

SECTION LAN
LAN SYSTEM

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

CONTENTS

CAN FUNDAMENTAL		PRECAUTION	25
PRECAUTION	9	PRECAUTIONS	25
PRECAUTIONS	9	Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	25
Precautions for Trouble Diagnosis	9	Precautions for Trouble Diagnosis	25
Precautions for Harness Repair	9	Precautions for Harness Repair	25
SYSTEM DESCRIPTION	10	BASIC INSPECTION	27
CAN COMMUNICATION SYSTEM	10	DIAGNOSIS AND REPAIR WORKFLOW	27
System Description	10	Interview Sheet	27
System Diagram	10	SYSTEM DESCRIPTION	28
CAN Communication Control Circuit	11	CAN COMMUNICATION SYSTEM	28
DIAG ON CAN	12	CAN System Specification Chart	28
Description	12	CAN Communication Signal Chart	28
System Diagram	12	DTC/CIRCUIT DIAGNOSIS	33
TROUBLE DIAGNOSIS	13	CAN COMMUNICATION SYSTEM	33
Condition of Error Detection	13	Component Parts Location	33
Symptom When Error Occurs in CAN Communication System	13	Wiring Diagram - CAN SYSTEM -	34
CAN Diagnosis with CONSULT-III	16	MALFUNCTION AREA CHART	40
Self-Diagnosis	16	Main Line	40
CAN Diagnostic Support Monitor	16	Branch Line	40
How to Use CAN Communication Signal Chart	18	Short Circuit	40
BASIC INSPECTION	19	MAIN LINE BETWEEN AV AND DLC CIRCUIT	41
DIAGNOSIS AND REPAIR WORKFLOW	19	Diagnosis Procedure	41
Trouble Diagnosis Flow Chart	19	MAIN LINE BETWEEN DLC AND ABS CIRCUIT	42
Trouble Diagnosis Procedure	19	Diagnosis Procedure	42
CAN		MAIN LINE BETWEEN DLC AND ADP CIRCUIT	43
HOW TO USE THIS MANUAL	24	Diagnosis Procedure	43
HOW TO USE THIS SECTION	24		
Caution	24		
Abbreviation List	24		

LAN

N
O
P

MAIN LINE BETWEEN DLC AND RAS CIR- CUIT	44	CAN COMMUNICATION CIRCUIT	66
Diagnosis Procedure	44	Diagnosis Procedure	66
MAIN LINE BETWEEN RAS AND ADP CIR- CUIT	45	CAN SYSTEM (TYPE 1)	
Diagnosis Procedure	45	DTC/CIRCUIT DIAGNOSIS	68
MAIN LINE BETWEEN ADP AND ABS CIR- CUIT	46	MAIN LINE BETWEEN AV AND DLC CIR- CUIT	68
Diagnosis Procedure	46	Diagnosis Procedure	68
MAIN LINE BETWEEN RAS AND ABS CIR- CUIT	48	MAIN LINE BETWEEN DLC AND ABS CIR- CUIT	69
Diagnosis Procedure	48	Diagnosis Procedure	69
ECM BRANCH LINE CIRCUIT	50	ECM BRANCH LINE CIRCUIT	70
Diagnosis Procedure	50	Diagnosis Procedure	70
4WD BRANCH LINE CIRCUIT	51	A-BAG BRANCH LINE CIRCUIT	71
Diagnosis Procedure	51	Diagnosis Procedure	71
A-BAG BRANCH LINE CIRCUIT	52	AV BRANCH LINE CIRCUIT	72
Diagnosis Procedure	52	Diagnosis Procedure	72
AV BRANCH LINE CIRCUIT	53	BCM BRANCH LINE CIRCUIT	73
Diagnosis Procedure	53	Diagnosis Procedure	73
BCM BRANCH LINE CIRCUIT	54	DLC BRANCH LINE CIRCUIT	74
Diagnosis Procedure	54	Diagnosis Procedure	74
PSB BRANCH LINE CIRCUIT	55	M&A BRANCH LINE CIRCUIT	75
Diagnosis Procedure	55	Diagnosis Procedure	75
TCM BRANCH LINE CIRCUIT	56	STRG BRANCH LINE CIRCUIT	76
Diagnosis Procedure	56	Diagnosis Procedure	76
AFS BRANCH LINE CIRCUIT	57	ABS BRANCH LINE CIRCUIT	77
Diagnosis Procedure	57	Diagnosis Procedure	77
DLC BRANCH LINE CIRCUIT	58	IPDM-E BRANCH LINE CIRCUIT	78
Diagnosis Procedure	58	Diagnosis Procedure	78
M&A BRANCH LINE CIRCUIT	59	CAN COMMUNICATION CIRCUIT	79
Diagnosis Procedure	59	Diagnosis Procedure	79
STRG BRANCH LINE CIRCUIT	60	CAN SYSTEM (TYPE 2)	
Diagnosis Procedure	60	DTC/CIRCUIT DIAGNOSIS	81
RAS BRANCH LINE CIRCUIT	61	MAIN LINE BETWEEN AV AND DLC CIR- CUIT	81
Diagnosis Procedure	61	Diagnosis Procedure	81
ADP BRANCH LINE CIRCUIT	62	MAIN LINE BETWEEN DLC AND ADP CIR- CUIT	82
Diagnosis Procedure	62	Diagnosis Procedure	82
ABS BRANCH LINE CIRCUIT	63	MAIN LINE BETWEEN ADP AND ABS CIR- CUIT	83
Diagnosis Procedure	63	Diagnosis Procedure	83
ICC BRANCH LINE CIRCUIT	64	ECM BRANCH LINE CIRCUIT	85
Diagnosis Procedure	64	Diagnosis Procedure	85
IPDM-E BRANCH LINE CIRCUIT	65		
Diagnosis Procedure	65		

A-BAG BRANCH LINE CIRCUIT	86	STRG BRANCH LINE CIRCUIT	107
Diagnosis Procedure	86	Diagnosis Procedure	107
AV BRANCH LINE CIRCUIT	87	RAS BRANCH LINE CIRCUIT	108
Diagnosis Procedure	87	Diagnosis Procedure	108
BCM BRANCH LINE CIRCUIT	88	ABS BRANCH LINE CIRCUIT	109
Diagnosis Procedure	88	Diagnosis Procedure	109
DLC BRANCH LINE CIRCUIT	89	IPDM-E BRANCH LINE CIRCUIT	110
Diagnosis Procedure	89	Diagnosis Procedure	110
M&A BRANCH LINE CIRCUIT	90	CAN COMMUNICATION CIRCUIT	111
Diagnosis Procedure	90	Diagnosis Procedure	111
STRG BRANCH LINE CIRCUIT	91	CAN SYSTEM (TYPE 4)	
Diagnosis Procedure	91	DTC/CIRCUIT DIAGNOSIS	113
ADP BRANCH LINE CIRCUIT	92	MAIN LINE BETWEEN AV AND DLC CIR-	
Diagnosis Procedure	92	CUIT	113
ABS BRANCH LINE CIRCUIT	93	Diagnosis Procedure	113
Diagnosis Procedure	93	MAIN LINE BETWEEN DLC AND RAS CIR-	
IPDM-E BRANCH LINE CIRCUIT	94	CUIT	114
Diagnosis Procedure	94	Diagnosis Procedure	114
CAN COMMUNICATION CIRCUIT	95	MAIN LINE BETWEEN RAS AND ADP CIR-	
Diagnosis Procedure	95	CUIT	115
CAN SYSTEM (TYPE 3)		Diagnosis Procedure	115
DTC/CIRCUIT DIAGNOSIS	97	MAIN LINE BETWEEN ADP AND ABS CIR-	
MAIN LINE BETWEEN AV AND DLC CIR-		CUIT	116
CUIT	97	Diagnosis Procedure	116
Diagnosis Procedure	97	ECM BRANCH LINE CIRCUIT	118
MAIN LINE BETWEEN DLC AND RAS CIR-		Diagnosis Procedure	118
CUIT	98	A-BAG BRANCH LINE CIRCUIT	119
Diagnosis Procedure	98	Diagnosis Procedure	119
MAIN LINE BETWEEN RAS AND ABS CIR-		AV BRANCH LINE CIRCUIT	120
CUIT	99	Diagnosis Procedure	120
Diagnosis Procedure	99	BCM BRANCH LINE CIRCUIT	121
ECM BRANCH LINE CIRCUIT	101	Diagnosis Procedure	121
Diagnosis Procedure	101	DLC BRANCH LINE CIRCUIT	122
A-BAG BRANCH LINE CIRCUIT	102	Diagnosis Procedure	122
Diagnosis Procedure	102	M&A BRANCH LINE CIRCUIT	123
AV BRANCH LINE CIRCUIT	103	Diagnosis Procedure	123
Diagnosis Procedure	103	STRG BRANCH LINE CIRCUIT	124
BCM BRANCH LINE CIRCUIT	104	Diagnosis Procedure	124
Diagnosis Procedure	104	RAS BRANCH LINE CIRCUIT	125
DLC BRANCH LINE CIRCUIT	105	Diagnosis Procedure	125
Diagnosis Procedure	105	ADP BRANCH LINE CIRCUIT	126
M&A BRANCH LINE CIRCUIT	106	Diagnosis Procedure	126
Diagnosis Procedure	106	ABS BRANCH LINE CIRCUIT	127
		Diagnosis Procedure	127

A

B

C

D

E

F

G

H

I

J

K

L

LAN

N

O

P

IPDM-E BRANCH LINE CIRCUIT	128	DTC/CIRCUIT DIAGNOSIS	150
Diagnosis Procedure	128	MAIN LINE BETWEEN AV AND DLC CIR-	
CAN COMMUNICATION CIRCUIT	129	CUIT	150
Diagnosis Procedure	129	Diagnosis Procedure	150
CAN SYSTEM (TYPE 5)			
DTC/CIRCUIT DIAGNOSIS	131	MAIN LINE BETWEEN DLC AND RAS CIR-	
MAIN LINE BETWEEN AV AND DLC CIR-		CUIT	151
CUIT	131	Diagnosis Procedure	151
Diagnosis Procedure	131	MAIN LINE BETWEEN RAS AND ADP CIR-	
MAIN LINE BETWEEN DLC AND ADP CIR-		CUIT	152
CUIT	132	Diagnosis Procedure	152
Diagnosis Procedure	132	MAIN LINE BETWEEN ADP AND ABS CIR-	
MAIN LINE BETWEEN ADP AND ABS CIR-		CUIT	153
CUIT	133	Diagnosis Procedure	153
Diagnosis Procedure	133	ECM BRANCH LINE CIRCUIT	155
ECM BRANCH LINE CIRCUIT	135	Diagnosis Procedure	155
Diagnosis Procedure	135	A-BAG BRANCH LINE CIRCUIT	156
A-BAG BRANCH LINE CIRCUIT	136	Diagnosis Procedure	156
Diagnosis Procedure	136	AV BRANCH LINE CIRCUIT	157
AV BRANCH LINE CIRCUIT	137	Diagnosis Procedure	157
Diagnosis Procedure	137	BCM BRANCH LINE CIRCUIT	158
BCM BRANCH LINE CIRCUIT	138	Diagnosis Procedure	158
Diagnosis Procedure	138	PSB BRANCH LINE CIRCUIT	159
PSB BRANCH LINE CIRCUIT	139	Diagnosis Procedure	159
Diagnosis Procedure	139	AFS BRANCH LINE CIRCUIT	160
AFS BRANCH LINE CIRCUIT	140	Diagnosis Procedure	160
Diagnosis Procedure	140	DLC BRANCH LINE CIRCUIT	161
DLC BRANCH LINE CIRCUIT	141	Diagnosis Procedure	161
Diagnosis Procedure	141	M&A BRANCH LINE CIRCUIT	162
M&A BRANCH LINE CIRCUIT	142	Diagnosis Procedure	162
Diagnosis Procedure	142	STRG BRANCH LINE CIRCUIT	163
STRG BRANCH LINE CIRCUIT	143	Diagnosis Procedure	163
Diagnosis Procedure	143	RAS BRANCH LINE CIRCUIT	164
ADP BRANCH LINE CIRCUIT	144	Diagnosis Procedure	164
Diagnosis Procedure	144	ADP BRANCH LINE CIRCUIT	165
ABS BRANCH LINE CIRCUIT	145	Diagnosis Procedure	165
Diagnosis Procedure	145	ABS BRANCH LINE CIRCUIT	166
ICC BRANCH LINE CIRCUIT	146	Diagnosis Procedure	166
Diagnosis Procedure	146	ICC BRANCH LINE CIRCUIT	167
IPDM-E BRANCH LINE CIRCUIT	147	Diagnosis Procedure	167
Diagnosis Procedure	147	IPDM-E BRANCH LINE CIRCUIT	168
CAN COMMUNICATION CIRCUIT	148	Diagnosis Procedure	168
Diagnosis Procedure	148	CAN COMMUNICATION CIRCUIT	169
CAN SYSTEM (TYPE 6)		CAN SYSTEM (TYPE 7)	
		Diagnosis Procedure	169

DTC/CIRCUIT DIAGNOSIS	171	AV BRANCH LINE CIRCUIT	191	A
		Diagnosis Procedure	191	
MAIN LINE BETWEEN AV AND DLC CIR- CUIT	171	BCM BRANCH LINE CIRCUIT	192	B
Diagnosis Procedure	171	Diagnosis Procedure	192	
MAIN LINE BETWEEN DLC AND ABS CIR- CUIT	172	TCM BRANCH LINE CIRCUIT	193	C
Diagnosis Procedure	172	Diagnosis Procedure	193	
ECM BRANCH LINE CIRCUIT	173	DLC BRANCH LINE CIRCUIT	194	D
Diagnosis Procedure	173	Diagnosis Procedure	194	
A-BAG BRANCH LINE CIRCUIT	174	M&A BRANCH LINE CIRCUIT	195	E
Diagnosis Procedure	174	Diagnosis Procedure	195	
AV BRANCH LINE CIRCUIT	175	STRG BRANCH LINE CIRCUIT	196	F
Diagnosis Procedure	175	Diagnosis Procedure	196	
BCM BRANCH LINE CIRCUIT	176	ADP BRANCH LINE CIRCUIT	197	G
Diagnosis Procedure	176	Diagnosis Procedure	197	
TCM BRANCH LINE CIRCUIT	177	ABS BRANCH LINE CIRCUIT	198	H
Diagnosis Procedure	177	Diagnosis Procedure	198	
DLC BRANCH LINE CIRCUIT	178	IPDM-E BRANCH LINE CIRCUIT	199	I
Diagnosis Procedure	178	Diagnosis Procedure	199	
M&A BRANCH LINE CIRCUIT	179	CAN COMMUNICATION CIRCUIT	200	J
Diagnosis Procedure	179	Diagnosis Procedure	200	
STRG BRANCH LINE CIRCUIT	180	CAN SYSTEM (TYPE 9)		K
Diagnosis Procedure	180	DTC/CIRCUIT DIAGNOSIS	202	
ABS BRANCH LINE CIRCUIT	181	MAIN LINE BETWEEN AV AND DLC CIR- CUIT	202	L
Diagnosis Procedure	181	Diagnosis Procedure	202	
IPDM-E BRANCH LINE CIRCUIT	182	MAIN LINE BETWEEN DLC AND RAS CIR- CUIT	203	LAN
Diagnosis Procedure	182	Diagnosis Procedure	203	
CAN COMMUNICATION CIRCUIT	183	MAIN LINE BETWEEN RAS AND ABS CIR- CUIT	204	N
Diagnosis Procedure	183	Diagnosis Procedure	204	
CAN SYSTEM (TYPE 8)		ECM BRANCH LINE CIRCUIT	206	O
DTC/CIRCUIT DIAGNOSIS	185	Diagnosis Procedure	206	
MAIN LINE BETWEEN AV AND DLC CIR- CUIT	185	A-BAG BRANCH LINE CIRCUIT	207	P
Diagnosis Procedure	185	Diagnosis Procedure	207	
MAIN LINE BETWEEN DLC AND ADP CIR- CUIT	186	AV BRANCH LINE CIRCUIT	208	
Diagnosis Procedure	186	Diagnosis Procedure	208	
MAIN LINE BETWEEN ADP AND ABS CIR- CUIT	187	BCM BRANCH LINE CIRCUIT	209	
Diagnosis Procedure	187	Diagnosis Procedure	209	
ECM BRANCH LINE CIRCUIT	189	TCM BRANCH LINE CIRCUIT	210	
Diagnosis Procedure	189	Diagnosis Procedure	210	
A-BAG BRANCH LINE CIRCUIT	190	DLC BRANCH LINE CIRCUIT	211	
Diagnosis Procedure	190	Diagnosis Procedure	211	

M&A BRANCH LINE CIRCUIT	212	ADP BRANCH LINE CIRCUIT	233
Diagnosis Procedure	212	Diagnosis Procedure	233
STRG BRANCH LINE CIRCUIT	213	ABS BRANCH LINE CIRCUIT	234
Diagnosis Procedure	213	Diagnosis Procedure	234
RAS BRANCH LINE CIRCUIT	214	IPDM-E BRANCH LINE CIRCUIT	235
Diagnosis Procedure	214	Diagnosis Procedure	235
ABS BRANCH LINE CIRCUIT	215	CAN COMMUNICATION CIRCUIT	236
Diagnosis Procedure	215	Diagnosis Procedure	236
IPDM-E BRANCH LINE CIRCUIT	216	CAN SYSTEM (TYPE 11)	
Diagnosis Procedure	216	DTC/CIRCUIT DIAGNOSIS	238
CAN COMMUNICATION CIRCUIT	217	MAIN LINE BETWEEN AV AND DLC CIR-	
Diagnosis Procedure	217	CUIT	238
CAN SYSTEM (TYPE 10)		Diagnosis Procedure	238
DTC/CIRCUIT DIAGNOSIS	219	MAIN LINE BETWEEN DLC AND ADP CIR-	
MAIN LINE BETWEEN AV AND DLC CIR-		CUIT	239
CUIT	219	Diagnosis Procedure	239
Diagnosis Procedure	219	MAIN LINE BETWEEN ADP AND ABS CIR-	
MAIN LINE BETWEEN DLC AND RAS CIR-		CUIT	240
CUIT	220	Diagnosis Procedure	240
Diagnosis Procedure	220	ECM BRANCH LINE CIRCUIT	242
MAIN LINE BETWEEN RAS AND ADP CIR-		Diagnosis Procedure	242
CUIT	221	A-BAG BRANCH LINE CIRCUIT	243
Diagnosis Procedure	221	Diagnosis Procedure	243
MAIN LINE BETWEEN ADP AND ABS CIR-		AV BRANCH LINE CIRCUIT	244
CUIT	222	Diagnosis Procedure	244
Diagnosis Procedure	222	BCM BRANCH LINE CIRCUIT	245
ECM BRANCH LINE CIRCUIT	224	Diagnosis Procedure	245
Diagnosis Procedure	224	PSB BRANCH LINE CIRCUIT	246
A-BAG BRANCH LINE CIRCUIT	225	Diagnosis Procedure	246
Diagnosis Procedure	225	TCM BRANCH LINE CIRCUIT	247
AV BRANCH LINE CIRCUIT	226	Diagnosis Procedure	247
Diagnosis Procedure	226	AFS BRANCH LINE CIRCUIT	248
BCM BRANCH LINE CIRCUIT	227	Diagnosis Procedure	248
Diagnosis Procedure	227	DLC BRANCH LINE CIRCUIT	249
TCM BRANCH LINE CIRCUIT	228	Diagnosis Procedure	249
Diagnosis Procedure	228	M&A BRANCH LINE CIRCUIT	250
DLC BRANCH LINE CIRCUIT	229	Diagnosis Procedure	250
Diagnosis Procedure	229	STRG BRANCH LINE CIRCUIT	251
M&A BRANCH LINE CIRCUIT	230	Diagnosis Procedure	251
Diagnosis Procedure	230	ADP BRANCH LINE CIRCUIT	252
STRG BRANCH LINE CIRCUIT	231	Diagnosis Procedure	252
Diagnosis Procedure	231	ABS BRANCH LINE CIRCUIT	253
RAS BRANCH LINE CIRCUIT	232	Diagnosis Procedure	253
Diagnosis Procedure	232		

ICC BRANCH LINE CIRCUIT	254	ABS BRANCH LINE CIRCUIT	275	A
Diagnosis Procedure	254	Diagnosis Procedure	275	
IPDM-E BRANCH LINE CIRCUIT	255	ICC BRANCH LINE CIRCUIT	276	B
Diagnosis Procedure	255	Diagnosis Procedure	276	
CAN COMMUNICATION CIRCUIT	256	IPDM-E BRANCH LINE CIRCUIT	277	C
Diagnosis Procedure	256	Diagnosis Procedure	277	
CAN SYSTEM (TYPE 12)				
DTC/CIRCUIT DIAGNOSIS	258	CAN COMMUNICATION CIRCUIT	278	D
		Diagnosis Procedure	278	
CAN SYSTEM (TYPE 13)				
MAIN LINE BETWEEN AV AND DLC CIR- CUIT	258	DTC/CIRCUIT DIAGNOSIS	280	E
Diagnosis Procedure	258			
MAIN LINE BETWEEN DLC AND RAS CIR- CUIT	259	MAIN LINE BETWEEN AV AND DLC CIR- CUIT	280	F
Diagnosis Procedure	259	Diagnosis Procedure	280	
MAIN LINE BETWEEN RAS AND ADP CIR- CUIT	260	MAIN LINE BETWEEN DLC AND ABS CIR- CUIT	281	G
Diagnosis Procedure	260	Diagnosis Procedure	281	
MAIN LINE BETWEEN ADP AND ABS CIR- CUIT	261	ECM BRANCH LINE CIRCUIT	282	H
Diagnosis Procedure	261	Diagnosis Procedure	282	
ECM BRANCH LINE CIRCUIT	263	4WD BRANCH LINE CIRCUIT	283	I
Diagnosis Procedure	263	Diagnosis Procedure	283	
A-BAG BRANCH LINE CIRCUIT	264	A-BAG BRANCH LINE CIRCUIT	284	J
Diagnosis Procedure	264	Diagnosis Procedure	284	
AV BRANCH LINE CIRCUIT	265	AV BRANCH LINE CIRCUIT	285	K
Diagnosis Procedure	265	Diagnosis Procedure	285	
BCM BRANCH LINE CIRCUIT	266	BCM BRANCH LINE CIRCUIT	286	L
Diagnosis Procedure	266	Diagnosis Procedure	286	
PSB BRANCH LINE CIRCUIT	267	TCM BRANCH LINE CIRCUIT	287	LAN
Diagnosis Procedure	267	Diagnosis Procedure	287	
TCM BRANCH LINE CIRCUIT	268	DLC BRANCH LINE CIRCUIT	288	N
Diagnosis Procedure	268	Diagnosis Procedure	288	
AFS BRANCH LINE CIRCUIT	269	M&A BRANCH LINE CIRCUIT	289	O
Diagnosis Procedure	269	Diagnosis Procedure	289	
DLC BRANCH LINE CIRCUIT	270	STRG BRANCH LINE CIRCUIT	290	P
Diagnosis Procedure	270	Diagnosis Procedure	290	
M&A BRANCH LINE CIRCUIT	271	ABS BRANCH LINE CIRCUIT	291	
Diagnosis Procedure	271	Diagnosis Procedure	291	
STRG BRANCH LINE CIRCUIT	272	IPDM-E BRANCH LINE CIRCUIT	292	
Diagnosis Procedure	272	Diagnosis Procedure	292	
RAS BRANCH LINE CIRCUIT	273	CAN COMMUNICATION CIRCUIT	293	
Diagnosis Procedure	273	Diagnosis Procedure	293	
ADP BRANCH LINE CIRCUIT	274	CAN SYSTEM (TYPE 14)		
Diagnosis Procedure	274	DTC/CIRCUIT DIAGNOSIS	295	

MAIN LINE BETWEEN AV AND DLC CIR- CUIT	295
Diagnosis Procedure	295
MAIN LINE BETWEEN DLC AND ADP CIR- CUIT	296
Diagnosis Procedure	296
MAIN LINE BETWEEN ADP AND ABS CIR- CUIT	297
Diagnosis Procedure	297
ECM BRANCH LINE CIRCUIT	299
Diagnosis Procedure	299
4WD BRANCH LINE CIRCUIT	300
Diagnosis Procedure	300
A-BAG BRANCH LINE CIRCUIT	301
Diagnosis Procedure	301
AV BRANCH LINE CIRCUIT	302
Diagnosis Procedure	302
BCM BRANCH LINE CIRCUIT	303
Diagnosis Procedure	303
TCM BRANCH LINE CIRCUIT	304
Diagnosis Procedure	304
DLC BRANCH LINE CIRCUIT	305
Diagnosis Procedure	305
M&A BRANCH LINE CIRCUIT	306
Diagnosis Procedure	306
STRG BRANCH LINE CIRCUIT	307
Diagnosis Procedure	307
ADP BRANCH LINE CIRCUIT	308
Diagnosis Procedure	308
ABS BRANCH LINE CIRCUIT	309
Diagnosis Procedure	309
IPDM-E BRANCH LINE CIRCUIT	310
Diagnosis Procedure	310
CAN COMMUNICATION CIRCUIT	311
Diagnosis Procedure	311
CAN SYSTEM (TYPE 15)	
DTC/CIRCUIT DIAGNOSIS	313
MAIN LINE BETWEEN AV AND DLC CIR- CUIT	313
Diagnosis Procedure	313

MAIN LINE BETWEEN DLC AND ADP CIR- CUIT	314
Diagnosis Procedure	314
MAIN LINE BETWEEN ADP AND ABS CIR- CUIT	315
Diagnosis Procedure	315
ECM BRANCH LINE CIRCUIT	317
Diagnosis Procedure	317
PSB BRANCH LINE CIRCUIT	318
Diagnosis Procedure	318
4WD BRANCH LINE CIRCUIT	319
Diagnosis Procedure	319
A-BAG BRANCH LINE CIRCUIT	320
Diagnosis Procedure	320
AV BRANCH LINE CIRCUIT	321
Diagnosis Procedure	321
BCM BRANCH LINE CIRCUIT	322
Diagnosis Procedure	322
TCM BRANCH LINE CIRCUIT	323
Diagnosis Procedure	323
AFS BRANCH LINE CIRCUIT	324
Diagnosis Procedure	324
DLC BRANCH LINE CIRCUIT	325
Diagnosis Procedure	325
M&A BRANCH LINE CIRCUIT	326
Diagnosis Procedure	326
STRG BRANCH LINE CIRCUIT	327
Diagnosis Procedure	327
ADP BRANCH LINE CIRCUIT	328
Diagnosis Procedure	328
ABS BRANCH LINE CIRCUIT	329
Diagnosis Procedure	329
ICC BRANCH LINE CIRCUIT	330
Diagnosis Procedure	330
IPDM-E BRANCH LINE CIRCUIT	331
Diagnosis Procedure	331
CAN COMMUNICATION CIRCUIT	332
Diagnosis Procedure	332

PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

INFOID:000000004457867

CAUTION:

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

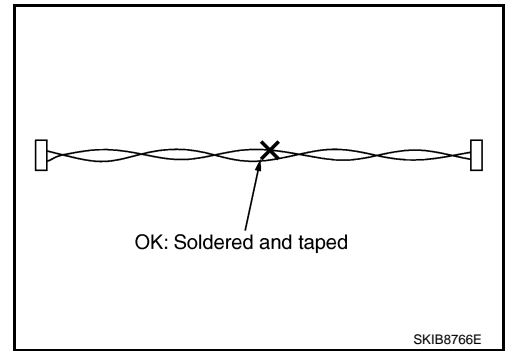
Precautions for Harness Repair

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

NOTE:

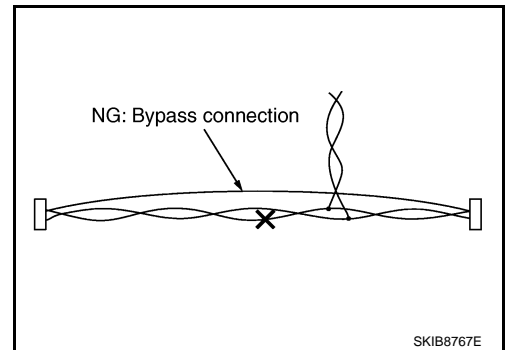
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

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



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

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D
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F
G
H
I
J
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SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

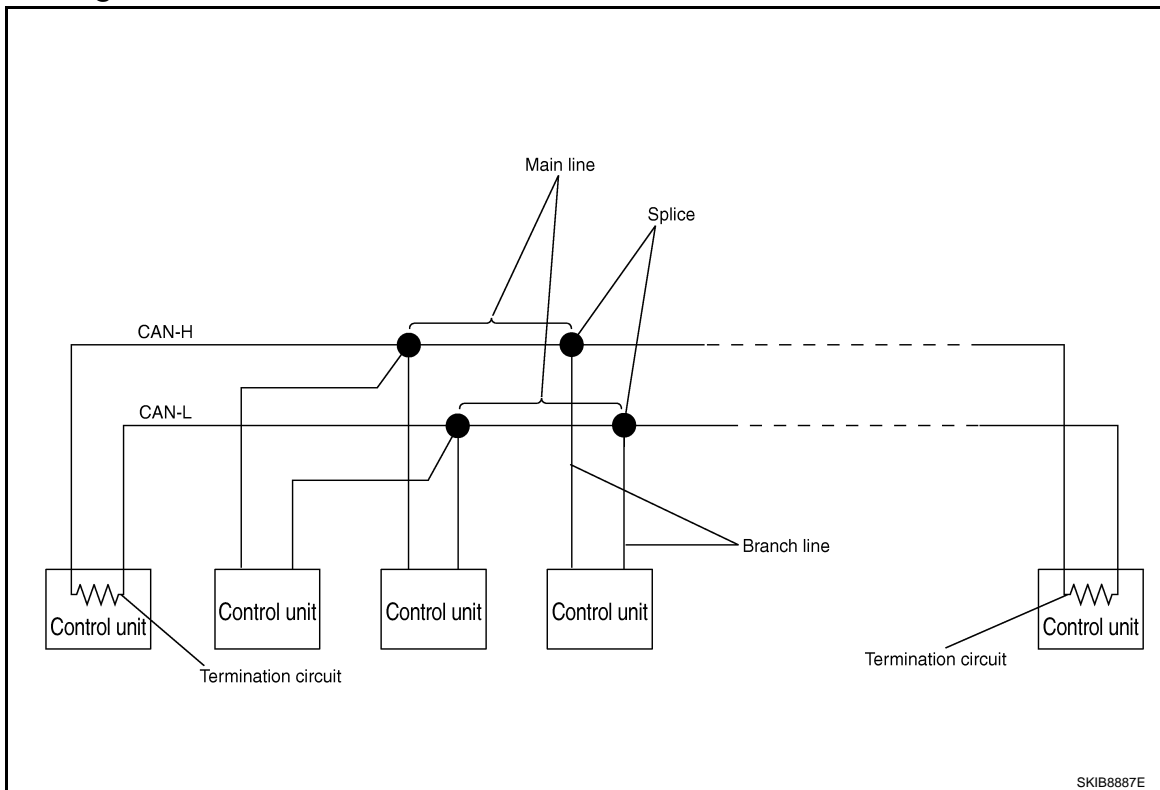
System Description

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- 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:000000004457870



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

Component	Description
Main line	CAN communication line between splices
Branch line	CAN communication line between splice and a control unit
Splice	A point connecting a branch line with a main line
Termination circuit	Refer to LAN-11, "CAN Communication Control Circuit" .

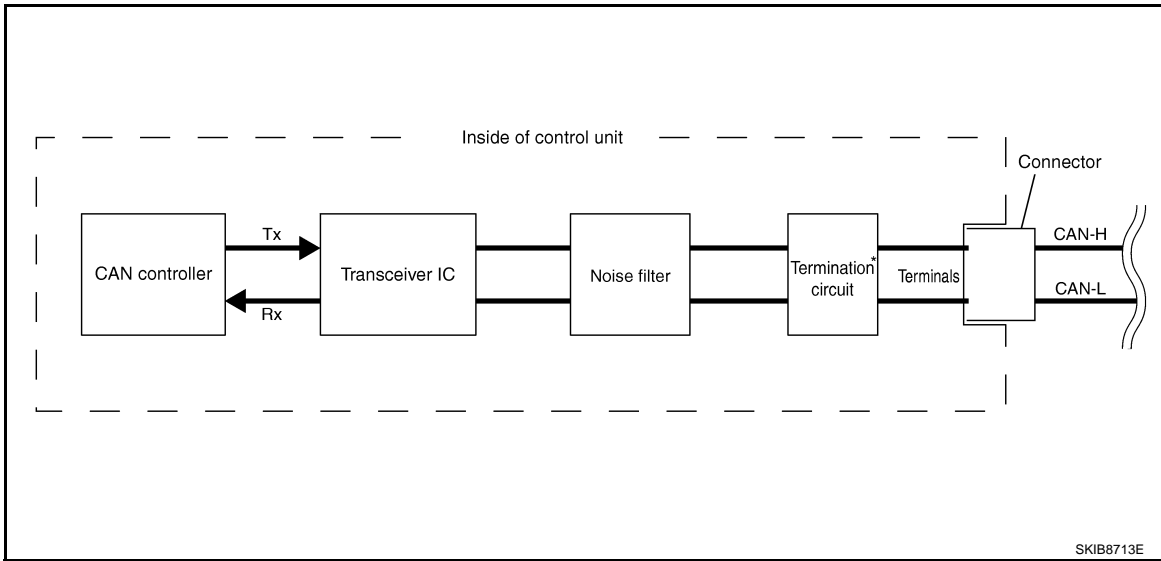
CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

CAN Communication Control Circuit

INFOID:000000004457871



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.

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

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N
O
P

DIAG ON CAN

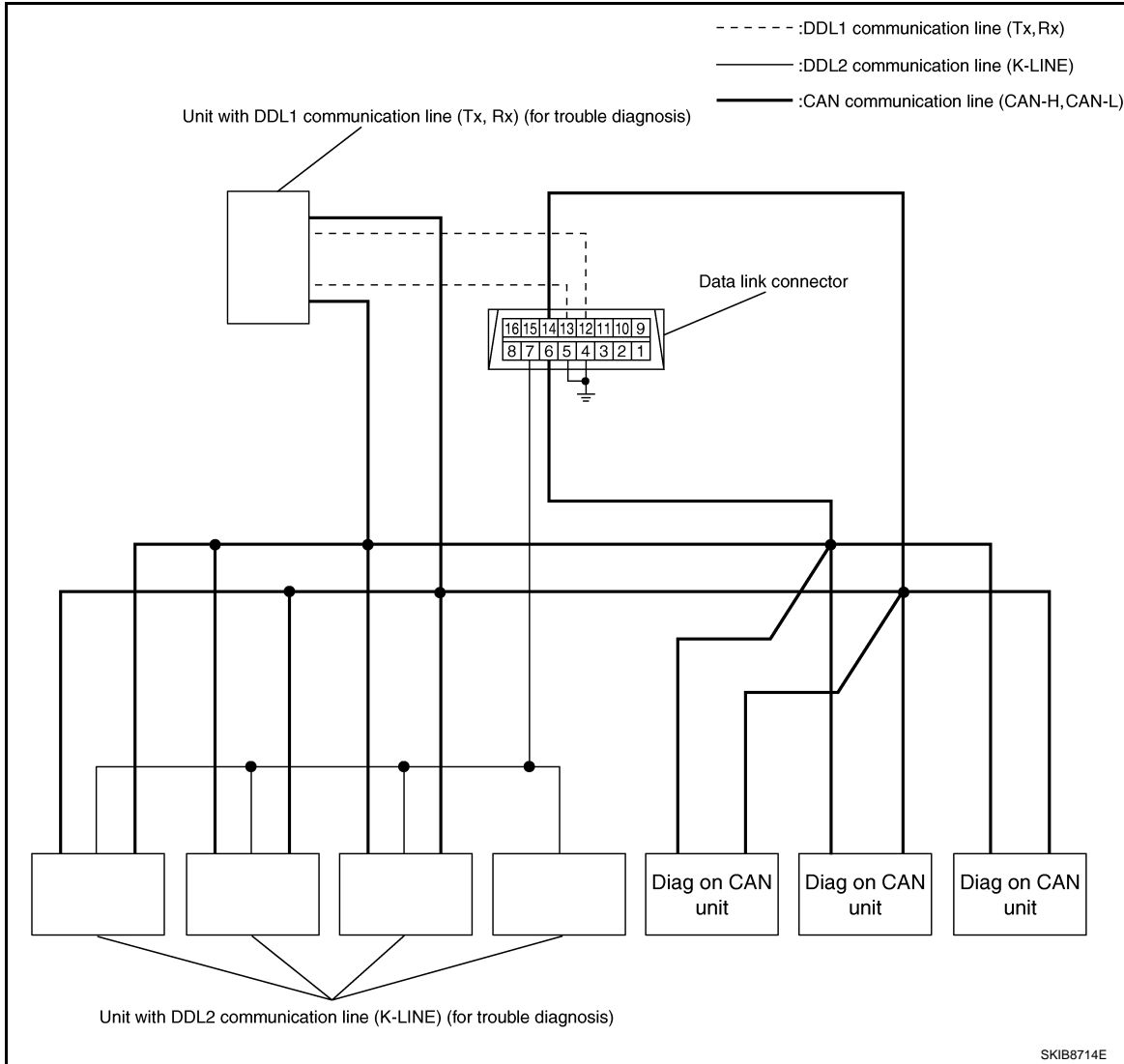
Description

INFOID:000000004457872

“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:000000004457873



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

TROUBLE DIAGNOSIS

Condition of Error Detection

INFOID:000000004457874

“U1000” or “U1001” is indicated on SELF-DIAG RESULTS on CONSULT-III if CAN communication signal is not transmitted or received between units for 2 seconds or more.

CAN COMMUNICATION SYSTEM ERROR

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

WHEN “U1000” OR “U1001” IS INDICATED EVEN THOUGH CAN COMMUNICATION SYSTEM IS NORMAL

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

NOTE:

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

Symptom When Error Occurs in CAN Communication System

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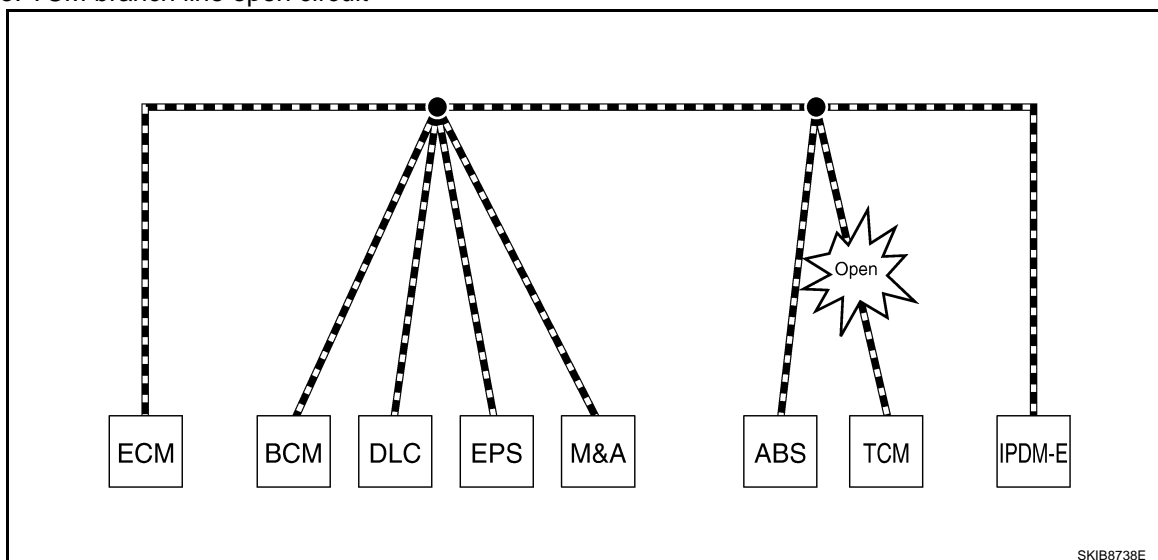
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to [LAN-24. "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.

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C
D
E
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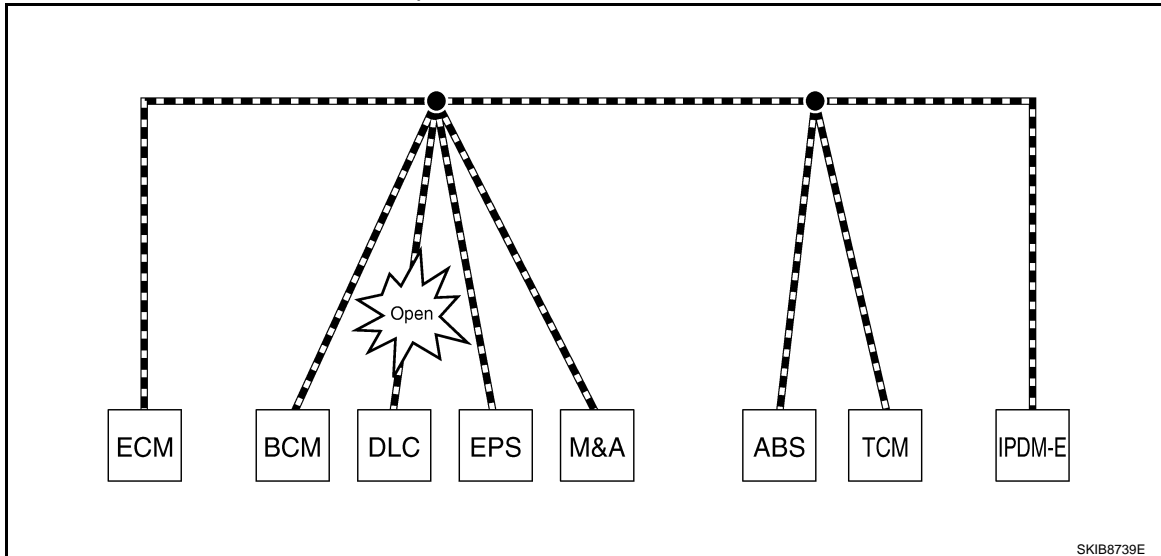
TROUBLE DIAGNOSIS

< 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-III if the following error occurs. The error is judged by the symptom.

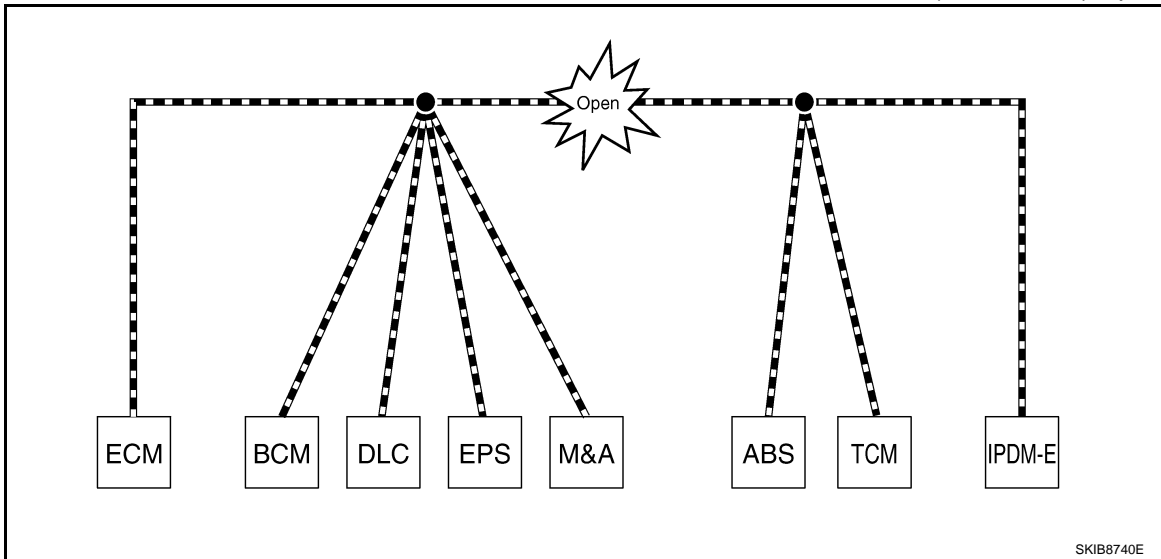
Error	Difference of symptom
Data link connector branch line open circuit	Normal operation.
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

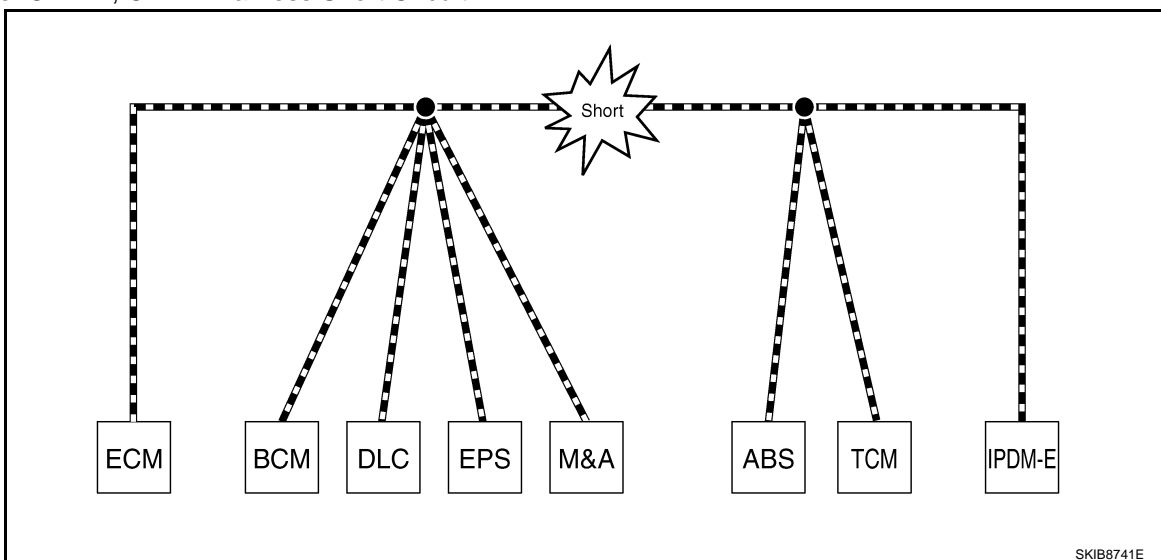
[CAN FUNDAMENTAL]

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



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

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



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TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	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-III

INFOID:000000004457876

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

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

Self-Diagnosis

INFOID:000000004457877

DTC	Self-diagnosis item (CONSULT-III indication)	DTC detection condition	Inspection/Action
U0101	LOST COMM (TCM)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) from TCM for 2 seconds or more.	Start the inspection. Refer to the applicable section of the indicated control unit.
U0164	LOST COMM (HVAC)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) from A/C auto amp. for 2 seconds or more.	
U1000	CAN COMM CIRCUIT	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 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.	
P0607	ECM		Replace the control unit indicating "U1010" or "P0607".

CAN Diagnostic Support Monitor

INFOID:000000004457878

MONITOR ITEM (CONSULT-III)

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

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

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Without PAST

Item	PRSNT	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	PRSNT	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.
	-	-	Diagnosis not performed. No control unit for receiving signals. (No applicable optional parts)

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

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

TROUBLE DIAGNOSIS

[CAN FUNDAMENTAL]

< SYSTEM DESCRIPTION >

Example: Vehicle Display

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

How to Use CAN Communication Signal Chart

INFOID:000000004457879

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

↓

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

CAN-H, CAN-L

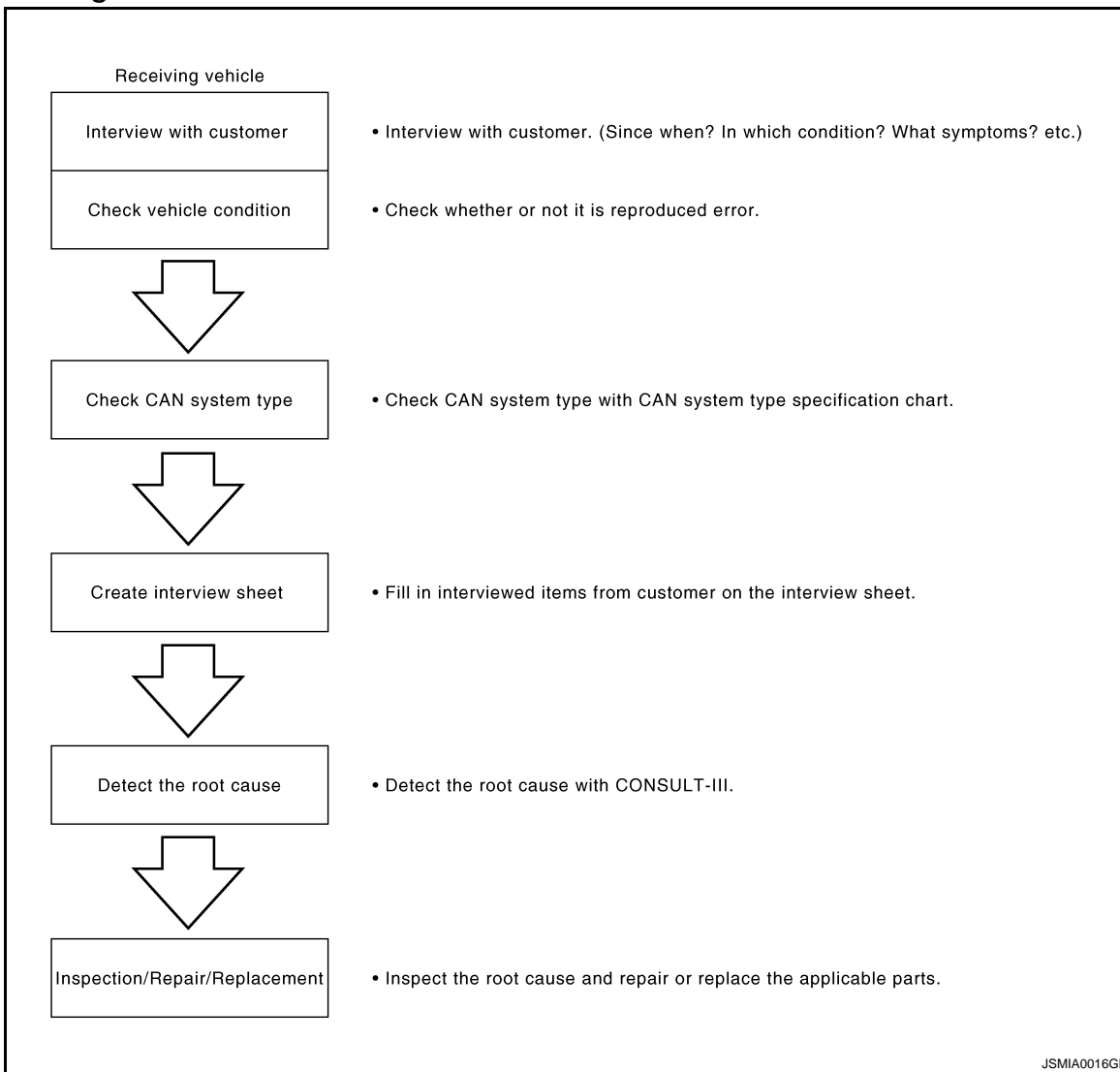
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

INFOID:000000004457880



Trouble Diagnosis Procedure

INFOID:000000004457881

INTERVIEW WITH CUSTOMER

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

Points in interview

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

NOTE:

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

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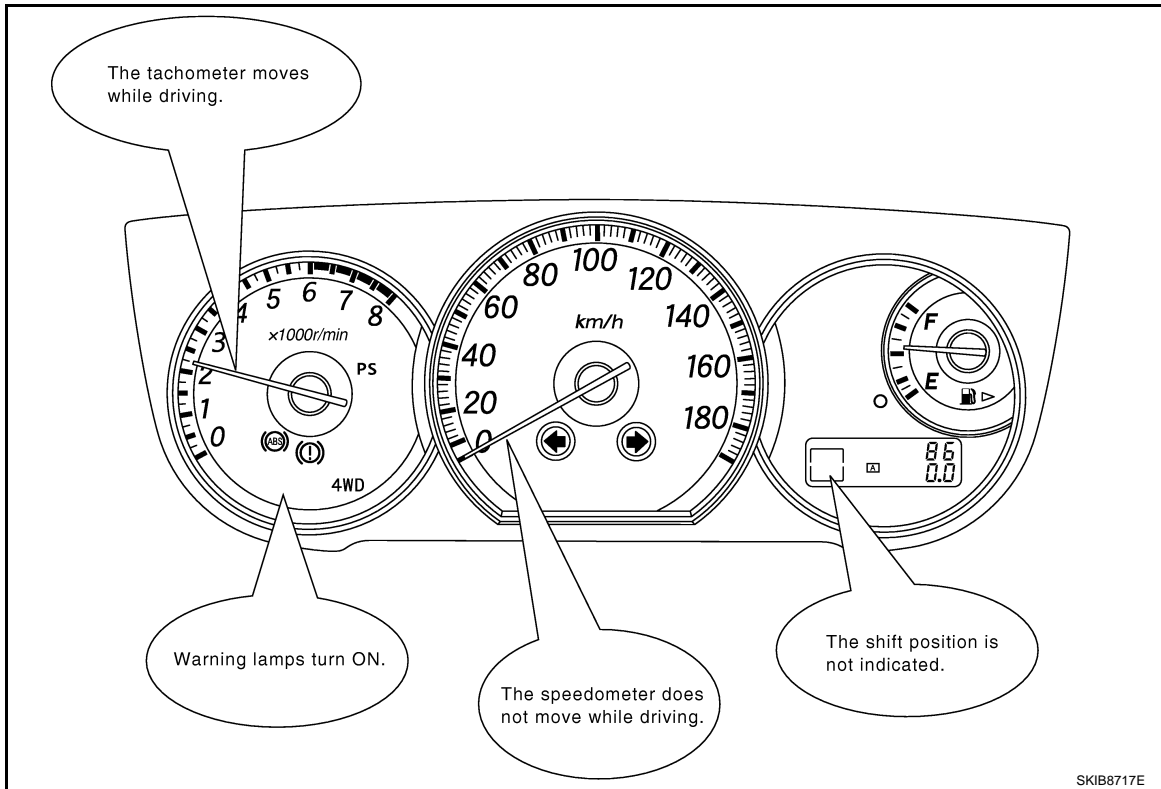
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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

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

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

Determine CAN system type based on vehicle equipment.

NOTE:

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

CAN System Type Specification Chart (Style A)

NOTE:

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

Example:

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

CAN System Specification Chart

Determine CAN system type from the following specification chart.

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

X : Applicable

Check the vehicle equipment with the vehicle identification number plate.

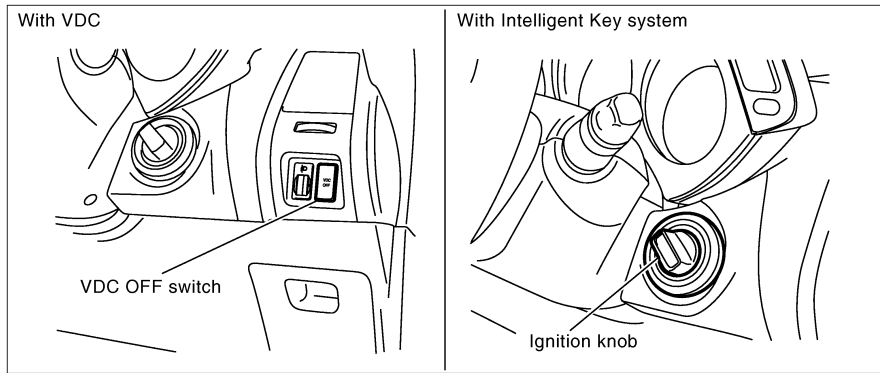
Check the vehicle equipment.

The number indicates the CAN system type of the vehicle.

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



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

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

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

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CAN System Type Specification Chart (Style B)

NOTE:

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

Example:

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

CAN System Specification Chart

Refer to the specification as shown in the chart.

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

Check the vehicle equipment with the vehicle identification number plate.

Check the vehicle equipment.

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

x: Applicable

SPECIFICATION CHART B

Determine CAN system type from the following specification chart.

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

Check the vehicle equipment.

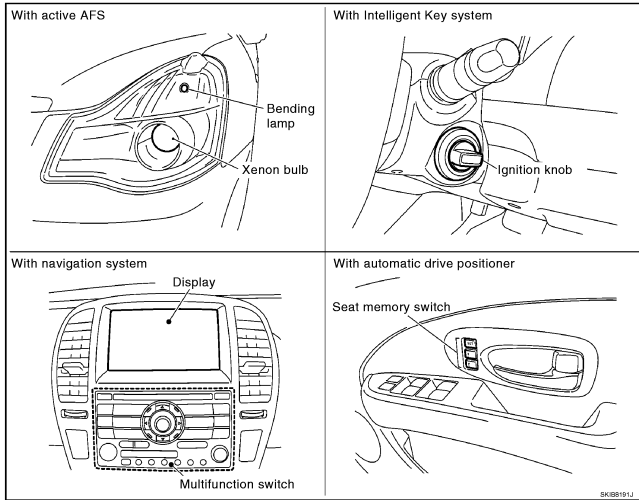
The number indicates the CAN system type of the vehicle.

x: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



In the above example,

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

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

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CREATE INTERVIEW SHEET

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

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

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

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DETECT THE ROOT CAUSE

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

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HOW TO USE THIS SECTION

< HOW TO USE THIS MANUAL >

[CAN]

HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution

INFOID:000000004457882

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to [LAN-19, "Trouble Diagnosis Procedure"](#).

Abbreviation List

INFOID:000000004457883

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

Abbreviation	Unit name
4WD	AWD control unit
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
ADP	Driver seat control unit
AFS	AFS control unit
AV	AV control unit
BCM	BCM
DLC	Data link connector
ECM	ECM
ICC	ICC sensor integrated unit
IPDM-E	IPDM E/R
M&A	Unified meter and A/C amp.
PSB	Pre-crash seat belt control unit
RAS	4WAS main control unit
STRG	Steering angle sensor
TCM	TCM

PRECAUTION

PRECAUTIONS

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

INFOID:000000004457884

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:

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

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

WARNING:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Trouble Diagnosis

INFOID:000000004457885

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.

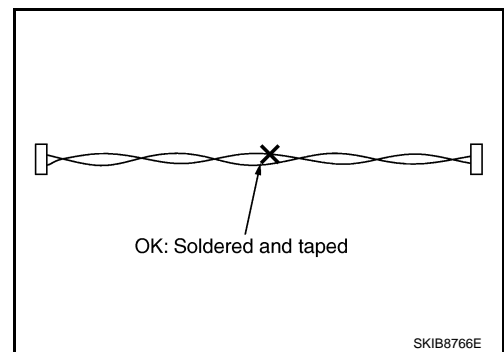
Precautions for Harness Repair

INFOID:000000004457886

- 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

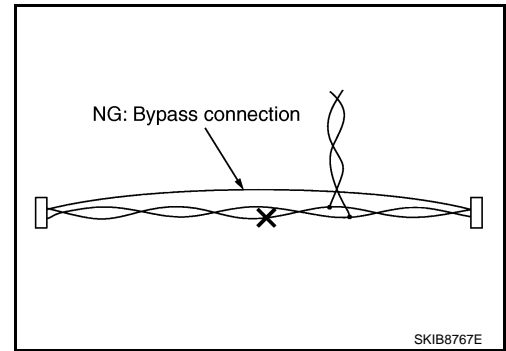
[CAN]

< 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.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

INFOID:000000004457887

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]

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SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

INFOID:000000004457888

Determine CAN system type from the following specification chart.

NOTE:

Refer to [LAN-19, "Trouble Diagnosis Procedure"](#) for how to use CAN system specification chart.

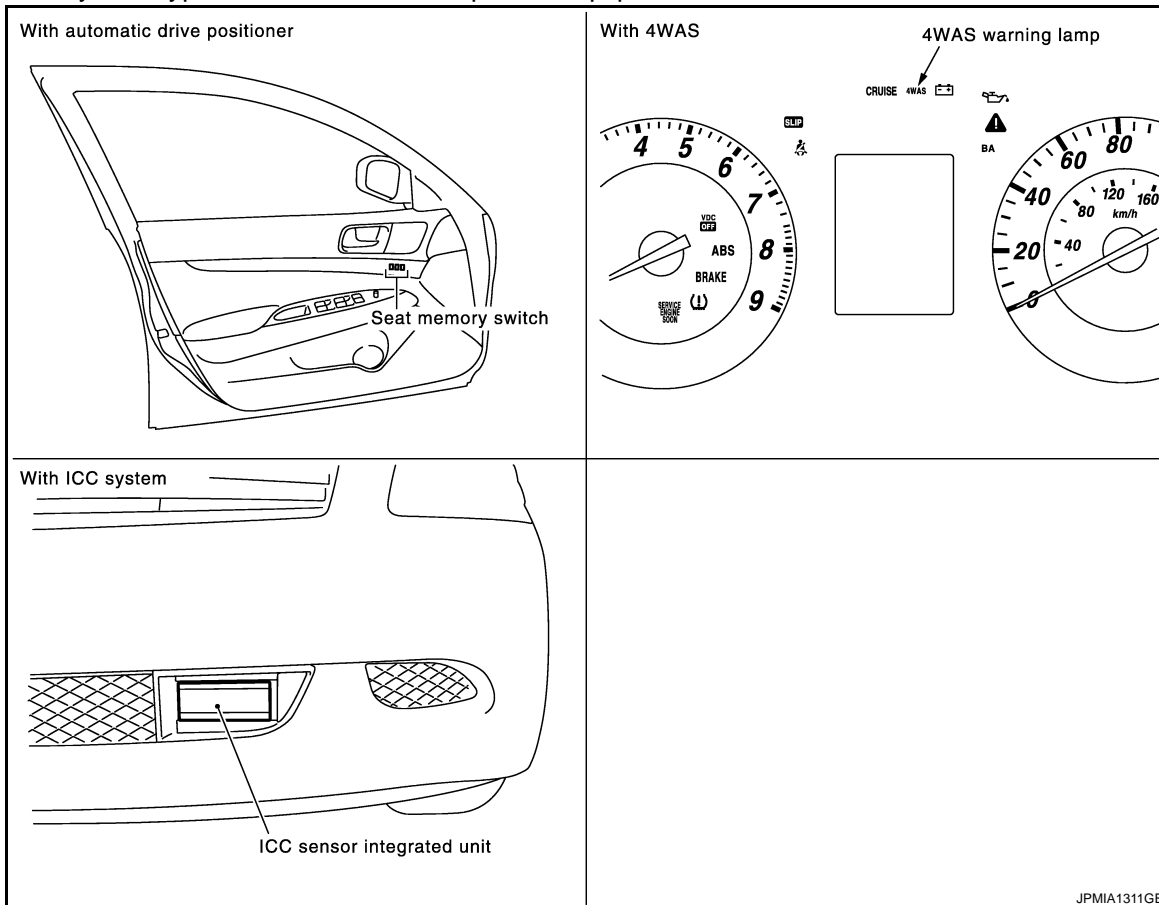
Body type	Sedan														
Axle	2WD										AWD				
Engine	VQ37VHR														
Transmission	M/T							A/T							
Brake control	VDC														
Automatic drive positioner		×		×	×	×		×		×	×	×		×	×
4WAS			×	×		×			×	×		×			
ICC system					×	×					×	×			×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



CAN Communication Signal Chart

INFOID:000000004457889

Refer to [LAN-18, "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

CAN COMMUNICATION SYSTEM

[CAN]

< SYSTEM DESCRIPTION >

NOTE:

Refer to [LAN-24, "Abbreviation List"](#) for the abbreviations of the connecting units.

T: Transmit R: Receive

Signal name/Connecting unit	ECM	4WD	AV	BCM	PSB	TCM	AFS	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E
A/C compressor request signal	T													R
Accelerator pedal position signal	T	R				R						R	R	
ASCD OD cancel request signal	T					R								
ASCD operation signal	T					R								
ASCD status signal	T							R						
ASCD SET indicator signal	T							R						
Closed throttle position signal	T					R							R	
Cooling fan speed request signal	T													R
Engine and A/T integrated control signal	T					R								
	R					T								
Engine coolant temperature signal	T							R						
Engine speed signal	T	R				R	R	R			R	R	R	
Engine status signal	T		R	R										
Fuel consumption monitor signal	T		R					R						
ICC brake switch signal	T												R	
ICC prohibition signal	T												R	
ICC steering switch signal	T												R	
Malfunctioning indicator lamp signal	T							R						
Park/neutral position switch signal ^{*1}	T												R	
Power generation command value signal	T													R
Snow mode switch signal	T											R	R	
	R							T						
Stop lamp switch signal	T												R	
		R										T	R	
				T		R								
Wide open throttle position signal	T					R								
AWD signal		T										R		
AWD warning lamp signal		T						R						
A/C switch/indicator signal			T					R						
			R					T						
A/C switch operation signal			T					R						
Rear window defogger switch signal			T	R										
System setting signal			T	R										
			R	T										
Voice recognition signal ^{*2}			T					R						
Buzzer output signal				T				R						
								R					T	
Door switch signal				T				R		R				R
Door unlock signal				T						R				
Front fog light request signal				T				R						R

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CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	AV	BCM	PSB	TCM	AFS	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E
Front wiper request signal				T									R	R
High beam request signal				T				R						R
Horn reminder signal				T										R
Ignition switch ON signal				T										R
				R										T
Ignition switch signal				T						R				
Interlock/PNP switch signal				T										R
				R										T
Key ID signal				T						R				
Key switch signal				T						R				
Key warning lamp signal				T				R						
Low beam request signal				T										R
Meter display signal				T				R						
								R					T	
Oil pressure switch signal				T				R						
				R										T
Position light request signal				T				R						R
Rear window defogger control signal				T										R
	R		R	R										T
Sleep wake up signal				T				R		R				R
Starter control relay signal				T										R
Starter relay status signal				R										T
				T										R
Starting mode signal				T						R				
Steering lock relay signal				R										T
				T										R
Theft warning horn request signal				T										R
Tire pressure signal				T				R						
Trunk switch signal				T				R						
Turn indicator signal				T				R						
A/T CHECK indicator lamp signal						T	R	R						
A/T self-diagnosis signal	R					T								
Current gear position signal						T						R	R	
Input speed signal	R					T							R	
Manual mode indicator signal						T		R					R	
N range signal				R		T							R	
Output shaft revolution signal	R					T							R	
P range signal				R		T						R	R	
R range signal						T							R	
Shift position signal					R ^{*3}	T	R	R		R		R	R	
AFS OFF indicator lamp signal							T	R						
A/C evaporator temperature signal	R							T						
A/C switch signal	R							T						

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	AV	BCM	PSB	TCM	AFS	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E	A
Blower fan motor switch signal	R							T							A
Distance to empty signal			R					T							B
Fuel level low warning signal			R					T							C
Fuel level sensor signal	R							T							C
Manual mode shift down signal						R		T							D
Manual mode shift up signal						R		T							D
Manual mode signal						R		T							D
Not manual mode signal						R		T							D
Odometer signal				R				T							E
Paddle shifter shift down signal*4						R		T							E
Paddle shifter shift up signal*4						R		T							E
Parking brake switch signal		R		R				T							F
Seat belt buckle switch signal				R				T							G
Sleep-ready signal				R				T							G
				R										T	G
Target A/C evaporator temperature signal	R							T							H
Vehicle speed signal	R		R	R	R	R	R	T		R					H
		R		R				R			R	T	R		H
Wake up signal				R				T							I
Steering angle sensor signal							R		T		R	R			I
4WAS signal											T	R			J
4WAS warning lamp signal								R			T				J
A/T shift schedule change demand signal						R						T			K
ABS malfunction signal												T	R		K
ABS operation signal						R						T	R		K
ABS warning lamp signal								R				T			L
Brake pressure control signal												T	R		L
Brake warning lamp signal								R				T			L
Side G sensor signal						R						T			L
SLIP indicator lamp signal								R				T			LAN
TCS malfunction signal												T	R		N
TCS operation signal												T	R		N
VDC malfunction signal						R						T	R		O
VDC OFF indicator lamp signal								R				T			O
VDC OFF switch signal												T	R		O
VDC operation signal												T	R		P
Deceleration degree commandment value signal												R	T		P
ICC operation signal	R												T		P
ICC warning lamp signal								R					T		P
A/C compressor feedback signal	R							R						T	P
Detention switch signal				R						R				T	P
Front wiper stop position signal				R										T	P

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	4WD	AV	BCM	PSB	TCM	AFS	M&A	STRG	ADP	RAS	ABS	ICC	IPDM-E
High beam status signal	R						R							T
Hood switch signal				R										T
Low beam status signal	R						R							T
Push-button ignition switch status signal				R										T
Steering lock unit status signal				R										T

*1: M/T models only

*2: Models with NAVI

*3: Receive reverse position signal only

*4: Models with paddle shifter

NOTE:

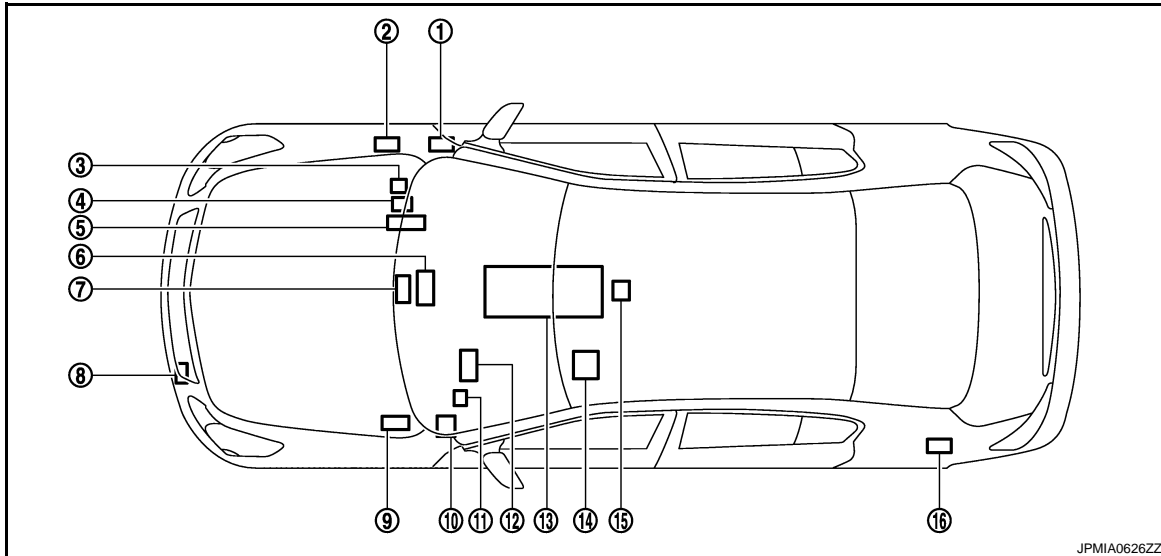
CAN data of the air bag diagnosis sensor unit is not used by usual service work, thus it is omitted.

DTC/CIRCUIT DIAGNOSIS

CAN COMMUNICATION SYSTEM

Component Parts Location

INFOID:000000004457890



- | | | |
|-----------------------------------|-----------------------------------|---|
| 1. BCM M122 | 2. IPDM E/R E6 | 3. Pre-crash seat belt control unit M110 |
| 4. AWD control unit F108 | 5. ECM M107 | 6. AV control unit
M85: Without NAVI
M87: With NAVI |
| 7. Unified meter and A/C amp. M67 | 8. ICC sensor integrated unit E67 | 9. ABS actuator and electric unit (control unit) E41 |
| 10. AFS control unit M16 | 11. Data link connector M24 | 12. Steering angle sensor M37 |
| 13. A/T assembly F51 | 14. Driver seat control unit B451 | 15. Air bag diagnosis sensor unit M147 |
| 16. 4WAS main control unit B54 | | |

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CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

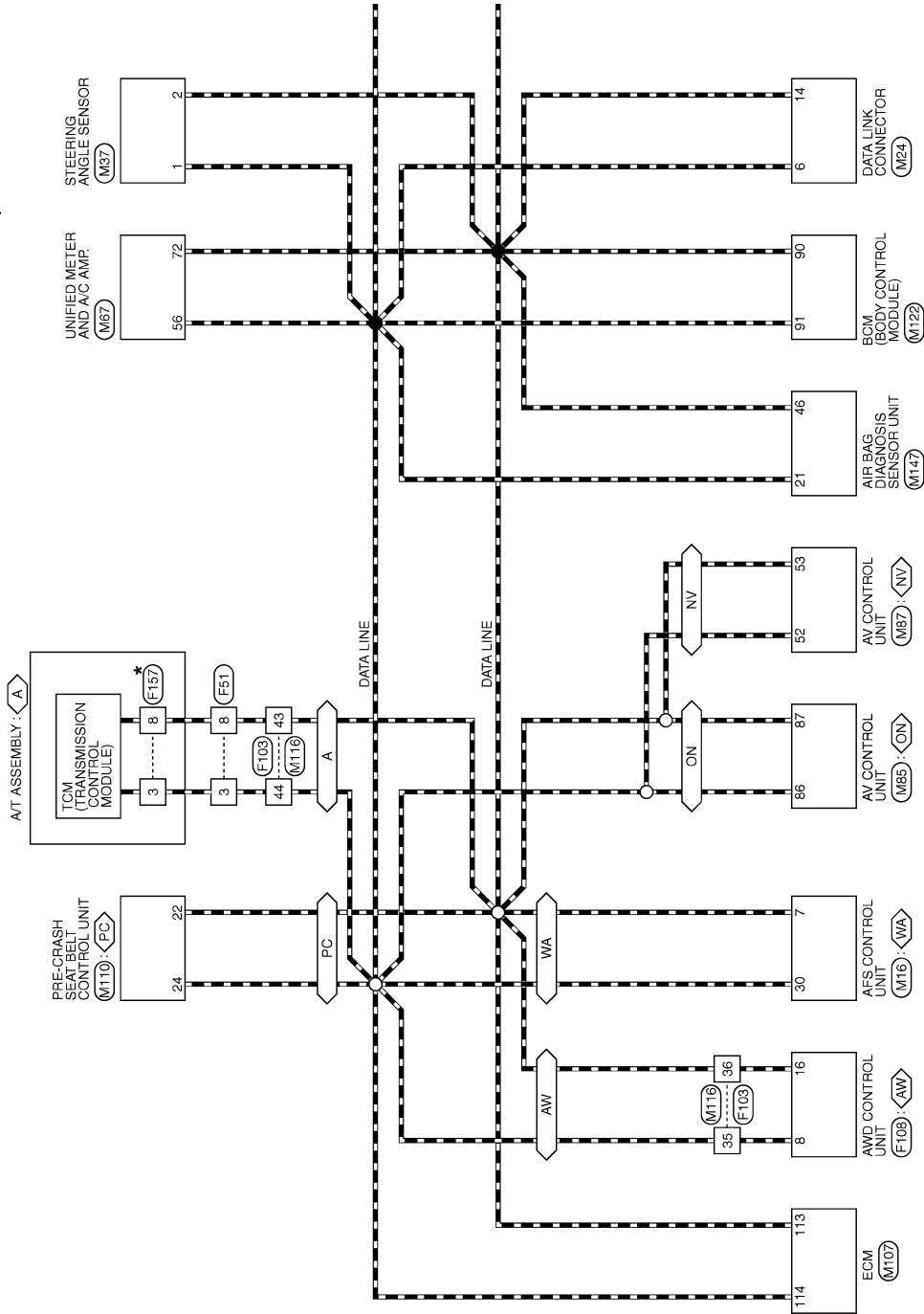
Wiring Diagram - CAN SYSTEM -

INFOID:000000004457891

CAN SYSTEM

- : With A/T
- : AWD models
- : With NAVI
- : Without NAVI
- : With AFS
- : With pre-crash seat belt

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



2008/08/07

JCMWA3025Gf

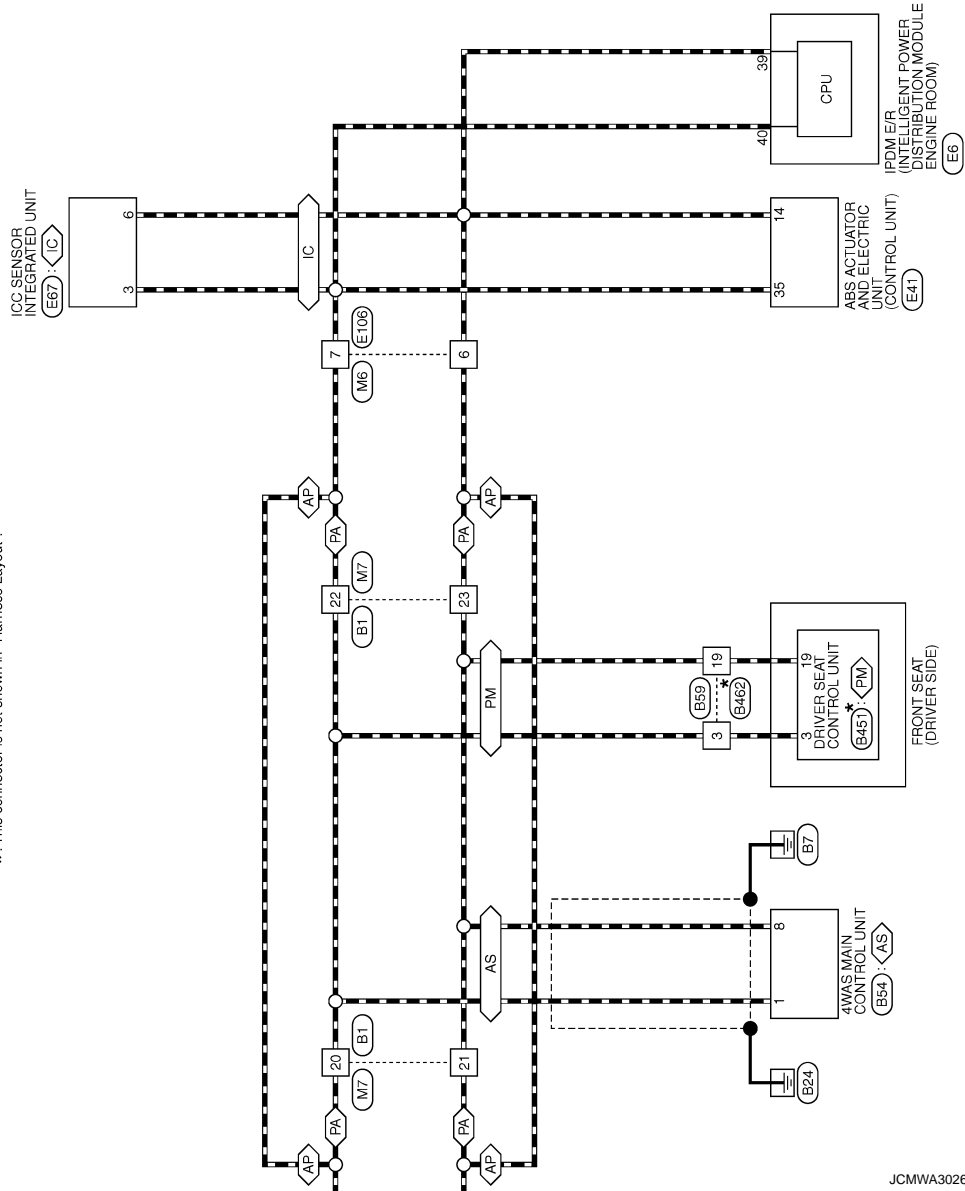
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

- ◁ FM ▷ : With automatic drive positioner
- ◁ AS ▷ : With 4WAS
- ◁ PA ▷ : With automatic drive positioner or 4WAS
- ◁ AP ▷ : Without automatic drive positioner and 4WAS
- ◁ IC ▷ : With ICC

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



JCMWA3026GE

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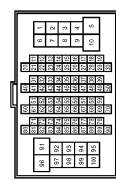
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]


CAN SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH8DFW-CS16-TM4




Terminal No.	Color of Wire	Signal Name [Specification]
20	L	-
21	P	-
22	L	-
23	P	-

Connector No.	B54
Connector Name	4WAS MAIN CONTROL UNIT
Connector Type	A38FW-M4




Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
8	P	CAN-L

Connector No.	B59
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS




Terminal No.	Color of Wire	Signal Name [Specification]
3	L	-
19	P	-

Connector No.	B45T
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH3ZFW




Terminal No.	Color of Wire	Signal Name [Specification]
3	R/Y	CAN-H
19	V	CAN-L

Connector No.	B46Z
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS




Terminal No.	Color of Wire	Signal Name [Specification]
3	R/Y	-
19	V	-

Connector No.	E6
Connector Name	PERM E R INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	TH8DFW-NH




Terminal No.	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	EP44ZFB-AH24-LH



Terminal No.	Color of Wire	Signal Name [Specification]
14	P	CAN-L
35	L	CAN-H

Connector No.	E67
Connector Name	IOC SENSOR INTEGRATED UNIT
Connector Type	RS6DFB-PR



Terminal No.	Color of Wire	Signal Name [Specification]
3	L	CAN-H
6	P	CAN-L

JCMWA3027G1

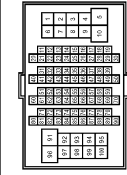
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

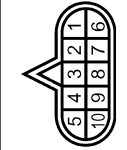
CAN SYSTEM

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



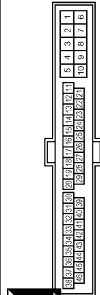
Terminal No.	Color of Wire	Signal Name [Specification]
6	P	-
7	L	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY



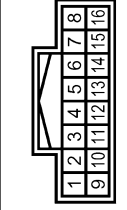
Terminal No.	Color of Wire	Signal Name [Specification]
3	L	-
8	P	-

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



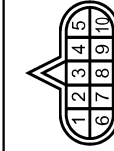
Terminal No.	Color of Wire	Signal Name [Specification]
35	L	-
36	P	-
43	P	-
44	L	-

Connector No.	F108
Connector Name	AMD CONTROL UNIT
Connector Type	TH16FW-NH



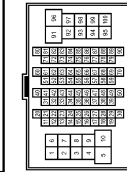
Terminal No.	Color of Wire	Signal Name [Specification]
8	L	CAN-H
16	P	CAN-L

Connector No.	F157
Connector Name	TOM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



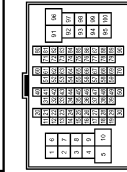
Terminal No.	Color of Wire	Signal Name [Specification]
3	R	CAN-H
8	BR	CAN-L

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



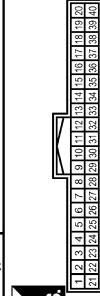
Terminal No.	Color of Wire	Signal Name [Specification]
6	P	-
7	L	-

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



Terminal No.	Color of Wire	Signal Name [Specification]
20	L	-
21	P	-
22	L	-
23	P	-

Connector No.	M16
Connector Name	AFS CONTROL UNIT
Connector Type	TH46FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
7	P	CAN-L
30	L	CAN-H

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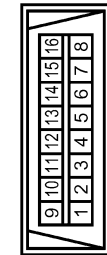
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

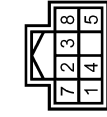
CAN SYSTEM

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



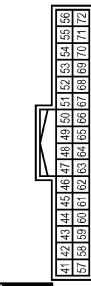
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	-
14	P	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH68FW-NH



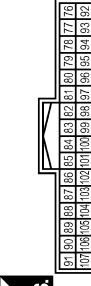
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L

Connector No.	M87
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH432FW-NH



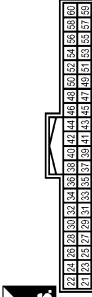
Terminal No.	Color of Wire	Signal Name [Specification]
56	L	CAN-H
72	P	CAN-L

Connector No.	M85
Connector Name	AV CONTROL UNIT (WITHOUT NAVI)
Connector Type	TH432FW-NH



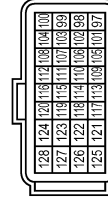
Terminal No.	Color of Wire	Signal Name [Specification]
86	L	CAN-H
87	P	CAN-L

Connector No.	M87
Connector Name	AV CONTROL UNIT (WITH NAVI)
Connector Type	TH40FW-NH




Terminal No.	Color of Wire	Signal Name [Specification]
52	L	CAN-H
53	P	CAN-L

Connector No.	M107
Connector Name	ECM
Connector Type	RN24FGY-R2B-R-LH-Z




Terminal No.	Color of Wire	Signal Name [Specification]
113	P	VEHCAN-L1
114	L	VEHCAN-H1

Connector No.	M110
Connector Name	PRE-CRASH SEAT BELT CONTROL UNIT
Connector Type	TH42FW-TB6



Terminal No.	Color of Wire	Signal Name [Specification]
22	P	CAN-L
24	L	CAN-H

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK36MP-NS10



Terminal No.	Color of Wire	Signal Name [Specification]
35	L	-
36	P	-
43	P	-
44	L	-

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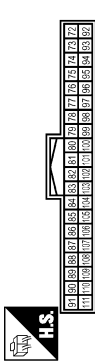
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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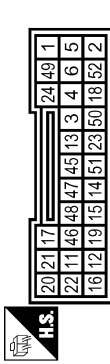
CAN SYSTEM

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



Terminal No.	Color of Wire	Signal Name (Specification)
90	P	CAN-L
91	L	CAN-H

Connector No.	M147
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	TK28FY-EX-SC



Terminal No.	Color of Wire	Signal Name (Specification)
21	L	CAN-H
46	P	CAN-L

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MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MALFUNCTION AREA CHART

Main Line

INFOID:000000004457892

Malfunction Area	Reference
Main line between AV control unit and data link connector	LAN-41. "Diagnosis Procedure"
Main line between data link connector and ABS actuator and electric unit (control unit)	LAN-42. "Diagnosis Procedure"
Main line between data link connector and driver seat control unit	LAN-43. "Diagnosis Procedure"
Main line between data link connector and 4WAS main control unit	LAN-44. "Diagnosis Procedure"
Main line between 4WAS main control unit and driver seat control unit	LAN-45. "Diagnosis Procedure"
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	LAN-46. "Diagnosis Procedure"
Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)	LAN-48. "Diagnosis Procedure"

Branch Line

INFOID:000000004457893

Malfunction Area	Reference
ECM branch line circuit	LAN-50. "Diagnosis Procedure"
AWD control unit branch line circuit	LAN-51. "Diagnosis Procedure"
Air bag diagnosis sensor unit branch line circuit	LAN-52. "Diagnosis Procedure"
AV control unit branch line circuit	LAN-53. "Diagnosis Procedure"
BCM branch line circuit	LAN-54. "Diagnosis Procedure"
Pre-crash seat belt control unit branch line circuit	LAN-55. "Diagnosis Procedure"
TCM branch line circuit	LAN-56. "Diagnosis Procedure"
AFS control unit branch line circuit	LAN-57. "Diagnosis Procedure"
Data link connector branch line circuit	LAN-58. "Diagnosis Procedure"
Unified meter and A/C amp. branch line circuit	LAN-59. "Diagnosis Procedure"
Steering angle sensor branch line circuit	LAN-60. "Diagnosis Procedure"
4WAS main control unit branch line circuit	LAN-61. "Diagnosis Procedure"
Driver seat control unit branch line circuit	LAN-62. "Diagnosis Procedure"
ABS actuator and electric unit (control unit) branch line circuit	LAN-63. "Diagnosis Procedure"
ICC sensor integrated unit branch line circuit	LAN-64. "Diagnosis Procedure"
IPDM E/R branch line circuit	LAN-65. "Diagnosis Procedure"

Short Circuit

INFOID:000000004457894

Malfunction Area	Reference
CAN communication circuit	LAN-66. "Diagnosis Procedure"

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004457895

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457896

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
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.	
M24	6	M6	7	Existed
	14		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 data link connector and the ABS actuator and electric unit (control unit).

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

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004457897

1.CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000004457898

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the 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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004674608

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the harness connectors M7 and B1.
4. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the driver seat control unit.

NO >> Repair the main line between the 4WAS main control unit and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457899

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457900

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the 4WAS main control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457901

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457903

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AWD control unit connector
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 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.		
F108	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-27, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-53, "Exploded View"](#).

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

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

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457904

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457905

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457906

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457902

1.CHECK CONNECTOR

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

Pre-crash seat belt control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the pre-crash seat belt control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-24, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-37, "Exploded View"](#).
YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
NO >> Repair the power supply and the ground circuit.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457907

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3	Approx. 54 – 66
	8	

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-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457908

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-62, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-199, "Exploded View"](#).
YES (Past error)>>Error was detected in the AFS control unit branch line.
NO >> Repair the power supply and the ground circuit.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457909

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457910

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457911

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457913

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-135, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-178, "Exploded View"](#).
YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457912

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457914

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "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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ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457915

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-102, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-131, "Exploded View"](#).
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457916

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004457917

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
M24	6	14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

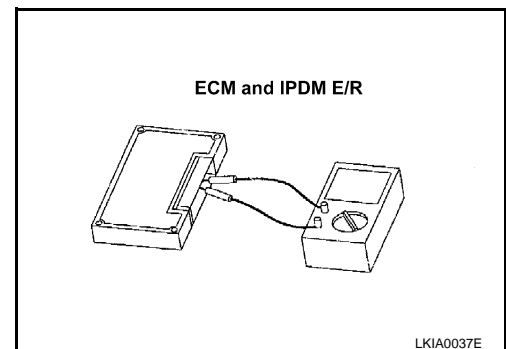
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004457918

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457919

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
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.	
M24	6	M6	7	Existed
	14		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 data link connector and the ABS actuator and electric unit (control unit).

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

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457920

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457921

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457922

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit 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:000000004457923

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82, "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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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457924

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457925

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457926

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457927

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457928

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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:000000004457929

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

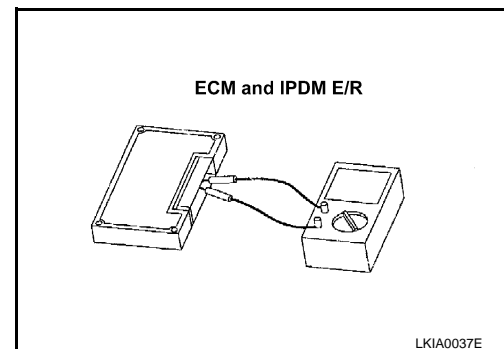
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004457944

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004457945

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457946

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457947

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457948

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457949

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457950

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM 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:000000004457951

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457952

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457953

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457954

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457955

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457956

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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:000000004457957

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

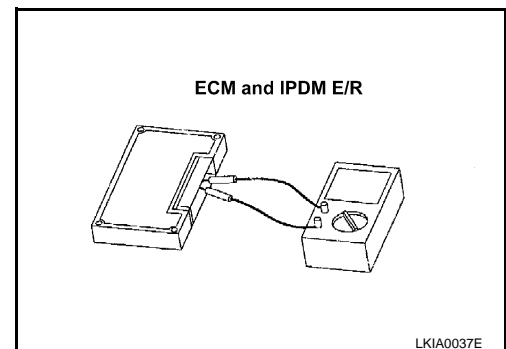
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004457930

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000004457931

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the 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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457932

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the 4WAS main control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 4WAS main control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457933

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457934

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457935

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457936

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457937

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457938

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457939

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457940

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-135, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-178, "Exploded View"](#).
 YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457941

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457942

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 3)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004457943

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

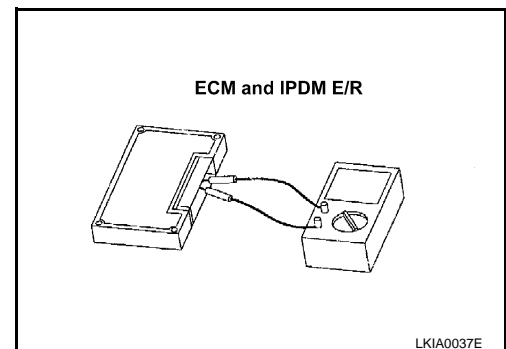
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

5.CHECK SYMPTOM

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



LKIA0037E

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.

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004457958

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000004674644

1.CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the 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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004674636

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the harness connectors M7 and B1.
4. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the driver seat control unit.

NO >> Repair the main line between the 4WAS main control unit and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457960

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457961

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457962

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457963

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457964

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82, "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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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457965

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457966

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457967

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457969

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-135, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-178, "Exploded View"](#).
YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457968

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457970

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457971

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 4)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004457972

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

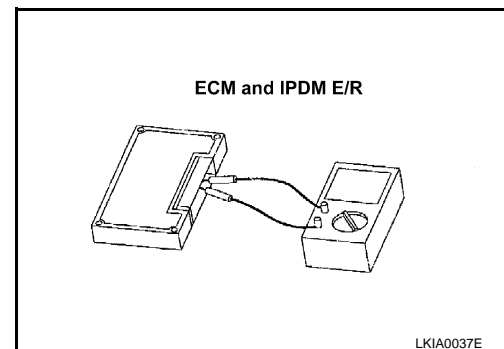
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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.

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004457973

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004457974

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457975

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457976

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457978

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457979

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457980

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457977

1.CHECK CONNECTOR

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

Pre-crash seat belt control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the pre-crash seat belt control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-24, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-37, "Exploded View"](#).
 YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
 NO >> Repair the power supply and the ground circuit.

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457981

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-62, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-199, "Exploded View"](#).
 YES (Past error)>>Error was detected in the AFS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457982

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457983

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457984

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457985

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457986

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "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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ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457987

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-102, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-131, "Exploded View"](#).
 YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
 NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457988

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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:000000004457989

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
M24	6	14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

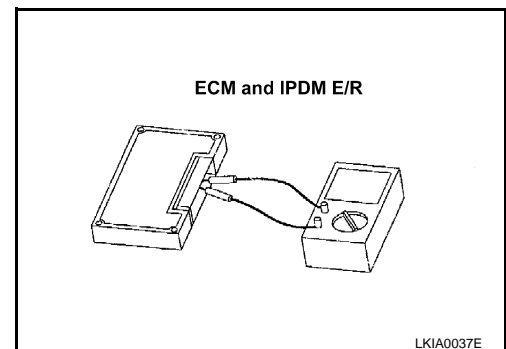
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

5. CHECK SYMPTOM

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



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CAN COMMUNICATION CIRCUIT

< 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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004457990

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000004674643

1.CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the 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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

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MAIN LINE BETWEEN RAS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004674637

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the harness connectors M7 and B1.
4. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the driver seat control unit.

NO >> Repair the main line between the 4WAS main control unit and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004457992

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457993

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457995

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457996

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457997

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457994

1.CHECK CONNECTOR

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

Pre-crash seat belt control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the pre-crash seat belt control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-24, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-37, "Exploded View"](#).
 YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
 NO >> Repair the power supply and the ground circuit.

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457998

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-62, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-199, "Exploded View"](#).
 YES (Past error)>>Error was detected in the AFS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004457999

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458000

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458001

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458003

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-135, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-178, "Exploded View"](#).
YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458002

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).
YES (Past error)>>Error was detected in the driver seat control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458004

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458005

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-102, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-131, "Exploded View"](#).
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458006

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 6)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458007

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

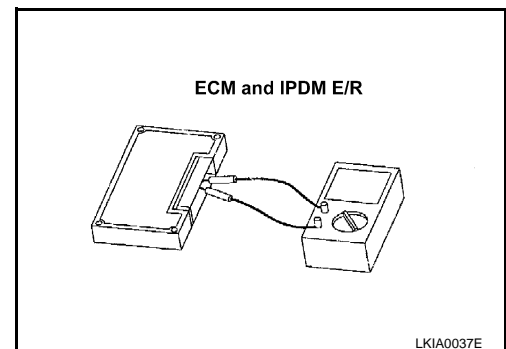
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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.

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458008

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458009

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
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.	
M24	6	M6	7	Existed
	14		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 data link connector and the ABS actuator and electric unit (control unit).

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

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458010

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458011

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458012

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413, "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114, "Exploded View"](#)
 - BOSE audio without navigation: [AV-325, "Exploded View"](#)
 - BOSE audio with navigation: [AV-575, "Exploded View"](#)

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

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458013

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM 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:000000004458014

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3	Approx. 54 – 66
	8	

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-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)
YES (Past error)>>Error was detected in the TCM 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 7)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458015

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458016

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458017

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458018

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458019

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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:000000004458020

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

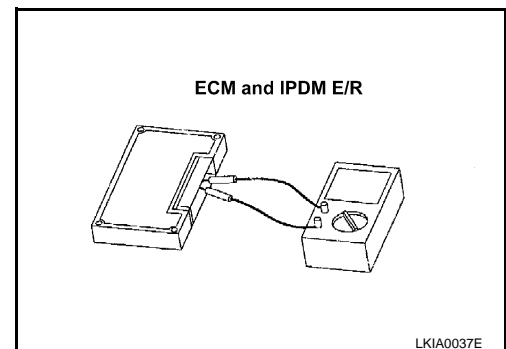
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458036

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004458037

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

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

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

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458038

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458039

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458040

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458041

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458042

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM 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:000000004458043

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3	Approx. 54 – 66
	8	

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-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)
YES (Past error)>>Error was detected in the TCM 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 8)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458044

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458045

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458046

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458047

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).
YES (Past error)>>Error was detected in the driver seat control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458048

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458049

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 8)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458050

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
M24	6	14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

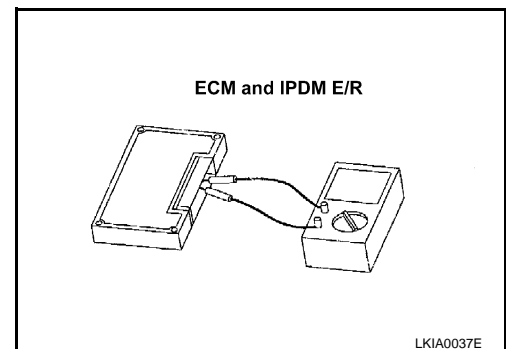
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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.

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MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458021

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000004458022

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the 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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

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MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458023

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the 4WAS main control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 4WAS main control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458024

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458025

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458026

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458027

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82, "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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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458028

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3 8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458029

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458030

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458031

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458032

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-135, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-178, "Exploded View"](#).
 YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458033

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458034

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 9)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458035

1.CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

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

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

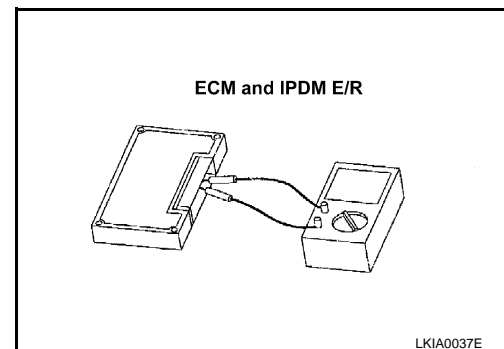
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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 9)]

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458051

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000004674640

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the 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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004674639

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the harness connectors M7 and B1.
4. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the driver seat control unit.

NO >> Repair the main line between the 4WAS main control unit and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458053

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458054

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458055

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458056

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458057

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82, "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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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458058

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3 8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

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

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

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458059

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458060

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458061

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458063

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-135, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-178, "Exploded View"](#).
 YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458062

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

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

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

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458064

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458065

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 10)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458066

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
M24	6	14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

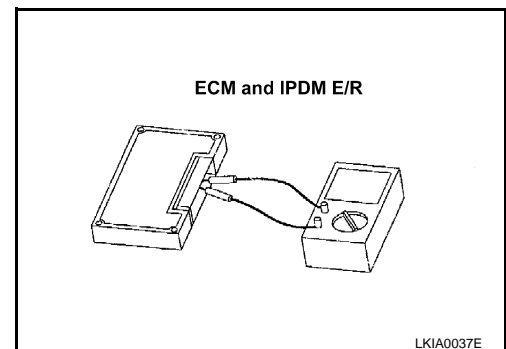
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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 10)]

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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458067

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004458068

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

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

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

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

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458069

1. CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

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

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

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

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458070

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

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

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

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458072

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

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

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458073

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

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

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

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

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

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458074

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82, "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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PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458071

1.CHECK CONNECTOR

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

Pre-crash seat belt control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the pre-crash seat belt control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-24, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-37, "Exploded View"](#).
 YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
 NO >> Repair the power supply and the ground circuit.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458075

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3	Approx. 54 – 66
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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-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458076

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-62, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-199, "Exploded View"](#).
 YES (Past error)>>Error was detected in the AFS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458077

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

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

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458078

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458079

1.CHECK CONNECTOR

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

Is the inspection result normal?

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458080

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

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

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458081

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "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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ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458082

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-102, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-131, "Exploded View"](#).
 YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
 NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458083

1. CHECK CONNECTOR

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

Is the inspection result normal?

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

2. CHECK HARNESS FOR OPEN CIRCUIT

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

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 11)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458084

1. CONNECTOR INSPECTION

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

Is the inspection result normal?

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

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
M24	6	14	Not existed

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

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

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

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

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

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

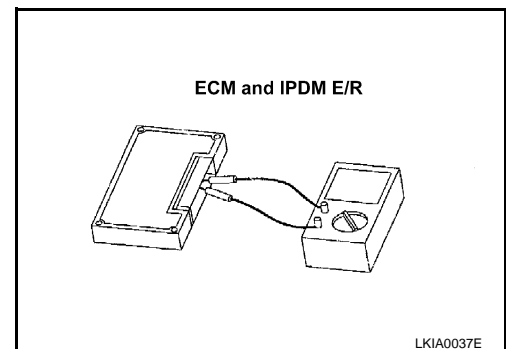
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

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

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 11)]

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication 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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458085

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - AV control unit
4. Check the continuity between the AV control unit harness connector and the data link connector.
 - With NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN DLC AND RAS CIRCUIT

Diagnosis Procedure

INFOID:000000004674641

1.CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the 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 4WAS main control unit.

NO >> Repair the main line between the harness connector B1 and the 4WAS main control unit.

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MAIN LINE BETWEEN RAS AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN RAS AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004674642

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the harness connectors M7 and B1.
4. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the driver seat control unit.

NO >> Repair the main line between the 4WAS main control unit and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458087

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector B1
 - Harness connector M7
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458088

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458090

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458091

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458092

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458089

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the pre-crash seat belt 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 pre-crash seat belt control unit.
2. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-crash seat belt control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the pre-crash seat belt control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-24, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-37, "Exploded View"](#).
YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
NO >> Repair the power supply and the ground circuit.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458093

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3 8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458094

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AFS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.
2. Check the resistance between the AFS control unit harness connector terminals.

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AFS control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-62, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-199, "Exploded View"](#).
 YES (Past error)>>Error was detected in the AFS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458095

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458096

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458097

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

RAS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458099

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the 4WAS main control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 4WAS main control unit.
2. Check the resistance between the 4WAS main control unit harness connector terminals.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B54	1	8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Replace the body harness.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to [STC-135, "Diagnosis Procedure \(4WAS Main Control Unit\)"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the 4WAS main control unit. Refer to [STC-178, "Exploded View"](#).
 YES (Past error)>>Error was detected in the 4WAS main control unit branch line.
 NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458098

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458100

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "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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ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458101

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ICC sensor integrated unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor integrated unit.
2. Check the resistance between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-102, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-131, "Exploded View"](#).
 YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
 NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458102

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 12)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458103

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
M24	6	14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

3. Check the resistance between the IPDM E/R terminals.

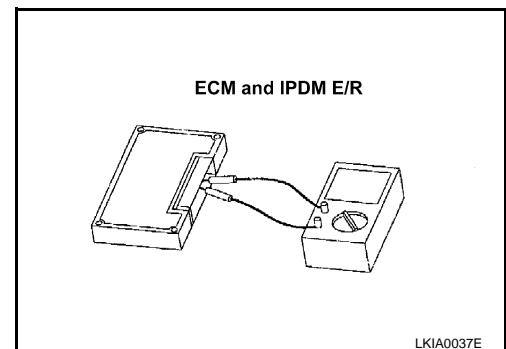
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

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 12)]

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication 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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458104

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - AV control unit
4. Check the continuity between the AV control unit harness connector and the data link connector.
 - With NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458105

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
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.	
M24	6	M6	7	Existed
	14		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 data link connector and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458106

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-16, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458107

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AWD control unit connector
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 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.		
F108	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-27, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-53, "Exploded View"](#).
YES (Past error)>>Error was detected in the AWD control unit branch line.
NO >> Repair the power supply and the ground circuit.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458108

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458109

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458110

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the BCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
 YES (Past error)>>Error was detected in the BCM branch line.
 NO >> Repair the power supply and the ground circuit.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458111

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3	Approx. 54 – 66
	8	

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-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)
YES (Past error)>>Error was detected in the TCM 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 13)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458112

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458113

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458114

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458115

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458116

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 13)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458117

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

3. Check the resistance between the IPDM E/R terminals.

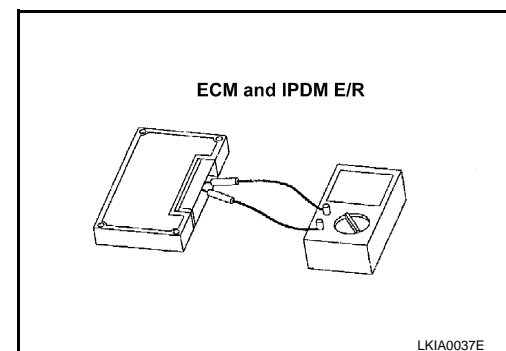
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.



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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 13)]

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication 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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458118

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - AV control unit
4. Check the continuity between the AV control unit harness connector and the data link connector.
 - With NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004458119

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the driver seat control unit.

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458120

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector B1
 - Harness connector M7
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458121

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458122

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AWD control unit connector
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 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.	
F108	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-27, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-53, "Exploded View"](#).
- YES (Past error)>>Error was detected in the AWD control unit branch line.
- NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458123

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458124

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458125

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82, "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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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458126

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3 8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458127

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458128

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the unified meter and A/C amp. branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458129

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458130

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458131

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 14)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458132

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 14)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458133

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

3. Check the resistance between the IPDM E/R terminals.

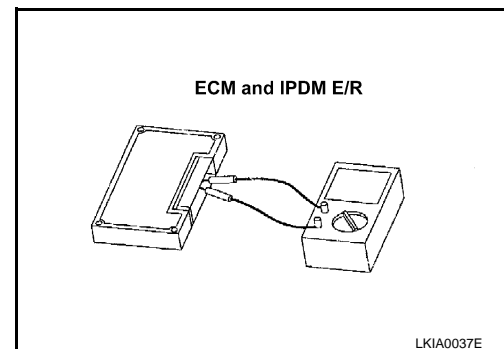
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

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 14)]

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication 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 AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000004458134

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
 - ECM
 - AV control unit
4. Check the continuity between the AV control unit harness connector and the data link connector.
 - With NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M87	52	M24	6	Existed
	53		14	Existed

- Without NAVI

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M85	86	M24	6	Existed
	87		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 AV control unit and the data link connector.

NO >> Repair the main line between the AV control unit and the data link connector.

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000004458135

1. CHECK CONNECTOR

1. Turn the ignition 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 M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
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.	
M24	6	M7	20	Existed
	14		21	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the driver seat control unit.

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000004458136

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector B1
 - Harness connector M7
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.
2. Check the continuity between the harness connector terminals.

Connector No.	Terminal No.		Continuity
B1	20	22	Existed
	21	23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	22	M6	7	Existed
	23		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector M7 and M6.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	7	E41	35	Existed
	6		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 driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458137

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M107	114	113	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 [EC-145. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-16. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

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PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458138

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the pre-crash seat belt 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 pre-crash seat belt control unit.
2. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

Pre-crash seat belt control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M110	24	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the pre-crash seat belt control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-24, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-37, "Exploded View"](#).
 YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
 NO >> Repair the power supply and the ground circuit.

4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458139

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - AWD control unit connector
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of 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.		
F108	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-27, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-53, "Exploded View"](#).

YES (Past error)>>Error was detected in the AWD control unit branch line.

NO >> Repair the power supply and the ground circuit.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458140

1. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-5, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458141

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M87	52	53	Approx. 54 – 66

- Models without NAVI

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M85	86	87	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-39. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-165. "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-413. "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-114. "Exploded View"](#)
 - BOSE audio without navigation: [AV-325. "Exploded View"](#)
 - BOSE audio with navigation: [AV-575. "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458142

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M122	91	90	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-82. "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458143

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

A/T assembly harness connector		Resistance (Ω)
Connector No.	Terminal No.	
F51	3	Approx. 54 – 66
	8	

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-228, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve with TCM. Refer to [TM-105, "Component Parts Location"](#).
(Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

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AFS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458144

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AFS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.
2. Check the resistance between the AFS control unit harness connector terminals.

AFS control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M16	30	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AFS control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to [EXL-62, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-199, "Exploded View"](#).
 YES (Past error)>>Error was detected in the AFS control unit branch line.
 NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458145

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance (Ω)
Connector No.	Terminal No.		
M24	6	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458146

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the unified meter and A/C amp. branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-51, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-128, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458147

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

Steering angle sensor harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M37	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-83, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-107, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458148

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Driver seat control unit
 - Harness connector B462
 - Harness connector B59

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

Driver seat control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B451	3	19	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the driver seat control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-65, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-221, "Exploded View"](#).
 YES (Past error)>>Error was detected in the driver seat control unit branch line.
 NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458149

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

ABS actuator and electric unit (control unit) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E41	35	14	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-104, "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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ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458150

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ICC sensor integrated unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor integrated unit.
2. Check the resistance between the ICC sensor integrated unit harness connector terminals.

ICC sensor integrated unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-102, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-131, "Exploded View"](#).
 YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
 NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 15)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000004458151

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

IPDM E/R harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E6	40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-33, "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 15)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000004458152

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector		Continuity
Connector No.	Terminal No.	
M24	6 14	Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M24	6		Not existed
	14		Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

ECM		Resistance (Ω)
Terminal No.		
114	113	Approx. 108 – 132

3. Check the resistance between the IPDM E/R terminals.

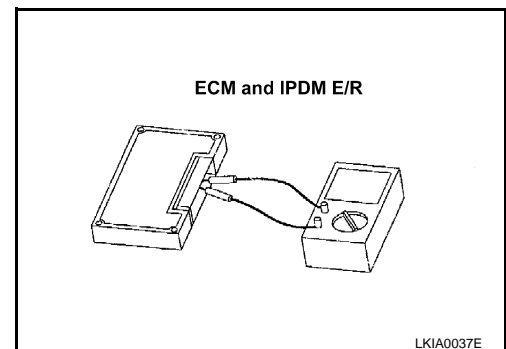
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

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 15)]

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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