

SECTION LAN

LAN SYSTEM

A
B
C
D
E
F
G
H
I
J
K
L

CONTENTS

CAN FUNDAMENTAL		PRECAUTIONS	22
PRECAUTION	6	FOR USA AND CANADA	22
PRECAUTIONS	6	FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	22
Precautions for Trouble Diagnosis	6	FOR USA AND CANADA : Precautions for Trouble Diagnosis	22
Precautions for Harness Repair	6	FOR USA AND CANADA : Precautions for Harness Repair	22
SYSTEM DESCRIPTION	7	FOR MEXICO	23
CAN COMMUNICATION SYSTEM	7	FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	23
System Description	7	FOR MEXICO : Precautions for Trouble Diagnosis	23
System Diagram	7	FOR MEXICO : Precautions for Harness Repair	24
CAN Communication Control Circuit	8	BASIC INSPECTION	25
DIAG ON CAN	9	DIAGNOSIS AND REPAIR WORKFLOW	25
Description	9	Interview Sheet	25
System Diagram	9	SYSTEM DESCRIPTION	26
TROUBLE DIAGNOSIS	10	CAN COMMUNICATION SYSTEM	26
Condition of Error Detection	10	CAN System Specification Chart	26
Symptom When Error Occurs in CAN Communication System	10	CAN Communication Signal Chart	26
CAN Diagnosis with CONSULT	13	DTC/CIRCUIT DIAGNOSIS	30
Self-Diagnosis	13	CAN COMMUNICATION SYSTEM	30
CAN Diagnostic Support Monitor	13	Component Parts Location	30
How to Use CAN Communication Signal Chart	15	Wiring Diagram - CAN SYSTEM -	31
BASIC INSPECTION	16	MALFUNCTION AREA CHART	32
DIAGNOSIS AND REPAIR WORKFLOW	16	Main Line	32
Trouble Diagnosis Flow Chart	16	Branch Line	32
Trouble Diagnosis Procedure	16	Short Circuit	32
CAN		MAIN LINE BETWEEN BCM AND DLC CIRCUIT	33
HOW TO USE THIS MANUAL	21		
HOW TO USE THIS SECTION	21		
Caution	21		
Abbreviation List	21		
PRECAUTION	22		

LAN

N
O
P

Diagnosis Procedure	33	Diagnosis Procedure	53
MAIN LINE BETWEEN DLC AND TCM CIR- CUIT	34	I-KEY BRANCH LINE CIRCUIT	54
Diagnosis Procedure	34	Diagnosis Procedure	54
ECM BRANCH LINE CIRCUIT	35	DLC BRANCH LINE CIRCUIT	55
Diagnosis Procedure	35	Diagnosis Procedure	55
4WD BRANCH LINE CIRCUIT	36	EPS BRANCH LINE CIRCUIT	56
Diagnosis Procedure	36	Diagnosis Procedure	56
A-BAG BRANCH LINE CIRCUIT	37	M&A BRANCH LINE CIRCUIT	57
Diagnosis Procedure	37	Diagnosis Procedure	57
BCM BRANCH LINE CIRCUIT	38	ABS BRANCH LINE CIRCUIT	58
Diagnosis Procedure	38	Diagnosis Procedure	58
I-KEY BRANCH LINE CIRCUIT	39	TCM BRANCH LINE CIRCUIT	59
Diagnosis Procedure	39	Diagnosis Procedure	59
STRG BRANCH LINE CIRCUIT	40	IPDM-E BRANCH LINE CIRCUIT	60
Diagnosis Procedure	40	Diagnosis Procedure	60
AVM BRANCH LINE CIRCUIT	41	CAN COMMUNICATION CIRCUIT	61
Diagnosis Procedure	41	Diagnosis Procedure	61
DLC BRANCH LINE CIRCUIT	42	CAN SYSTEM (TYPE 2)	
Diagnosis Procedure	42	DTC/CIRCUIT DIAGNOSIS	63
EPS BRANCH LINE CIRCUIT	43	MAIN LINE BETWEEN BCM AND DLC CIR- CUIT	63
Diagnosis Procedure	43	Diagnosis Procedure	63
M&A BRANCH LINE CIRCUIT	44	MAIN LINE BETWEEN DLC AND TCM CIR- CUIT	64
Diagnosis Procedure	44	Diagnosis Procedure	64
ABS BRANCH LINE CIRCUIT	45	ECM BRANCH LINE CIRCUIT	65
Diagnosis Procedure	45	Diagnosis Procedure	65
TCM BRANCH LINE CIRCUIT	46	A-BAG BRANCH LINE CIRCUIT	66
Diagnosis Procedure	46	Diagnosis Procedure	66
IPDM-E BRANCH LINE CIRCUIT	47	BCM BRANCH LINE CIRCUIT	67
Diagnosis Procedure	47	Diagnosis Procedure	67
CAN COMMUNICATION CIRCUIT	48	STRG BRANCH LINE CIRCUIT	68
Diagnosis Procedure	48	Diagnosis Procedure	68
CAN SYSTEM (TYPE 1)		DLC BRANCH LINE CIRCUIT	69
DTC/CIRCUIT DIAGNOSIS	50	Diagnosis Procedure	69
MAIN LINE BETWEEN BCM AND DLC CIR- CUIT	50	EPS BRANCH LINE CIRCUIT	70
Diagnosis Procedure	50	Diagnosis Procedure	70
MAIN LINE BETWEEN DLC AND TCM CIR- CUIT	51	M&A BRANCH LINE CIRCUIT	71
Diagnosis Procedure	51	Diagnosis Procedure	71
ECM BRANCH LINE CIRCUIT	52	ABS BRANCH LINE CIRCUIT	72
Diagnosis Procedure	52	Diagnosis Procedure	72
BCM BRANCH LINE CIRCUIT	53	TCM BRANCH LINE CIRCUIT	73
		Diagnosis Procedure	73

IPDM-E BRANCH LINE CIRCUIT	74	ECM BRANCH LINE CIRCUIT	94	
Diagnosis Procedure	74	Diagnosis Procedure	94	A
CAN COMMUNICATION CIRCUIT	75	A-BAG BRANCH LINE CIRCUIT	95	
Diagnosis Procedure	75	Diagnosis Procedure	95	B
CAN SYSTEM (TYPE 3)				
DTC/CIRCUIT DIAGNOSIS	77	BCM BRANCH LINE CIRCUIT	96	
		Diagnosis Procedure	96	C
MAIN LINE BETWEEN BCM AND DLC CIR- CUIT	77	I-KEY BRANCH LINE CIRCUIT	97	
Diagnosis Procedure	77	Diagnosis Procedure	97	D
MAIN LINE BETWEEN DLC AND TCM CIR- CUIT	78	STRG BRANCH LINE CIRCUIT	98	
Diagnosis Procedure	78	Diagnosis Procedure	98	E
ECM BRANCH LINE CIRCUIT	79	AVM BRANCH LINE CIRCUIT	99	
Diagnosis Procedure	79	Diagnosis Procedure	99	F
A-BAG BRANCH LINE CIRCUIT	80	DLC BRANCH LINE CIRCUIT	100	
Diagnosis Procedure	80	Diagnosis Procedure	100	G
BCM BRANCH LINE CIRCUIT	81	EPS BRANCH LINE CIRCUIT	101	
Diagnosis Procedure	81	Diagnosis Procedure	101	H
I-KEY BRANCH LINE CIRCUIT	82	M&A BRANCH LINE CIRCUIT	102	
Diagnosis Procedure	82	Diagnosis Procedure	102	I
STRG BRANCH LINE CIRCUIT	83	ABS BRANCH LINE CIRCUIT	103	
Diagnosis Procedure	83	Diagnosis Procedure	103	J
DLC BRANCH LINE CIRCUIT	84	TCM BRANCH LINE CIRCUIT	104	
Diagnosis Procedure	84	Diagnosis Procedure	104	K
EPS BRANCH LINE CIRCUIT	85	IPDM-E BRANCH LINE CIRCUIT	105	
Diagnosis Procedure	85	Diagnosis Procedure	105	L
M&A BRANCH LINE CIRCUIT	86	CAN COMMUNICATION CIRCUIT	106	
Diagnosis Procedure	86	Diagnosis Procedure	106	LAN
ABS BRANCH LINE CIRCUIT	87	CAN SYSTEM (TYPE 5)		
Diagnosis Procedure	87	DTC/CIRCUIT DIAGNOSIS	108	
TCM BRANCH LINE CIRCUIT	88	MAIN LINE BETWEEN BCM AND DLC CIR- CUIT	108	
Diagnosis Procedure	88	Diagnosis Procedure	108	N
IPDM-E BRANCH LINE CIRCUIT	89	MAIN LINE BETWEEN DLC AND TCM CIR- CUIT	109	
Diagnosis Procedure	89	Diagnosis Procedure	109	O
CAN COMMUNICATION CIRCUIT	90	ECM BRANCH LINE CIRCUIT	110	
Diagnosis Procedure	90	Diagnosis Procedure	110	P
CAN SYSTEM (TYPE 4)				
DTC/CIRCUIT DIAGNOSIS	92	4WD BRANCH LINE CIRCUIT	111	
		Diagnosis Procedure	111	
MAIN LINE BETWEEN BCM AND DLC CIR- CUIT	92	BCM BRANCH LINE CIRCUIT	112	
Diagnosis Procedure	92	Diagnosis Procedure	112	
MAIN LINE BETWEEN DLC AND TCM CIR- CUIT	93	I-KEY BRANCH LINE CIRCUIT	113	
Diagnosis Procedure	93	Diagnosis Procedure	113	
		STRG BRANCH LINE CIRCUIT	114	

Diagnosis Procedure	114	IPDM-E BRANCH LINE CIRCUIT	135
AVM BRANCH LINE CIRCUIT	115	Diagnosis Procedure	135
Diagnosis Procedure	115	CAN COMMUNICATION CIRCUIT	136
DLC BRANCH LINE CIRCUIT	116	Diagnosis Procedure	136
Diagnosis Procedure	116	CAN SYSTEM (TYPE 7)	
EPS BRANCH LINE CIRCUIT	117	DTC/CIRCUIT DIAGNOSIS	138
Diagnosis Procedure	117	MAIN LINE BETWEEN BCM AND DLC CIR-	
M&A BRANCH LINE CIRCUIT	118	CUIT	138
Diagnosis Procedure	118	Diagnosis Procedure	138
ABS BRANCH LINE CIRCUIT	119	MAIN LINE BETWEEN DLC AND TCM CIR-	
Diagnosis Procedure	119	CUIT	139
TCM BRANCH LINE CIRCUIT	120	Diagnosis Procedure	139
Diagnosis Procedure	120	ECM BRANCH LINE CIRCUIT	140
IPDM-E BRANCH LINE CIRCUIT	121	Diagnosis Procedure	140
Diagnosis Procedure	121	A-BAG BRANCH LINE CIRCUIT	141
CAN COMMUNICATION CIRCUIT	122	Diagnosis Procedure	141
Diagnosis Procedure	122	BCM BRANCH LINE CIRCUIT	142
CAN SYSTEM (TYPE 6)		Diagnosis Procedure	142
DTC/CIRCUIT DIAGNOSIS	124	I-KEY BRANCH LINE CIRCUIT	143
MAIN LINE BETWEEN BCM AND DLC CIR-		Diagnosis Procedure	143
CUIT	124	STRG BRANCH LINE CIRCUIT	144
Diagnosis Procedure	124	Diagnosis Procedure	144
MAIN LINE BETWEEN DLC AND TCM CIR-		DLC BRANCH LINE CIRCUIT	145
CUIT	125	Diagnosis Procedure	145
Diagnosis Procedure	125	EPS BRANCH LINE CIRCUIT	146
ECM BRANCH LINE CIRCUIT	126	Diagnosis Procedure	146
Diagnosis Procedure	126	M&A BRANCH LINE CIRCUIT	147
A-BAG BRANCH LINE CIRCUIT	127	Diagnosis Procedure	147
Diagnosis Procedure	127	ABS BRANCH LINE CIRCUIT	148
BCM BRANCH LINE CIRCUIT	128	Diagnosis Procedure	148
Diagnosis Procedure	128	TCM BRANCH LINE CIRCUIT	149
STRG BRANCH LINE CIRCUIT	129	Diagnosis Procedure	149
Diagnosis Procedure	129	IPDM-E BRANCH LINE CIRCUIT	150
DLC BRANCH LINE CIRCUIT	130	Diagnosis Procedure	150
Diagnosis Procedure	130	CAN COMMUNICATION CIRCUIT	151
EPS BRANCH LINE CIRCUIT	131	Diagnosis Procedure	151
Diagnosis Procedure	131	CAN SYSTEM (TYPE 8)	
M&A BRANCH LINE CIRCUIT	132	DTC/CIRCUIT DIAGNOSIS	153
Diagnosis Procedure	132	MAIN LINE BETWEEN BCM AND DLC CIR-	
ABS BRANCH LINE CIRCUIT	133	CUIT	153
Diagnosis Procedure	133	Diagnosis Procedure	153
TCM BRANCH LINE CIRCUIT	134	MAIN LINE BETWEEN DLC AND TCM CIR-	
Diagnosis Procedure	134	CUIT	154
		Diagnosis Procedure	154

ECM BRANCH LINE CIRCUIT	155	Diagnosis Procedure	161	
Diagnosis Procedure	155	EPS BRANCH LINE CIRCUIT	162	A
A-BAG BRANCH LINE CIRCUIT	156	Diagnosis Procedure	162	
Diagnosis Procedure	156	M&A BRANCH LINE CIRCUIT	163	B
BCM BRANCH LINE CIRCUIT	157	Diagnosis Procedure	163	
Diagnosis Procedure	157	ABS BRANCH LINE CIRCUIT	164	C
I-KEY BRANCH LINE CIRCUIT	158	Diagnosis Procedure	164	
Diagnosis Procedure	158	TCM BRANCH LINE CIRCUIT	165	D
STRG BRANCH LINE CIRCUIT	159	Diagnosis Procedure	165	
Diagnosis Procedure	159	IPDM-E BRANCH LINE CIRCUIT	166	E
AVM BRANCH LINE CIRCUIT	160	Diagnosis Procedure	166	
Diagnosis Procedure	160	CAN COMMUNICATION CIRCUIT	167	F
DLC BRANCH LINE CIRCUIT	161	Diagnosis Procedure	167	

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PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

INFOID:000000008280905

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.

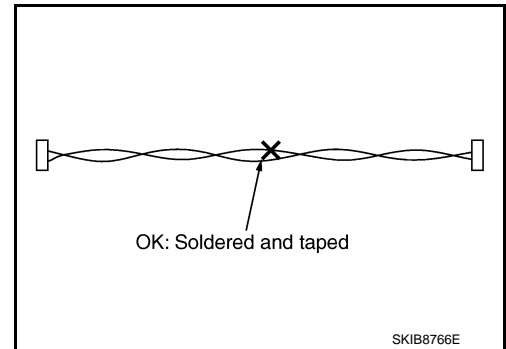
Precautions for Harness Repair

INFOID:000000008280906

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

NOTE:

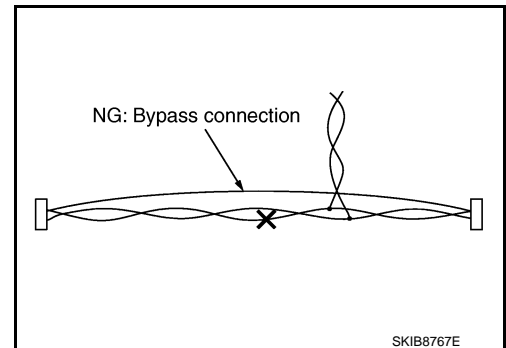
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

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



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

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

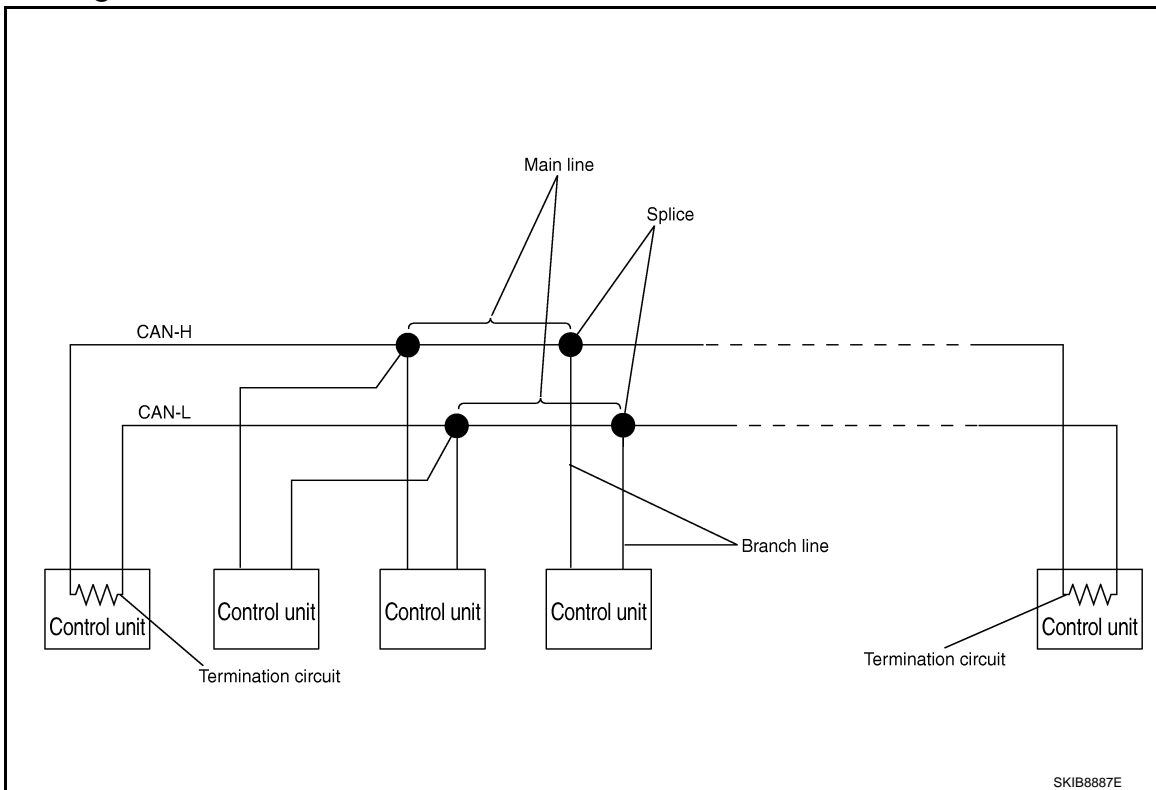
System Description

INFOID:000000008280907

- 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:000000008280908



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

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Component	Description
Main line	CAN communication line between splices
Branch line	CAN communication line between splice and a control unit
Splice	A point connecting a branch line with a main line
Termination circuit	Refer to LAN-8. "CAN Communication Control Circuit" .

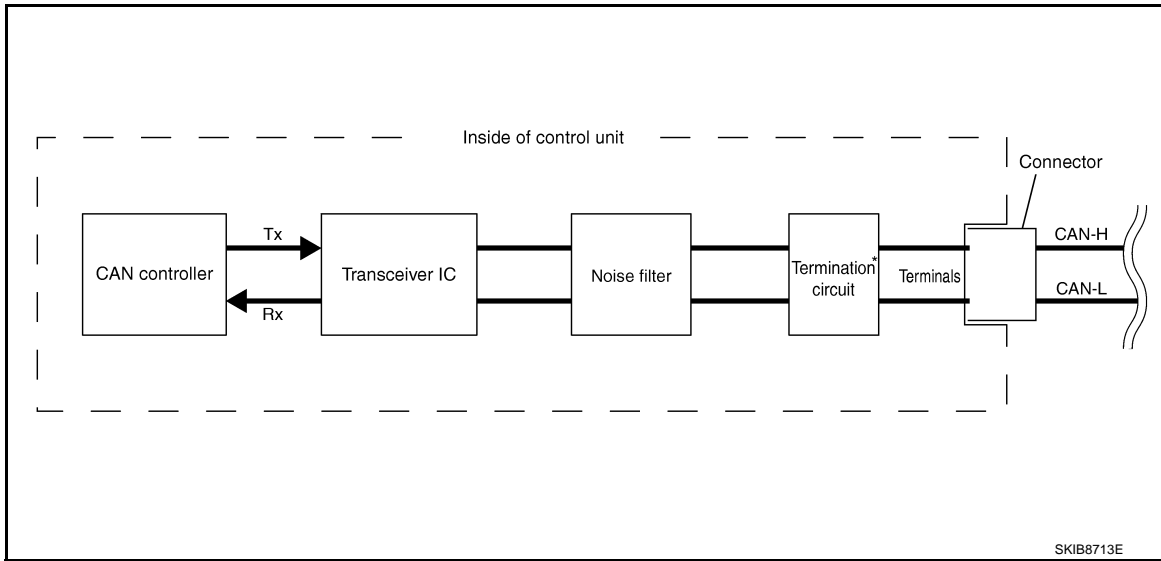
CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

CAN Communication Control Circuit

INFOID:000000008280909



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

*: These are the only control units wired with both ends of CAN communication system.

DIAG ON CAN

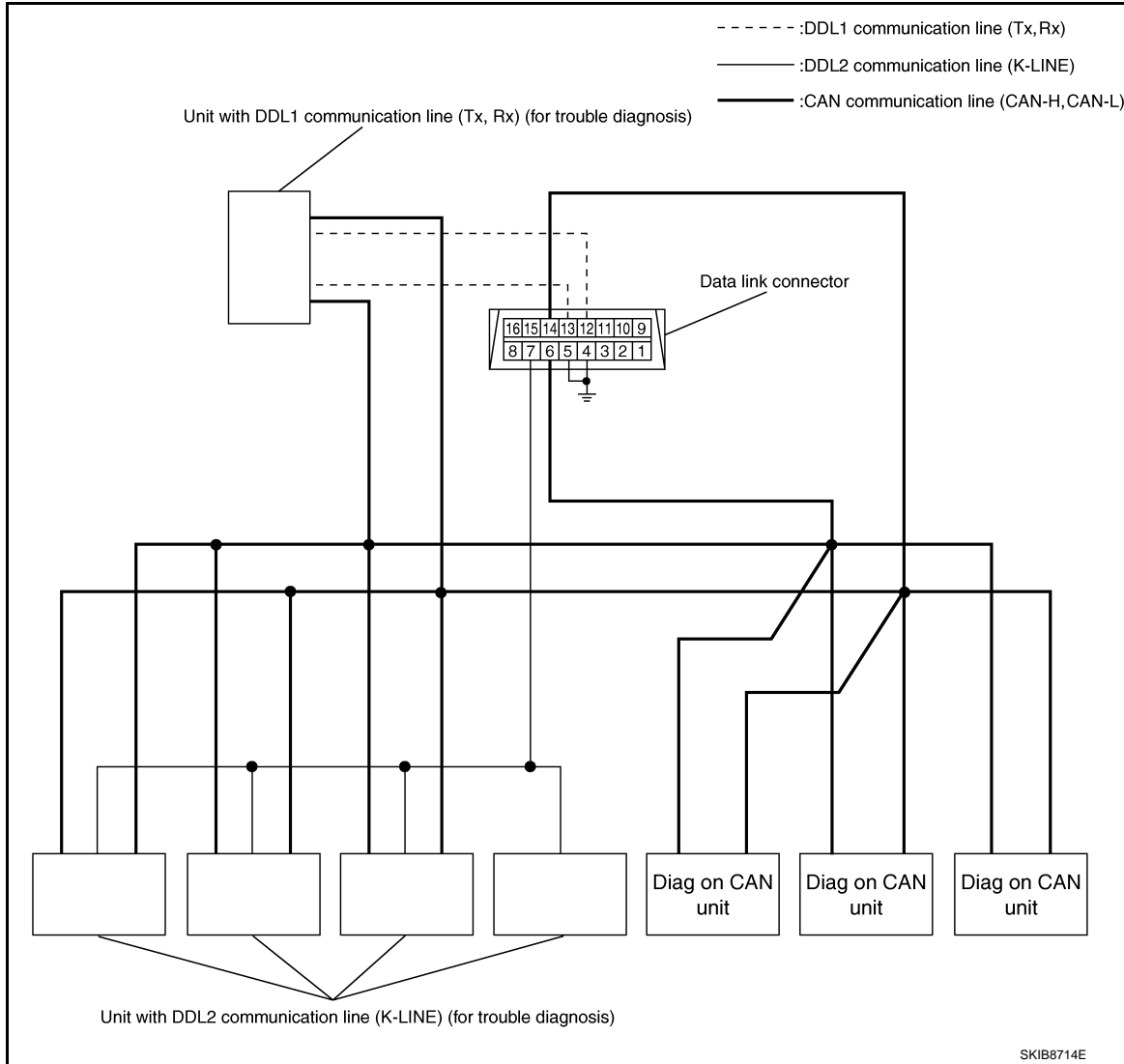
Description

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

System Diagram

INFOID:000000008280911



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.

A
B
C
D
E
F
G
H
I
J
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L

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N
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TROUBLE DIAGNOSIS

Condition of Error Detection

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

CAN COMMUNICATION SYSTEM ERROR

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

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

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

CAUTION:

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

Symptom When Error Occurs in CAN Communication System

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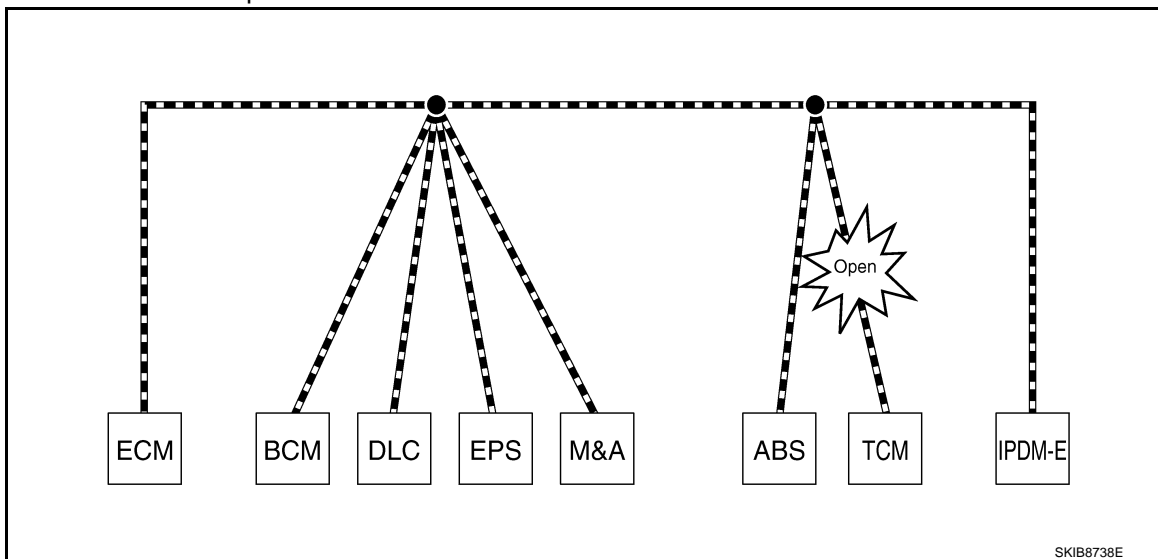
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

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.

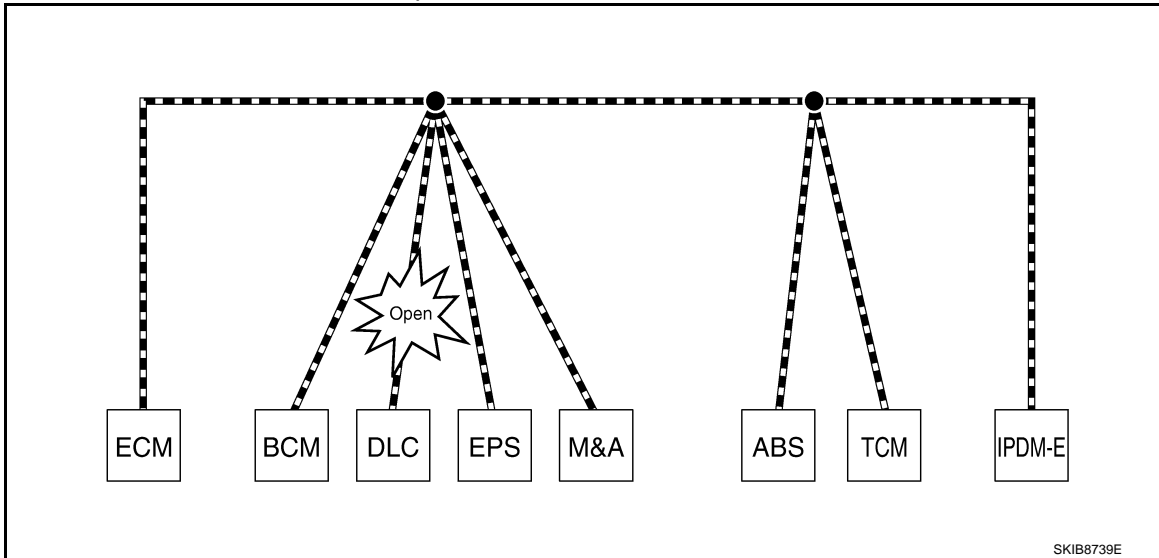
TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Symptom
EPS control unit	Normal operation.
Combination meter	<ul style="list-style-type: none"> Shift position indicator and OD OFF indicator turn OFF. Warning lamps turn ON.
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R	Normal operation.

Example: Data link connector branch line open circuit



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

NOTE:

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

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

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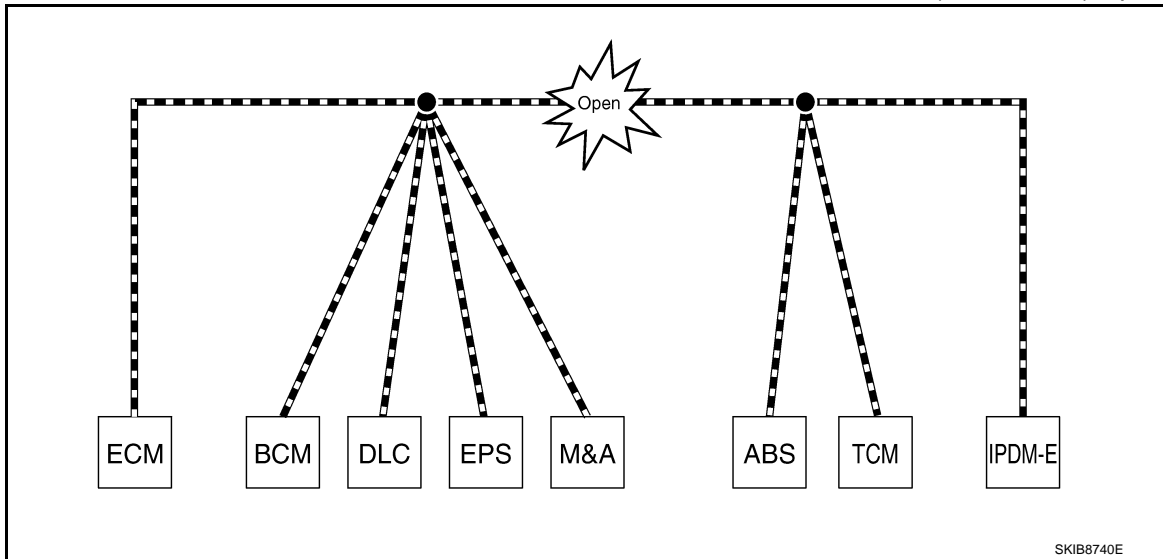
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TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

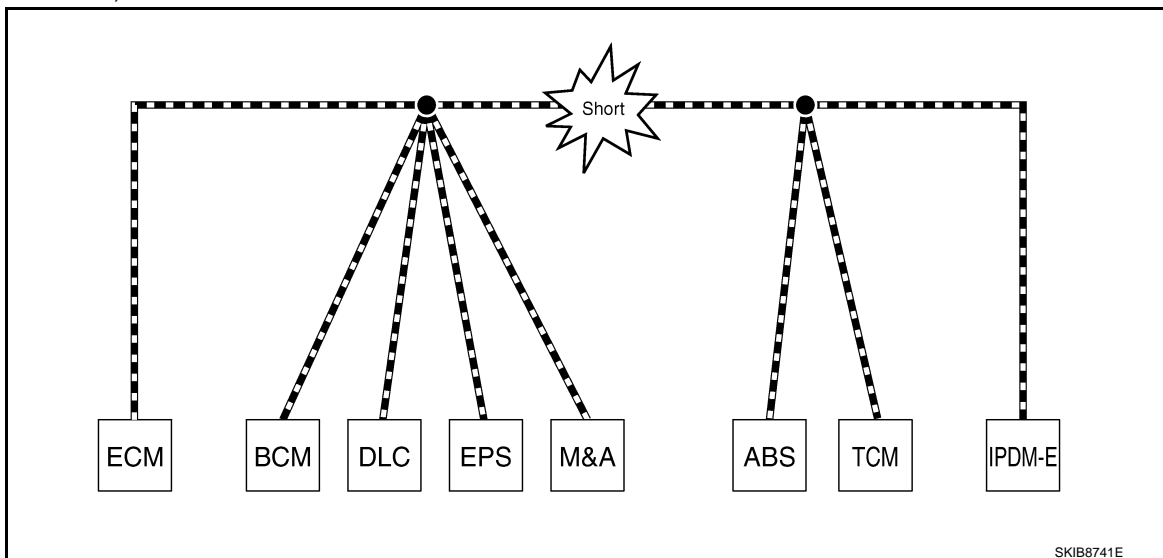
[CAN FUNDAMENTAL]

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



Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	<ul style="list-style-type: none"> • Reverse warning chime does not sound. • The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.
EPS control unit	The steering effort increases.
Combination meter	<ul style="list-style-type: none"> • The shift position indicator and OD OFF indicator turn OFF. • The speedometer is inoperative. • The odo/trip meter stops.
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R	When the ignition switch is ON, <ul style="list-style-type: none"> • The headlamps (Lo) turn ON. • The cooling fan continues to rotate.

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



TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Symptom
ECM	<ul style="list-style-type: none"> Engine torque limiting is affected, and shift harshness increases. Engine speed drops.
BCM	<ul style="list-style-type: none"> Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. The room lamp does not turn ON. The engine does not start (if an error or malfunction occurs while turning the ignition switch OFF.) The steering lock does not release (if an error or malfunction occurs while turning the ignition switch OFF.)
EPS control unit	The steering effort increases.
Combination meter	<ul style="list-style-type: none"> The tachometer and the speedometer do not move. Warning lamps turn ON. Indicator lamps do not turn ON.
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R	When the ignition switch is ON, <ul style="list-style-type: none"> The headlamps (Lo) turn ON. The cooling fan continues to rotate.

CAN Diagnosis with CONSULT

INFOID:000000008280914

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

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

Self-Diagnosis

INFOID:000000008280915

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

NOTE:

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

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

CAN Diagnostic Support Monitor

INFOID:000000008280916

MONITOR ITEM (CONSULT)

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

Without PAST			With PAST		
BCM			ENGINE		
MONITOR ITEM	PRESENT	PAST	MONITOR ITEM	PRESENT	PAST
INITIAL DIAG	OK	-	TRANSMIT DIAG	OK	OK
TRANSMIT DIAG	OK	-	VDC/TCS/ABS	OK	5
ECM	OK	-	METER/M&A	Not diagnosed	-
METER/M&A	OK	-	BCM/SEC	OK	OK
TCM	OK	-	ICC	Not diagnosed	-
IPDM E/R	OK	-	HVAC	Not diagnosed	-
I-KEY	OK	-	TCM	OK	OK
			EPS	OK	OK
			IPDM E/R	OK	5
			e4WD	Not diagnosed	-
			AWD/4WD	Not diagnosed	-

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Without PAST

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

With PAST

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

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

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

TROUBLE DIAGNOSIS

[CAN FUNDAMENTAL]

< SYSTEM DESCRIPTION >

Example: Vehicle Display

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

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C
D
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F
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H
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O
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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.

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

T: Transmit R: Receive

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

No communication between ECM and M&A.

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

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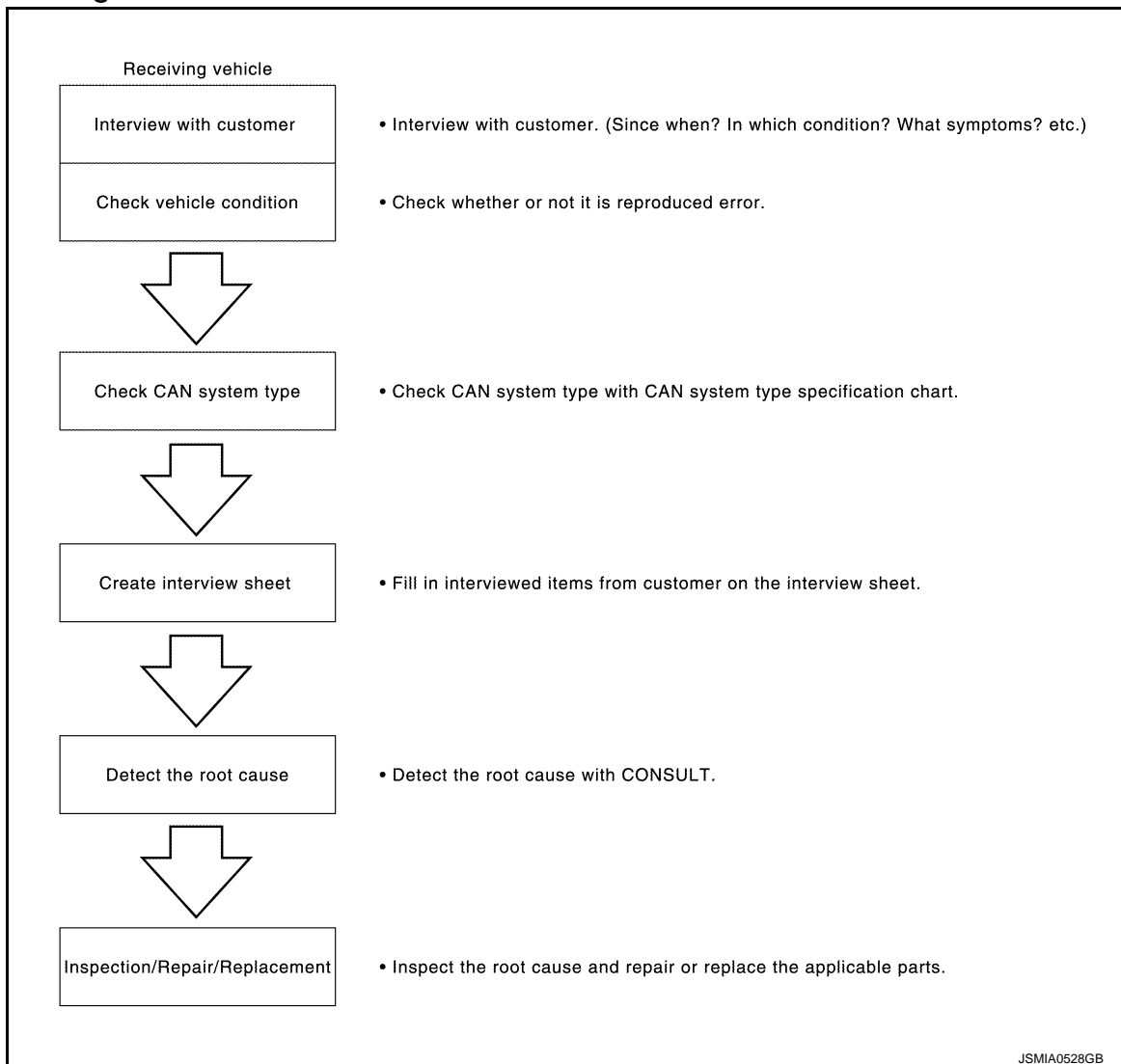
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

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Trouble Diagnosis Procedure

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INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

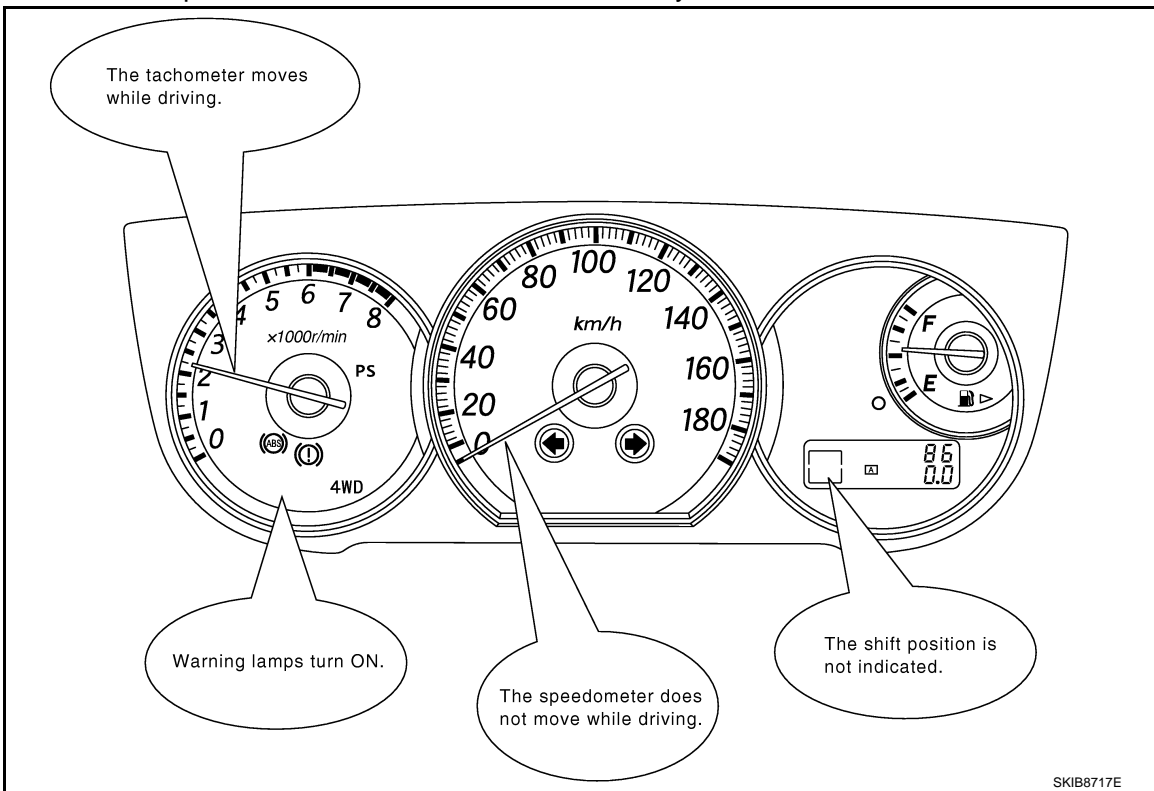
- Check normal units as well as error symptoms.
- Example: Circuit between ECM and the combination meter is judged normal if the customer indicates tachometer functions normally.
- When a CAN communication system error is present, multiple control units may malfunction or go into fail-safe mode.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

Determine CAN system type based on vehicle equipment.

NOTE:

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

CAN System Type Specification Chart (Style A)

NOTE:

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

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

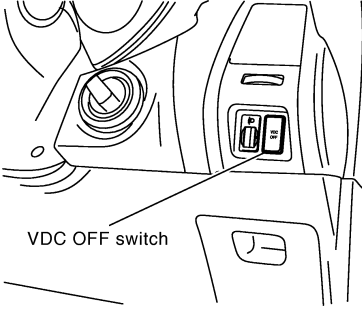
CAN System Specification Chart
Determine CAN system type from the following specification chart.

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

X : Applicable

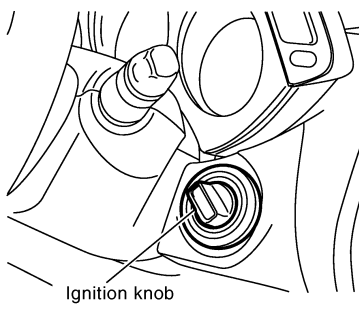
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION
NOTE:
Check CAN system type from the vehicle shape and equipment.

With VDC



VDC OFF switch

With Intelligent Key system



Ignition knob

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

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CAN System Type Specification Chart (Style B)

NOTE:

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

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

CAN System Specification Chart
Refer to the specification as shown in the chart.

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

○: Applicable

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

SPECIFICATION CHART B
Determine CAN system type from the following specification chart.

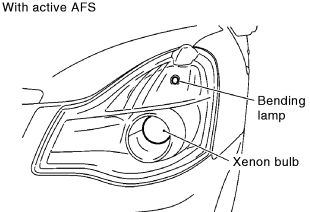
Body type	Sedan											
Axle	2WD											
Engine	MR20DE											
Transmission	CVT											
Brake control	ABS											
Active AFS		x			x	x		x	x		x	
Intelligent Key system			x		x		x	x	x	x	x	
Navigation system				x		x	x		x		x	
Automatic drive positioner							x		x	x	x	
CAN system type	9	10	11	12	13	14	15	16	17	18	19	20
CAN communication signal chart	XXX TYPE W/INTELLIGENT KEY SYSTEM, ABS, NAVIGATION SYSTEM, ACTIVE AFS, SEAT MEMORY SWITCH, MULTIFUNCTION SWITCH, DISPLAY, MR20DE, 2WD, CVT, ABS											

○: Applicable

Check the vehicle equipment.
The number indicates the CAN system type of the vehicle.

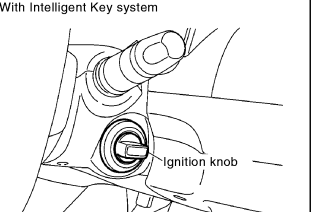
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION
NOTE:
Check CAN system type from the vehicle shape and equipment.

With active AFS



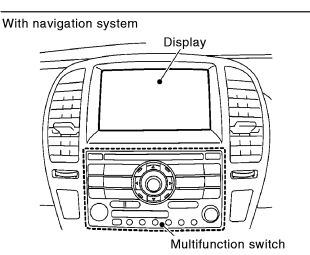
Xenon bulb
Bending lamp

With Intelligent Key system



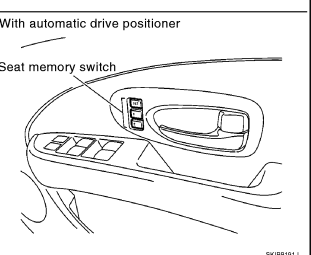
Ignition knob

With navigation system



Display
Multifunction switch

With automatic drive positioner



Seat memory switch

In the above example,

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

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

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CREATE INTERVIEW SHEET

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

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

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

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DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

HOW TO USE THIS SECTION

< HOW TO USE THIS MANUAL >

[CAN]

HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution

INFOID:000000008280920

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

Abbreviation List

INFOID:000000008280921

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

Abbreviation	Unit name
4WD	AWD control unit
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
AVM	Around view monitor control unit
BCM	BCM
DLC	Data link connector
ECM	ECM
EPS	EPS control unit
I-KEY	Intelligent Key unit
IPDM-E	IPDM E/R
M&A	Combination meter
STRG	Steering angle sensor
TCM	TCM

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PRECAUTION

PRECAUTIONS
FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000008741770

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

FOR USA AND CANADA : Precautions for Trouble Diagnosis

INFOID:000000008280924

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.

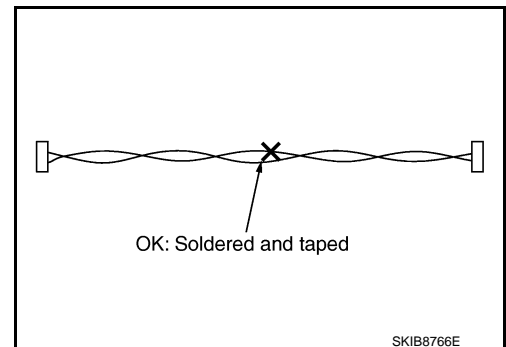
FOR USA AND CANADA : Precautions for Harness Repair

INFOID:000000008280925

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

NOTE:

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



PRECAUTIONS

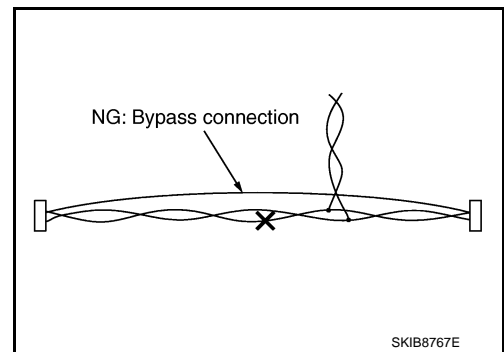
[CAN]

< PRECAUTION >

- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause CAN communication 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.

FOR MEXICO

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

INFOID:000000008741773

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. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

FOR MEXICO : Precautions for Trouble Diagnosis

INFOID:000000008741775

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

[CAN]

< PRECAUTION >

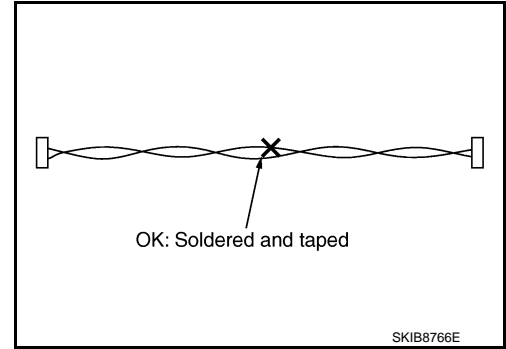
FOR MEXICO : Precautions for Harness Repair

INFOID:000000008741776

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

NOTE:

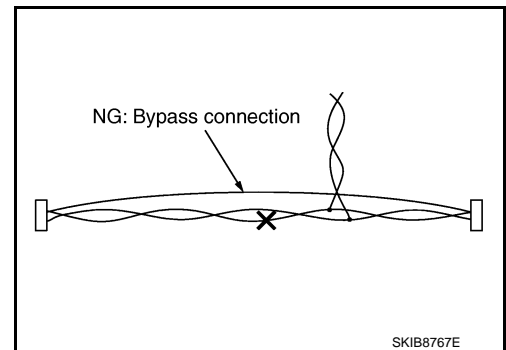
A fray of twisted lines must be within 110 mm (4.33 in).



- 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.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

INFOID:000000008280926

CAN Communication System Diagnosis Interview Sheet

Date received:

Type:

VIN No.:

Model:

First registration:

Mileage:

CAN system type:

Symptom (Results from interview with customer)

Condition at inspection

Error symptom : Present / Past

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CAN COMMUNICATION SYSTEM

[CAN]

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

INFOID:000000008280927

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.

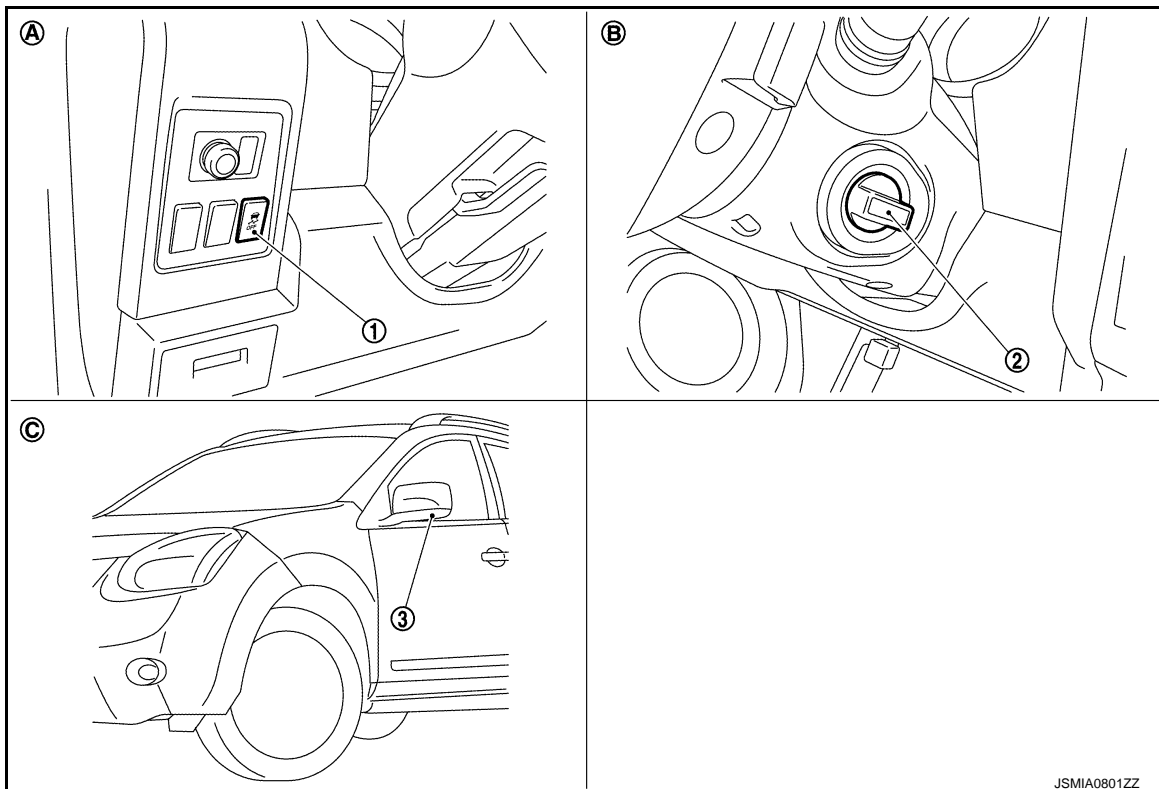
Body type	Hatchback							
Axle	2WD				AWD			
Engine	QR25DE							
Transmission	CVT							
Brake control	ABS	VDC			ABS	VDC		
Intelligent Key system	×		×	×	×		×	×
Around view monitor system				×	×			×
CAN system type	1	2	3	4	5	6	7	8

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



- 1. VDC OFF switch
- 2. Ignition knob
- 3. Side camera
- A. With VDC
- B. With Intelligent Key system
- C. With around view monitor system

CAN Communication Signal Chart

INFOID:000000008280928

Refer to [LAN-15. "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

NOTE:

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Refer to [LAN-21, "Abbreviation List"](#) for the abbreviations of the connecting units.

T: Transmit R: Receive

Signal name/Connecting unit	ECM	4WD	BCM	I-KEY	STRG	AVM	EPS	M&A	ABS	TCM	IPDM-E
A/C compressor request signal	T										R
Accelerator pedal position signal	T	R ^{*1}							R ^{*2}	R	
ASCD status signal	T							R			
Closed throttle position signal	T									R	
Cooling fan speed request signal	T										R
Engine and CVT integrated control signal	T									R	
	R									T	
Engine coolant temperature signal	T							R			
Engine speed signal	T	R ^{*1}						R	R ^{*2}	R	
Engine status signal	T		R				R				
Fuel consumption monitor signal	T							R			
Fuel filler cap warning display signal	T							R			
Malfunctioning indicator lamp signal	T							R			
SPORT mode indicator lamp signal ^{*3}	T							R			
AWD warning lamp signal		T ^{*1}						R	T ^{*2}		
Mode lamp signal		T ^{*1}						R	T ^{*2}		
A/C switch signal	R		T								
Blower fan motor switch signal	R		T								
Buzzer output signal			T					R			
				T				R			
Daytime running light request signal			T					R			R
Door lock/unlock signal			T	R							
Door switch signal			T	R				R			R
Front fog light request signal			T					R			R
Front wiper request signal			T								R
High beam request signal			T					R			R
Horn request signal			T								R
Ignition switch ON signal			T								R
Ignition switch signal			T	R							
Low beam request signal			T								R
Low tire pressure warning lamp signal			T					R			
Oil pressure switch signal			T					R			
			R								T
Position light request signal			T					R			R
Rear window defogger control signal			T								R
	R										T
Sleep wake up signal			T	R				R			R
Stop lamp switch signal			T							R	
TPMS malfunction warning lamp signal			T					R			
Turn indicator signal			T					R			

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CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	BCM	I-KEY	STRG	AVM	EPS	M&A	ABS	TCM	IPDM-E
Sleep-ready signal			R	T							
			R					T			
			R								T
Wake up signal			R	T							
			R					T			
Door lock/unlock trunk open request signal			R	T							
Hazard request signal			R	T							
KEY/LOCK warning request signal				T				R			
Power window open request signal			R	T							
Steering angle sensor signal					T	R			R ²		
EPS operation signal	R						T				
EPS warning lamp signal							T	R			
Brake fluid level switch signal ^{*2}								T	R		
Fuel filler cap warning reset signal	R							T			
Manual mode shift down signal								T		R	
Manual mode shift up signal								T		R	
Manual mode signal								T		R	
Non-manual mode signal								T		R	
Overdrive control switch signal ^{*3}								T		R	
Paddle shifter shift down signal								T		R	
Paddle shifter shift up signal								T		R	
Parking brake switch signal		R ^{*1}	R					T	R ^{*2}		
Seat belt buckle switch signal			R					T			
SPORT mode switch signal ^{*3}								T		R	
Vehicle speed signal	R		R				R	T			
	R	R ^{*1}				R	R	R	T	R	
ABS warning lamp signal								R	T		
G sensor signal ^{*3}									T	R	
VDC warning lamp signal ^{*2}								R	T		
Stop lamp switch signal		R ^{*1}							T		
VDC OFF indicator lamp signal ^{*2}								R	T		
Current gear position signal ^{*2}									R	T	
Input shaft revolution signal	R									T	
Manual mode indicator signal								R		T	
OD OFF indicator signal ^{*3}								R		T	
Output shaft revolution signal	R									T	
Shift position signal								R	R ^{*2}	T	
SPORT mode signal ^{*3}	R									T	
A/C compressor feedback signal	R										T
Front wiper stop position signal			R								T
High beam status signal	R										T

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	BCM	I-KEY	STRG	AVM	EPS	M&A	ABS	TCM	IPDM-E
Hood switch signal			R								T
Ignition relay status signal			R								T
Low beam status signal	R										T

*1: With ABS (without VDC)

*2: With VDC

*3: Without manual mode

NOTE:

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

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CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

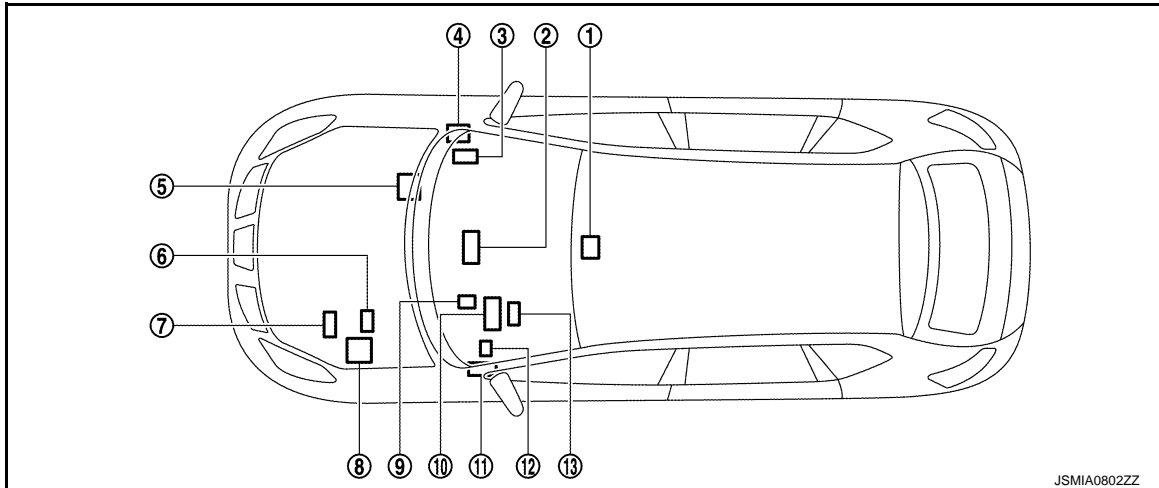
[CAN]

DTC/CIRCUIT DIAGNOSIS

CAN COMMUNICATION SYSTEM

Component Parts Location

INFOID:000000008280929



- | | | |
|---|--|----------------------------|
| 1. Air bag diagnosis sensor unit M59 | 2. Around view monitor control unit M103 | 3. BCM M65 |
| 4. AWD control unit M69 | 5. ABS actuator and electric unit (control unit) E36 | 6. TCM F25 |
| 7. ECM E16 | 8. IPDM E/R E13 | 9. EPS control unit M37 |
| 10. Combination meter M34 | 11. Intelligent Key unit M40 | 12. Data link connector M4 |
| 13. Steering angle sensor
M30: With VDC
M101: For Mexico with around view
monitor system | | |


CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >







[CAN]

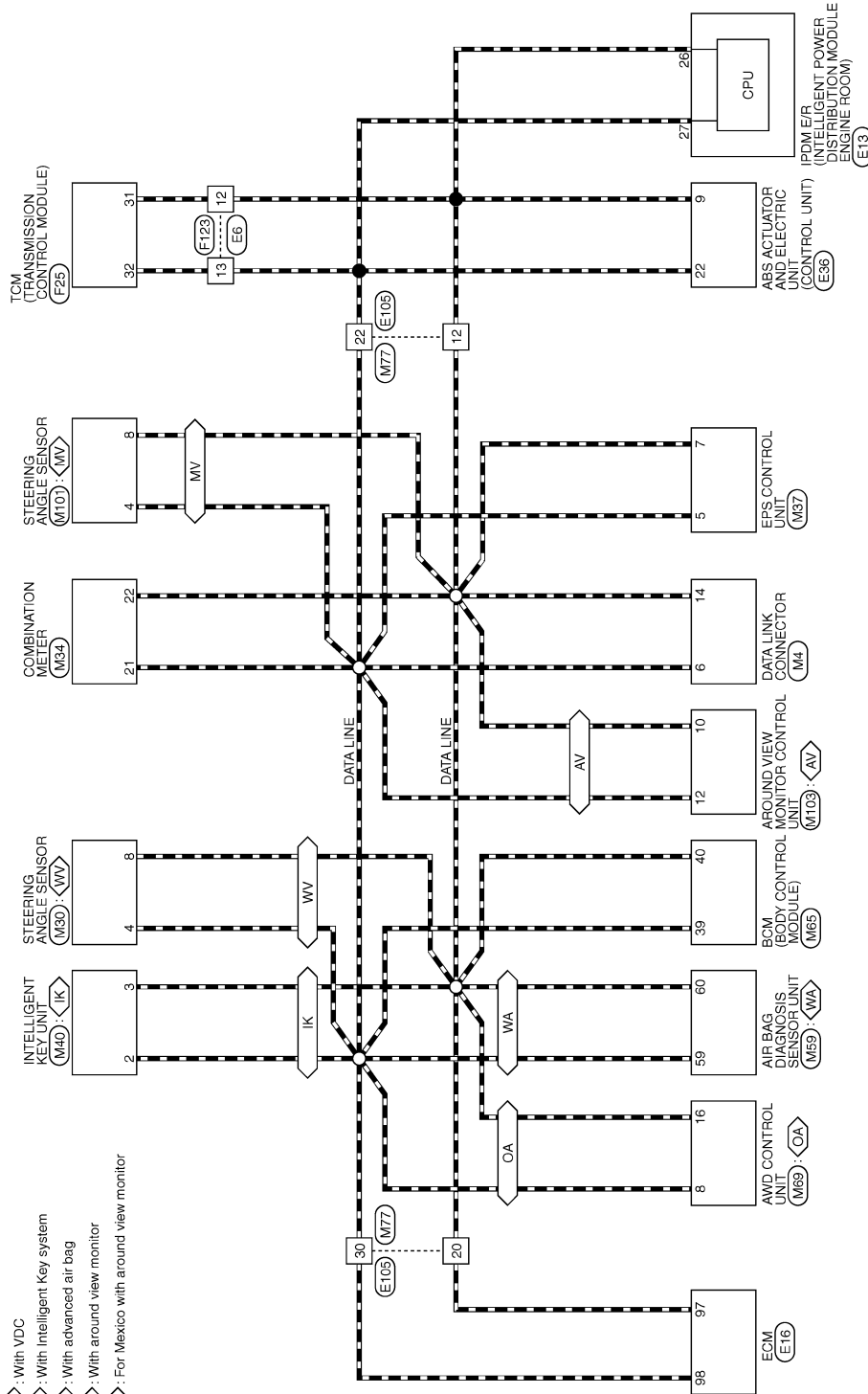
Wiring Diagram - CAN SYSTEM -

INFOID:00000000280930

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

CAN SYSTEM

-  : AWD models without VDC
-  : With VDC
-  : With Intelligent Key system
-  : With advanced air bag
-  : With around view monitor
-  : For Mexico with around view monitor



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MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MALFUNCTION AREA CHART

Main Line

INFOID:000000008280931

Malfunction area	Reference
Main line between BCM and data link connector	LAN-33, "Diagnosis Procedure"
Main line between data link connector and TCM	LAN-34, "Diagnosis Procedure"

Branch Line

INFOID:000000008280932

Malfunction area	Reference
ECM branch line circuit	LAN-35, "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-36, "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-37, "Diagnosis Procedure"
BCM branch line circuit	LAN-38, "Diagnosis Procedure"
Intelligent Key unit branch line circuit	LAN-39, "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-40, "Diagnosis Procedure"
Around view monitor control unit branch line circuit	LAN-41, "Diagnosis Procedure"
Data link connector branch line circuit	LAN-42, "Diagnosis Procedure"
EPS control unit branch line circuit	LAN-43, "Diagnosis Procedure"
Combination meter branch line circuit	LAN-44, "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-45, "Diagnosis Procedure"
TCM branch line circuit	LAN-46, "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-47, "Diagnosis Procedure"

Short Circuit

INFOID:000000008280933

Malfunction area	Reference
CAN communication circuit	LAN-48, "Diagnosis Procedure"

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008280934

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008280935

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280936

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.		
E16	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 the ECM. Refer to the following.

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
 - For Mexico: [EC-469, "BASIC INSPECTION : 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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4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280937

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

AWD control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M69	8	16	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to [DLN-26, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Exploded View"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NG >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280938

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-8, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280939

1. CHECK 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.		
M65	39	40	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-36. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

I-KEY BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

I-KEY BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280940

1.CHECK CONNECTOR

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

Intelligent Key unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M40	2	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the Intelligent Key unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the Intelligent Key unit. Refer to [DLK-55, "INTELLIGENT KEY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the Intelligent Key unit. Refer to [DLK-249, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the Intelligent Key unit branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280941

1.CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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.

AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280942

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M103	12	10	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to the following.

- Display audio: [AV-120, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-282, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to the following.
- Display audio: [AV-154, "Removal and Installation"](#)
 - BOSE audio with navigation: [AV-326, "Removal and Installation"](#)

- YES (Past error)>>Error was detected in the around view monitor control unit branch line.
NO >> Repair the power supply and the ground circuit.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280943

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

EPS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280944

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
YES (Past error)>>Error was detected in the EPS control unit branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280945

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the combination meter branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280946

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280947

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to [TM-175, "Exploded View"](#).

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

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

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008280948

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008280949

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

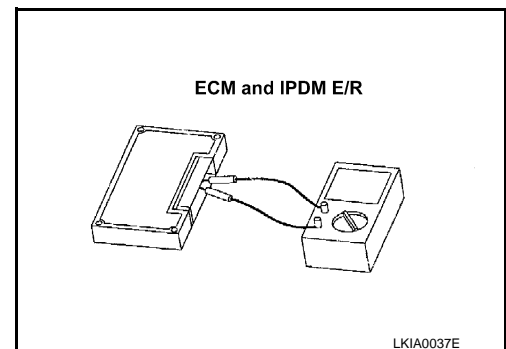
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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MAIN LINE BETWEEN BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741788

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741789

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741790

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.	
E16	98	Approx. 108 – 132
	97	

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
 - For Mexico: [EC-469, "BASIC INSPECTION : Special Repair Requirement"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741793

1. CHECK 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.		
M65	39	40	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-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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I-KEY BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

I-KEY BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741794

1. CHECK CONNECTOR

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

Intelligent Key unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M40	2	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the Intelligent Key unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the Intelligent Key unit. Refer to [DLK-55, "INTELLIGENT KEY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the Intelligent Key unit. Refer to [DLK-249, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the Intelligent Key unit branch line.
NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741797

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

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EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741798

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
 YES (Past error)>>Error was detected in the EPS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741799

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741800

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741801

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to [TM-175, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741802

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741803

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

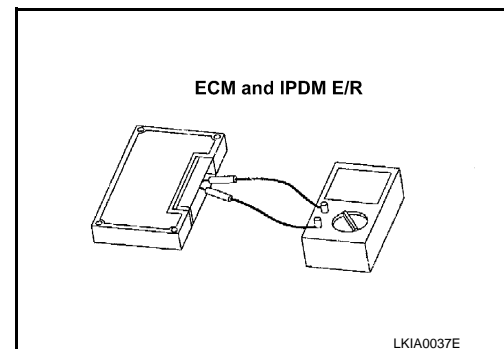
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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 BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741804

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741805

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741806

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.		
E16	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 the ECM. Refer to the following.

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
 - For Mexico: [EC-469, "BASIC INSPECTION : 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741808

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-8, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741809

1. CHECK 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.		
M65	39	40	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-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741811

1.CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741813

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

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EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741814

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
 YES (Past error)>>Error was detected in the EPS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741815

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741816

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741817

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to [TM-175, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741818

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741819

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

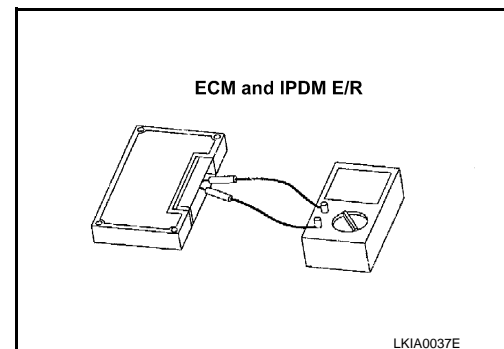
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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 BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741820

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741821

1.CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741822

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.	
E16	98	Approx. 108 – 132
	97	

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
 - For Mexico: [EC-469, "BASIC INSPECTION : 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741824

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-8, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741825

1. CHECK 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.		
M65	39	40	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-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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I-KEY BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

I-KEY BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741826

1. CHECK CONNECTOR

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

Intelligent Key unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M40	2	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the Intelligent Key unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the Intelligent Key unit. Refer to [DLK-55, "INTELLIGENT KEY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the Intelligent Key unit. Refer to [DLK-249, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the Intelligent Key unit branch line.
NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741827

1. CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741829

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

EPS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741830

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
YES (Past error)>>Error was detected in the EPS control unit branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741831

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the combination meter branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741832

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741833

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to [TM-175, "Exploded View"](#).

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

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

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741834

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741835

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

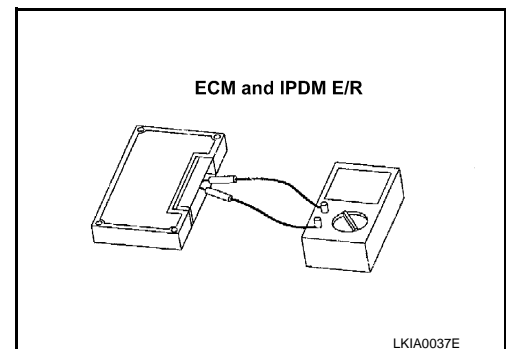
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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MAIN LINE BETWEEN BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741836

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741837

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741838

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.	
E16	98	Approx. 108 – 132
	97	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
- For Mexico: [EC-469, "BASIC INSPECTION : Special Repair Requirement"](#)

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741840

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1. CHECK CONNECTOR

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

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace the main harness.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-8, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741841

1. CHECK 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.		
M65	39	40	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-36. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

I-KEY BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

I-KEY BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741842

1. CHECK CONNECTOR

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

Intelligent Key unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M40	2	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the Intelligent Key unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the Intelligent Key unit. Refer to [DLK-55, "INTELLIGENT KEY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the Intelligent Key unit. Refer to [DLK-249, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the Intelligent Key unit branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741843

1. CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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.

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741844

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M103	12	10	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to the following.

- Display audio: [AV-120, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-282, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to the following.
- Display audio: [AV-154, "Removal and Installation"](#)
 - BOSE audio with navigation: [AV-326, "Removal and Installation"](#)

- YES (Past error)>>Error was detected in the around view monitor control unit branch line.
 NO >> Repair the power supply and the ground circuit.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741845

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

EPS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741846

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
YES (Past error)>>Error was detected in the EPS control unit branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741847

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the combination meter branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741848

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741849

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to [TM-175, "Exploded View"](#).

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

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

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741850

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741851

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

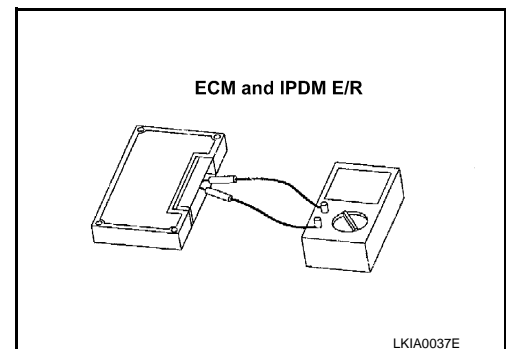
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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MAIN LINE BETWEEN BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741855

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741856

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741857

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.	
E16	98	Approx. 108 – 132
	97	

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
 - For Mexico: [EC-469, "BASIC INSPECTION : Special Repair Requirement"](#)

- YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741858

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

AWD control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M69	8	16	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to [DLN-26, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-55, "Exploded View"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NG >> Repair the power supply and the ground circuit.

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741860

1.CHECK 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.		
M65	39	40	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-36. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

I-KEY BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

I-KEY BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741861

1. CHECK CONNECTOR

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

Intelligent Key unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M40	2	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the Intelligent Key unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the Intelligent Key unit. Refer to [DLK-55, "INTELLIGENT KEY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the Intelligent Key unit. Refer to [DLK-249, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the Intelligent Key unit branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741862

1. CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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.

AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741863

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M103	12	10	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to the following.

- Display audio: [AV-120, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-282, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to the following.
- Display audio: [AV-154, "Removal and Installation"](#)
 - BOSE audio with navigation: [AV-326, "Removal and Installation"](#)

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

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

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741864

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

EPS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741865

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
YES (Past error)>>Error was detected in the EPS control unit branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741866

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the combination meter branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741867

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741868

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to [TM-175, "Exploded View"](#).

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

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

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741869

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741870

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

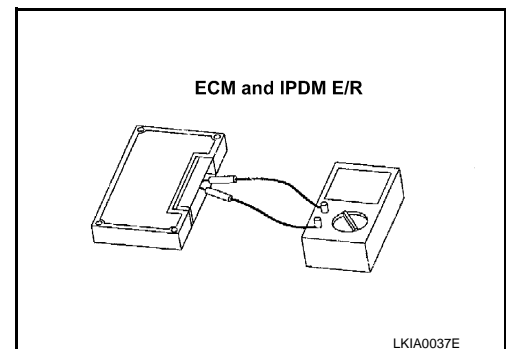
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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MAIN LINE BETWEEN BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741872

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741873

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741874

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.	
E16	98	Approx. 108 – 132
	97	

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
 - For Mexico: [EC-469, "BASIC INSPECTION : Special Repair Requirement"](#)

- YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741876

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1. CHECK CONNECTOR

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

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace the main harness.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-8, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741877

1. CHECK 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.		
M65	39	40	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-36. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741879

1.CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741881

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

EPS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741882

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
YES (Past error)>>Error was detected in the EPS control unit branch line.
NO >> Repair the power supply and the ground circuit.

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741883

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the combination meter branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741884

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741885

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the TCM. Refer to [TM-175, "Exploded View"](#).

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

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

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741886

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28. "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741887

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

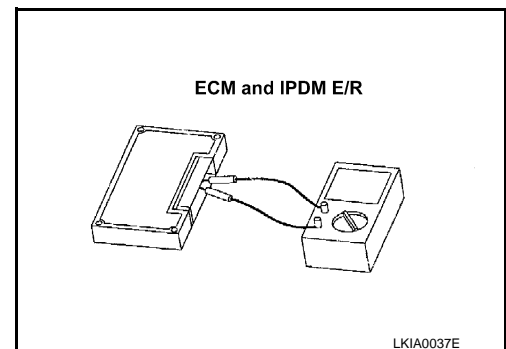
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

NOTE:

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

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

NOTE:

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

Inspection result

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

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

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MAIN LINE BETWEEN BCM AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741889

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741890

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741891

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.	
E16	98	Approx. 108 – 132
	97	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ECM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

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

- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
- For Mexico: [EC-469, "BASIC INSPECTION : Special Repair Requirement"](#)

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741893

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1. CHECK CONNECTOR

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

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace the main harness.

2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-8, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741894

1. CHECK 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.		
M65	39	40	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-36. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

I-KEY BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

I-KEY BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741895

1. CHECK CONNECTOR

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

Intelligent Key unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M40	2	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the Intelligent Key unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the Intelligent Key unit. Refer to [DLK-55, "INTELLIGENT KEY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the Intelligent Key unit. Refer to [DLK-249, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the Intelligent Key unit branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741896

1. CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741898

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

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EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741899

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
 YES (Past error)>>Error was detected in the EPS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741900

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741901

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741902

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to [TM-175, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741903

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741904

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

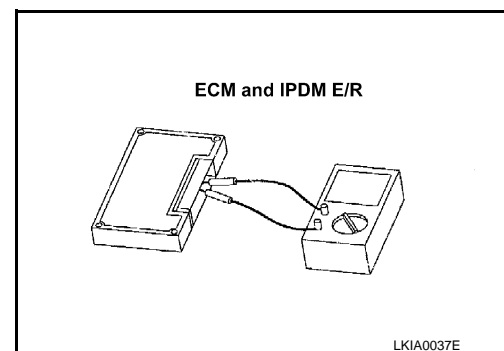
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

Inspection result

Reproduced>>GO TO 6.

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

6.CHECK UNIT REPRODUCTION

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

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN BCM AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008741906

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

BCM harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M65	39	M4	6	Existed
	40		14	Existed

Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN DLC AND TCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN DLC AND TCM CIRCUIT

Diagnosis Procedure

INFOID:000000008741907

1. CHECK CONNECTOR

1. Turn the ignition 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 M77
 - Harness connector E105

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 M77 and E105.
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.	
M4	6	M77	22	Existed
	14		12	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M77.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors E6 and F123.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E6	13	Existed
	12		12	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors E105 and E6.

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741908

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - ECM
 - Harness connector E105
 - Harness connector M77

Is the 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.	
E16	98	Approx. 108 – 132
	97	

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Except for Mexico: [EC-123, "Diagnosis Procedure"](#)
- For Mexico: [EC-557, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- Except for Mexico: [EC-17, "BASIC INSPECTION : Special Repair Requirement"](#)
 - For Mexico: [EC-469, "BASIC INSPECTION : 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741910

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-8, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741911

1. CHECK 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.		
M65	39	40	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-36, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-65, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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I-KEY BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

I-KEY BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741912

1. CHECK CONNECTOR

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

Intelligent Key unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M40	2	3	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the Intelligent Key unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the Intelligent Key unit. Refer to [DLK-55, "INTELLIGENT KEY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the Intelligent Key unit. Refer to [DLK-249, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the Intelligent Key unit branch line.
NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741913

1. CHECK 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.
- Models with VDC

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M30	4	8	Approx. 54 – 66

- For Mexico with around view monitor

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M101	4	8	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 the following.

- Models with VDC: [BRC-164, "Wiring Diagram -BRAKE CONTROL SYSTEM-"](#)
- For Mexico with around view monitor: [AV-99, "Wiring Diagram"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to following.
- Models with VDC: [BRC-183, "Removal and Installation"](#)
 - For Mexico with around view monitor: [AV-158, "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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AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

AVM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741914

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M103	12	10	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the around view monitor control unit. Refer to the following.

- Display audio: [AV-120, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-282, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to the following.

- Display audio: [AV-154, "Removal and Installation"](#)
- BOSE audio with navigation: [AV-326, "Removal and Installation"](#)

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

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

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741915

1. CHECK 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.		
M4	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

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EPS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741916

1. CHECK CONNECTOR

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

EPS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	5	7	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the EPS control unit. Refer to [STC-8, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the EPS control unit. Refer to [STC-35, "Exploded View"](#).
 YES (Past error)>>Error was detected in the EPS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741917

1. CHECK 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.		
M34	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-55, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-70, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741918

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E36	22	9	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-26, "Diagnosis Procedure"](#)
- Models with VDC: [BRC-107, "Diagnosis Procedure"](#)

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-69, "Exploded View"](#)
 - Models with VDC: [BRC-180, "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.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741919

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
 - Harness connector F123
 - Harness connector E6

Is the 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.		
F25	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 [TM-96, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCM. Refer to [TM-175, "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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008741920

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E13	27	26	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-15, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-28, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000008741921

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.	
M4	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

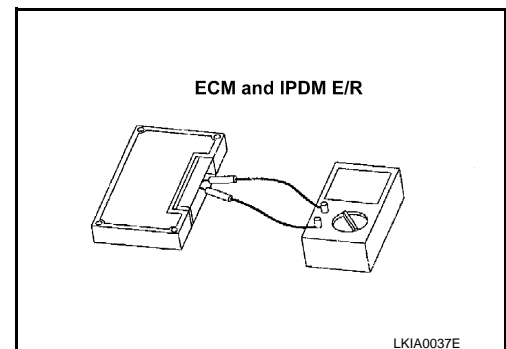
IPDM E/R		Resistance (Ω)
Terminal No.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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.