the inspection result normal?

YES >> GO TO 4..

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

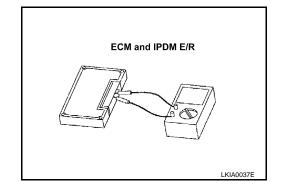
4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)	
Terminal No.			
98	97	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.

 ${f 5.}$ CHECK SYMPTOM

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Α 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. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication system. D 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. 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. Н K LAN Ν

[CAN SYSTEM (TYPE 13)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994628

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	- M1	15G	Existed
IVIZZ	14		8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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	Harness connector		ABS actuator and electric unit (control unit) harness connector	
Connector No.	Terminal No.	Connector No.	Terminal No.	
E30	15G	E26	26	Existed
L30	8G		15	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994629

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

 ECM harness connector
 Resistance (Ω)

 Connector No.
 Terminal No.
 Properties
 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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: EC-1160, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT: Special Repair Requirement"
- QR engine models except for California: <u>EC-1050</u>, "<u>ADDITIONAL SERVICE WHEN REPLAC-ING CONTROL UNIT</u>: <u>Special Repair Requirement</u>"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT Special Repair Requirement"

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

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

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A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994630

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to <u>SRC-3, "Work Flow"</u>. <u>Is the inspection result normal?</u>

YES >> Replace the main harness.

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

BCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994631

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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		
Connector No.	Terminal No.		Resistance (Ω)
M19	79 78		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-33, "Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

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

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[CAN SYSTEM (TYPE 13)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994632

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.		ivesistance (22)
M22	6	14	Approx. 54 – 66

Is the measurement value within the specification?

YES (Present error)>>Check the 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.

M&A BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994633

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M24	21 22		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

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

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STRG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994634

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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.

Ste	Steering angle sensor harness connector		
Connector No.	Terminal No.		Resistance (Ω)
M53	5	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 <u>BRC-196, "Wiring Diagram"</u>.

Is it normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-223, "Removal and Installation".

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

ABS BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994635

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		1103/314/100 (22)
E26	26 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-41, "Wiring Diagram"
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: BRC-196, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "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.

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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994636

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2...

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of TCM.
- Check the resistance between the TCM harness connector terminals.

TCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		110333141100 (22)
F16	32 31		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring Diagram <u>CVT CONTROL SYSTEM</u> —
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

IPDM-E BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994637

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.		Tresistance (22)
E17	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-18, "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.

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

Diagnosis Procedure

INFOID:0000000000994638

INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Terminal No.		Continuity
M22	6	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			Continuity	
Connector No.	Terminal No.	Ground	Continuity	
M22	6	Giodila	Not existed	
	14		Not existed	

Is the inspection result normal?

YES >> GO TO 4..

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

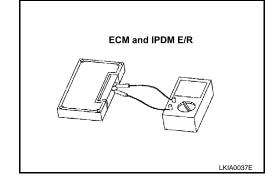
4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

E	CM	Resistance (Ω)	
Terminal No.		Resistance (12)	
98	97	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.

 $\mathbf{5}.$ CHECK SYMPTOM

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

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Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Α 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. Disconnect the battery cable from the negative terminal. Disconnect one of the unit connectors of CAN communication system. D 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. 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. Н K LAN Ν

[CAN SYSTEM (TYPE 14)]

COMPONENT DIAGNOSIS

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:0000000000994639

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition 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 M1
- Harness connector E30

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 M1 and E30.
- 2. Check the continuity between the data link connector and the harness connector.

Data link	connector	Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	Continuity
M22	6	M1	15G	Existed
IVIZZ	14	IVII	8G	Existed

Is the inspection result normal?

YES >> GO TO 3...

NO >> Repair the main line between the data link connector and the harness connector M1.

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	Harness connector		ABS actuator and electric unit (control unit) harness connector		
Connector No.	Terminal No.	Connector No. Terminal No.			
E30	15G	E26	26	Existed	
L30	8G	L20	15	Existed	

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector E30 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994640

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM connector
- Harness connector E30
- Harness connector M1

Is the 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.

	Resistance (Ω)	
Connector No.	Termi	rtesistance (22)
E10	98	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 ECM. Refer to the following.

- QR engine models for California: <u>EC-652</u>, "<u>Diagnosis Procedure</u>"
- QR engine models expect for California: EC-1160, "Diagnosis Procedure"
- VQ engine models: EC-150, "Diagnosis Procedure"

Is the inspection result normal?

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

- QR engine models for California: <u>EC-535</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CON-TROL UNIT</u>: <u>Special Repair Requirement</u>"
- QR engine models except for California: <u>EC-1050</u>, "ADDITIONAL SERVICE WHEN REPLAC-ING CONTROL UNIT: Special Repair Requirement"
- VQ engine models: <u>EC-27</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT Special Repair Requirement"

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

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

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A-BAG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994641

1. 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.

AV BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994642

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AV 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 AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.

AV control unit harness connector			Resistance (Ω)
Connector No.	Termi	resistance (22)	
M46	24 44		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the AV control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to AV-186, "AV CONTROL UNIT: Diagnosis Procedure".

Is the inspection result normal?

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

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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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994643

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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		
Connector No.	Termi	Resistance (Ω)	
M19	79	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 $\underline{\sf BCS\text{-}33,\,"Diagnosis\ Procedure"}$.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-76, "Removal and Installation".

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

DLC BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994644

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 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		
Connector No.	Termi	Resistance (Ω)	
M22	6 14		Approx. 54 – 66

Is the measurement value within the specification?

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

YES (Past error)>>Error was detected in the data link connector branch line circuit.

>> Repair the data link connector branch line. NO

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994645

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

Co	Combination meter harness connector		
Connector No.	Termi	Resistance (Ω)	
M24	21 22		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to MWI-22, "COMBINATION METER: Diagnosis Procedure".

Is it normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-64, "Removal and Installation".

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

STRG BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994646

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 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.	Termi	resistance (22)	
M53	5 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 <u>BRC-196, "Wiring Diagram"</u>.

Is it normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-223, "Removal and Installation" .

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

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

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994647

INSPECTION PROCEDURE

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator	ABS actuator and electric unit (control unit) harness connector		
Connector No.	Termi	Resistance (Ω)	
E26	26 15		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3...

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-41, "Wiring Diagram"
- Models with TCS: BRC-104, "Wiring Diagram"
- Models with VDC: BRC-196, "Wiring Diagram"

Is the inspection result normal?

YES (Present error)>>•Replace the ABS actuator and electric unit (control unit). Refer to the following.

- Models with ABS: BRC-61, "Exploded View"
- Models with TCS: BRC-126, "Exploded View"
- Models with VDC: BRC-220, "Exploded View"

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

TCM BRANCH LINE CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994648

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INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- TCM connector
- Harness connector F1
- Harness connector E3

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

	Resistance (Ω)		
Connector No.	Termi	1(63)3(4)106 (52)	
F16	F16 32 31		

Is the measurement value within the specification?

YES >> GO TO 3..

NO >> Repair the TCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- QR25DE models: <u>TM-339</u>, "Wiring Diagram CVT CONTROL SYSTEM —"
- VQ35DE models: TM-186, "Wiring Diagram CVT CONTROL SYSTEM —"

Is the inspection result normal?

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

- QR25DE models: TM-382, "Exploded View"
- VQ35DE models: TM-228, "Exploded View"

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

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

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000000994649

INSPECTION PROCEDURE

1. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- IPDM E/R connector
- Harness connector E30 (M/T models without ABS)
- Harness connector M1 (M/T models without ABS)

Is the 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.	Termi	110333141100 (22)	
E17	40 39		Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3..

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-18, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

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INSPECTION PROCEDURE

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 2..

NO >> Repair the terminal and connector.

2.check harness continuity (short circuit)

Check the continuity between the data link connector terminals.

	Data link connector		
Connector No.	Termi	Continuity	
M22	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			Continuity
Connector No.	Terminal No.	Ground	Continuity
M22	6		Not existed
IVIZZ	14		Not existed

Is the inspection result normal?

YES >> GO TO 4..

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

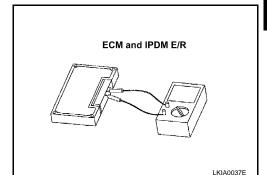
4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

- Remove the ECM and the IPDM E/R.
- Check the resistance between the ECM terminals.

ECM		Resistance (Ω)
Terminal No.		
98	97	Approx. 108 – 132

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

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



Is the measurement value within the specification?

YES >> GO TO 5..

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

5.CHECK SYMPTOM

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CAN COMMUNICATION CIRCUIT

< COMPONENT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

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.