

# SECTION LAN

## LAN SYSTEM

# CONTENTS

<b>CAN FUNDAMENTAL</b>	
<b>PRECAUTION</b>	<b>6</b>
<b>PRECAUTIONS</b>	<b>6</b>
Precautions for Trouble Diagnosis	6
Precautions for Harness Repair	6
<b>SYSTEM DESCRIPTION</b>	<b>7</b>
<b>CAN COMMUNICATION SYSTEM</b>	<b>7</b>
System Description	7
System Diagram	7
CAN Communication Control Circuit	8
<b>DIAG ON CAN</b>	<b>9</b>
Description	9
System Diagram	9
<b>TROUBLE DIAGNOSIS</b>	<b>10</b>
Condition of Error Detection	10
Symptom When Error Occurs in CAN Communi-	
cation System	10
CAN Diagnosis with CONSULT	13
Self-Diagnosis	13
CAN Diagnostic Support Monitor	13
How to Use CAN Communication Signal Chart	15
<b>BASIC INSPECTION</b>	<b>16</b>
<b>DIAGNOSIS AND REPAIR WORKFLOW</b>	<b>16</b>
Trouble Diagnosis Flow Chart	16
Trouble Diagnosis Procedure	16
<b>CAN</b>	
<b>HOW TO USE THIS MANUAL</b>	<b>21</b>
<b>HOW TO USE THIS SECTION</b>	<b>21</b>
Caution	21
Abbreviation List	21
<b>PRECAUTION</b>	<b>22</b>
Precaution for Supplemental Restraint System	
(SRS) "AIR BAG" and "SEAT BELT PRE-TEN-	
SIONER"	22
Precautions for Trouble Diagnosis	22
Precautions for Harness Repair	22
Precautions for Removing Battery Terminal	23
<b>BASIC INSPECTION</b>	<b>24</b>
<b>DIAGNOSIS AND REPAIR WORKFLOW</b>	<b>24</b>
Interview Sheet	24
<b>SYSTEM DESCRIPTION</b>	<b>25</b>
<b>CAN COMMUNICATION SYSTEM</b>	<b>25</b>
CAN System Specification Chart	25
CAN Communication Signal Chart	25
<b>DTC/CIRCUIT DIAGNOSIS</b>	<b>30</b>
<b>CAN COMMUNICATION SYSTEM</b>	<b>30</b>
Component Parts Location	30
Wiring Diagram - CAN SYSTEM -	31
<b>MALFUNCTION AREA CHART</b>	<b>41</b>
System Diagram	41
CAN Communication Circuit	41
ITS Communication Circuit	42
BSW Communication Circuit	42
<b>MAIN LINE BETWEEN AV AND DLC CIR-</b>	
<b>CUIT</b>	<b>43</b>
Diagnosis Procedure	43
<b>MAIN LINE BETWEEN DLC AND M&amp;A CIR-</b>	
<b>CUIT</b>	<b>44</b>
Diagnosis Procedure	44
<b>MAIN LINE BETWEEN M&amp;A AND ABS CIR-</b>	
<b>CUIT</b>	<b>45</b>
Diagnosis Procedure	45

<b>MAIN LINE BETWEEN M&amp;A AND ADP CIRCUIT</b> .....	<b>46</b>
Diagnosis Procedure .....	46
<b>MAIN LINE BETWEEN ADP AND ABS CIRCUIT</b> .....	<b>47</b>
Diagnosis Procedure .....	47
<b>MAIN LINE BETWEEN ADP AND BSW CIRCUIT</b> .....	<b>49</b>
Diagnosis Procedure .....	49
<b>MAIN LINE BETWEEN BSW AND ABS CIRCUIT</b> .....	<b>50</b>
Diagnosis Procedure .....	50
<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>52</b>
Diagnosis Procedure .....	52
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>53</b>
Diagnosis Procedure .....	53
<b>AFS BRANCH LINE CIRCUIT</b> .....	<b>54</b>
Diagnosis Procedure .....	54
<b>AV BRANCH LINE CIRCUIT</b> .....	<b>55</b>
Diagnosis Procedure .....	55
<b>LANE BRANCH LINE CIRCUIT</b> .....	<b>56</b>
Diagnosis Procedure .....	56
<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>57</b>
Diagnosis Procedure .....	57
<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>58</b>
Diagnosis Procedure .....	58
<b>DLC BRANCH LINE CIRCUIT</b> .....	<b>59</b>
Diagnosis Procedure .....	59
<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>60</b>
Diagnosis Procedure .....	60
<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>61</b>
Diagnosis Procedure .....	61
<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>62</b>
Diagnosis Procedure .....	62
<b>ADP BRANCH LINE CIRCUIT</b> .....	<b>63</b>
Diagnosis Procedure .....	63
<b>BSW BRANCH LINE CIRCUIT</b> .....	<b>64</b>
Diagnosis Procedure .....	64
<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>65</b>
Diagnosis Procedure .....	65
<b>ICC BRANCH LINE CIRCUIT</b> .....	<b>66</b>
Diagnosis Procedure .....	66
<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	<b>67</b>
Diagnosis Procedure .....	67

<b>APA BRANCH LINE CIRCUIT</b> .....	<b>68</b>
Diagnosis Procedure .....	68
<b>BCU BRANCH LINE CIRCUIT</b> .....	<b>69</b>
Diagnosis Procedure .....	69
<b>RDR-L BRANCH LINE CIRCUIT</b> .....	<b>70</b>
Diagnosis Procedure .....	70
<b>RDR-R BRANCH LINE CIRCUIT</b> .....	<b>71</b>
Diagnosis Procedure .....	71
<b>CAN COMMUNICATION CIRCUIT</b> .....	<b>72</b>
Diagnosis Procedure .....	72
<b>ITS COMMUNICATION CIRCUIT</b> .....	<b>74</b>
Diagnosis Procedure .....	74
<b>BSW COMMUNICATION CIRCUIT</b> .....	<b>76</b>
Diagnosis Procedure .....	76
<b>CAN SYSTEM (TYPE 1)</b>	
<b>DTC/CIRCUIT DIAGNOSIS</b> .....	<b>78</b>
<b>MAIN LINE BETWEEN AV AND DLC CIRCUIT</b> .....	<b>78</b>
Diagnosis Procedure .....	78
<b>MAIN LINE BETWEEN DLC AND M&amp;A CIRCUIT</b> .....	<b>79</b>
Diagnosis Procedure .....	79
<b>MAIN LINE BETWEEN M&amp;A AND ABS CIRCUIT</b> .....	<b>80</b>
Diagnosis Procedure .....	80
<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>81</b>
Diagnosis Procedure .....	81
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>82</b>
Diagnosis Procedure .....	82
<b>AV BRANCH LINE CIRCUIT</b> .....	<b>83</b>
Diagnosis Procedure .....	83
<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>84</b>
Diagnosis Procedure .....	84
<b>DLC BRANCH LINE CIRCUIT</b> .....	<b>85</b>
Diagnosis Procedure .....	85
<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>86</b>
Diagnosis Procedure .....	86
<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>87</b>
Diagnosis Procedure .....	87
<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>88</b>
Diagnosis Procedure .....	88
<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>89</b>
Diagnosis Procedure .....	89

<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	90
Diagnosis Procedure .....	90
<b>CAN COMMUNICATION CIRCUIT</b> .....	91
Diagnosis Procedure .....	91
<b>CAN SYSTEM (TYPE 2)</b>	
<b>DTC/CIRCUIT DIAGNOSIS</b> .....	93
<b>MAIN LINE BETWEEN AV AND DLC CIR- CUIT</b> .....	93
Diagnosis Procedure .....	93
<b>MAIN LINE BETWEEN DLC AND M&amp;A CIR- CUIT</b> .....	94
Diagnosis Procedure .....	94
<b>MAIN LINE BETWEEN M&amp;A AND ADP CIR- CUIT</b> .....	95
Diagnosis Procedure .....	95
<b>MAIN LINE BETWEEN ADP AND ABS CIR- CUIT</b> .....	96
Diagnosis Procedure .....	96
<b>ECM BRANCH LINE CIRCUIT</b> .....	98
Diagnosis Procedure .....	98
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	99
Diagnosis Procedure .....	99
<b>AFS BRANCH LINE CIRCUIT</b> .....	100
Diagnosis Procedure .....	100
<b>AV BRANCH LINE CIRCUIT</b> .....	101
Diagnosis Procedure .....	101
<b>BCM BRANCH LINE CIRCUIT</b> .....	102
Diagnosis Procedure .....	102
<b>DLC BRANCH LINE CIRCUIT</b> .....	103
Diagnosis Procedure .....	103
<b>TCM BRANCH LINE CIRCUIT</b> .....	104
Diagnosis Procedure .....	104
<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	105
Diagnosis Procedure .....	105
<b>STRG BRANCH LINE CIRCUIT</b> .....	106
Diagnosis Procedure .....	106
<b>ADP BRANCH LINE CIRCUIT</b> .....	107
Diagnosis Procedure .....	107
<b>ABS BRANCH LINE CIRCUIT</b> .....	108
Diagnosis Procedure .....	108
<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	109
Diagnosis Procedure .....	109
<b>CAN COMMUNICATION CIRCUIT</b> .....	110
Diagnosis Procedure .....	110

<b>CAN SYSTEM (TYPE 3)</b>	
<b>DTC/CIRCUIT DIAGNOSIS</b> .....	112
<b>MAIN LINE BETWEEN AV AND DLC CIR- CUIT</b> .....	112
Diagnosis Procedure .....	112
<b>MAIN LINE BETWEEN DLC AND M&amp;A CIR- CUIT</b> .....	113
Diagnosis Procedure .....	113
<b>MAIN LINE BETWEEN M&amp;A AND ADP CIR- CUIT</b> .....	114
Diagnosis Procedure .....	114
<b>MAIN LINE BETWEEN ADP AND BSW CIR- CUIT</b> .....	115
Diagnosis Procedure .....	115
<b>MAIN LINE BETWEEN BSW AND ABS CIR- CUIT</b> .....	116
Diagnosis Procedure .....	116
<b>ECM BRANCH LINE CIRCUIT</b> .....	118
Diagnosis Procedure .....	118
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	119
Diagnosis Procedure .....	119
<b>AFS BRANCH LINE CIRCUIT</b> .....	120
Diagnosis Procedure .....	120
<b>AV BRANCH LINE CIRCUIT</b> .....	121
Diagnosis Procedure .....	121
<b>LANE BRANCH LINE CIRCUIT</b> .....	122
Diagnosis Procedure .....	122
<b>BCM BRANCH LINE CIRCUIT</b> .....	123
Diagnosis Procedure .....	123
<b>DLC BRANCH LINE CIRCUIT</b> .....	124
Diagnosis Procedure .....	124
<b>TCM BRANCH LINE CIRCUIT</b> .....	125
Diagnosis Procedure .....	125
<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	126
Diagnosis Procedure .....	126
<b>STRG BRANCH LINE CIRCUIT</b> .....	127
Diagnosis Procedure .....	127
<b>ADP BRANCH LINE CIRCUIT</b> .....	128
Diagnosis Procedure .....	128
<b>BSW BRANCH LINE CIRCUIT</b> .....	129
Diagnosis Procedure .....	129
<b>ABS BRANCH LINE CIRCUIT</b> .....	130
Diagnosis Procedure .....	130

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

LAN

N  
O  
P

<b>ICC BRANCH LINE CIRCUIT</b> .....	<b>131</b>	<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>153</b>
Diagnosis Procedure .....	131	Diagnosis Procedure .....	153
<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	<b>132</b>	<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>154</b>
Diagnosis Procedure .....	132	Diagnosis Procedure .....	154
<b>APA BRANCH LINE CIRCUIT</b> .....	<b>133</b>	<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>155</b>
Diagnosis Procedure .....	133	Diagnosis Procedure .....	155
<b>BCU BRANCH LINE CIRCUIT</b> .....	<b>134</b>	<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	<b>156</b>
Diagnosis Procedure .....	134	Diagnosis Procedure .....	156
<b>RDR-L BRANCH LINE CIRCUIT</b> .....	<b>135</b>	<b>CAN COMMUNICATION CIRCUIT</b> .....	<b>157</b>
Diagnosis Procedure .....	135	Diagnosis Procedure .....	157
<b>RDR-R BRANCH LINE CIRCUIT</b> .....	<b>136</b>	<b>CAN SYSTEM (TYPE 5)</b>	
Diagnosis Procedure .....	136	<b>DTC/CIRCUIT DIAGNOSIS</b> .....	<b>159</b>
<b>CAN COMMUNICATION CIRCUIT</b> .....	<b>137</b>	<b>MAIN LINE BETWEEN AV AND DLC CIR-</b>	
Diagnosis Procedure .....	137	<b>CUIT</b> .....	<b>159</b>
<b>ITS COMMUNICATION CIRCUIT</b> .....	<b>139</b>	Diagnosis Procedure .....	159
Diagnosis Procedure .....	139	<b>MAIN LINE BETWEEN DLC AND M&amp;A CIR-</b>	
<b>BSW COMMUNICATION CIRCUIT</b> .....	<b>141</b>	<b>CUIT</b> .....	<b>160</b>
Diagnosis Procedure .....	141	Diagnosis Procedure .....	160
<b>CAN SYSTEM (TYPE 4)</b>		<b>MAIN LINE BETWEEN M&amp;A AND ADP CIR-</b>	
<b>DTC/CIRCUIT DIAGNOSIS</b> .....	<b>143</b>	<b>CUIT</b> .....	<b>161</b>
<b>MAIN LINE BETWEEN AV AND DLC CIR-</b>		Diagnosis Procedure .....	161
<b>CUIT</b> .....	<b>143</b>	<b>MAIN LINE BETWEEN ADP AND ABS CIR-</b>	
Diagnosis Procedure .....	143	<b>CUIT</b> .....	<b>162</b>
<b>MAIN LINE BETWEEN DLC AND M&amp;A CIR-</b>		Diagnosis Procedure .....	162
<b>CUIT</b> .....	<b>144</b>	<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>164</b>
Diagnosis Procedure .....	144	Diagnosis Procedure .....	164
<b>MAIN LINE BETWEEN M&amp;A AND ABS CIR-</b>		<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>165</b>
<b>CUIT</b> .....	<b>145</b>	Diagnosis Procedure .....	165
Diagnosis Procedure .....	145	<b>AFS BRANCH LINE CIRCUIT</b> .....	<b>166</b>
<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>146</b>	Diagnosis Procedure .....	166
Diagnosis Procedure .....	146	<b>AV BRANCH LINE CIRCUIT</b> .....	<b>167</b>
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>147</b>	Diagnosis Procedure .....	167
Diagnosis Procedure .....	147	<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>168</b>
<b>AV BRANCH LINE CIRCUIT</b> .....	<b>148</b>	Diagnosis Procedure .....	168
Diagnosis Procedure .....	148	<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>169</b>
<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>149</b>	Diagnosis Procedure .....	169
Diagnosis Procedure .....	149	<b>DLC BRANCH LINE CIRCUIT</b> .....	<b>170</b>
<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>150</b>	Diagnosis Procedure .....	170
Diagnosis Procedure .....	150	<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>171</b>
<b>DLC BRANCH LINE CIRCUIT</b> .....	<b>151</b>	Diagnosis Procedure .....	171
Diagnosis Procedure .....	151	<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>172</b>
<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>152</b>	Diagnosis Procedure .....	172
Diagnosis Procedure .....	152	<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>173</b>
		Diagnosis Procedure .....	173

<b>ADP BRANCH LINE CIRCUIT</b> .....	174	Diagnosis Procedure .....	190	
Diagnosis Procedure .....	174			A
<b>ABS BRANCH LINE CIRCUIT</b> .....	175	<b>BCM BRANCH LINE CIRCUIT</b> .....	191	
Diagnosis Procedure .....	175	Diagnosis Procedure .....	191	B
<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	176	<b>DLC BRANCH LINE CIRCUIT</b> .....	192	
Diagnosis Procedure .....	176	Diagnosis Procedure .....	192	C
<b>CAN COMMUNICATION CIRCUIT</b> .....	177	<b>TCM BRANCH LINE CIRCUIT</b> .....	193	
Diagnosis Procedure .....	177	Diagnosis Procedure .....	193	D
<b>CAN SYSTEM (TYPE 6)</b>		<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	194	
<b>DTC/CIRCUIT DIAGNOSIS</b> .....	179	Diagnosis Procedure .....	194	E
<b>MAIN LINE BETWEEN AV AND DLC CIR- CUIT</b> .....	179	<b>STRG BRANCH LINE CIRCUIT</b> .....	195	
Diagnosis Procedure .....	179	Diagnosis Procedure .....	195	F
<b>MAIN LINE BETWEEN DLC AND M&amp;A CIR- CUIT</b> .....	180	<b>ADP BRANCH LINE CIRCUIT</b> .....	196	
Diagnosis Procedure .....	180	Diagnosis Procedure .....	196	G
<b>MAIN LINE BETWEEN M&amp;A AND ADP CIR- CUIT</b> .....	181	<b>BSW BRANCH LINE CIRCUIT</b> .....	197	
Diagnosis Procedure .....	181	Diagnosis Procedure .....	197	H
<b>MAIN LINE BETWEEN ADP AND BSW CIR- CUIT</b> .....	182	<b>ABS BRANCH LINE CIRCUIT</b> .....	198	
Diagnosis Procedure .....	182	Diagnosis Procedure .....	198	I
<b>MAIN LINE BETWEEN BSW AND ABS CIR- CUIT</b> .....	183	<b>ICC BRANCH LINE CIRCUIT</b> .....	199	
Diagnosis Procedure .....	183	Diagnosis Procedure .....	199	J
<b>ECM BRANCH LINE CIRCUIT</b> .....	185	<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	200	
Diagnosis Procedure .....	185	Diagnosis Procedure .....	200	K
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	186	<b>APA BRANCH LINE CIRCUIT</b> .....	201	
Diagnosis Procedure .....	186	Diagnosis Procedure .....	201	L
<b>AFS BRANCH LINE CIRCUIT</b> .....	187	<b>BCU BRANCH LINE CIRCUIT</b> .....	202	
Diagnosis Procedure .....	187	Diagnosis Procedure .....	202	
<b>AV BRANCH LINE CIRCUIT</b> .....	188	<b>RDR-L BRANCH LINE CIRCUIT</b> .....	203	
Diagnosis Procedure .....	188	Diagnosis Procedure .....	203	
<b>LANE BRANCH LINE CIRCUIT</b> .....	189	<b>RDR-R BRANCH LINE CIRCUIT</b> .....	204	
Diagnosis Procedure .....	189	Diagnosis Procedure .....	204	
<b>4WD BRANCH LINE CIRCUIT</b> .....	190	<b>CAN COMMUNICATION CIRCUIT</b> .....	205	LAN
		Diagnosis Procedure .....	205	
		<b>ITS COMMUNICATION CIRCUIT</b> .....	207	
		Diagnosis Procedure .....	207	N
		<b>BSW COMMUNICATION CIRCUIT</b> .....	209	
		Diagnosis Procedure .....	209	O
				P

## PRECAUTION

### PRECAUTIONS

#### Precautions for Trouble Diagnosis

INFOID:0000000010593509

#### 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.

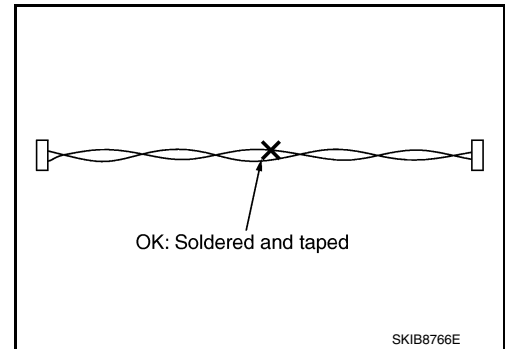
#### Precautions for Harness Repair

INFOID:0000000010593510

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

#### NOTE:

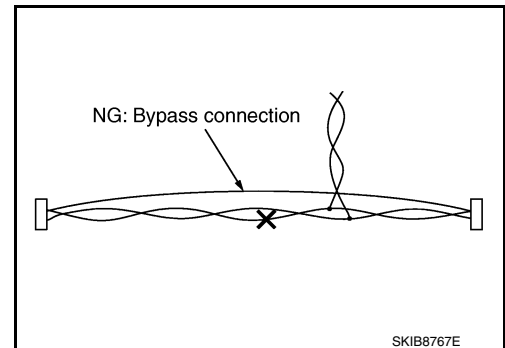
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

#### NOTE:

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



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

# SYSTEM DESCRIPTION

## CAN COMMUNICATION SYSTEM

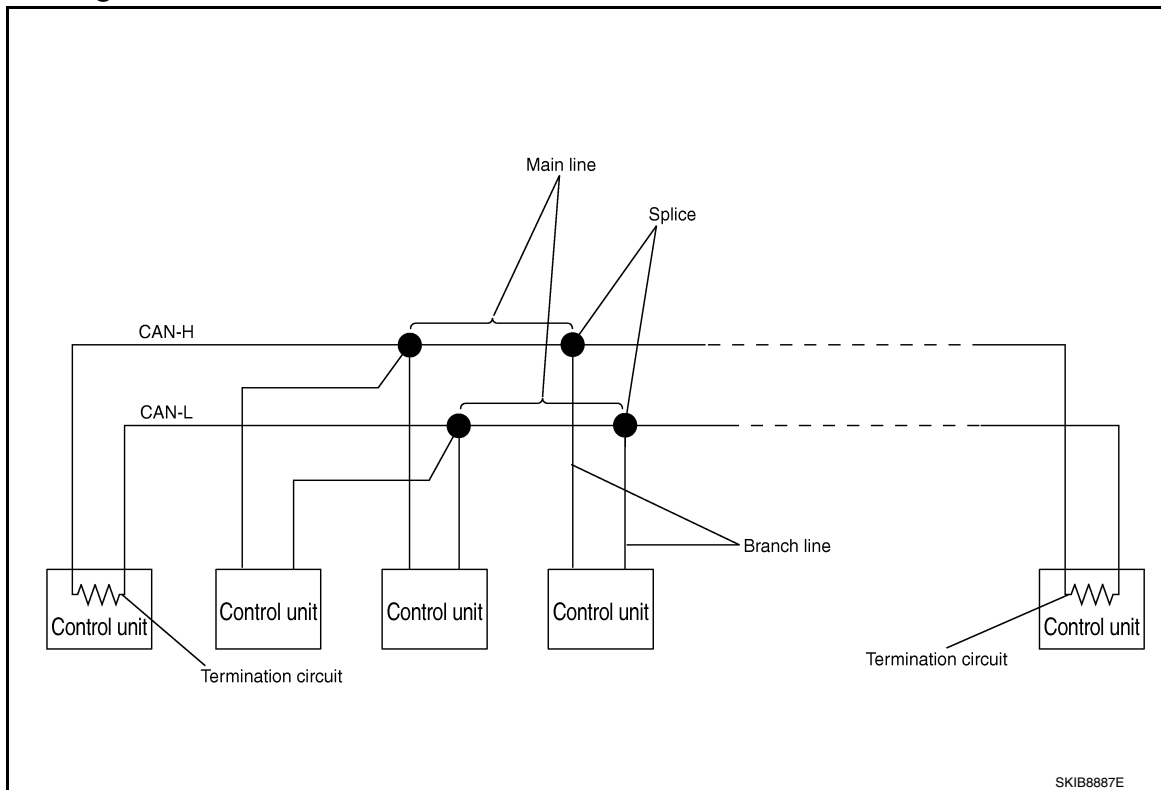
### System Description

INFOID:0000000010593511

- 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:0000000010593512



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 <a href="#">LAN-8, "CAN Communication Control Circuit"</a> .

LAN

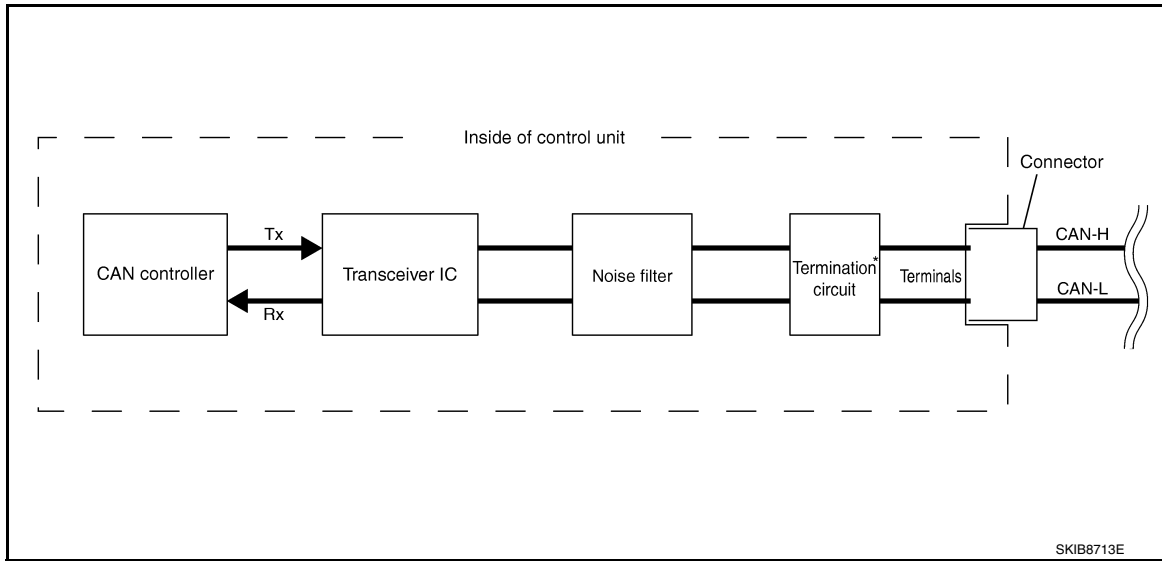
# CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

## CAN Communication Control Circuit

INFOID:0000000010593513



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

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



## DIAG ON CAN

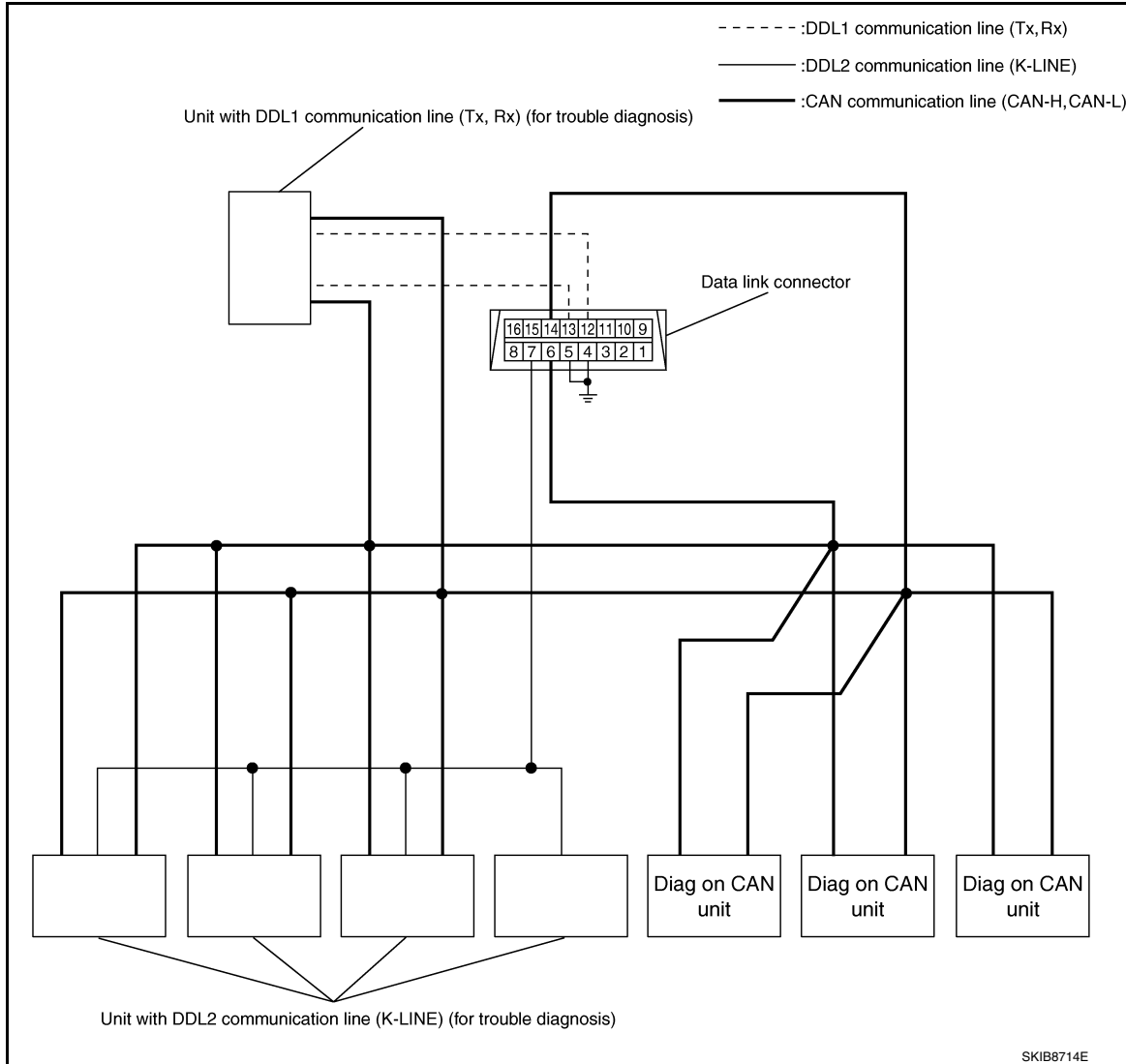
### Description

INFOID:000000010593514

“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:000000010593515



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:0000000010593516

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

## CAN COMMUNICATION SYSTEM ERROR

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

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

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

**CAUTION:**

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

## Symptom When Error Occurs in CAN Communication System

INFOID:0000000010593517

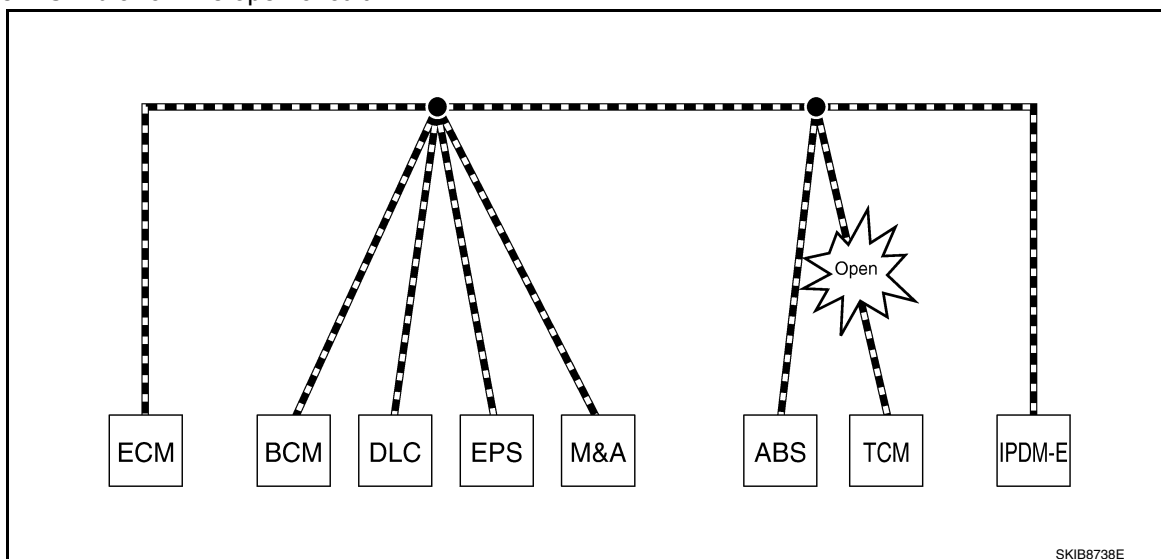
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

## ERROR EXAMPLE

**NOTE:**

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to [LAN-21, "Abbreviation List"](#) for the unit abbreviation.

Example: TCM branch line open circuit



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

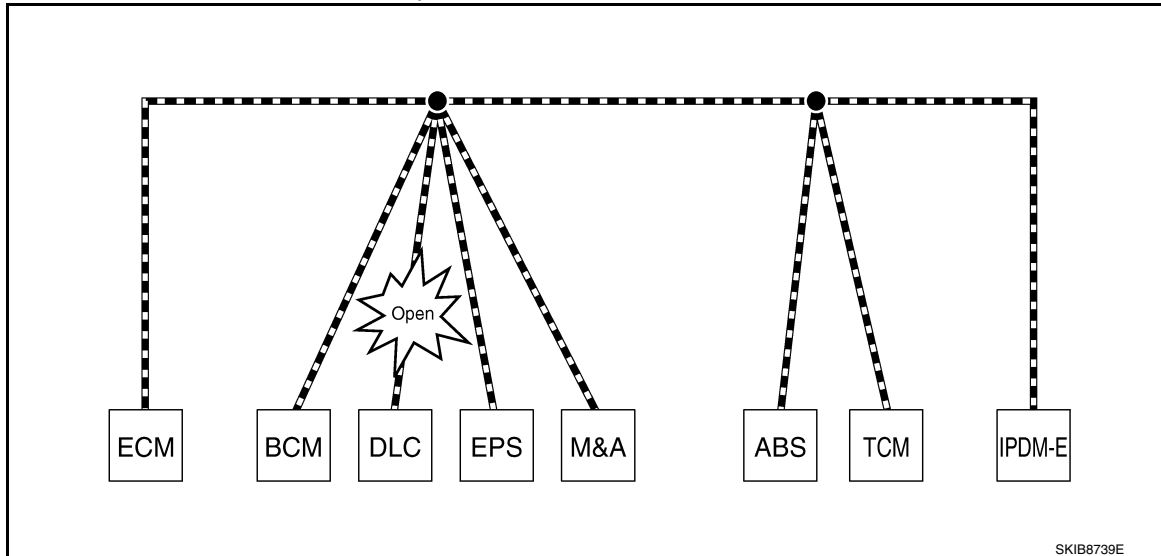
# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

Example: Data link connector branch line open circuit



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

## NOTE:

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

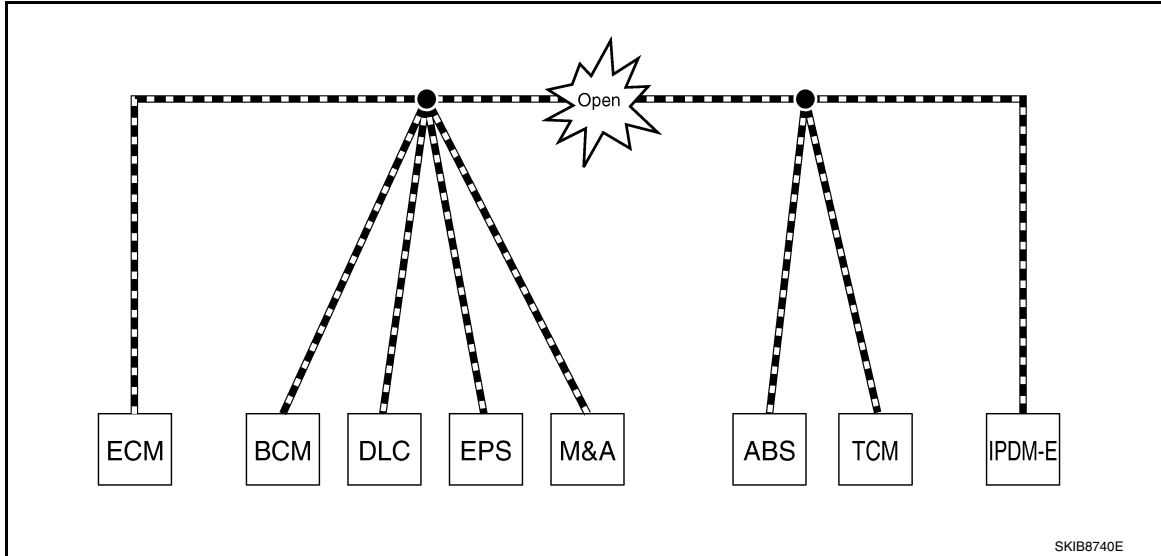
Error	Difference of symptom
Data link connector branch line open circuit	Normal operation.
CAN-H, CAN-L harness short-circuit	Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated.

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

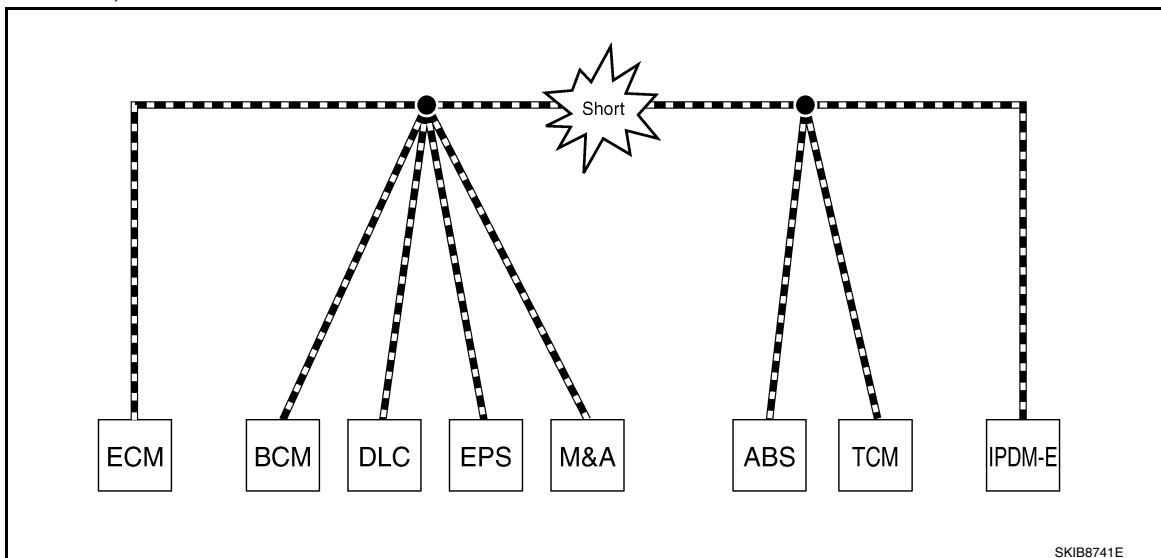
[CAN FUNDAMENTAL]

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



Unit name	Symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	<ul style="list-style-type: none"> <li>Reverse warning chime does not sound.</li> <li>The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> </ul>
EPS control unit	The steering effort increases.
Combination meter	<ul style="list-style-type: none"> <li>The shift position indicator and OD OFF indicator turn OFF.</li> <li>The speedometer is inoperative.</li> <li>The odo/trip meter stops.</li> </ul>
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"> <li>The headlamps (Lo) turn ON.</li> <li>The cooling fan continues to rotate.</li> </ul>

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



# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Symptom
ECM	<ul style="list-style-type: none"> <li>Engine torque limiting is affected, and shift harshness increases.</li> <li>Engine speed drops.</li> </ul>
BCM	<ul style="list-style-type: none"> <li>Reverse warning chime does not sound.</li> <li>The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> <li>The room lamp does not turn ON.</li> <li>The engine does not start (if an error or malfunction occurs while turning the ignition switch OFF.)</li> <li>The steering lock does not release (if an error or malfunction occurs while turning the ignition switch OFF.)</li> </ul>
EPS control unit	The steering effort increases.
Combination meter	<ul style="list-style-type: none"> <li>The tachometer and the speedometer do not move.</li> <li>Warning lamps turn ON.</li> <li>Indicator lamps do not turn ON.</li> </ul>
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"> <li>The headlamps (Lo) turn ON.</li> <li>The cooling fan continues to rotate.</li> </ul>

## CAN Diagnosis with CONSULT

INFOID:0000000010593518

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

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

## Self-Diagnosis

INFOID:0000000010593519

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

### NOTE:

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

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

## CAN Diagnostic Support Monitor

INFOID:0000000010593520

## MONITOR ITEM (CONSULT)

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

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

JSMIA0964GB

Without PAST

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

With PAST

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

## MONITOR ITEM (ON-BOARD DIAGNOSIS)

### NOTE:

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

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: Vehicle Display

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

## How to Use CAN Communication Signal Chart

INFOID:0000000010593521

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

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

T: Transmit R: Receive

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

No communication between ECM and M&A.

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

CAN-H, CAN-L

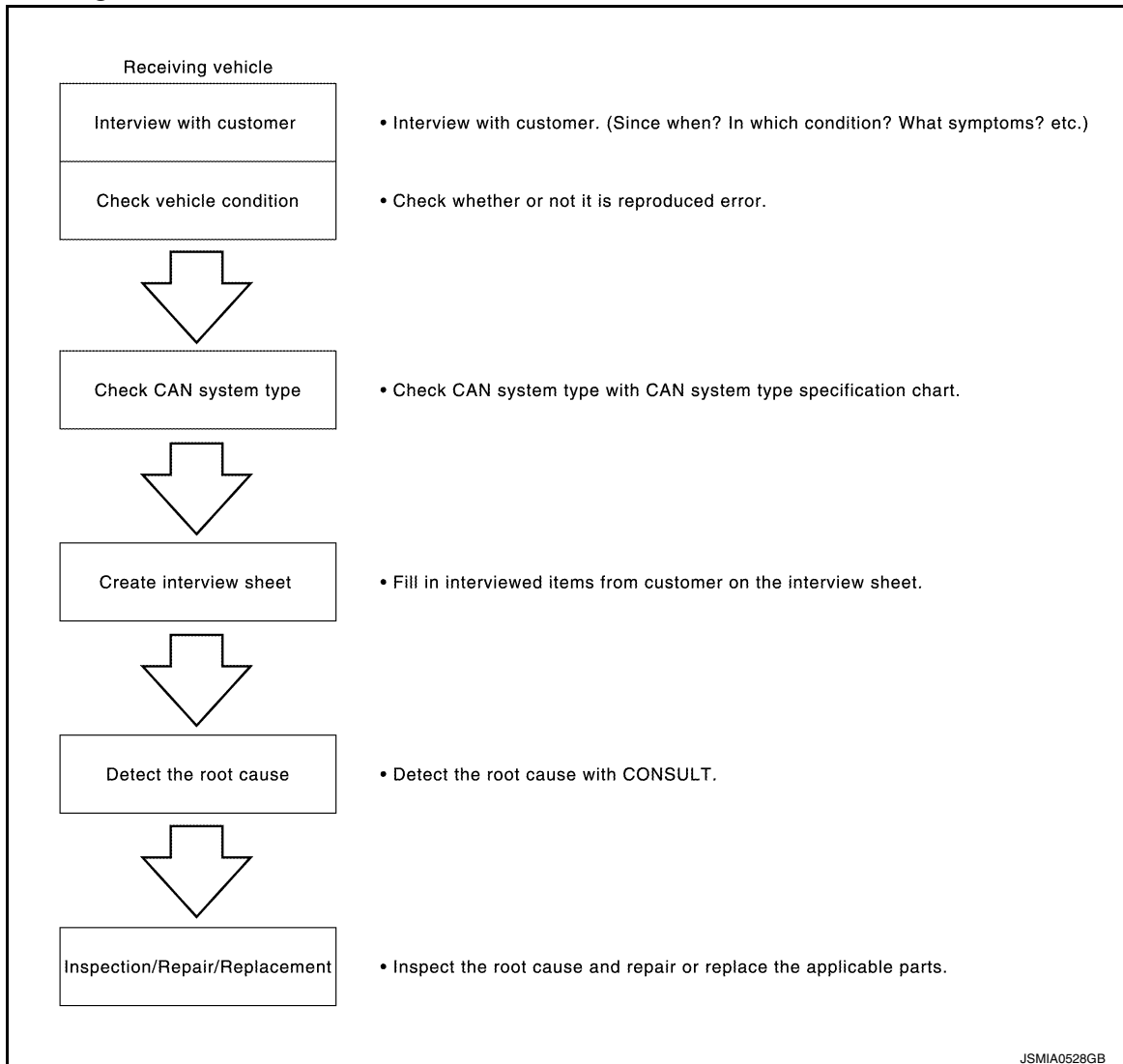
SKIB8715E

## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Trouble Diagnosis Flow Chart

INFOID:0000000010593522



#### Trouble Diagnosis Procedure

INFOID:0000000010593523

##### INTERVIEW WITH CUSTOMER

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

##### Points in interview

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

##### NOTE:

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

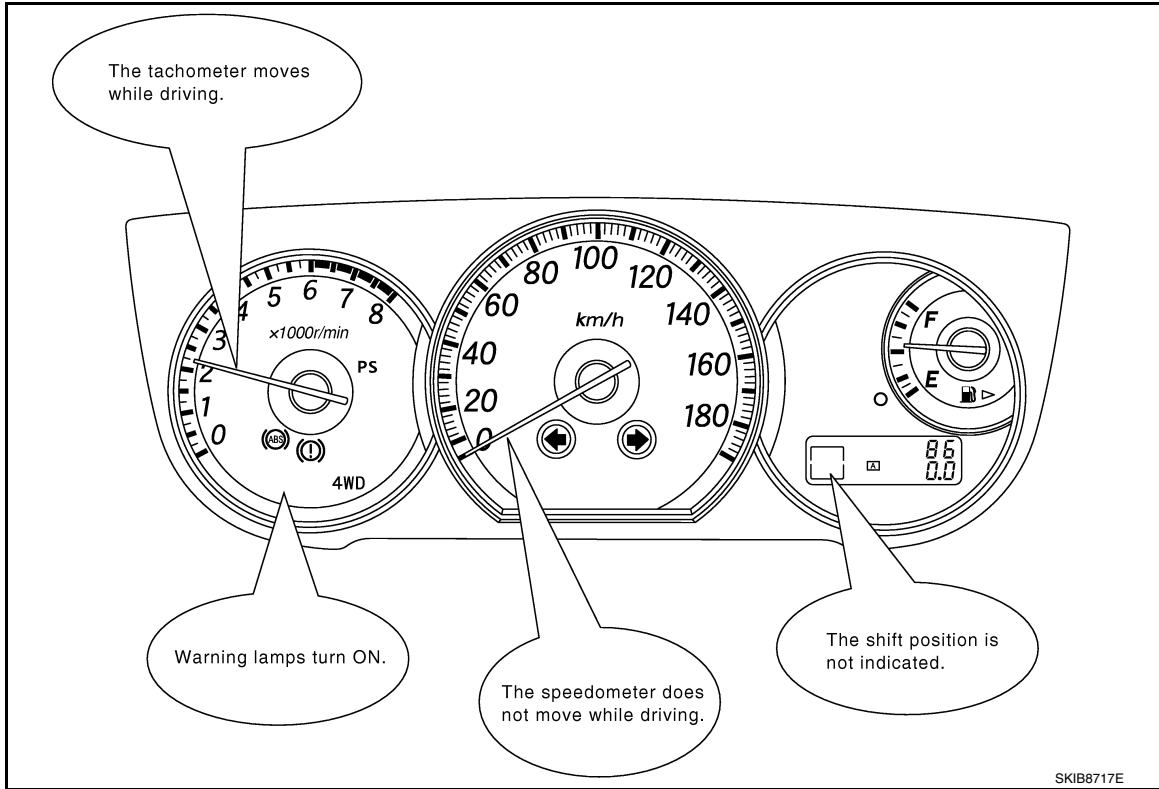


# DIAGNOSIS AND REPAIR WORKFLOW

## < BASIC INSPECTION >

[CAN FUNDAMENTAL]

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



## INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

### NOTE:

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

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

Determine CAN system type based on vehicle equipment.

### NOTE:

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

CAN System Type Specification Chart (Style A)

### NOTE:

LAN

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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

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

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

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

X : Applicable

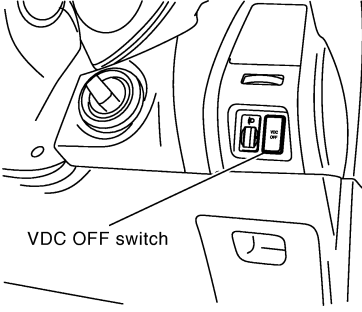
Check the vehicle equipment with the vehicle identification number plate.

Check the vehicle equipment.

The number indicates the CAN system type of the vehicle.

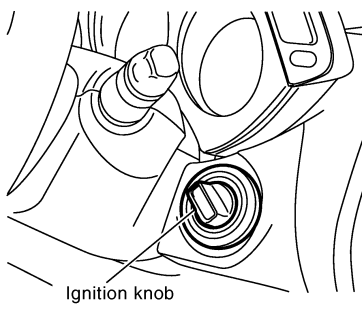
**VEHICLE EQUIPMENT IDENTIFICATION INFORMATION**  
**NOTE:**  
Check CAN system type from the vehicle shape and equipment.

With VDC



VDC OFF switch

With Intelligent Key system



Ignition knob

In the above example,

- Checking VDC OFF switch leads to judge whether or not VDC is equipped.
- Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped.

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

JSMIA0017GB

CAN System Type Specification Chart (Style B)

**NOTE:**

**[CAN FUNDAMENTAL]**

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

JSMIA0018GB

## 2015 QX50

# 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"><li>•Headlamps suddenly turn ON while driving the vehicle.</li><li>•The engine does not restart after stopping the vehicle and turning the ignition switch OFF.</li><li>•The cooling fan continues rotating while turning the ignition switch ON.</li></ul>	
Condition at inspection	
Error Symptom: Present / Past	
<p>The engine does not start.</p> <p>While turning the ignition switch ON,</p> <ul style="list-style-type: none"><li>• The headlamps (Lo) turn ON, and the cooling fan continues rotating.</li><li>• The interior lamp does not turn ON.</li></ul>	

JSMIA0019GB

## DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

## HOW TO USE THIS MANUAL

### HOW TO USE THIS SECTION

#### Caution

INFOID:0000000010593524

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

#### Abbreviation List

INFOID:0000000010593525

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

Abbreviation	Unit name
4WD	AWD control unit
A-BAG	Air bag diagnosis sensor unit
ABS	ABS actuator and electric unit (control unit)
ADP	Driver seat control unit
AFS	AFS control unit
APA	Accelerator pedal actuator
AV	AV control unit
BCM	BCM
BCU	Brake booster control unit
BSW	BSW control module
DLC	Data link connector
ECM	ECM
ICC	ICC sensor integrated unit
IPDM-E	IPDM E/R
LANE	Lane camera unit
M&A	Unified meter and A/C amp.
RDR-L	Side radar LH
RDR-R	Side radar RH
STRG	Steering angle sensor
TCM	TCM

LAN

## PRECAUTION

### PRECAUTIONS

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

INFOID:0000000010593526

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

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

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

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

#### Precautions for Trouble Diagnosis

INFOID:0000000010593527

#### **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.

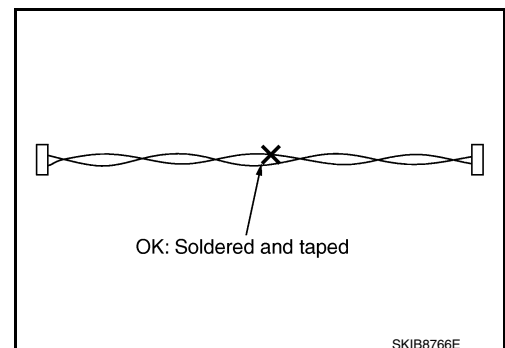
#### Precautions for Harness Repair

INFOID:0000000010593528

- 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

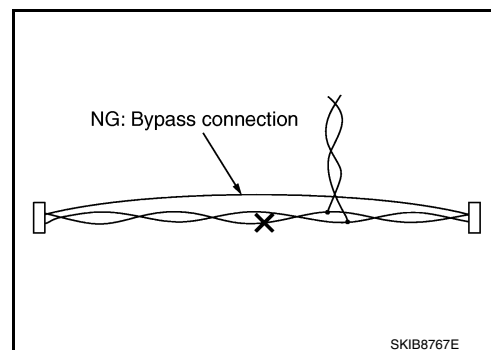
### < PRECAUTION >

[CAN]

- 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.

### Precautions for Removing Battery Terminal

INFOID:000000011038852

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

**NOTE:**

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

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

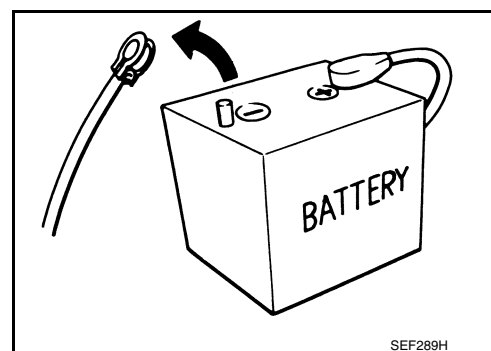
**NOTE:**

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

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

**NOTE:**

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



LAN

**BASIC INSPECTION**

## DIAGNOSIS AND REPAIR WORKFLOW

## Interview Sheet

INFOID:0000000010593529

## CAN Communication System Diagnosis Interview Sheet

Date received:

Type:

VIN No.:

Model:

First registration:

Mileage:

CAN system type:

Symptom (Results from interview with customer)

Condition at inspection

Error symptom : Present / Past

SKIB8898E



&lt; SYSTEM DESCRIPTION &gt;

## SYSTEM DESCRIPTION

## CAN COMMUNICATION SYSTEM

## CAN System Specification Chart

INFOID:0000000010593530

Determine CAN system type from the following specification chart.

**NOTE:**

Refer to [LAN-16. "Trouble Diagnosis Procedure"](#) for how to use CAN system specification chart.

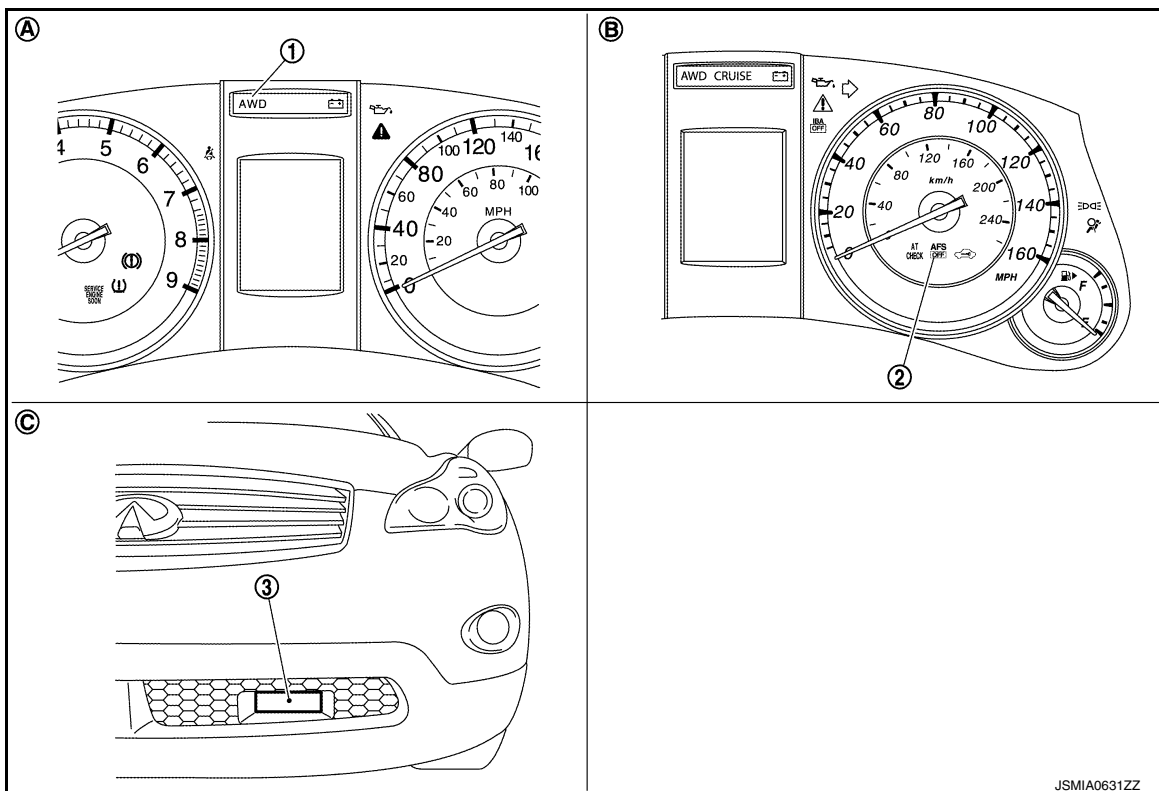
Body type	Wagon					
Axle	2WD			AWD		
Engine	VQ37VHR					
Transmission	A/T					
Brake control	VDC					
Active AFS		×	×		×	×
ICC system			×			×
CAN system type	1	2	3	4	5	6

×: Applicable

## VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

**NOTE:**

Check CAN system type from the vehicle shape and equipment.



- |                     |                           |                               |
|---------------------|---------------------------|-------------------------------|
| 1. AWD warning lamp | 2. AFS OFF indicator lamp | 3. ICC sensor integrated unit |
| A. AWD models       | B. With active AFS        | C. With ICC system            |

## CAN Communication Signal Chart

INFOID:0000000010593531

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

**NOTE:**

# CAN COMMUNICATION SYSTEM

[CAN]

## < SYSTEM DESCRIPTION >

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

T: Transmit R: Receive

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	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						
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 filler cap warning display signal	T							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 <sup>*2</sup>	R	
Malfunctioning indicator lamp signal	T							R						
Power generation command value signal	T													R
Snow mode switch signal	T											R	R	
Stop lamp switch signal	T												R	
						T	R							
					R							T		
Wide open throttle position signal	T						R							
AFS OFF indicator 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 selection signal			T										R	
System setting signal			T			R				R				
			R			T								
			R							T				
Voice recognition signal <sup>*1</sup>			T					R						
Detected lane condition signal				T								R		
Lane camera status signal				T								R		
Lane departure buzzer operation signal				T								R		
Lane departure warning lamp signal				T				R				R		
LDP ON indicator lamp signal				T				R				R		
LDW operation signal				T								R		

# CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	ABS	ICC	IPDM-E
Warning systems switch signal				T								R		
												T	R	
				R							R		T	
AWD signal					T							R		
AWD warning lamp signal					T			R						
Buzzer output signal						T		R						
								R			T			
												R	T	
Door switch signal						T		R		R				R
Dimmer signal						T					R			
Door unlock signal						T				R				
Front fog light request signal						T		R						R
Front wiper request signal						T						R	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
Low tire pressure warning lamp 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											T
Sleep wake up signal						T		R		R				R
Starter control relay signal						T								R
Starter relay status signal						T								R
						R								T
Starting mode signal						T				R				
Theft warning horn request signal						T								R
TPMS malfunction warning lamp signal						T		R						
Turn indicator signal				R		T		R			R	R		
A/T CHECK indicator lamp signal		R					T	R						
A/T self-diagnosis signal	R						T							
Current gear position signal							T					R <sup>*2</sup>	R	

# CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	ABS	ICC	IPDM-E
Input speed signal	R						T					R <sup>*2</sup>	R	
Manual mode indicator signal							T	R						
Manual mode shift refusal signal							T	R						
N range signal						R	T							
Output shaft revolution signal	R						T					R <sup>*2</sup>	R	
P range signal						R	T			R				
R range signal							T			R				
Shift position signal		R					T	R			R	R	R	
A/C evaporator temperature signal	R							T						
A/C switch signal	R							T						
Blower fan motor switch signal	R							T						
Distance to empty signal			R					T						
Fuel filler cap warning reset signal	R							T						
Fuel level low warning signal			R					T						
Fuel level sensor signal	R							T						
Manual mode shift down signal							R	T						
Manual mode shift up signal							R	T						
Manual mode signal							R	T						
Non-manual mode signal							R	T						
Odometer signal						R		T						
Parking brake switch signal					R	R		T				R	R	
Seat belt buckle switch signal						R		T						
Sleep-ready signal						R		T						
						R								T
Target A/C evaporator temperature signal	R							T						
Vehicle speed signal	R	R	R			R	R	T		R				R
	R			R	R	R		R			R	T	R	
Wake up signal						R		T						
Steering angle sensor signal		R	R						T			R	R	
BSW warning lamp signal								R			T			
A/T shift schedule change demand signal							R					T		
ABS malfunction signal												T	R	
ABS operation signal							R					T	R	
ABS warning lamp signal								R				T		
Brake warning lamp signal								R				T		
Front wiper status signal				R								T		
LDP buzzer request signal				R								T		
LDP condition signal				R								T		
LDP malfunction signal				R								T		
LDP meter indication request signal				R								T		
LDP operation signal				R								T		

# CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name/Connecting unit	ECM	AFS	AV	LANE	4WD	BCM	TCM	M&A	STRG	ADP	BSW	ABS	ICC	IPDM-E
Side G sensor signal							R					T		
TCS malfunction signal												T	R	
TCS operation signal												T	R	
VDC malfunction signal												T	R	
VDC OFF indicator lamp signal								R				T		
VDC OFF switch signal												T	R	
VDC operation signal												T	R	
VDC warning lamp signal								R				T		
IBA OFF indicator lamp signal								R					T	
ICC operation signal	R											R	T	
ICC warning lamp signal								R					T	
LDP ON signal												R	T	
Target approach warning signal												R	T	
A/C compressor feedback signal	R							R						T
Detention switch signal						R								T
Front wiper stop position signal						R								T
High beam status signal	R	R												T
Hood switch signal						R								T
Low beam status signal	R	R												T
Push-button ignition switch status signal						R								T

\*1: Models with navigation system

\*2: Models with LDP

## NOTE:

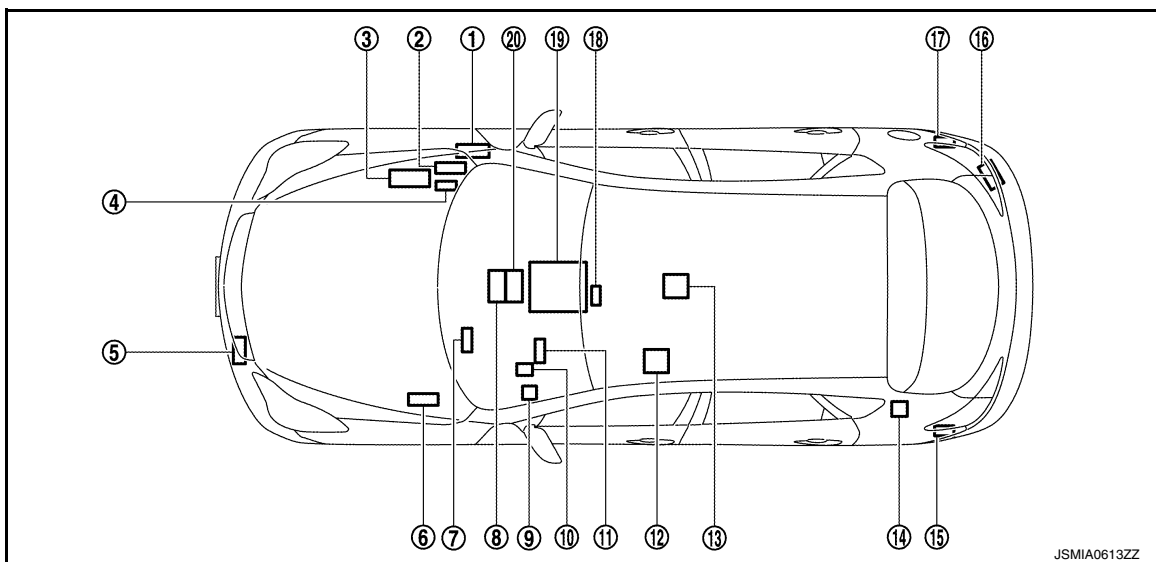
CAN data of the air bag diagnosis sensor unit is not used by usual service work, thus it is omitted.

## DTC/CIRCUIT DIAGNOSIS

### CAN COMMUNICATION SYSTEM

#### Component Parts Location

INFOID:000000010593532



- |  |                                   |  |
|--|-----------------------------------|--|
| 1. BCM M122                            | 2. ECM M107                       | 3. IPDM E/R E6                                       |
| 4. AWD control unit F108               | 5. ICC sensor integrated unit E67 | 6. ABS actuator and electric unit (control unit) E41 |
| 7. Accelerator pedal actuator E113     | 8. Unified meter and A/C amp. M67 | 9. AFS control unit M16                              |
| 10. Data link connector M24            | 11. Steering angle sensor M37     | 12. Driver seat control unit B451                    |
| 13. Air bag diagnosis sensor unit M213 | 14. BSW control module B50        | 15. Side radar LH B105                               |
| 16. Brake booster control unit B250    | 17. Side radar RH B107            | 18. Lane camera unit R10                             |
| 19. A/T assembly F51                   | 20. AV control unit               |  |
|  | M217: Without navigation system   |  |
|  | M151: With navigation system      |  |

# CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

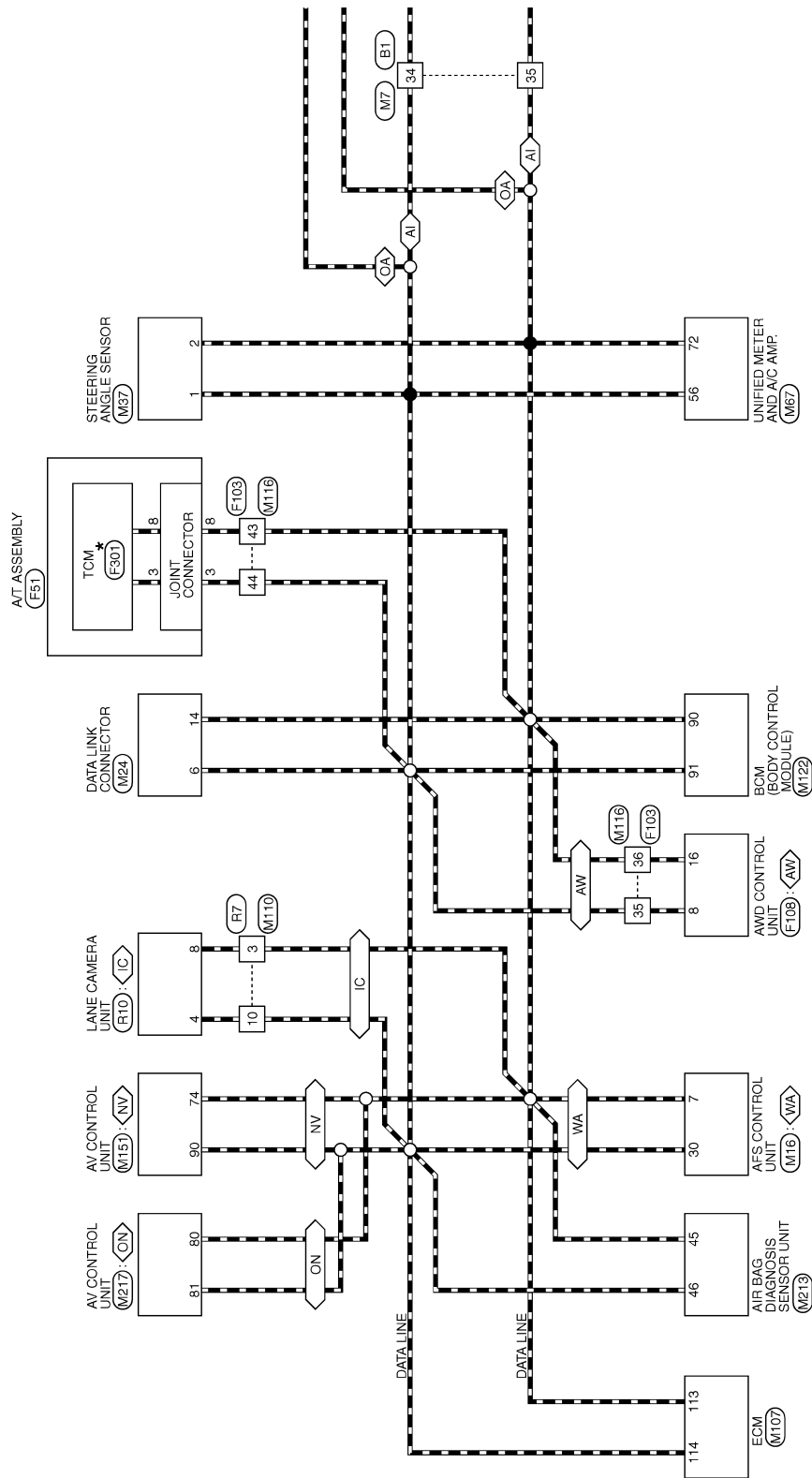
[CAN]

## Wiring Diagram - CAN SYSTEM -

INFOID:000000010593533

### CAN SYSTEM

- <PM> : With automatic drive positioner
- <IC> : With ICC
- <AI> : With automatic drive positioner or ICC
- <OA> : Without automatic drive positioner or ICC
- <AW> : AWD models
- <NV> : With NAVI
- <ON> : Without NAVI
- <WA> : With AFS



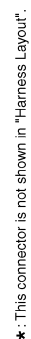
★: This connector is not shown in "Harness Layout".

2014/03/21

JRMWF4615GB

**[CAN]**

**[CAN]**





# CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN SYSTEM

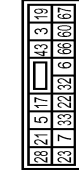
Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH18FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	G	-
3	SB	-
4	V	-
5	L	-
6	SB	-
7	V	-
8	L	-
9	SB	-
10	V	-
11	L	-
12	SB	-
13	LG	-
14	GR	-
15	LG	-
16	R	-
17	W	-
18	SB	-
19	LG	-
20	GR	-
21	SHIELD	-
22	GR	-
23	P	-
24	B	-
25	R	-
26	W	-
27	SHIELD	-
28	W	-
29	L	-
30	SB	-
31	P	-
32	W	-
33	SB	-
34	L	-
35	P	-
36	L	-
37	P	-
38	Y	-
39	SB	-
40	Y	-
41	GR	-
42	LG	-

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

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS18FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	SB	-
3	P	-
4	Y	-
5	V	-
6	L	-
7	P	-
8	Y	-
9	V	-
10	L	-
11	SB	-
12	P	-
13	Y	-
14	V	-
15	L	-
16	SB	-
17	P	-
18	Y	-
19	V	-
20	L	-
21	SB	-
22	P	-
23	Y	-
24	V	-
25	L	-
26	SB	-
27	P	-
28	Y	-
29	V	-
30	L	-
31	SB	-
32	P	-
33	Y	-
34	V	-
35	L	-
36	SB	-
37	P	-
38	Y	-
39	V	-
40	L	-
41	SB	-
42	P	-
43	Y	-
44	V	-
45	L	-
46	SB	-
47	P	-
48	Y	-
49	V	-
50	L	-
51	SB	-
52	P	-
53	Y	-
54	V	-
55	L	-
56	SB	-
57	P	-
58	Y	-
59	V	-
60	L	-
61	SB	-
62	P	-
63	Y	-
64	V	-
65	L	-
66	SB	-
67	P	-
68	Y	-
69	V	-
70	L	-
71	SB	-
72	P	-
73	Y	-
74	V	-
75	L	-
76	SB	-
77	P	-
78	Y	-
79	V	-
80	L	-
81	SB	-
82	P	-
83	Y	-
84	V	-
85	L	-
86	SB	-
87	P	-
88	Y	-
89	V	-
90	L	-
91	SB	-
92	P	-
93	Y	-
94	V	-
95	L	-
96	SB	-
97	P	-
98	Y	-
99	V	-
100	L	-
101	SB	-
102	P	-
103	Y	-
104	V	-
105	L	-
106	SB	-
107	P	-
108	Y	-
109	V	-
110	L	-
111	SB	-
112	P	-
113	Y	-
114	V	-
115	L	-
116	SB	-
117	P	-
118	Y	-
119	V	-
120	L	-
121	SB	-
122	P	-
123	Y	-
124	V	-
125	L	-
126	SB	-
127	P	-
128	Y	-
129	V	-
130	L	-
131	SB	-
132	P	-
133	Y	-
134	V	-
135	L	-
136	SB	-
137	P	-
138	Y	-
139	V	-
140	L	-
141	SB	-
142	P	-
143	Y	-
144	V	-
145	L	-
146	SB	-
147	P	-
148	Y	-
149	V	-
150	L	-
151	SB	-
152	P	-
153	Y	-
154	V	-
155	L	-
156	SB	-
157	P	-
158	Y	-
159	V	-
160	L	-
161	SB	-
162	P	-
163	Y	-
164	V	-
165	L	-
166	SB	-
167	P	-
168	Y	-
169	V	-
170	L	-
171	SB	-
172	P	-
173	Y	-
174	V	-
175	L	-
176	SB	-
177	P	-
178	Y	-
179	V	-
180	L	-
181	SB	-
182	P	-
183	Y	-
184	V	-
185	L	-
186	SB	-
187	P	-
188	Y	-
189	V	-
190	L	-
191	SB	-
192	P	-
193	Y	-
194	V	-
195	L	-
196	SB	-
197	P	-
198	Y	-
199	V	-
200	L	-
201	SB	-
202	P	-
203	Y	-
204	V	-
205	L	-
206	SB	-
207	P	-
208	Y	-
209	V	-
210	L	-
211	SB	-
212	P	-
213	Y	-
214	V	-
215	L	-
216	SB	-
217	P	-
218	Y	-
219	V	-
220	L	-
221	SB	-
222	P	-
223	Y	-
224	V	-
225	L	-
226	SB	-
227	P	-
228	Y	-
229	V	-
230	L	-
231	SB	-
232	P	-
233	Y	-
234	V	-
235	L	-
236	SB	-
237	P	-
238	Y	-
239	V	-
240	L	-
241	SB	-
242	P	-
243	Y	-
244	V	-
245	L	-
246	SB	-
247	P	-
248	Y	-
249	V	-
250	L	-
251	SB	-
252	P	-
253	Y	-
254	V	-
255	L	-
256	SB	-
257	P	-
258	Y	-
259	V	-
260	L	-
261	SB	-
262	P	-
263	Y	-
264	V	-
265	L	-
266	SB	-
267	P	-
268	Y	-
269	V	-
270	L	-
271	SB	-
272	P	-
273	Y	-
274	V	-
275	L	-
276	SB	-
277	P	-
278	Y	-
279	V	-
280	L	-
281	SB	-
282	P	-
283	Y	-
284	V	-
285	L	-
286	SB	-
287	P	-
288	Y	-
289	V	-
290	L	-
291	SB	-
292	P	-
293	Y	-
294	V	-
295	L	-
296	SB	-
297	P	-
298	Y	-
299	V	-
300	L	-
301	SB	-
302	P	-
303	Y	-
304	V	-
305	L	-
306	SB	-
307	P	-
308	Y	-
309	V	-
310	L	-
311	SB	-
312	P	-
313	Y	-
314	V	-
315	L	-
316	SB	-
317	P	-
318	Y	-
319	V	-
320	L	-
321	SB	-
322	P	-
323	Y	-
324	V	-
325	L	-
326	SB	-
327	P	-
328	Y	-
329	V	-
330	L	-
331	SB	-
332	P	-
333	Y	-
334	V	-
335	L	-
336	SB	-
337	P	-
338	Y	-
339	V	-
340	L	-
341	SB	-
342	P	-
343	Y	-
344	V	-
345	L	-
346	SB	-
347	P	-
348	Y	-
349	V	-
350	L	-
351	SB	-
352	P	-
353	Y	-
354	V	-
355	L	-
356	SB	-
357	P	-
358	Y	-
359	V	-
360	L	-
361	SB	-
362	P	-
363	Y	-
364	V	-
365	L	-
366	SB	-
367	P	-
368	Y	-
369	V	-
370	L	-
371	SB	-
372	P	-
373	Y	-
374	V	-
375	L	-
376	SB	-
377	P	-
378	Y	-
379	V	-
380	L	-
381	SB	-
382	P	-
383	Y	-
384	V	-
385	L	-
386	SB	-
387	P	-
388	Y	-
389	V	-
390	L	-
391	SB	-
392	P	-
393	Y	-
394	V	-
395	L	-
396	SB	-
397	P	-
398	Y	-
399	V	-
400	L	-
401	SB	-
402	P	-
403	Y	-
404	V	-
405	L	-
406	SB	-
407	P	-
408	Y	-
409	V	-
410	L	-

**[CAN]**

## < DTC/CIRCUIT DIAGNOSIS >

Terminal No.	Color Of Wire	Signal Name (Specification)
1	W	-
2	B	-
3	GR	-
4	B/G	-
7	LG	-
10	W	-
15	S/B	-
16	V	-
17	BR	-
26	BR	-
27	L	-
28	Y	-
29	Y	-
30	GR	-
31	R	-
32	BR	-
33	G	-
34	R	-
36	R	-
37	W	-
38	B	-
39	SHIELD	-
40	LG	-
61	W	-
62	BR	-
63	P	-
64	L	-
65	G	-
66	P	-
67	L	-
68	SHIELD	-
69	V	-
70	Y	-
71	S/B	-

# CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN SYSTEM

73	BR	-
79	V	-
81	SB	-
82	LG	-
83	P	-
84	R	-
85	L	-
86	EG	-
87	L	-
88	P	-
91	V	-
92	R	-
94	R	-
95	SB	-
96	G	-
97	G	-
98	R	-
99	P	-
100	L	-

Connector No.	B250
Connector Name	BRAKE BOOSTER CONTROL UNIT
Connector Type	TK2FW



1	2	5	6	8
10	12	14	15	17
19	20	21	22	24

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BATTERY
2	W	BATTERY
5	P	ITS COMM-L
6	SB	RELEASE SW PWR
8	R	BRAKE PRESSURE SEN PWR
10	G	BOOSTER SOL PWR
12	R	BOOSTER SOL GND
14	W	ITS COMM-R
15	LG	RELEASE SW (NO)
17	L	BRAKE PRESSURE SEN SIGNAL
19	B	GROUND
20	B	CHIME SIGNAL
21	Y	CHIME SIGNAL
22	P	RELEASE SW (NC)

24	BG	BRAKE PRESSURE SEN GND
----	----	------------------------



1	2	5	6	8	10	12	14	15	17
19	20	21	22	24	25	26	27	28	29

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	CAN-H
2	-	CAN-L
4	-	UART (TX/RX)
5	-	PULSE (RECLINER)
6	-	PULSE (TELESCOPIE)
7	-	ADDRESS 2
8	-	IND 2
9	-	SLIDE SW (BACKWARD)
10	-	RECLINER SW (BACKWARD)
11	-	FRONT LIFTER SW (DOWNWARD)
12	-	REAR LIFTER SW (DOWNWARD)
13	-	POWER SUPPLY (ENCODER)
14	-	CAN-LS
15	-	PULSE (REAR LIFTER)
16	-	PULSE (REAR LIFTER)
17	-	PULSE (REAR LIFTER)
18	-	PULSE (REAR LIFTER)
19	-	ADDRESS 1
20	-	IND 1
21	-	SLIDE SW (FORWARD)
22	-	RECLINER SW (FORWARD)
23	-	FRONT LIFTER SW (UPWARD)
24	-	REAR LIFTER SW (UPWARD)
25	-	SET SW
26	-	SET SW
27	-	SET SW
28	-	SET SW

Connector No.	B400
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



19	3	43		17	5	21	28
67	60	66	6	32	22	33	7
							23

# CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN SYSTEM

Connector No.	E87
Connector Name	ICC SENSOR INTEGRATED UNIT
Connector Type	ISO9602-PPR



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

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80PW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
3	B	-
4	GR	-
5	GR	-
6	Y	-
7	Y	-
8	EG	-
9	EG	-
10	EG	-
11	SB	-
12	EG	-
13	L	-
14	R	-
15	P	-
16	V	-

37	P	- [Without ICG]
37	R	- [With ICG]
38	BR	- [Without ICG]
38	L	- [With ICG]
79	L	- [Without ICG]
79	Y	- [With ICG]
80	SB	-
81	R	-
82	SB	-
83	EG	-
84	G	-
85	L	-
86	P	-
87	Y	-
88	Y	-
89	Y	-
90	SHIELD	-
91	W	-
92	Y	-
93	V	-
94	LG	-
95	EG	-
96	P	-
97	R	-
98	SHIELD	-
99	L	-
100	P	-

Connector No.	E113
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	KOZ06FB



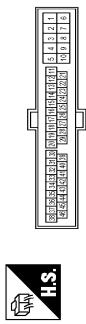
Terminal No.	Color Of Wire	Signal Name [Specification]
1	EG	IGNITION
2	EG	BATTERY
3	P	ITS COMM-L
4	B/W	GROUND
5	L	ITS COMM-H

Connector No.	F51
Connector Name	A-T ASSEMBLY
Connector Type	RK0FC-DGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	IGNITION POWER SUPPLY
2	BR	BATTERY POWER SUPPLY
3	O	CAN-H
4	V	K-LINE
5	B	GROUND
6	Y	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	LG	CAN-L
9	GR	STARTER RELAY
10	B	GROUND

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK0BW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	W	-
4	W	-
5	R	-
6	Y	-
7	Y	-
8	GR	-
9	EG	-
10	O	- [With ICG]
19	O	- [With ICG]
20	Y	-
28	B	-

# CAN COMMUNICATION SYSTEM

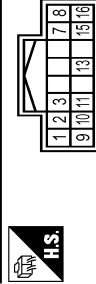
< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN SYSTEM

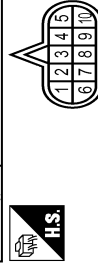
Terminal No.	Color Of Wire	Signal Name [Specification]
29	G	-
32	GR	-
34	B	-
35	L	-
36	P	-
37	Y	-
38	G	-
43	LG	-
44	O	-
45	Y	-
46	V	-

Connector No.	Signal Name [Specification]
F108	AWD CONTROL UNIT
TH18FW-NH	



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	AWD SOL (+)
2	W	AWD SOL (-)
3	W	FLUID TEMP (+)
7	G	CAN-H
8	L	CAN-L
9	O	AWD SOL BATT
10	B	GROUND
11	GR	GROUND
13	LG	FLUID TEMP (+)
15	Y	BATTERY
16	P	CAN-L

Connector No.	Signal Name [Specification]
F501	TOM
SP10FG	



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY
3	-	CAN-L
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CAN-L
9	-	STARTER RELAY
10	-	GROUND

Connector No.	Signal Name [Specification]
MB	WIRE TO WIRE
TH18MM-CS18-TM4	



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-
3	SHIELD	-
5	G	-
8	Y	-
9	BR	-
10	R	-
11	BR	-
12	BG	-

Terminal No.	Color Of Wire	Signal Name [Specification]
13	L	-
15	P	-
16	V	-
17	SB	-
18	V	-
20	BG	-
21	L	-
22	W	-
23	P	-
24	BR	-
25	Y	-
26	V	-
27	G	-
28	G	-
32	G	-
33	B	-
34	W	-
35	R	-
36	SHIELD	-
37	V	-
38	BG	-
39	BR	-
41	W	-
42	BG	-
43	BG	-
45	W	-
49	B	-
51	BR	-
54	Y	-
57	G	-
59	W	-
60	L	-
61	G	-
62	SB	-
63	G	-
64	B	-
65	W	-
66	R	-
67	SHIELD	-
68	Y	-
69	LG	-
71	LG	-
72	Y	-
73	SB	-
74	BR	-
74	L	-



Connector No.	Signal Name [Specification]
M7	WIRE TO WIRE
TH18MM-CS18-TM4	

Terminal No.	Color Of Wire	Signal Name [Specification]
3	SB	-
3	W	-
5	G	-
6	BG	-
7	W	-

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

LAN

# CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN SYSTEM

8	B	-
9	B	-
10	SB	-
11	Y	-
12	SB	-
13	LG	-
14	Y	-
15	G	-
16	R	-
17	W	-
18	SB	-
19	LG	-
20	BR	-
21	SHIELD	-
22	Y	-
23	Y	-
24	B	-
25	G	-
26	W	-
27	Y	-
28	R	-
29	R	-
30	SHIELD	-
31	P	-
32	P	-
33	SB	-
34	L	-
35	P	-
36	L	-
37	P	-
38	P	-
39	Y	-
40	SB	-
41	SB	-
42	GP	-
43	GP	-
44	LG	-
45	GP	-
46	LG	-
47	SB	-
48	GP	-
49	R	-
50	L	-
60	P	-
61	L	-
62	SHIELD	-
63	R	-
64	G	-
65	SHIELD	-
66	SB	-
67	Y	-
68	LG	-
69	SHIELD	-
70	W	-
73	G	-
74	R	-
75	W	-
76	W	-

37	B	-
38	P	-
39	GR	-
40	BG	-
41	LG	-
42	R	-
43	Y	-
44	W	-
45	Y	-
46	W	-
47	R	-
48	W	-
49	BR	-
50	BG	-
51	G	-
52	V	-
53	BR	-
54	V	-
55	G	-
56	Y	-
57	W	-
58	R	-

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

1	2		4	5	6	7	8	9		11	13	15	17	19
			24	25	27	28	29	30		32	34	36	38	40



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

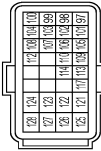
# CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN SYSTEM

Connector No.	M107
Connector Name	ECM
Connector Type	HR24CV-12Z-R-LH-Z



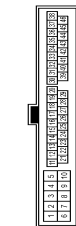
Terminal No.	Color Of Wire	Signal Name [Specification]
87	R	ACCELERATOR PEDAL POSITION SENSOR 1
88	P	ACCELERATOR PEDAL POSITION SENSOR 2 (W/ ICC)
89	Y	ACCELERATOR PEDAL POSITION SENSOR 2 (W/ ICC)
89	G	SENSOR POWER SUPPLY (W/ ICC)
89	L	SENSOR POWER SUPPLY (Without ICC)
100	W	SENSOR GROUND
101	SB	ASGD/ICC STEERING SWITCH
102	LG	EVAP CONTROL SYSTEM PRESS SENSOR
103	G	SENSOR POWER SUPPLY (Without ICC)
103	L	SENSOR GROUND (W/ ICC)
104	BR	SENSOR GROUND (W/ ICC)
105	L	REFRIGERANT PRESS SENSOR
106	W	FUEL TANK TEMPERATURE SENSOR
107	RG	SENSOR POWER SUPPLY
108	G	SENSOR GROUND
109	G	EMP SIGNAL
110	R	ENGINE SPEED OUTPUT SIGNAL
112	V	SENSOR GROUND
113	P	CAN COMMUNICATION LINE
114	L	CAN COMMUNICATION LINE
117	V	DATA LINK CONNECTOR
121	LG	EVAP CANISTER VENT CONTROL VALVE
122	P	STOP LAMP SWITCH
123	B	ECM GROUND
124	B	ECM GROUND
125	R	POWER SUPPLY FOR ECM
126	BR	ASGD/ICC BRAKE SWITCH
127	B	ECM GROUND
128	B	ECM GROUND

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH16MM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	P	-
3	P	-
8	V	-
10	L	-
11	SB	-

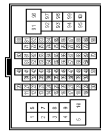
Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TF-38MM-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	P	-
3	L	-
4	R	-
5	B	-
9	R	-
10	R	-
18	RG	-
28	R	-
28	LG	-
31	B	-
33	B	-
34	B	-
35	L	-

38	P	-
39	P	-
43	P	-
44	L	-
45	BR	-
46	RG	-

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH8MM-CS16-TM1



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	G	-
3	GR	-
4	SB	-
7	W	-
10	SB	-
18	V	-
17	BR	-
26	BR	-
27	LG	-
28	Y	-
29	Y	-
30	V	-
31	R	-
32	BR	-
33	G	-
34	R	-
35	W	-
36	B	-
38	C	-
59	SHIELD	-
60	V	-
61	LG	-
62	BR	-
63	L	-

44	LG	-
62	B	-
63	W	-
67	W	-
68	SHIELD	-
69	V	-
70	Y	-
71	SB	-
72	W	-
73	G	-
75	W	-
80	V	-
81	SB	-
82	V	-
83	P	-
85	R	-
86	EG	-
87	L	-
88	P	-
91	V	-
92	G	-
94	G	-
95	W	-
96	G	-
97	Y	-
98	BR	-
99	P	-
99	V	-
100	L	-
100	SB	-

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FE-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
74	SB	PASSENGER DOOR ANT-
75	GR	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT-

# CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN SYSTEM

77	LG	DRIVER DOOR ANT+
78	V	ROOM ANT+
79	BR	ROOM ANT+
80	GR	NATS ANT AMP
81	W	NATS ANT AMP
82	R	IGN RELAY (F/B) CONT
83	Y	KEYLESS ENTRY RECEIVER COM1
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
92	LG	KEY SLOT ILL CONT
93	V	ON IND
94	Y	FLOOD LAMP CONT
95	GR	LOCK ACTUATOR
96	GR	A/T SHIFT SELECTOR POWER SUPPLY
99	R	SHIFT P
100	G	PASSENGER DOOR REQUEST SW
101	SB	DRIVER DOOR REQUEST SW
102	BG	BLOWER FAN MOTOR RELAY CONT
103	LG	KEYLESS ENTRY RECEIVER POWER SUPPLY
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2
110	G	HAZARD SW

Connector No.	M151
Connector Name	AV CONTROL UNIT
Connector Type	TH132FW-NH



																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----



# MALFUNCTION AREA CHART

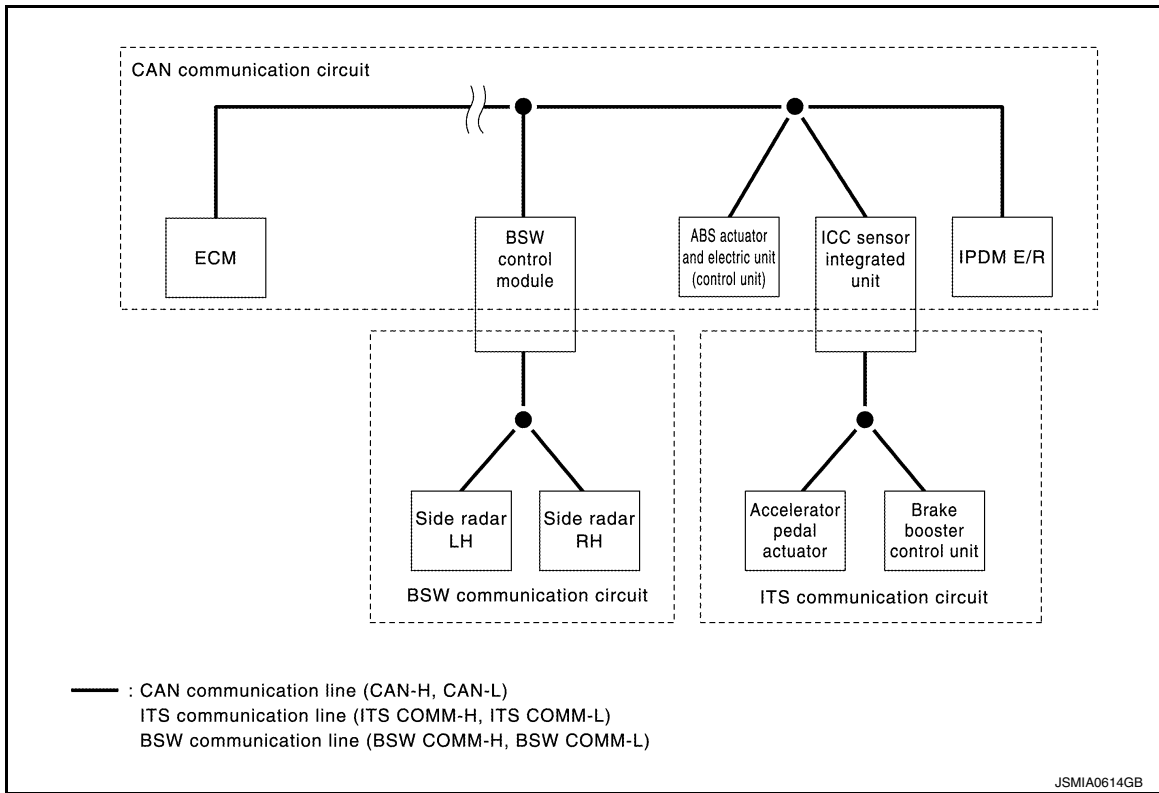
< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MALFUNCTION AREA CHART

### System Diagram

INFOID:000000010593534



### CAN Communication Circuit

INFOID:000000010593535

### MAIN LINE

Malfunction area	Reference
Main line between AV control unit and data link connector	<a href="#">LAN-43. "Diagnosis Procedure"</a>
Main line between data link connector and unified meter and A/C amp.	<a href="#">LAN-44. "Diagnosis Procedure"</a>
Main line between unified meter and A/C amp. and ABS actuator and electric unit (control unit)	<a href="#">LAN-45. "Diagnosis Procedure"</a>
Main line between unified meter and A/C amp. and driver seat control unit	<a href="#">LAN-46. "Diagnosis Procedure"</a>
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	<a href="#">LAN-47. "Diagnosis Procedure"</a>
Main line between driver seat control unit and BSW control module	<a href="#">LAN-49. "Diagnosis Procedure"</a>
Main line between BSW control module and ABS actuator and electric unit (control unit)	<a href="#">LAN-50. "Diagnosis Procedure"</a>

### BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	<a href="#">LAN-52. "Diagnosis Procedure"</a>
Air bag diagnosis sensor unit branch line circuit	<a href="#">LAN-53. "Diagnosis Procedure"</a>
AFS control unit branch line circuit	<a href="#">LAN-54. "Diagnosis Procedure"</a>

# MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
AV control unit branch line circuit	<a href="#">LAN-55. "Diagnosis Procedure"</a>
Lane camera unit branch line circuit	<a href="#">LAN-56. "Diagnosis Procedure"</a>
AWD control unit branch line circuit	<a href="#">LAN-57. "Diagnosis Procedure"</a>
BCM branch line circuit	<a href="#">LAN-58. "Diagnosis Procedure"</a>
Data link connector branch line circuit	<a href="#">LAN-59. "Diagnosis Procedure"</a>
TCM branch line circuit	<a href="#">LAN-60. "Diagnosis Procedure"</a>
Unified meter and A/C amp. branch line circuit	<a href="#">LAN-61. "Diagnosis Procedure"</a>
Steering angle sensor branch line circuit	<a href="#">LAN-62. "Diagnosis Procedure"</a>
Driver seat control unit branch line circuit	<a href="#">LAN-63. "Diagnosis Procedure"</a>
BSW control module branch line circuit	<a href="#">LAN-64. "Diagnosis Procedure"</a>
ABS actuator and electric unit (control unit) branch line circuit	<a href="#">LAN-65. "Diagnosis Procedure"</a>
ICC sensor integrated unit branch line circuit	<a href="#">LAN-66. "Diagnosis Procedure"</a>
IPDM E/R branch line circuit	<a href="#">LAN-67. "Diagnosis Procedure"</a>

## SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit	<a href="#">LAN-72. "Diagnosis Procedure"</a>

## ITS Communication Circuit

INFOID:0000000010593536

## BRANCH LINE

Malfunction area	Reference
Accelerator pedal actuator branch line circuit	<a href="#">LAN-68. "Diagnosis Procedure"</a>
Brake booster control unit branch line circuit	<a href="#">LAN-69. "Diagnosis Procedure"</a>

## SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	<a href="#">LAN-74. "Diagnosis Procedure"</a>

## BSW Communication Circuit

INFOID:0000000010593537

## BRANCH LINE

Malfunction area	Reference
Side radar LH branch line circuit	<a href="#">LAN-70. "Diagnosis Procedure"</a>
Side radar RH branch line circuit	<a href="#">LAN-71. "Diagnosis Procedure"</a>

## SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
BSW communication circuit	<a href="#">LAN-76. "Diagnosis Procedure"</a>

# MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN AV AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593538

#### 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.
  - Models with navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M151	90	M24	6	Existed
	74		14	Existed

- Models without navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M217	81	M24	6	Existed
	80		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.

LAN

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### Diagnosis Procedure

INFOID:0000000010593539

#### 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

#### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter and A/C amp.

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

# MAIN LINE BETWEEN M&A AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN M&A AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593540

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M6 and E106
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M6	85	Existed
	72		86	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector 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	85	E41	35	Existed
	86		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 unified meter and A/C amp. 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 M&A AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN M&A AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000010593541

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M7 and B1
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M7	34	Existed
	72		35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M7.

#### 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	34	B11	3	Existed
	35		19	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors B1 and B11.

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000010593542

#### 1.CHECK CONNECTOR

1. Turn the ignition 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		36	34	Existed
		37	35	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	36	M6	85	Existed
	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
	86		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).



# MAIN LINE BETWEEN ADP AND BSW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN ADP AND BSW CIRCUIT

### Diagnosis Procedure

INFOID:000000010593543

#### 1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
  - ECM
  - Harness connectors B460 and B11
  - BSW control module
4. Check the continuity between the harness connector and the BSW control module harness connector.

Harness connector		BSW control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B11	3	B50	14	Existed
	19		15	Existed

#### Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B11 and the BSW control module.

LAN

# MAIN LINE BETWEEN BSW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593544

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - BSW control module
  - Harness connectors B1 and M7
2. Check the continuity between the BSW control module harness connector and the harness connector.

BSW control module harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	14	B1	36	Existed
	15		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the BSW control module 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	36	M6	85	Existed
	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
	86		14	Existed

Is the inspection result normal?

## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

YES (Past error)>>Error was detected in the main line between the BSW control module 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).

A

B

C

D

E

F

G

H

I

J

K

L

LAN

N

O

P

## ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000010593545

**1.CHECK 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-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-17, "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]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593546

#### **WARNING:**

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

#### **1**.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

Is the inspection result normal?

YES >> Replace the main harness.

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

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

LAN

## AFS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000010593547

**1.CHECK 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-65, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-219, "Exploded View"](#).

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

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

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010593548

#### 1.CHECK 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 navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M151	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M217	81	80	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-93, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-268, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-477, "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-128, "Exploded View"](#)
  - BOSE audio without navigation: [AV-316, "Exploded View"](#)
  - BOSE audio with navigation: [AV-520, "Exploded View"](#)

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

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

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593549

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Lane camera unit
  - Harness connector R7
  - Harness connector M110

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of lane camera unit.
2. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R10	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-298, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-334, "Exploded View"](#).

YES (Past error)>>Error was detected in the lane camera unit 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:000000010593550

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
  - 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-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).

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

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

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593551

#### 1.CHECK 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-46, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-97, "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]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593552

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

LAN

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593553

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-185, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-125, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-185, "Removal and Installation"](#).

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

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

# M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593554

#### 1.CHECK 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-55, "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-137, "Exploded View"](#).  
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593555

#### 1.CHECK 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-134, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-159, "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]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593556

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Driver seat control unit
  - Harness connector B460
  - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-56, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-219, "Exploded View"](#).

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

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

LAN

## BSW BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000010593557

**1.CHECK CONNECTOR**

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect the connector of BSW control module.
2. Check the resistance between the BSW control module harness connector terminals.

BSW control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B50	14	15	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the BSW control module branch line (CAN communication circuit side). Refer to [LAN-41, "System Diagram"](#).

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

Check the power supply and the ground circuit of the BSW control module. Refer to [DAS-409, "BSW CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the BSW control module. Refer to [DAS-418, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the BSW control module 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:0000000010593558

#### 1.CHECK 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-48, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-156, "Exploded View"](#).  
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

## ICC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000010593559

**1.CHECK 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 (CAN communication circuit side). Refer to [LAN-41, "System Diagram"](#).

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

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

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-174, "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:0000000010593560

#### 1.CHECK 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-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Exploded View"](#).  
YES (Past error)>>Error was detected in the IPDM E/R branch line.  
NO >> Repair the power supply and the ground circuit.

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593561

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

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

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E113	5	3	Approx. 54 – 66

Is the measurement value within the specification?

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

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-141, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal actuator. Refer to [DAS-197, "Exploded View"](#).  
 YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
 NO >> Repair the power supply and the ground circuit.

## BCU BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000010593562

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-175. "Exploded View"](#).

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

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

LAN

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010593563

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Side radar LH
  - Harness connector B104
  - Harness connector B102
  - Harness connector B101
  - Harness connector B69

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of side radar LH.
2. Check the resistance between the side radar LH harness connector terminals.

Side radar LH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B105	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to [DAS-409. "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to [DAS-419. "Removal and Installation"](#).

YES (Past error)>>Error was detected in the side radar LH branch line.

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

# RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010593564

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Side radar RH
  - Harness connector B106
  - Harness connector B103
  - Harness connector B101
  - Harness connector B69

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of side radar RH.
2. Check the resistance between the side radar RH harness connector terminals.

Side radar RH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B107	4	3	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar RH branch line.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to [DAS-410. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to [DAS-419. "Removal and Installation"](#).

YES (Past error)>>Error was detected in the side radar RH branch line.

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

LAN

## CAN COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:000000010593565

## 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 &gt;&gt; GO TO 2.

NO &gt;&gt; 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 &gt;&gt; GO TO 3.

NO &gt;&gt; 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 &gt;&gt; GO TO 4.

NO &gt;&gt; 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

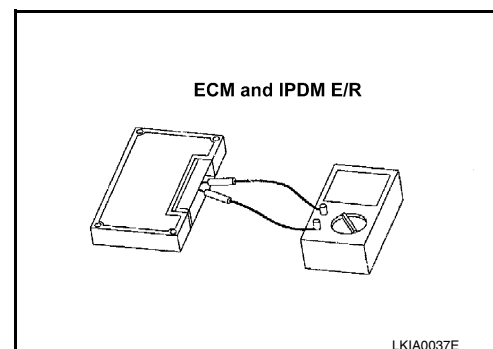
Is the measurement value within the specification?

YES &gt;&gt; GO TO 5.

NO &gt;&gt; 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]

## 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.

A

B

C

D

E

F

G

H

I

J

K

L

LAN

N

O

P

## ITS COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:000000010593566

## 1.CHECK CAN DIAGNOSIS

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

**NOTE:**

For identification of CAN communication circuit, ITS communication circuit and BSW communication circuit, refer to [LAN-41, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

## 2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

## 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line (ITS communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 5.

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

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 6.

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

## 6.CHECK TERMINATION CIRCUIT

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

1 : ICC sensor integrated unit and brake booster control unit

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

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

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

Is the inspection result normal?

YES >> GO TO 7.

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

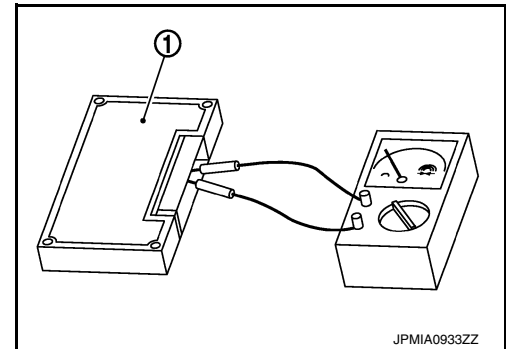
## 7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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



## BSW COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:0000000010593567

## 1.CHECK CAN DIAGNOSIS

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

**NOTE:**

For identification of CAN communication circuit, ITS communication circuit, and BSW communication circuit, refer to [LAN-41, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

## 2.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - BSW control module
  - Side radar LH
  - Side radar RH
  - Harness connector B69
  - Harness connector B101
  - Harness connector B103
  - Harness connector B106

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

## 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
  - BSW control module
  - Side radar RH
2. Check the continuity between the BSW control module harness connector and the side radar RH harness connector.

BSW control module harness connector		Side radar RH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	7	B107	4	Existed
	8		3	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the BSW control module branch line (BSW communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of side radar LH.
2. Check the continuity between the BSW control module harness connector terminals.

BSW control module harness connector			Continuity
Connector No.	Terminal No.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

# BSW COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the BSW control module harness connector and the ground.

BSW control module harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

## 6.CHECK TERMINATION CIRCUIT

1. Remove the BSW control module and the side radar RH.
2. Check the resistance between the BSW control module terminals.

1 : BSW control module and side radar RH

BSW control module		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the side radar RH terminals.

Side radar RH		Resistance (Ω)
Terminal No.		
4	3	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the BSW control module and/or the side radar RH.

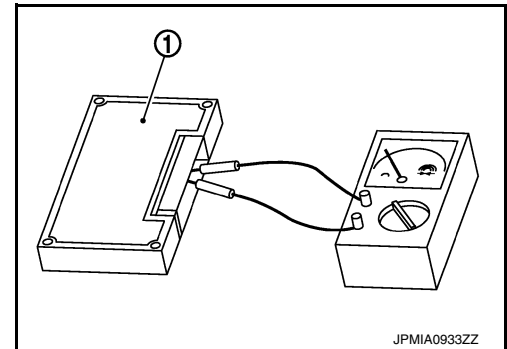
## 7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the side radar LH.

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



## 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:0000000011038860

#### 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.
  - Models with navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M151	90	M24	6	Existed
	74		14	Existed

- Models without navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M217	81	M24	6	Existed
	80		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 M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038861

#### 1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

#### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter and A/C amp.

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

LAN

# MAIN LINE BETWEEN M&A AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN M&A AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000011038862

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M6 and E106
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M6	85	Existed
	72		86	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector 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	85	E41	35	Existed
	86		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 unified meter and A/C amp. and the ABS actuator and electric unit (control unit).

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



# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038863

#### 1.CHECK 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-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-17, "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.

LAN

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038864

#### **WARNING:**

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

#### **1**.CHECK CONNECTOR

---

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

---

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

Is the inspection result normal?

YES >> Replace the main harness.

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

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038865

#### 1.CHECK 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 navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M151	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M217	81	80	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-93, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-268, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-477, "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-128, "Exploded View"](#)
  - BOSE audio without navigation: [AV-316, "Exploded View"](#)
  - BOSE audio with navigation: [AV-520, "Exploded View"](#)

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

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

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

LAN

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038866

#### 1.CHECK 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-46. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-97. "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 1)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038867

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

LAN

## TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038868

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the 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 &gt;&gt; GO TO 2.

NO &gt;&gt; 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 &gt;&gt; GO TO 3.

NO &gt;&gt; Repair the TCM branch line.

**3.CHECK HARNESS FOR OPEN CIRCUIT**

1. Remove the joint connector. Refer to [TM-185, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES &gt;&gt; GO TO 4.

NO &gt;&gt; Replace the joint connector.

**4.CHECK POWER SUPPLY AND GROUND CIRCUIT**Check the power supply and the ground circuit of the TCM. Refer to [TM-125, "Diagnosis Procedure"](#).Is the inspection result normal?YES (Present error)>>Replace the control valve & TCM. Refer to [TM-185, "Removal and Installation"](#).

YES (Past error)&gt;&gt;Error was detected in the TCM branch line.

NO &gt;&gt; Repair the power supply and the ground circuit.

# M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038869

#### 1.CHECK 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-55, "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-137, "Exploded View"](#).  
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038870

#### 1.CHECK 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-134, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-159, "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:0000000011038871

#### 1.CHECK 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-48, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-156, "Exploded View"](#).  
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038872

#### 1.CHECK 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-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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

## Diagnosis Procedure

INFOID:0000000011038873

## 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 &gt;&gt; GO TO 2.

NO &gt;&gt; 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 &gt;&gt; GO TO 3.

NO &gt;&gt; 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 &gt;&gt; GO TO 4.

NO &gt;&gt; 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

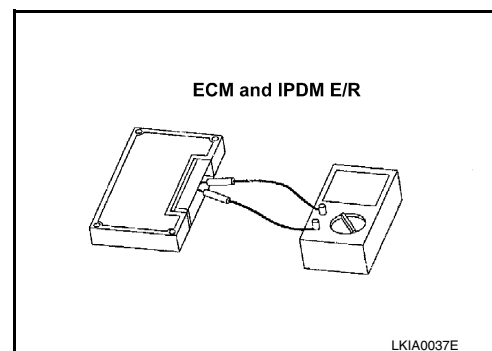
Is the measurement value within the specification?

YES &gt;&gt; GO TO 5.

NO &gt;&gt; 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:0000000011038874

#### 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.
  - Models with navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M151	90	M24	6	Existed
	74		14	Existed

- Models without navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M217	81	M24	6	Existed
	80		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.

LAN

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038875

#### 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

#### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter and A/C amp.

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

# MAIN LINE BETWEEN M&A AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN M&A AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038876

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M7 and B1
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M7	34	Existed
	72		35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M7.

#### 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	34	B11	3	Existed
	35		19	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors B1 and B11.

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000011038877

#### 1.CHECK CONNECTOR

1. Turn the ignition 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		36	34	Existed
		37	35	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	36	M6	85	Existed
	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
	86		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 2)]

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

A

B

C

D

E

F

G

H

I

J

K

L

LAN

N

O

P

## ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038880

**1.CHECK 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-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-17, "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 2)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038881

#### **WARNING:**

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

#### **1**.CHECK CONNECTOR

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

#### Is the inspection result normal?

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

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

#### Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

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

LAN

## AFS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038882

**1.CHECK 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-65, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-219, "Exploded View"](#).

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

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

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038883

#### 1.CHECK 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 navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M151	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M217	81	80	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-93, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-268, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-477, "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-128, "Exploded View"](#)
- BOSE audio without navigation: [AV-316, "Exploded View"](#)
- BOSE audio with navigation: [AV-520, "Exploded View"](#)

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

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

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

LAN

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038884

#### 1.CHECK 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-46. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-97. "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:0000000011038885

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

LAN

## TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038886

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the 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 &gt;&gt; GO TO 2.

NO &gt;&gt; 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 &gt;&gt; GO TO 3.

NO &gt;&gt; Repair the TCM branch line.

**3.CHECK HARNESS FOR OPEN CIRCUIT**

1. Remove the joint connector. Refer to [TM-185, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES &gt;&gt; GO TO 4.

NO &gt;&gt; Replace the joint connector.

**4.CHECK POWER SUPPLY AND GROUND CIRCUIT**Check the power supply and the ground circuit of the TCM. Refer to [TM-125, "Diagnosis Procedure"](#).Is the inspection result normal?YES (Present error)>>Replace the control valve & TCM. Refer to [TM-185, "Removal and Installation"](#).

YES (Past error)&gt;&gt;Error was detected in the TCM branch line.

NO &gt;&gt; Repair the power supply and the ground circuit.



# M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038887

#### 1.CHECK 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-55, "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-137, "Exploded View"](#).  
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038888

#### 1.CHECK 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-134, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-159, "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 2)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038889

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Driver seat control unit
  - Harness connector B460
  - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-56, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-219, "Exploded View"](#).

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

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

LAN

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038890

#### 1.CHECK 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-48, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-156, "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 2)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038892

#### 1.CHECK 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-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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

## Diagnosis Procedure

INFOID:000000011038893

## 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 &gt;&gt; GO TO 2.

NO &gt;&gt; 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 &gt;&gt; GO TO 3.

NO &gt;&gt; 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 &gt;&gt; GO TO 4.

NO &gt;&gt; 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

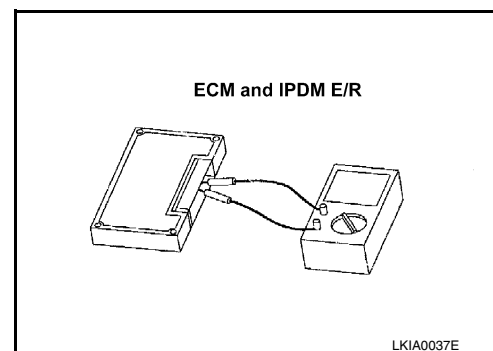
Is the measurement value within the specification?

YES &gt;&gt; GO TO 5.

NO &gt;&gt; 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 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.

A

B

C

D

E

F

G

H

I

J

K

L

LAN

N

O

P

## 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:0000000011038894

#### 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.
  - Models with navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M151	90	M24	6	Existed
	74		14	Existed

- Models without navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M217	81	M24	6	Existed
	80		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 M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038895

#### 1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

#### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter and A/C amp.

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

LAN

# MAIN LINE BETWEEN M&A AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN M&A AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011038897

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M7 and B1
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M7	34	Existed
	72		35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M7.

#### 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	34	B11	3	Existed
	35		19	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors B1 and B11.

# MAIN LINE BETWEEN ADP AND BSW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN ADP AND BSW CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038898

#### 1.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
  - ECM
  - Harness connectors B460 and B11
  - BSW control module
4. Check the continuity between the harness connector and the BSW control module harness connector.

Harness connector		BSW control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B11	3	B50	14	Existed
	19		15	Existed

#### Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B11 and the BSW control module.

LAN

# MAIN LINE BETWEEN BSW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038899

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - BSW control module
  - Harness connectors B1 and M7
2. Check the continuity between the BSW control module harness connector and the harness connector.

BSW control module harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	14	B1	36	Existed
	15		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the BSW control module 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	36	M6	85	Existed
	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
	86		14	Existed

Is the inspection result normal?

## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

YES (Past error)>>Error was detected in the main line between the BSW control module 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).

A

B

C

D

E

F

G

H

I

J

K

L

LAN

N

O

P

## ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038900

**1.CHECK 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-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-17, "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 3)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038901

#### **WARNING:**

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

#### **1**.CHECK CONNECTOR

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

#### Is the inspection result normal?

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

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

#### Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

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

LAN

## AFS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038902

**1.CHECK 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-65, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-219, "Exploded View"](#).

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

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



## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038903

#### 1.CHECK 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 navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M151	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M217	81	80	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-93, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-268, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-477, "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-128, "Exploded View"](#)
  - BOSE audio without navigation: [AV-316, "Exploded View"](#)
  - BOSE audio with navigation: [AV-520, "Exploded View"](#)

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

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

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038904

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Lane camera unit
  - Harness connector R7
  - Harness connector M110

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of lane camera unit.
2. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R10	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-298, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-334, "Exploded View"](#).

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

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

# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038905

#### 1.CHECK 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-46, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-97, "Exploded View"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038906

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038907

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-185, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-125, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-185, "Removal and Installation"](#).

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

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

## M&amp;A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038908

**1.CHECK 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 &gt;&gt; GO TO 2.

NO &gt;&gt; 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 &gt;&gt; GO TO 3.

NO &gt;&gt; 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-55, "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-137, "Exploded View"](#).

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

NO &gt;&gt; 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:0000000011038909

#### 1.CHECK 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-134, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-159, "Exploded View"](#).  
YES (Past error)>>Error was detected in the steering angle sensor branch line.  
NO >> Repair the power supply and the ground circuit.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
LAN  
N  
O  
P

## ADP BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038910

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Driver seat control unit
  - Harness connector B460
  - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-56, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-219, "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.



## BSW BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038911

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

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

## 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BSW control module.
2. Check the resistance between the BSW control module harness connector terminals.

BSW control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B50	14	15	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BSW control module branch line (CAN communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BSW control module. Refer to [DAS-409, "BSW CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BSW control module. Refer to [DAS-418, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BSW control module 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:0000000011038912

#### 1.CHECK 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-48, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-156, "Exploded View"](#).

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

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

## ICC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038913

## 1.CHECK 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 (CAN communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-174, "Exploded View"](#).  
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038914

#### 1.CHECK 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-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Exploded View"](#).

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

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

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038915

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

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

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E113	5	3	Approx. 54 – 66

Is the measurement value within the specification?

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

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-141, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal actuator. Refer to [DAS-197, "Exploded View"](#).  
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

## BCU BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038916

**1.CHECK CONNECTOR**

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

Is the inspection result normal?

YES &gt;&gt; GO TO 2.

NO &gt;&gt; Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

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

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

Is the measurement value within the specification?

YES &gt;&gt; GO TO 3.

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

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

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

Is the inspection result normal?YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-175. "Exploded View"](#).

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

NO &gt;&gt; Repair the power supply and the ground circuit.

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038917

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Side radar LH
  - Harness connector B104
  - Harness connector B102
  - Harness connector B101
  - Harness connector B69

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of side radar LH.
2. Check the resistance between the side radar LH harness connector terminals.

Side radar LH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B105	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to [DAS-409, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to [DAS-419, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the side radar LH branch line.

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

LAN

## RDR-R BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038918

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Side radar RH
  - Harness connector B106
  - Harness connector B103
  - Harness connector B101
  - Harness connector B69

Is the inspection result normal?

YES &gt;&gt; GO TO 2.

NO &gt;&gt; Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect the connector of side radar RH.
2. Check the resistance between the side radar RH harness connector terminals.

Side radar RH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B107	4	3	Approx. 108 – 132

Is the measurement value within the specification?

YES &gt;&gt; GO TO 3.

NO &gt;&gt; Repair the side radar RH branch line.

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

Check the power supply and the ground circuit of the side radar RH. Refer to [DAS-410. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?YES (Present error)>>Replace the side radar RH. Refer to [DAS-419. "Removal and Installation"](#).

YES (Past error)&gt;&gt;Error was detected in the side radar RH branch line.

NO &gt;&gt; Repair the power supply and the ground circuit.



# CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038919

#### 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.

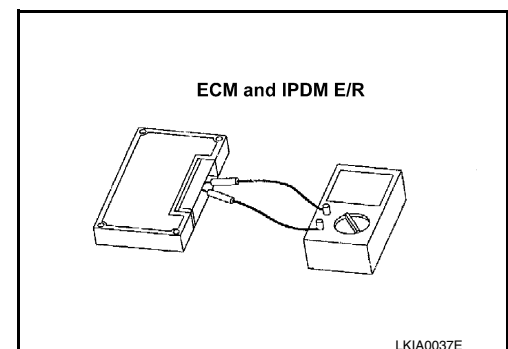
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

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 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.

## ITS COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038920

## 1.CHECK CAN DIAGNOSIS

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

**NOTE:**

For identification of CAN communication circuit, ITS communication circuit and BSW communication circuit, refer to [LAN-41, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

## 2.CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

## 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line (ITS communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 5.

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

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 6.

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

## 6.CHECK TERMINATION CIRCUIT

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

1 : ICC sensor integrated unit and brake booster control unit

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

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

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

Is the inspection result normal?

YES >> GO TO 7.

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

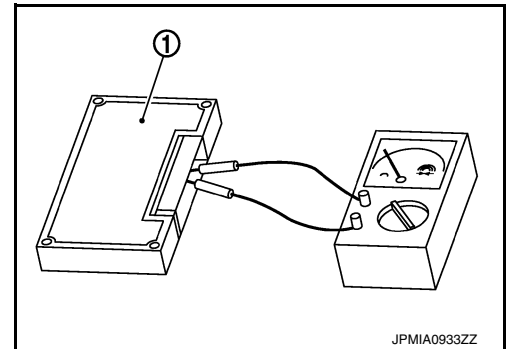
## 7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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



## BSW COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038921

## 1.CHECK CAN DIAGNOSIS

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

**NOTE:**

For identification of CAN communication circuit, ITS communication circuit, and BSW communication circuit, refer to [LAN-41, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

## 2.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - BSW control module
  - Side radar LH
  - Side radar RH
  - Harness connector B69
  - Harness connector B101
  - Harness connector B103
  - Harness connector B106

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

## 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
  - BSW control module
  - Side radar RH
2. Check the continuity between the BSW control module harness connector and the side radar RH harness connector.

BSW control module harness connector		Side radar RH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	7	B107	4	Existed
	8		3	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the BSW control module branch line (BSW communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of side radar LH.
2. Check the continuity between the BSW control module harness connector terminals.

BSW control module harness connector			Continuity
Connector No.	Terminal No.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

## BSW COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

### 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the BSW control module harness connector and the ground.

BSW control module harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

### 6.CHECK TERMINATION CIRCUIT

1. Remove the BSW control module and the side radar RH.
2. Check the resistance between the BSW control module terminals.

1 : BSW control module and side radar RH

BSW control module		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the side radar RH terminals.

Side radar RH		Resistance (Ω)
Terminal No.		
4	3	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the BSW control module and/or the side radar RH.

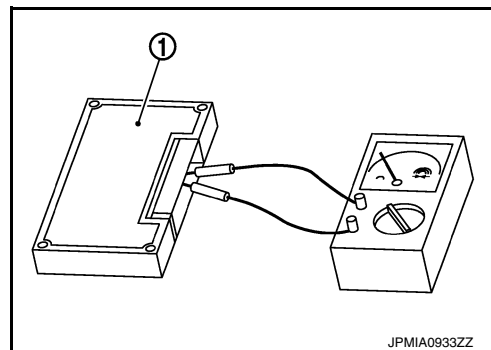
### 7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the side radar LH.

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



# 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:0000000011038922

#### 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.
  - Models with navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M151	90	M24	6	Existed
	74		14	Existed

- Models without navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M217	81	M24	6	Existed
	80		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.

LAN

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038923

#### 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

#### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter and A/C amp.

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



# MAIN LINE BETWEEN M&A AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN M&A AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038924

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M6 and E106
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M6	85	Existed
	72		86	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector 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	85	E41	35	Existed
	86		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 unified meter and A/C amp. and the ABS actuator and electric unit (control unit).

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

## ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038925

**1.CHECK 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-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-17, "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:0000000011038926

#### **WARNING:**

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

#### **1**.CHECK CONNECTOR

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

#### Is the inspection result normal?

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

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

#### Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

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

LAN

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011038927

#### 1. CHECK 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 navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M151	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M217	81	80	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-93, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-268, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-477, "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-128, "Exploded View"](#)
  - BOSE audio without navigation: [AV-316, "Exploded View"](#)
  - BOSE audio with navigation: [AV-520, "Exploded View"](#)

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

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

# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038936

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
  - 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-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).

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

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

LAN

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038928

#### 1.CHECK 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-46. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-97. "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 4)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038929

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

LAN

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038930

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-185, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-125, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-185, "Removal and Installation"](#).

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

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



## M&amp;A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038931

## 1.CHECK 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-55, "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-137, "Exploded View"](#).  
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038932

#### 1.CHECK 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-134, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-159, "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 4)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038933

#### 1.CHECK 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-48, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-156, "Exploded View"](#).  
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038934

#### 1.CHECK 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-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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:0000000011038935

#### 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

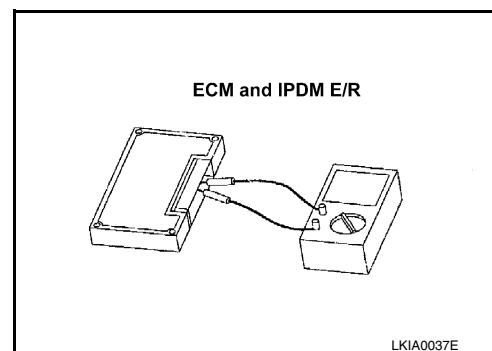
Is the measurement value within the specification?

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:0000000011038937

#### 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.
  - Models with navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M151	90	M24	6	Existed
	74		14	Existed

- Models without navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M217	81	M24	6	Existed
	80		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.

LAN

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011038938

#### 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

#### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter and A/C amp.

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



# MAIN LINE BETWEEN M&A AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN M&A AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038939

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M7 and B1
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M7	34	Existed
	72		35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M7.

#### 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	34	B11	3	Existed
	35		19	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors B1 and B11.

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038940

#### 1.CHECK CONNECTOR

1. Turn the ignition 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		36	34	Existed
		37	35	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	36	M6	85	Existed
	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
	86		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 5)]

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

A

B

C

D

E

F

G

H

I

J

K

L

LAN

N

O

P

## ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038941

**1.CHECK 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-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-17, "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 5)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038942

#### **WARNING:**

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

#### **1**.CHECK CONNECTOR

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

#### Is the inspection result normal?

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

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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

#### Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

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

LAN

## AFS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038943

**1.CHECK 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-65, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to [EXL-219, "Exploded View"](#).

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

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

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038944

#### 1.CHECK 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 navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M151	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M217	81	80	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-93, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-268, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-477, "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-128, "Exploded View"](#)
  - BOSE audio without navigation: [AV-316, "Exploded View"](#)
  - BOSE audio with navigation: [AV-520, "Exploded View"](#)

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

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

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

LAN

## 4WD BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038954

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the 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
  - 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-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).

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

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



# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038945

#### 1.CHECK 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-46, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-97, "Exploded View"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

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

LAN

# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038946

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038947

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-185, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-125, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-185, "Removal and Installation"](#).

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

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

## M&amp;A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038948

**1.CHECK 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-55, "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-137, "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:0000000011038949

#### 1.CHECK 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-134, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-159, "Exploded View"](#).  
YES (Past error)>>Error was detected in the steering angle sensor branch line.  
NO >> Repair the power supply and the ground circuit.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
LAN  
N  
O  
P

## ADP BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038950

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Driver seat control unit
  - Harness connector B460
  - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-56, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-219, "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:0000000011038951

#### 1.CHECK 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-48, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-156, "Exploded View"](#).  
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038952

#### 1.CHECK 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-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "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 5)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038953

#### 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.

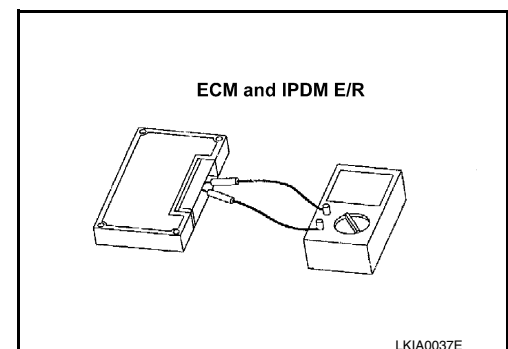
IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

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 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.

# 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:0000000011038956

#### 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.
  - Models with navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M151	90	M24	6	Existed
	74		14	Existed

- Models without navigation system

AV control unit harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M217	81	M24	6	Existed
	80		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.

LAN

## MAIN LINE BETWEEN DLC AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

### MAIN LINE BETWEEN DLC AND M&A CIRCUIT

#### Diagnosis Procedure

INFOID:000000011038957

#### 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

#### Is the inspection result normal?

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

YES (Past error)>>Error was detected in the main line between the data link connector and the unified meter and A/C amp.

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

# MAIN LINE BETWEEN M&A AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN M&A AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038958

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - Unified meter and A/C amp.
  - Harness connectors M7 and B1
2. Check the continuity between the unified meter and A/C amp. harness connector and the harness connector.

Unified meter and A/C amp. harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M67	56	M7	34	Existed
	72		35	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the unified meter and A/C amp. and the harness connector M7.

#### 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B11 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B1	34	B11	3	Existed
	35		19	Existed

Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connectors B1 and B11.

## MAIN LINE BETWEEN ADP AND BSW CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

### MAIN LINE BETWEEN ADP AND BSW CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011038959

#### 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect the following harness connectors.
  - ECM
  - Harness connectors B460 and B11
  - BSW control module
4. Check the continuity between the harness connector and the BSW control module harness connector.

Harness connector		BSW control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B11	3	B50	14	Existed
	19		15	Existed

#### Is the inspection result normal?

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

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

NO >> Repair the main line between the harness connector B11 and the BSW control module.

# MAIN LINE BETWEEN BSW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038960

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 following harness connectors.
  - BSW control module
  - Harness connectors B1 and M7
2. Check the continuity between the BSW control module harness connector and the harness connector.

BSW control module harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	14	B1	36	Existed
	15		37	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the BSW control module 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	36	M6	85	Existed
	37		86	Existed

Is the inspection result normal?

YES >> GO TO 4.

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

#### 4.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

Harness connector		ABS actuator and electric unit (control unit) harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E106	85	E41	35	Existed
	86		14	Existed

Is the inspection result normal?

## MAIN LINE BETWEEN BSW AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

---

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

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

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



# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038961

#### 1.CHECK 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-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-17, "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  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
N  
O  
P

LAN

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038962

#### **WARNING:**

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

#### **1**.CHECK CONNECTOR

---

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

---

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

Is the inspection result normal?

YES >> Replace the main harness.

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

## AFS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038963

## 1.CHECK 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-65, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-219, "Exploded View"](#).  
YES (Past error)>>Error was detected in the AFS control unit branch line.  
NO >> Repair the power supply and the ground circuit.

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011038964

#### 1. CHECK 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 navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M151	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M217	81	80	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-93, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-268, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-477, "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-128, "Exploded View"](#)
  - BOSE audio without navigation: [AV-316, "Exploded View"](#)
  - BOSE audio with navigation: [AV-520, "Exploded View"](#)

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

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

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038965

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Lane camera unit
  - Harness connector R7
  - Harness connector M110

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of lane camera unit.
2. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R10	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the lane camera unit branch line.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-298, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-334, "Exploded View"](#).

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

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

LAN

## 4WD BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038983

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the 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
  - 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-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).

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

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

# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038966

#### 1.CHECK 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-46, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-97, "Exploded View"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038967

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

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

Is the measurement value within the specification?

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

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

NO >> Repair the data link connector branch line.



# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038968

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-185, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-125, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-185, "Removal and Installation"](#).

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

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

**M&A BRANCH LINE CIRCUIT****Diagnosis Procedure**

INFOID:0000000011038969

**1.CHECK 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 &gt;&gt; GO TO 2.

NO &gt;&gt; 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 &gt;&gt; GO TO 3.

NO &gt;&gt; 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-55, "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-137, "Exploded View"](#).

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

NO &gt;&gt; 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:0000000011038970

#### 1.CHECK 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-134, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-159, "Exploded View"](#).  
YES (Past error)>>Error was detected in the steering angle sensor branch line.  
NO >> Repair the power supply and the ground circuit.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
LAN  
N  
O  
P

## ADP BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038971

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Driver seat control unit
  - Harness connector B460
  - Harness connector B11

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

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

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

Is the measurement value within the specification?

YES >> GO TO 3.

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

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

Check the power supply and the ground circuit of the driver seat control unit. Refer to [ADP-56, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-219, "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.

## BSW BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038972

## 1.CHECK CONNECTOR

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

Is the inspection result normal?

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

## 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BSW control module.
2. Check the resistance between the BSW control module harness connector terminals.

BSW control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B50	14	15	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BSW control module branch line (CAN communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BSW control module. Refer to [DAS-409, "BSW CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BSW control module. Refer to [DAS-418, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BSW control module branch line.  
NO >> Repair the power supply and the ground circuit.

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038973

#### 1.CHECK 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-48, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-156, "Exploded View"](#).  
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  
NO >> Repair the power supply and the ground circuit.

## ICC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038974

## 1.CHECK 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 (CAN communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-174, "Exploded View"](#).  
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.  
NO >> Repair the power supply and the ground circuit.

LAN

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038975

#### 1.CHECK 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-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-35, "Exploded View"](#).

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

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



# APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038976

#### 1.CHECK CONNECTOR

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

Is the inspection result normal?

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

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E113	5	3	Approx. 54 – 66

Is the measurement value within the specification?

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

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-141, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal actuator. Refer to [DAS-197, "Exploded View"](#).  
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
NO >> Repair the power supply and the ground circuit.

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

LAN

## BCU BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038977

**1.CHECK CONNECTOR**

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

Is the inspection result normal?

YES &gt;&gt; GO TO 2.

NO &gt;&gt; Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

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

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

Is the measurement value within the specification?

YES &gt;&gt; GO TO 3.

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

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

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

Is the inspection result normal?YES (Present error)>>Replace the brake booster control unit. Refer to [CCS-175. "Exploded View"](#).

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

NO &gt;&gt; Repair the power supply and the ground circuit.

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038978

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Side radar LH
  - Harness connector B104
  - Harness connector B102
  - Harness connector B101
  - Harness connector B69

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of side radar LH.
2. Check the resistance between the side radar LH harness connector terminals.

Side radar LH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B105	4	3	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to [DAS-409, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to [DAS-419, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the side radar LH branch line.

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

LAN

## RDR-R BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000011038979

**1.CHECK CONNECTOR**

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Side radar RH
  - Harness connector B106
  - Harness connector B103
  - Harness connector B101
  - Harness connector B69

Is the inspection result normal?

YES &gt;&gt; GO TO 2.

NO &gt;&gt; Repair the terminal and connector.

**2.CHECK HARNESS FOR OPEN CIRCUIT**

1. Disconnect the connector of side radar RH.
2. Check the resistance between the side radar RH harness connector terminals.

Side radar RH harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B107	4	3	Approx. 108 – 132

Is the measurement value within the specification?

YES &gt;&gt; GO TO 3.

NO &gt;&gt; Repair the side radar RH branch line.

**3.CHECK POWER SUPPLY AND GROUND CIRCUIT**

Check the power supply and the ground circuit of the side radar RH. Refer to [DAS-410. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?YES (Present error)>>Replace the side radar RH. Refer to [DAS-419. "Removal and Installation"](#).

YES (Past error)&gt;&gt;Error was detected in the side radar RH branch line.

NO &gt;&gt; Repair the power supply and the ground circuit.

# CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:0000000011038980

#### 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

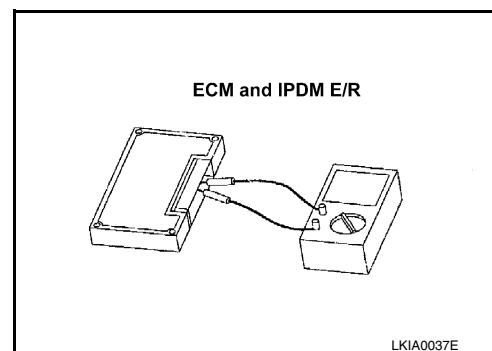
Is the measurement value within the specification?

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.

## ITS COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038981

## 1. CHECK CAN DIAGNOSIS

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

**NOTE:**

For identification of CAN communication circuit, ITS communication circuit and BSW communication circuit, refer to [LAN-41, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

## 2. CONNECTOR INSPECTION

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

## 3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ICC sensor integrated unit branch line (ITS communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 4. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 5.

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

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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

Is the inspection result normal?

YES >> GO TO 6.

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

## 6.CHECK TERMINATION CIRCUIT

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

1 : ICC sensor integrated unit and brake booster control unit

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

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

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

Is the inspection result normal?

YES >> GO TO 7.

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

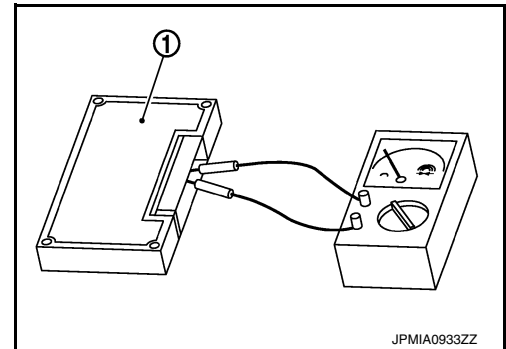
## 7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the accelerator pedal actuator.

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





## BSW COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:0000000011038982

## 1.CHECK CAN DIAGNOSIS

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

**NOTE:**

For identification of CAN communication circuit, ITS communication circuit, and BSW communication circuit, refer to [LAN-41, "System Diagram"](#).

Is the CAN communication circuit normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit.

## 2.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - BSW control module
  - Side radar LH
  - Side radar RH
  - Harness connector B69
  - Harness connector B101
  - Harness connector B103
  - Harness connector B106

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

## 3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
  - BSW control module
  - Side radar RH
2. Check the continuity between the BSW control module harness connector and the side radar RH harness connector.

BSW control module harness connector		Side radar RH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B50	7	B107	4	Existed
	8		3	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the BSW control module branch line (BSW communication circuit side). Refer to [LAN-41, "System Diagram"](#).

## 4.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

1. Disconnect the connector of side radar LH.
2. Check the continuity between the BSW control module harness connector terminals.

BSW control module harness connector			Continuity
Connector No.	Terminal No.		
B50	7	8	Not existed

Is the inspection result normal?

YES >> GO TO 5.

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

## BSW COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

### 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the BSW control module harness connector and the ground.

BSW control module harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	8		Not existed

Is the inspection result normal?

YES >> GO TO 6.

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

### 6.CHECK TERMINATION CIRCUIT

1. Remove the BSW control module and the side radar RH.
2. Check the resistance between the BSW control module terminals.

1 : BSW control module and side radar RH

BSW control module		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

3. Check the resistance between the side radar RH terminals.

Side radar RH		Resistance (Ω)
Terminal No.		
4	3	Approx. 108 – 132

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the BSW control module and/or the side radar RH.

### 7.CHECK SYMPTOM

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

Inspection result

Reproduced>>Replace the side radar LH.

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

