SECTION AV

AUDIO, VISUAL, NAVIGATION & TELEPHONE SYSTEM

CONTENTS

PRECAUTIONS 4
Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER” 4
Wiring Diagrams and Trouble Diagnosis 4
PREPARATION 5
Commercial Service Tools 5
AUDIO 6
System Description 6
BASE SYSTEM 6
BOSE SYSTEM 6
SPEED SENSITIVE VOLUME SYSTEM 7
Component Parts and Harness Connector Location 8
Schematic 9
BASE SYSTEM 9
BOSE SYSTEM WITH NAVIGATION SYSTEM 10
BOSE SYSTEM WITHOUT NAVIGATION SYSTEM 11
Wiring Diagram — AUDIO — 12
BASE SYSTEM 12
BOSE SYSTEM WITH NAVIGATION SYSTEM 17
BOSE SYSTEM WITHOUT NAVIGATION SYSTEM 27
Terminals and Reference Value for Audio Unit for Base System 36
Terminals and Reference Value for Audio Unit for BOSE System 37
Terminals and Reference Value for BOSE Speaker Amp. 39
Terminals and Reference Value for A/C and AV Switch 41
A/C and AV Switch Self-Diagnosis Function 43
STARTING THE SELF-DIAGNOSIS MODE 43
DIAGNOSIS FUNCTION 43
EXITING THE SELF-DIAGNOSIS MODE 43
Trouble Diagnosis 43
MALFUNCTION WITH RADIO AND CD (BASE SYSTEM) 43
MALFUNCTION WITH RADIO, TAPE AND CD (BOSE SYSTEM) 44
FOR RADIO ONLY 45
FOR CASSETTE PLAYER ONLY 45
FOR CD ONLY 45
Noise Inspection 46
TYPE OF NOISE AND POSSIBLE CAUSE 46
Power Supply Circuit Inspection 47
Power Supply and Ground Circuit Check for A/C and AV Switch 48
Audio Steering Wheel Switch Check 48
A/C and AV Switch Check 50
Front Door Speaker Check (Base System) 51
Rear Door Speaker Check (Base System) 53
Front Door Speaker Check (BOSE System) 55
Rear Door Speaker Check (BOSE System) 59
Woofer Check (BOSE System) 63
Vehicle Speed Signal Check 64
Locking CD Auto Changer Mechanism 66
DAMPER LOCK PROCEDURE 66
Removal and Installation of Audio Unit 66
REMOVAL 66
INSTALLATION 67
Removal and Installation for A/C and AV Switch 68
REMOVAL 68
INSTALLATION 68
Removal and Installation of Audio Steering Wheel Switch 69
REMOVAL 69
INSTALLATION 69
Removal and Installation of Front Door Speaker (Base system) 69
REMOVAL 69
INSTALLATION 69
Removal and Installation of Front Door Speaker (BOSE system) 69
REMOVAL 69
INSTALLATION 69
Removal and Installation of Rear Door Speaker (Base system) 70
REMOVAL 70
INSTALLATION 70

Removal and Installation of Rear Door Speaker (BOSE system) 70
REMOVAL 70
INSTALLATION 70
Removal and Installation of Tweeter 70
REMOVAL 70
INSTALLATION 70
Removal and Installation of Woofer 71
REMOVAL 71
INSTALLATION 71
Removal and Installation of BOSE Speaker Amp. ... 71
REMOVAL 71
INSTALLATION 71
AUDIO ANTENNA 72
Location of Antenna 72
Removal and Installation of Roof Antenna 72
REMOVAL 72
INSTALLATION 72
INTEGRATED DISPLAY SYSTEM 73
System Description 73
A/C AND AV SWITCH SYSTEM 73
PRECAUTION OF LCD MONITOR 73
POWER SUPPLY AND GROUND 73
DRIVE COMPUTER 74
SETTING SCREEN 76
WARNING INDICATIONS 77
AV COMMUNICATION LINE 77
CAN Communication System Description 77
CAN Communication Unit 77
Component Parts and Harness Connector Location.. 77
Schematic 78
Wiring Diagram — INF/D — 79
Wiring Diagram — COMM — 84
Terminals and Reference Value for Display Unit ... 86
Terminals and Reference Value for A/C and AV Switch 87
On Board Self-Diagnosis Function 89
DESCRIPTION 89
DIAGNOSIS ITEM 89
Self-Diagnosis Mode 89
OPERATION PROCEDURES 89
NETWORK CHECK 90
PARTS CHECK 90
HVAC DETAIL SCREEN 91
VERSION CHECK 91
CAN DIAG MNTR (CAN DIAG MONITOR) 91
A/C and AV Switch Self-Diagnosis Function 92
STARTING THE SELF-DIAGNOSIS MODE 92
DIAGNOSIS FUNCTION 92
EXITING THE SELF-DIAGNOSIS MODE 92
Trouble Diagnosis Chart by Symptom 93
Power Supply and Ground Circuit Check for Display Unit 94
Power Supply and Ground Circuit Check for A/C and AV Switch 95
Vehicle Speed Signal Check 96
Illumination Signal Check 97
Ignition Signal Check 97
A/C and AV Switch Check 98
Audio Communication Line Check 98
A/C and AV Switch Does Not Operate 100
CAN Communication Line Check 101
Audio Steering Wheel Switch Check 101
Removal and Installation of Display Unit 102
REMOVAL 102
INSTALLATION 102
Removal and Installation of A/C and AV Switch ...102
Removal and Installation of Audio Steering Wheel Switch 102
NAVIGATION SYSTEM 103
System Description 103
TRAVEL DISTANCE 103
TRAVEL DIRECTION 103
MAP–MATCHING 103
GPS (GLOBAL POSITIONING SYSTEM) 104
COMPONENT DESCRIPTION 105
BIRDVIEW™ 105
MAP DISPLAY 106
FUNCTION OF CENTER SWITCH 107
“VIEW” MODE 114
“HEADING” MODE 114
“NEARBY DISPLAY ICONS” MODE 114
“SAVE CURRENT LOCATION” MODE 114
“ADJUST CURRENT LOCATION” MODE 115
“AUTO RE-ROUTE” MODE 115
“AVOID AREA SETTINGS” MODE 115
“CLEAR MEMORY” MODE 116
“EDIT ADDRESS BOOK” MODE 116
“GPS INFORMATION” MODE 116
“QUICK STOP CUSTOMER SETTING” MODE. 116
“SET AVERAGE SPEED” MODE 117
“TRACKING” MODE 117
GUIDANCE VOLUME 117
DISPLAY WITH PUSHED “TRIP” BUTTON 118
TRIP 1 OR TRIP 2 118
FUEL ECONOMY 118
MAINTENANCE 119
ENGINE OIL OR TIRE ROTATION 119
TIRE PRESSURE 119
WARNING INDICATIONS 120
CAN Communication System Description 120
CAN Communication Unit 120
Component Parts Location 120
Schematic — NAVI — 121
Wiring Diagram — NAVI — 122
Schematic — COMM — 129
Wiring Diagram — COMM — 130
Terminals and Reference Value for NAVI Control Unit 133
Terminals and Reference Value for Display Control Unit 135
Terminals and Reference Value for Display 139
Terminals and Reference Value for A/C and AV Switch 141
On Board Self-Diagnosis Function 143
DESCRIPTION 143
DIAGNOSIS ITEM 143
Self-Diagnosis Mode (DCU) 144

OPERATION PROCEDURE 144
SELF-DIAGNOSIS RESULT 146
Self-Diagnosis Mode (NAVI) 147
OPERATION PROCEDURE 147
SELF-DIAGNOSIS RESULT 149
CONFIRMATION/ADJUSTMENT Mode 150
OPERATION PROCEDURE 150
DISPLAY DIAGNOSIS 151
VEHICLE SIGNALS 152
AUTO CLIMATE CONTROL 152
NAVIGATION 152
DISPLAY DIAGNOSIS 153
VEHICLE SIGNALS 154
HISTORY OF ERRORS 154
DIAGNOSIS BY HISTORY OF ERRORS 155
NAVIGATION 156
CAN DIAG SUPPORT MONITOR 158
OPERATION PROCEDURE 158
A/C and AV Switch Self-Diagnosis Function 159
STARTING THE SELF-DIAGNOSIS MODE 159
DIAGNOSIS FUNCTION 159
EXITING THE SELF-DIAGNOSIS MODE 159
Power Supply and Ground Circuit Check for NAVI Control Unit 160
Power Supply and Ground Circuit Check for Display Control Unit 161
Power Supply and Ground Circuit Check for Display 162
Power Supply and Ground Circuit Check for A/C and AV Switch 164
Vehicle Speed Signal Check for NAVI Control Unit 165
Vehicle Speed Signal Check for Display Control Unit 166
Illumination Signal Check for NAVI Control Unit .. 167
Illumination Signal Check for Display Control Unit 168
Ignition Signal Check for NAVI Control Unit 168
Ignition Signal Check for Display Control Unit 168
Reverse Signal Check for NAVI Control Unit 169
Reverse Signal Check for Display Control Unit ... 169
When Malfunctioning Connection Between Display Control Unit and NAVI Control Unit 170
When Malfunctioning Connection Between Display Control Unit and Audio Unit 171
When Malfunctioning Connection Between Display Control Unit and Display 173
CAN Communication Line Check 175
If NAVI Control Unit Detects That DVD-ROM Map Is Not Inserted 176
If NAVI Control Unit Detects That Inserted DVD-ROM Map Malfunctioning or If It Is Impossible to Load Data From DVD-ROM Map 176
If Connection Between NAVI Control Unit and GPS Antenna is Malfunctioning 176
Color of RGB Image is Not Proper 177
Color of RGB Image is Not Proper (Only NAVI Screen) 179
NAVI Screen is Rolling 181
Guide Sound is Not Heard 182
Screen is Not Shown 183
Operating Screen for Audio and A/C is Not Displayed When Showing NAVI Screen 183
FUEL ECONOMY Screen is Not Shown 185
Average Fuel Economy is Not Shown 185
Distance to Empty is Not Shown 185
Driving Distance or Average Speed is Not Shown 186
WARNING DOOR OPEN Screen is Not Shown .. 186
TIRE PRESSURE Screen is Not Shown 186
Unable to Operate All of A/C and AV Switches (Unable to Start Self-Diagnosis) 187
A/C Operation is Not Possible 188
Position of Current–Location Mark is Not Correct. 189
Radio Wave From GPS Satellite is Not Received. 189
Driving Test 189
Example of Symptoms Judged Not Malfunction .. 191
BASIC OPERATION 191
VEHICLE MARK 191
DESTINATION, PASSING POINTS, AND MENU ITEMS CANNOT BE SELECTED/SET 192
VOICE GUIDE 192
ROUTE SEARCH 193
EXAMPLES OF CURRENT-LOCATION MARK DISPLACEMENT 194
CURRENT LOCATION MARK SHOWS A POSITION WHICH IS COMPLETELY WRONG 197
CURRENT-LOCATION MARK JUMPS 197
CURRENT LOCATION MARK IS IN A RIVER OR SEA 198
WHEN DRIVING ON SAME ROAD, SOMETIMES CURRENT-LOCATION MARK IS IN RIGHT PLACE AND SOMETIMES IT IS WRONG PLACE 198
LOCATION CORRECTION BY MAP-MATCHING IS SLOW 198
ALTHOUGH GPS RECEIVING DISPLAY IS GREEN, VEHICLE MARK DOES NOT RETURN TO CORRECT LOCATION 198
NAME OF CURRENT PLACE IS NOT DISPLAYED 198
CONTENTS OF DISPLAY DIFFER FOR BIRD-VIEW™ AND THE (FLAT) MAP SCREEN 198
Program Loading of NAVI Control Unit 199
Removal and Installation of NAVI Control Unit 200
REMOVAL 200
INSTALLATION 200
Removal and Installation of GPS Antenna 201
REMOVAL 201
INSTALLATION 201
Removal and Installation of Audio Steering Wheel Switch 201
Removal and Installation of NAVI Switch 202
REMOVAL 202
INSTALLATION 202
Removal and Installation of Display 202
REMOVAL 202
INSTALLATION 202
Removal and Installation of Display Control Unit . 203
REMOVAL 203
INSTALLATION 203

PRECAUTIONS

PFP:00001

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

AKS007WC

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 and SB section of this Service Manual.

WARNING:

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

Wiring Diagrams and Trouble Diagnosis

AKS007VO

When reading wiring diagrams, refer to the following:

- Refer to GI-14, "How to Read Wiring Diagrams" .
- Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

When performing trouble diagnosis, refer to the following:

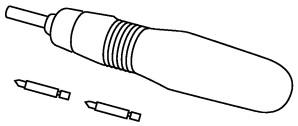
- Refer to GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" .
- Refer to GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident" .

PREPARATION

PFP:00002

Commercial Service Tools

AKS007VM

Tool name	Description
Power tool  PBIC0191E	Loosening bolts and nuts

AUDIO

PFP:28111

System Description

AKS005EV

BASE SYSTEM

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times

- through 15A fuse [No. 38, located in the fuse and fusible link block]
- to audio unit terminal 6
- to display unit terminal 1
- to A/C and AV switch terminal 1
- to option connector for satellite radio receiver terminal 22
- to option connector for DVD terminal 1.

With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10
- to display unit terminal 2
- to A/C and AV switch terminal 2
- to option connector for satellite radio receiver terminal 26
- to option connector for DVD terminal 2.

Ground is supplied through the case of the audio unit.
Audio unit and A/C and audio controller are connected by FPC (Flexible Print Circuit).
A/C and audio controller integrates A/C switches and audio switches.
When A/C and audio controller is pushed to audio switch, it sends audio signal to audio unit.
Then audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15, and 16
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear door speaker LH and RH
- to terminals 1 and 2 of tweeter LH and RH.

When one of steering wheel audio control switches is pushed to volume up, seek up, or mode ON, resistance in steering switch circuit changes depending on which button is pushed.
When one of steering wheel audio control switches is pushed to volume down, seek down, or power ON, resistance in steering switch circuit changes depending on which button is pushed.

BOSE SYSTEM

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times

- through 15A fuse [No. 38, located in the fuse and fusible link block]
- to audio unit terminal 6
- to BOSE speaker amp. terminal 1
- to A/C and AV switch terminal 1
- to display control unit terminal 1 (with navigation system)
- to display unit terminal 1 (without navigation system)
- to option connector for satellite radio receiver terminal 22
- to option connector for DVD terminal 1.

With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10
- to A/C and AV switch terminal 2
- to display control unit terminal 10 (with navigation system)
- to display unit terminal 2 (without navigation system)
- to option connector for satellite radio receiver terminal 26
- to option connector for DVD terminal 2.

Ground is supplied through the case of the audio unit.
Ground is also supplied

- to BOSE speaker amp. terminal 17
- through body ground B105 and B116,
- to A/C and AV switch terminal 5
- to display control unit terminal 3 (with navigation system)
- to display terminal 1 (with navigation system)
- to display unit terminal 6 (without navigation system)
- to option connector for DVD terminal 3
- through body ground M14 and M78.

Audio unit and A/C and audio controller are connected by FPC (Flexible Print Circuit).
A/C and audio controller integrates A/C switches and audio switches.
When A/C and audio controller is pushed to audio switch, it send audio signal to audio unit.
Then audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15, and 16
- to BOSE speaker amp. terminals 23, 24, 25, 26, 27, 28, 29, and 30.

Audio signals are amplified by the BOSE speaker amp.
The amplified audio signals are supplied

- through BOSE speaker amp. terminals 2, 3, 9,10,11,12, 13, 14, 15, 16, 18, and 19
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear door speaker LH and RH
- to terminals 1 and 2 of tweeter LH and RH
- to terminals 2, 3, 4 and 6 of woofer.

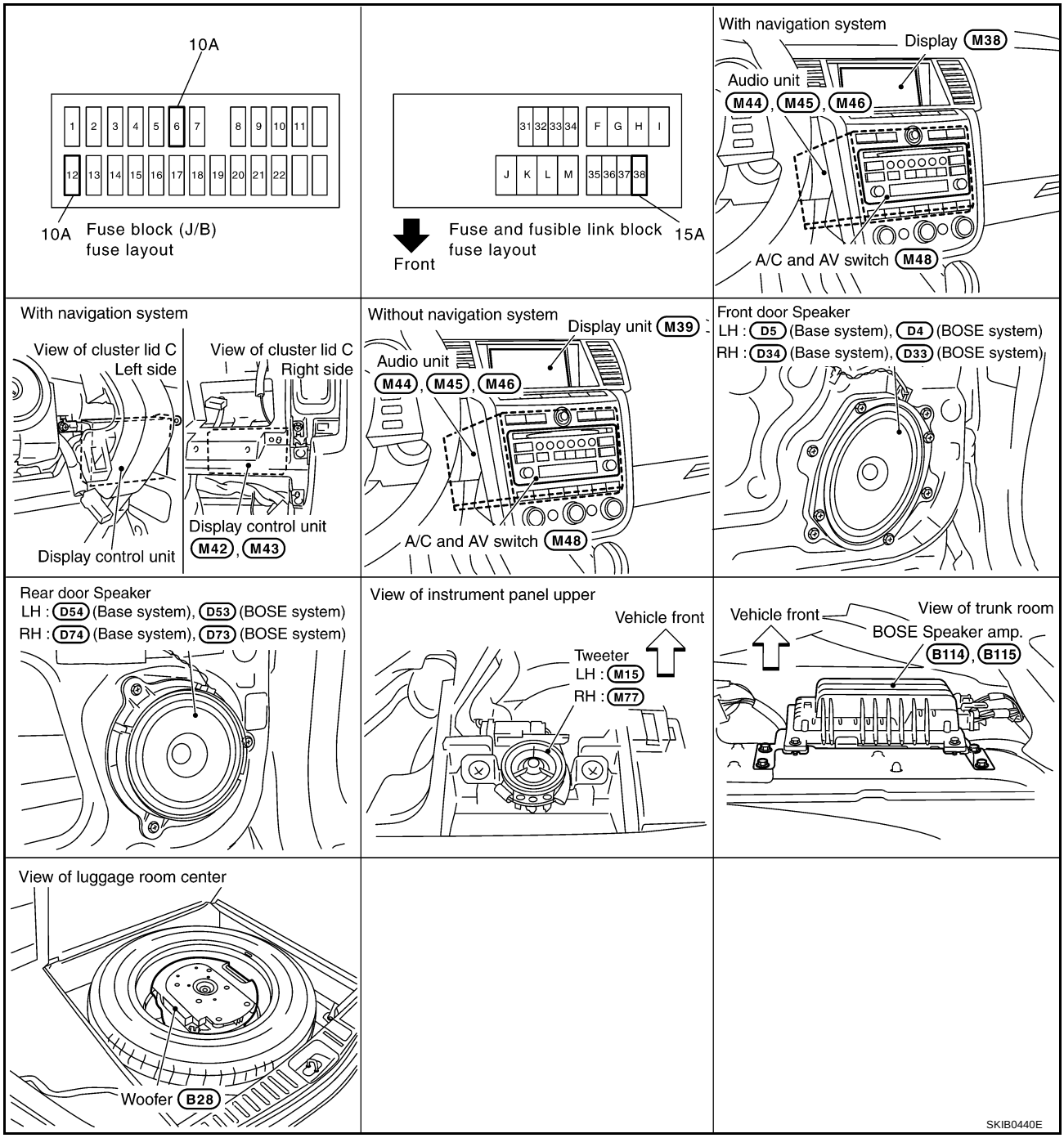
When one of steering wheel audio control switches is pushed to volume up, seek up, or mode ON, resistance in steering switch circuit changes depending on which button is pushed.
When one of steering wheel audio control switches is pushed to volume down, seek down, or power ON, resistance in steering switch circuit changes depending on which button is pushed.

SPEED SENSITIVE VOLUME SYSTEM

Volume level of this system gone up and down automatically in proportion to the vehicle speed. And the control level can be selected by the customer. This system is equipped for BOSE system.

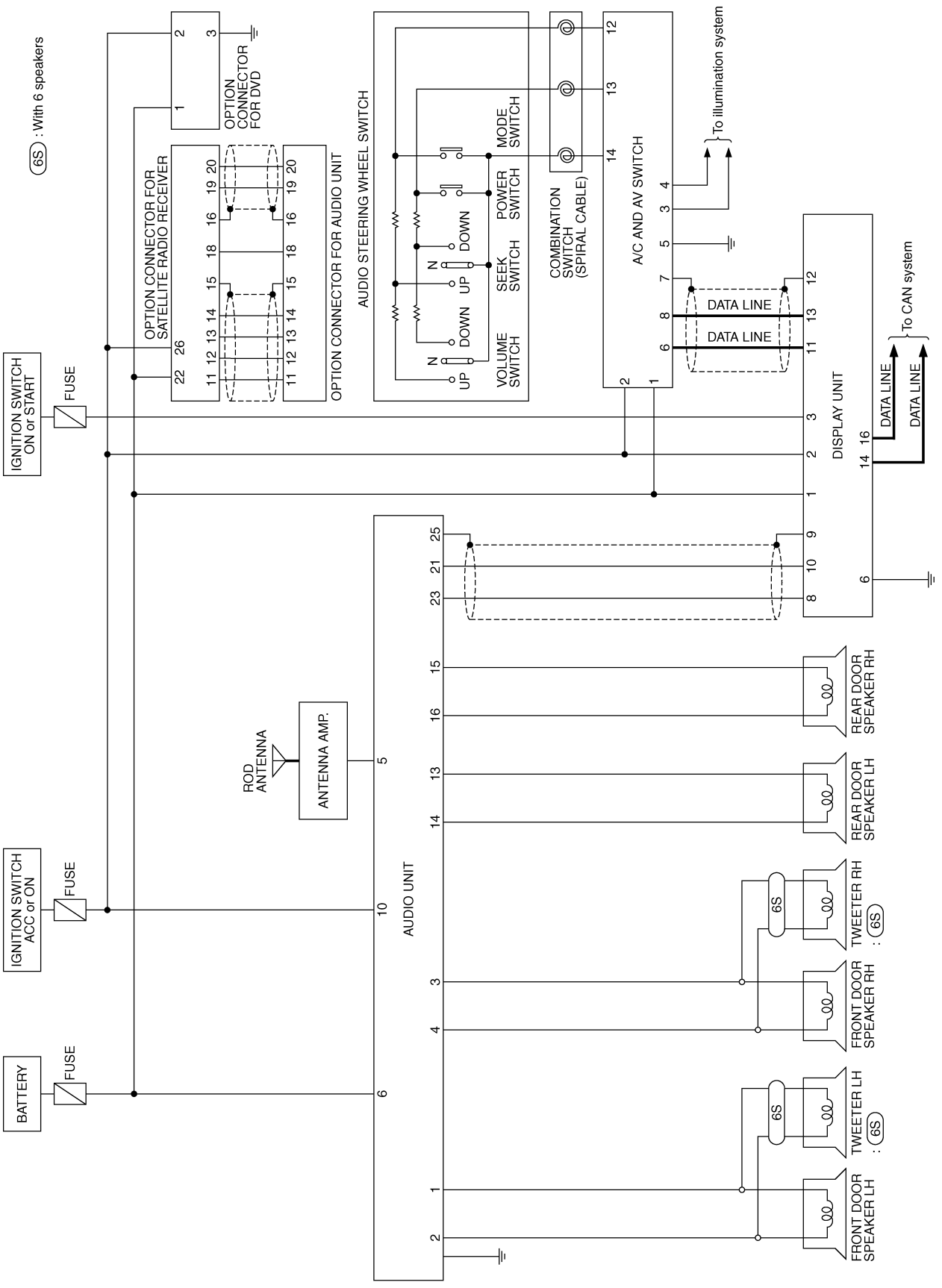
Component Parts and Harness Connector Location

AKS007I2



Schematic
BASE SYSTEM

AKS005EW



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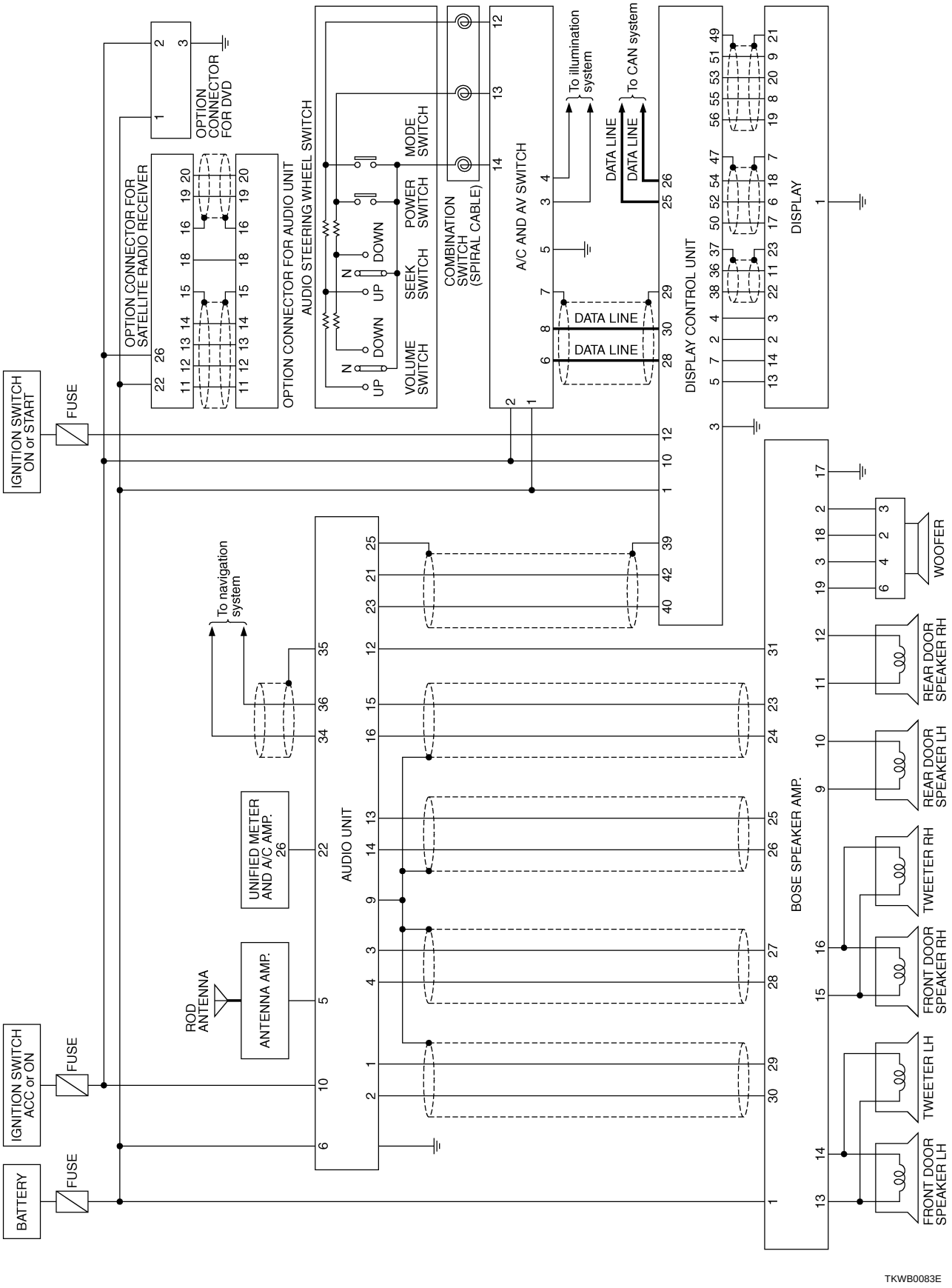
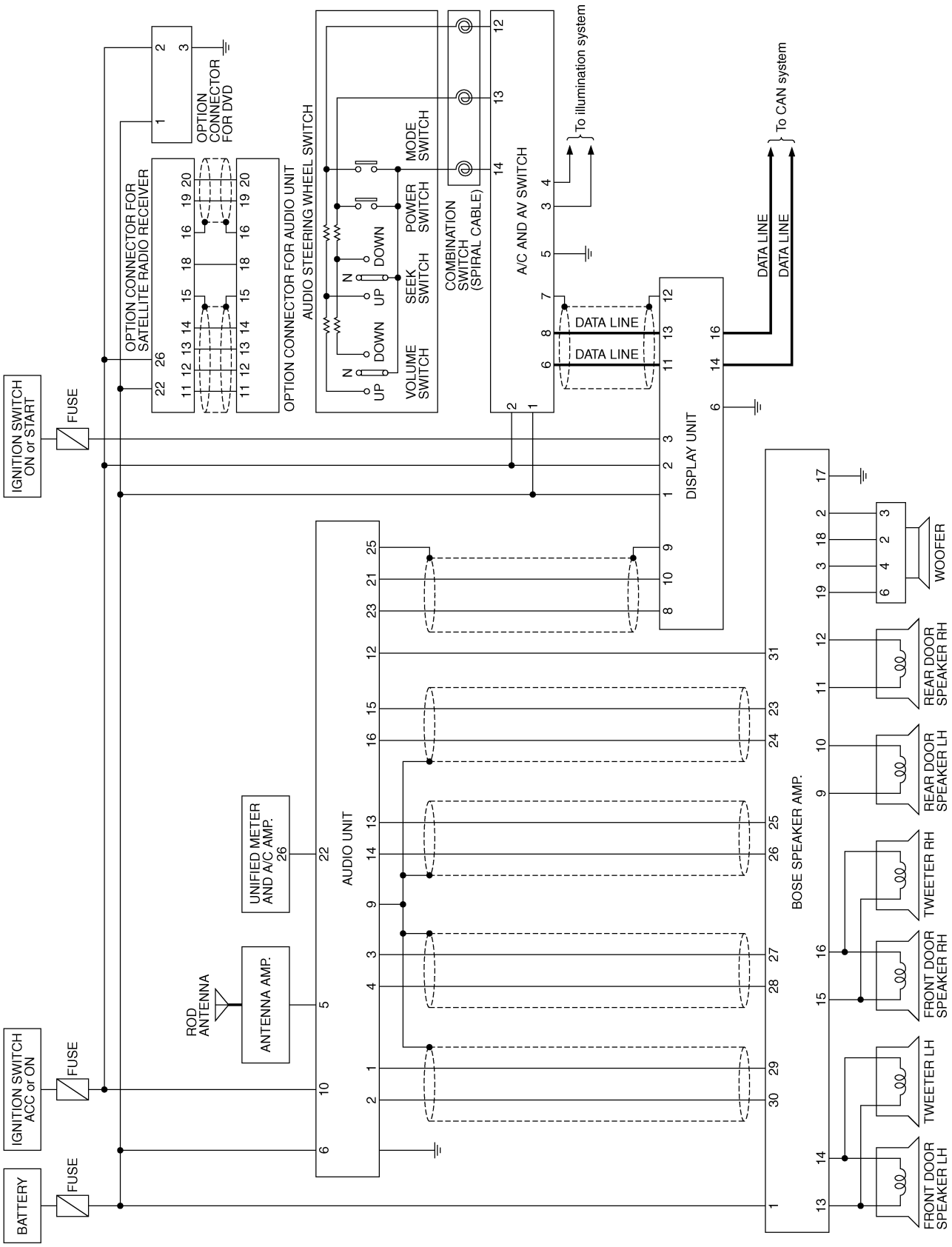
BOSE SYSTEM WITH NAVIGATION SYSTEM



BOSE SYSTEM WITHOUT NAVIGATION SYSTEM



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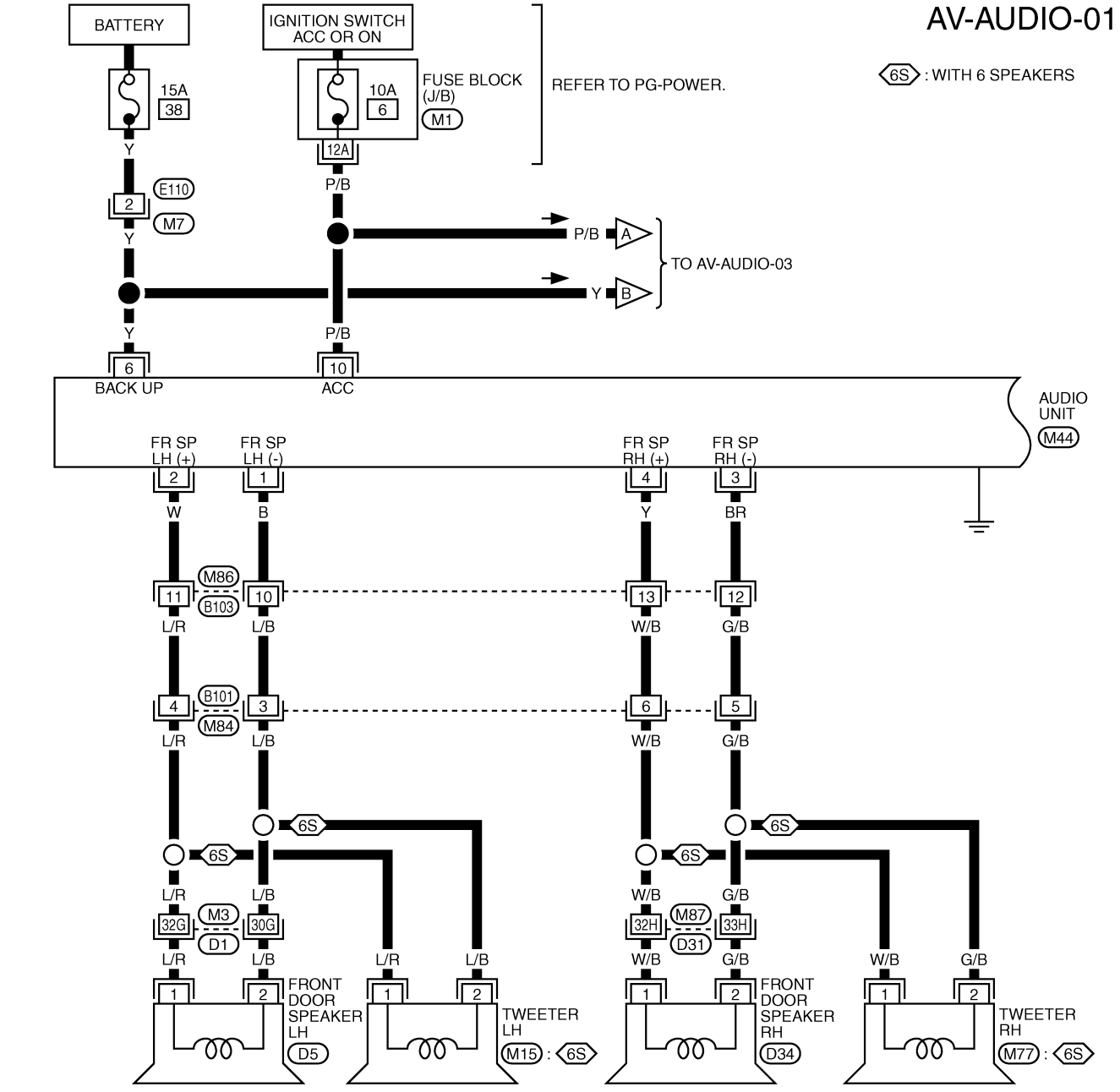
Wiring Diagram — AUDIO —

AKS005EX

BASE SYSTEM



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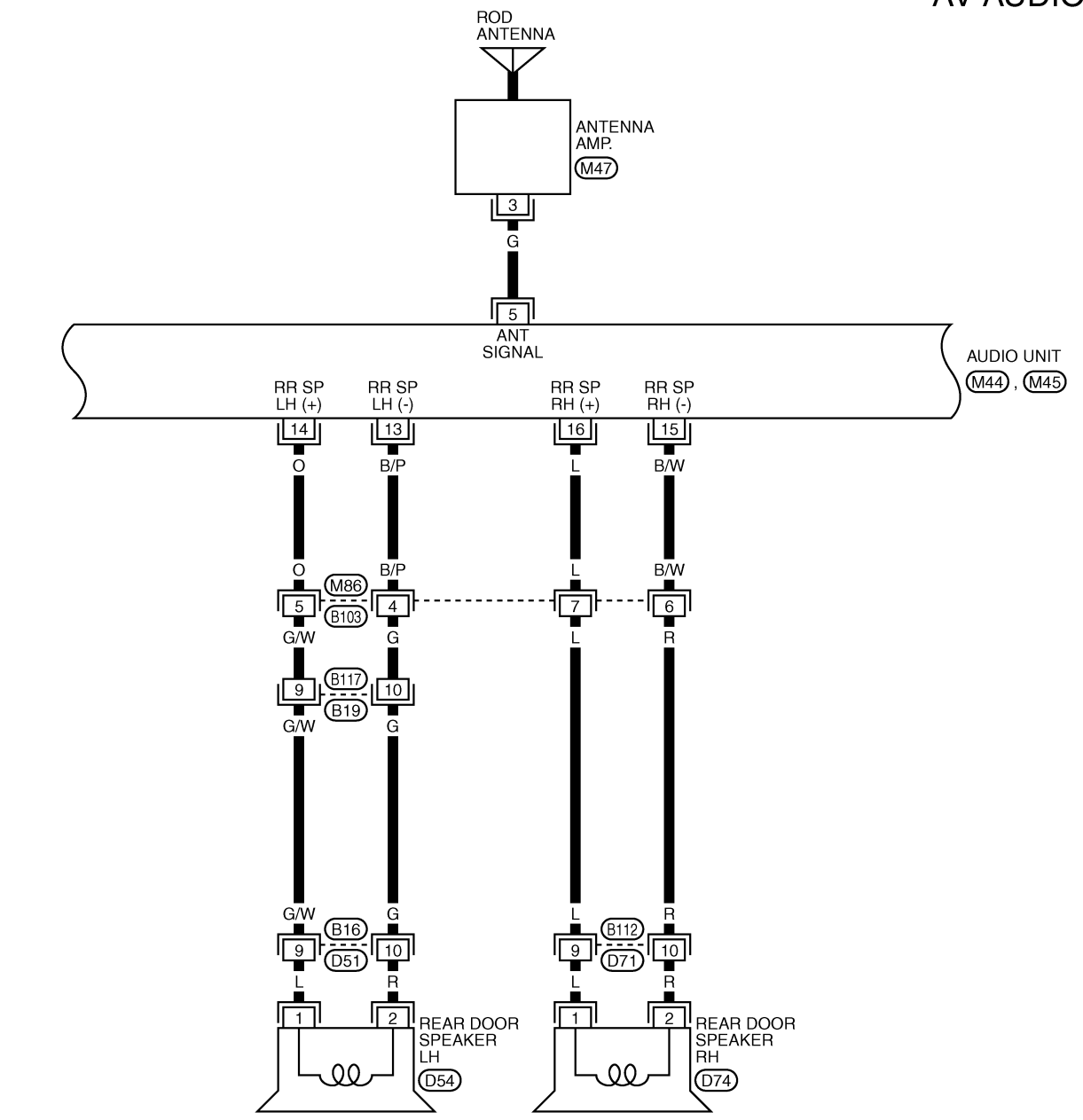
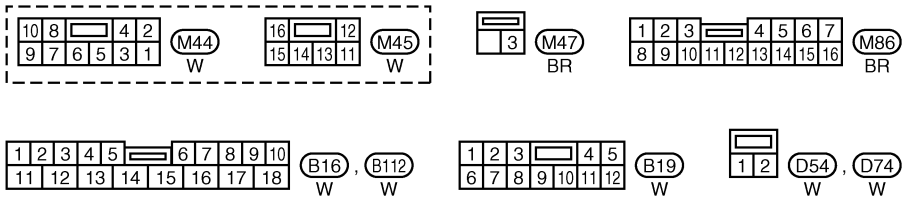
AV-AUDIO-02





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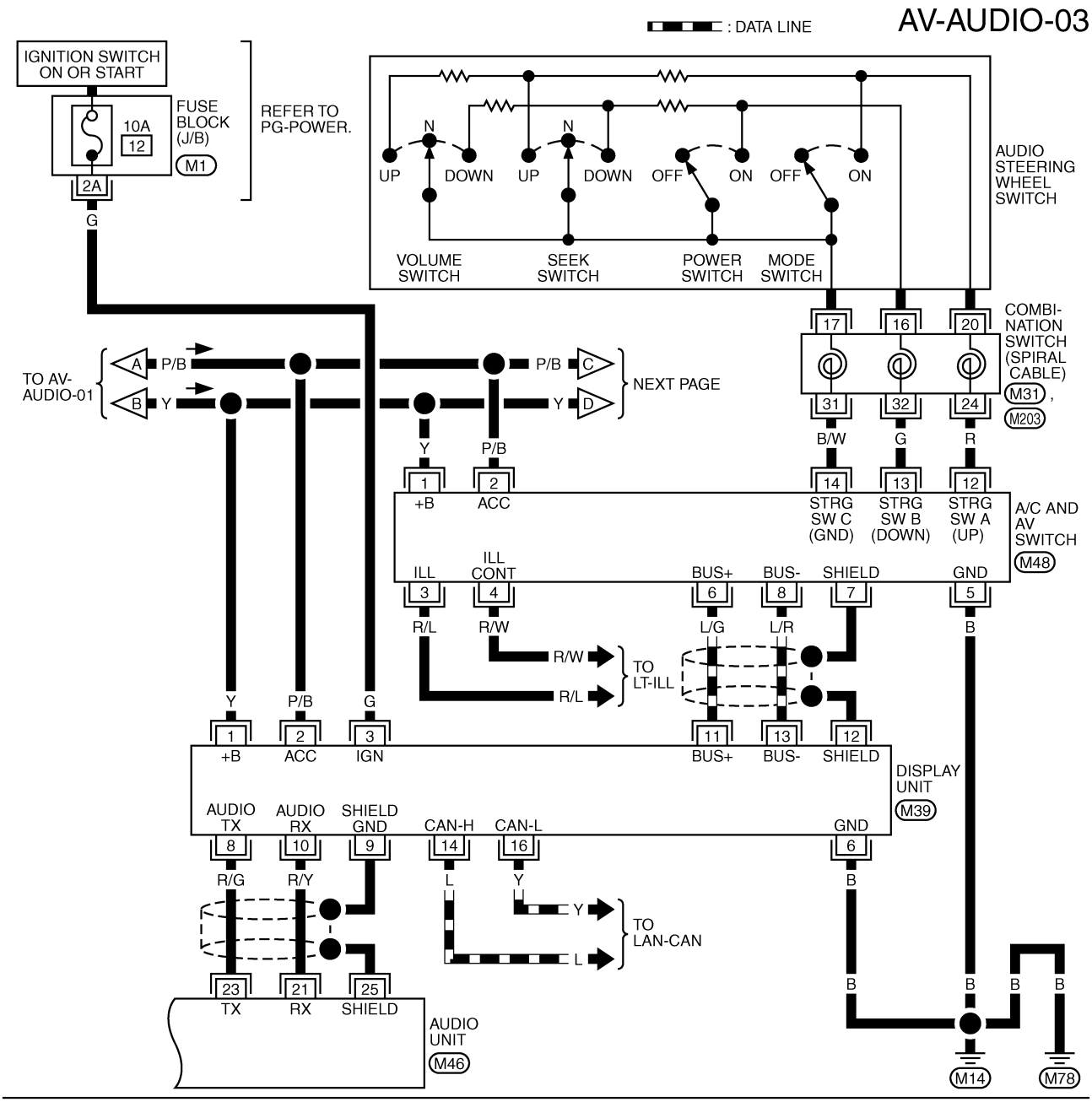
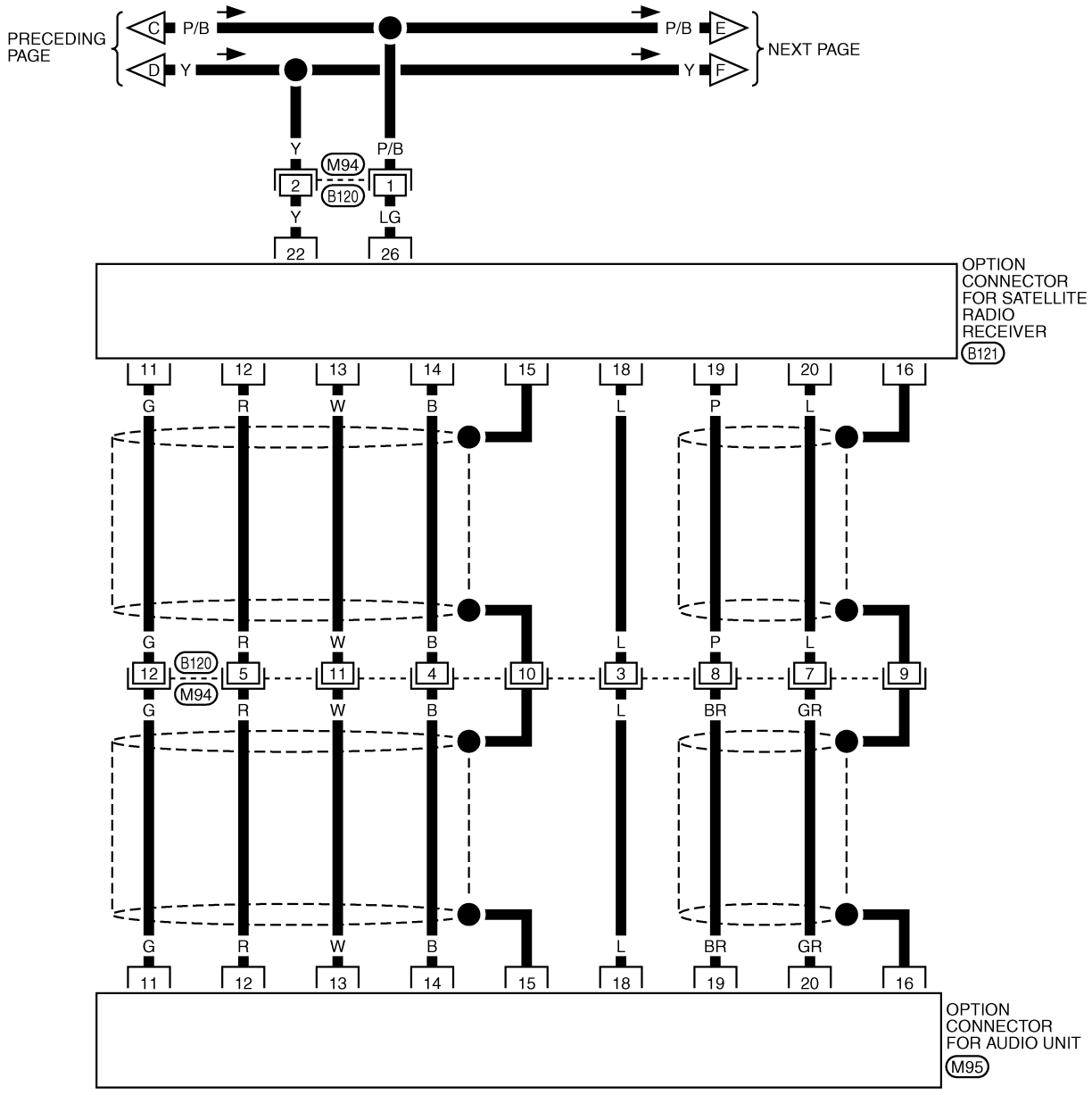
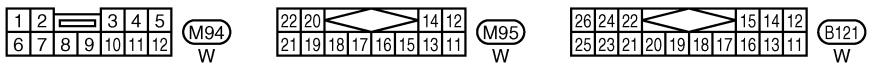

AV-AUDIO-03
: DATA LINE
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B)
10A
12
M1
2A
G
REFER TO PG-POWER.
AUDIO STEERING WHEEL SWITCH
UP
DOWN
UP
DOWN
OFF
ON
OFF
ON
N
N
VOLUME SWITCH
SEEK SWITCH
POWER SWITCH
MODE SWITCH
COMBI-NATION SWITCH (SPIRAL CABLE)
M31 , M203
17
16
20
31
32
24
B/W
G
R
TO AV-AUDIO-01
A
B
P/B
Y
P/B
Y
C
D
NEXT PAGE
Y
P/B
1
2
+B
ACC
14
13
12
STRG SW C (GND)
STRG SW B (DOWN)
STRG SW A (UP)
A/C AND AV SWITCH
M48
ILL
ILL CONT
BUS+
BUS-
SHIELD
GND
3
4
6
8
7
5
R/L
R/W
L/G
L/R
B
R/W
R/L
TO LT-ILL
Y
P/B
G
1
2
3
+B
ACC
IGN
11
13
12
BUS+
BUS-
SHIELD
DISPLAY UNIT
M39
AUDIO TX
AUDIO RX
SHIELD GND
CAN-H
CAN-L
GND
8
10
9
14
16
6
R/G
R/Y
L
Y
B
Y
L
TO LAN-CAN
23
21
25
TX
RX
SHIELD
AUDIO UNIT
M46
B
B
B
B
B
M14
M78
27 26 25 24
34 33 32 31
M31
GR
21 20 19 18 17 16 15 14
M203
GR
*
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M39
W
36 34 32 26 24 22
35 33 31 30 29 28 27 25 23 21
M46
W
16 14 12 10 8 6 4 2
15 13 11 9 7 5 3 1
M48
W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
TKWB0120E

AV-AUDIO-04





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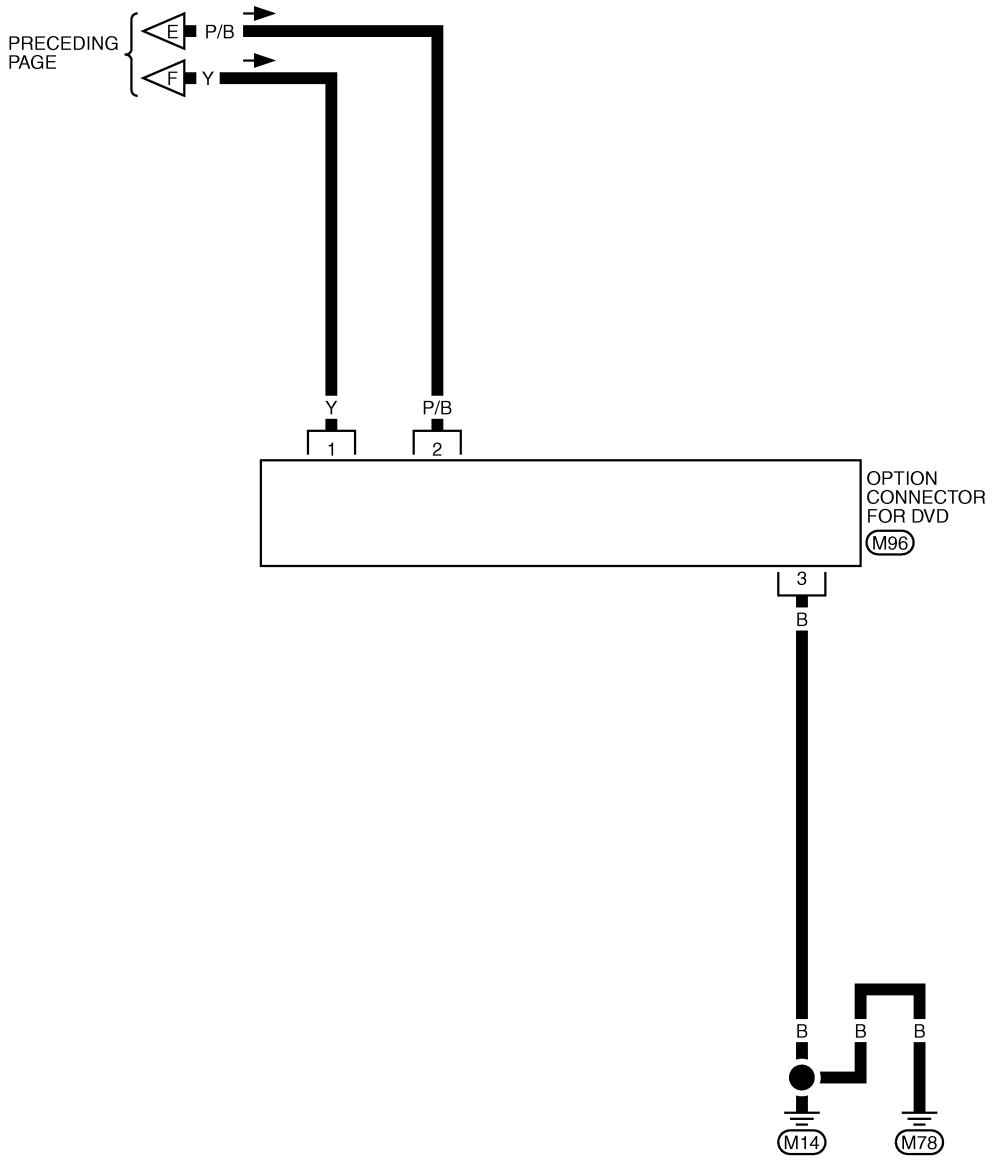
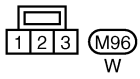
AV-AUDIO-05





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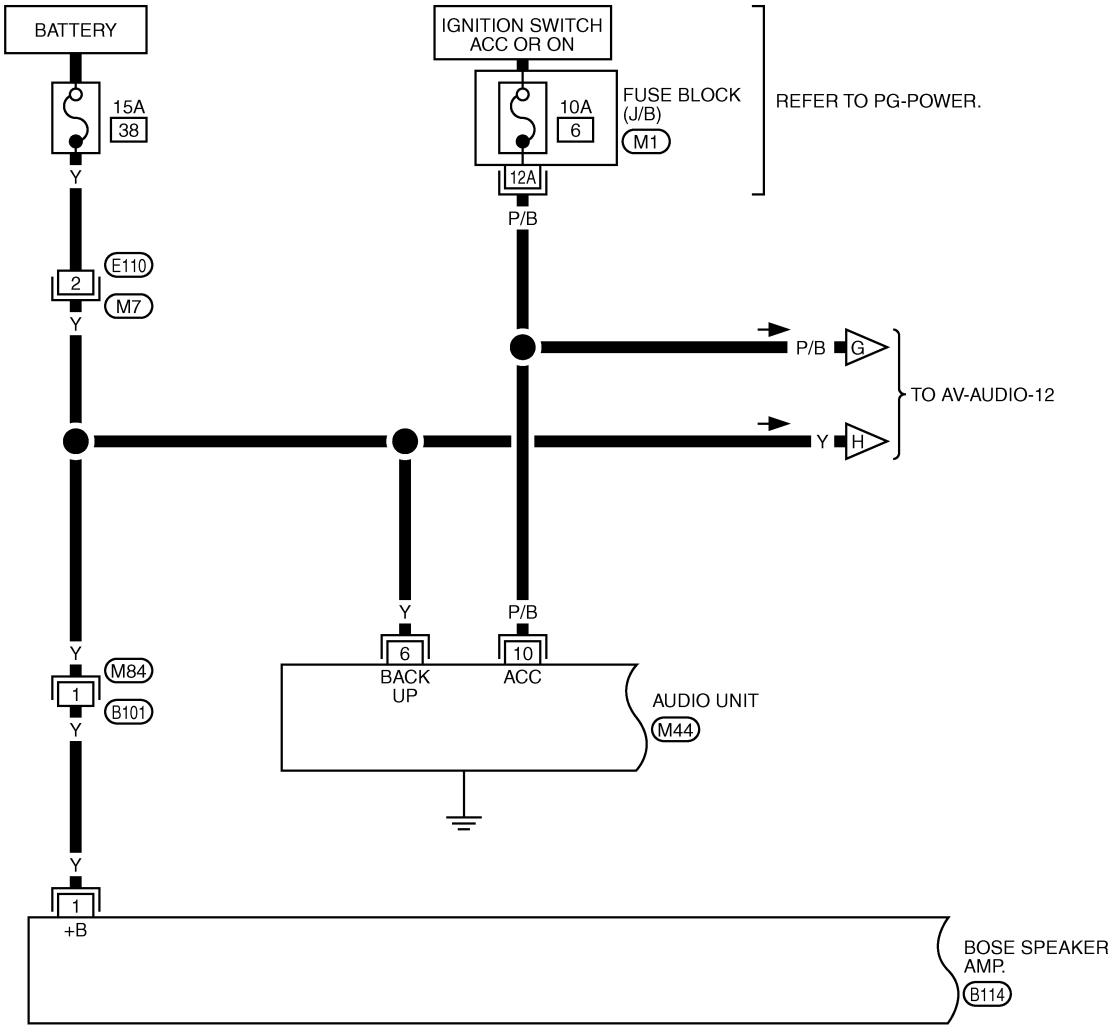
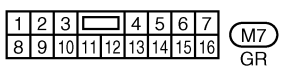
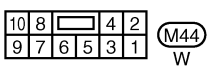
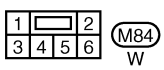
BOSE SYSTEM WITH NAVIGATION SYSTEM

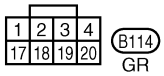
AV-AUDIO-06







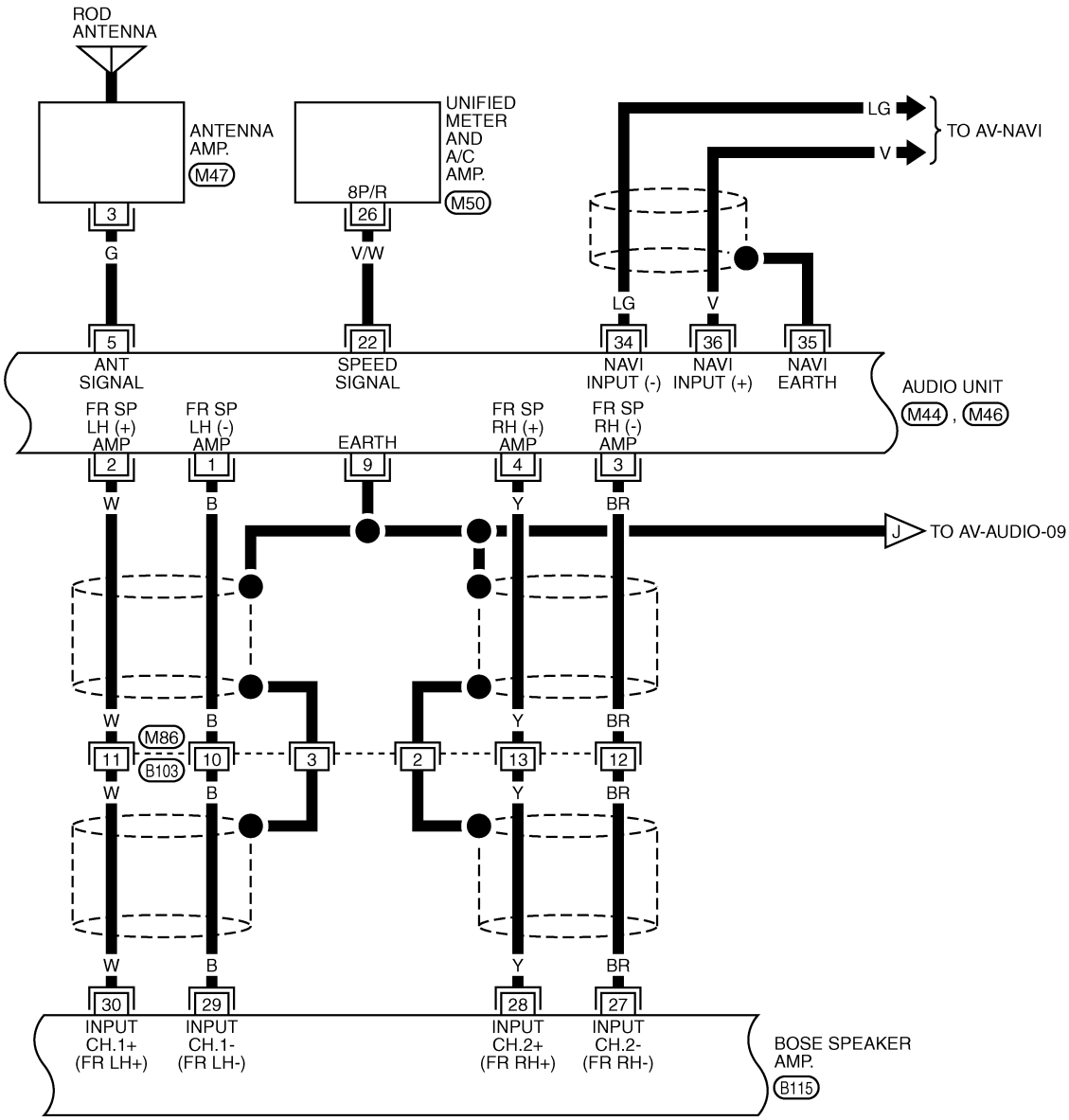


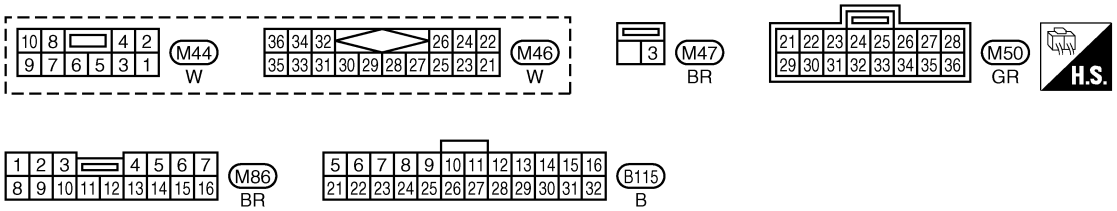


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB0084E

AV-AUDIO-07





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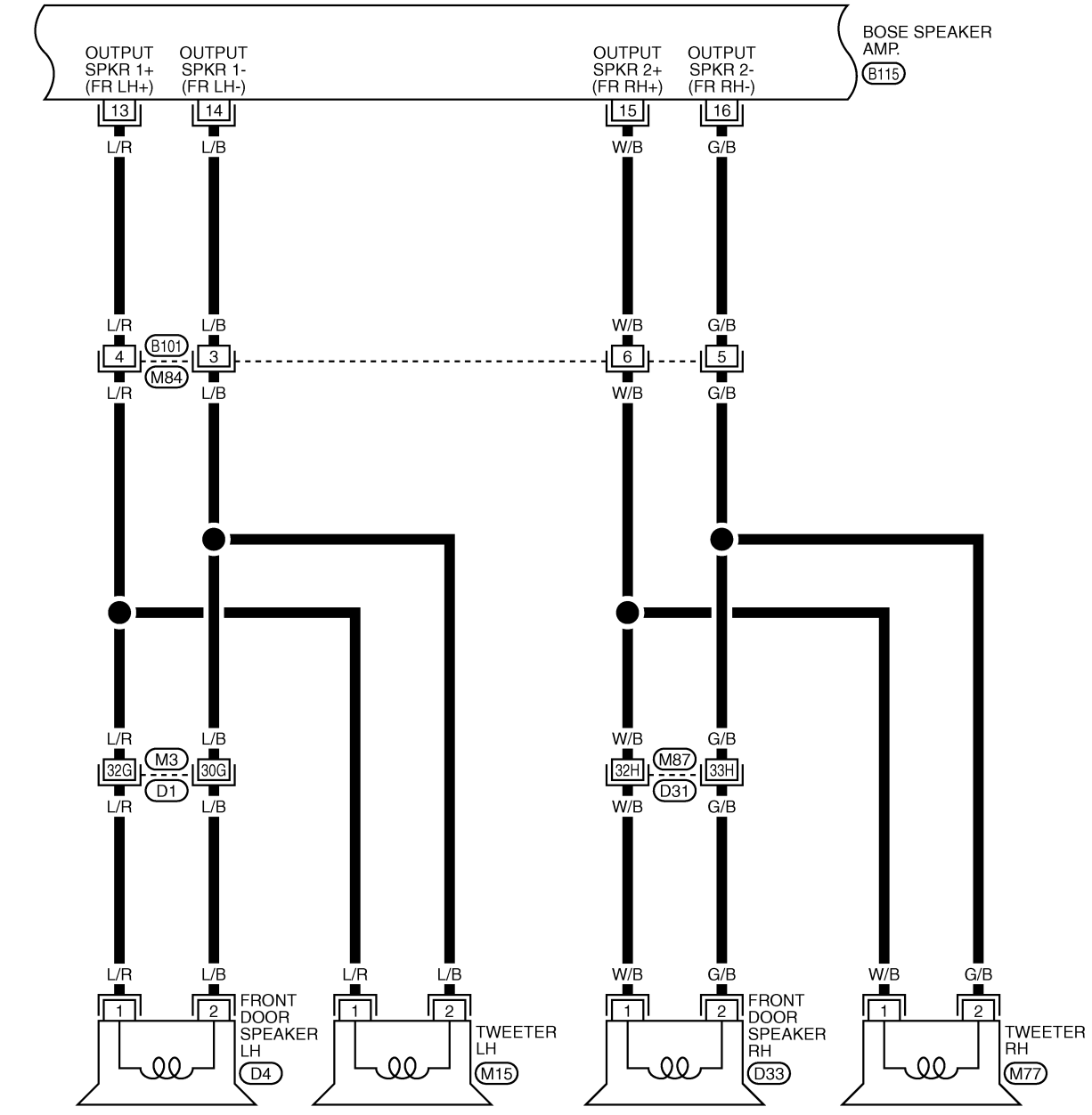
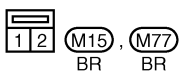
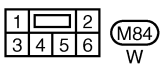
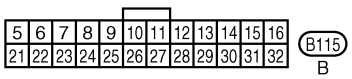
AV-AUDIO-08





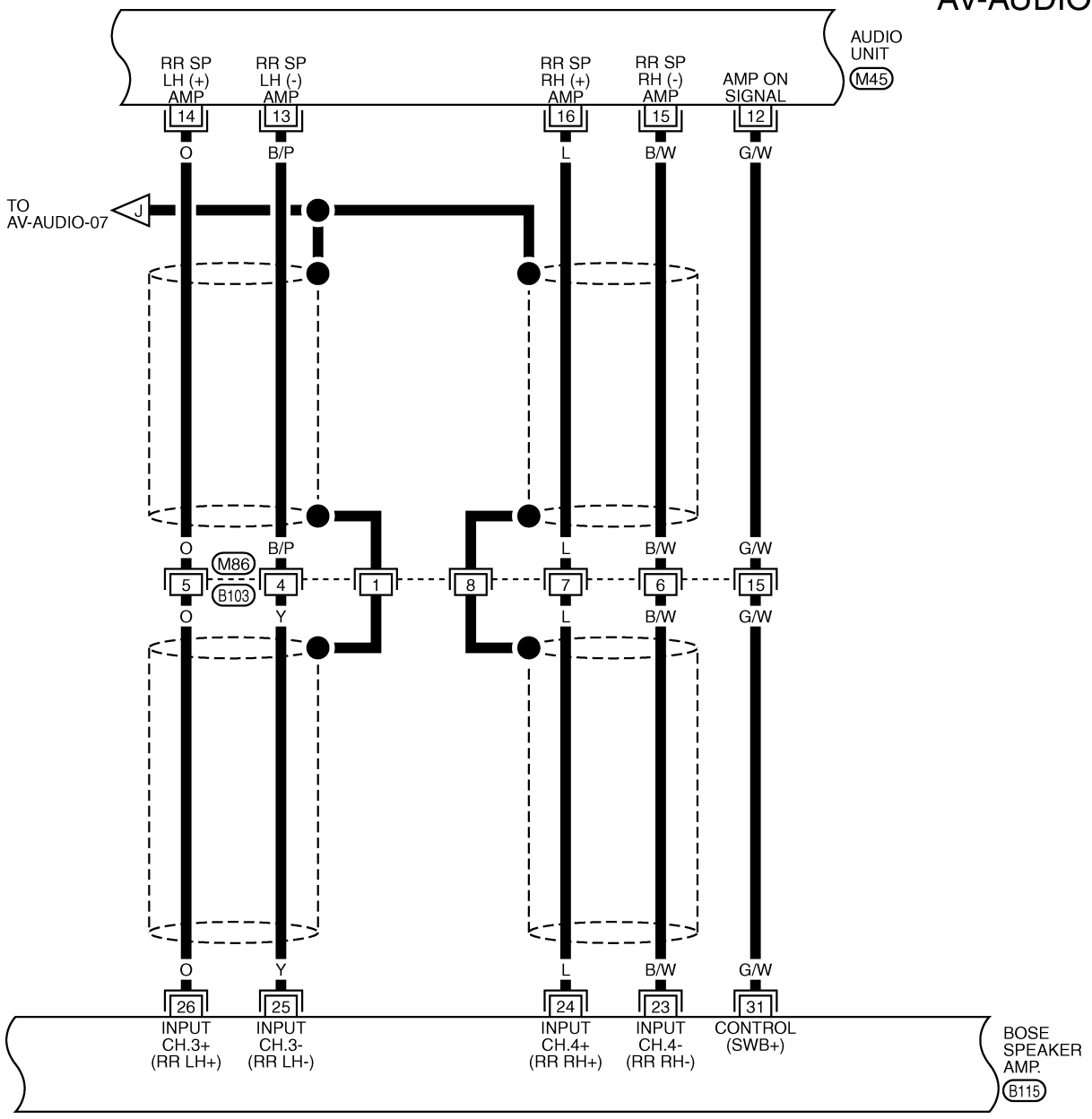




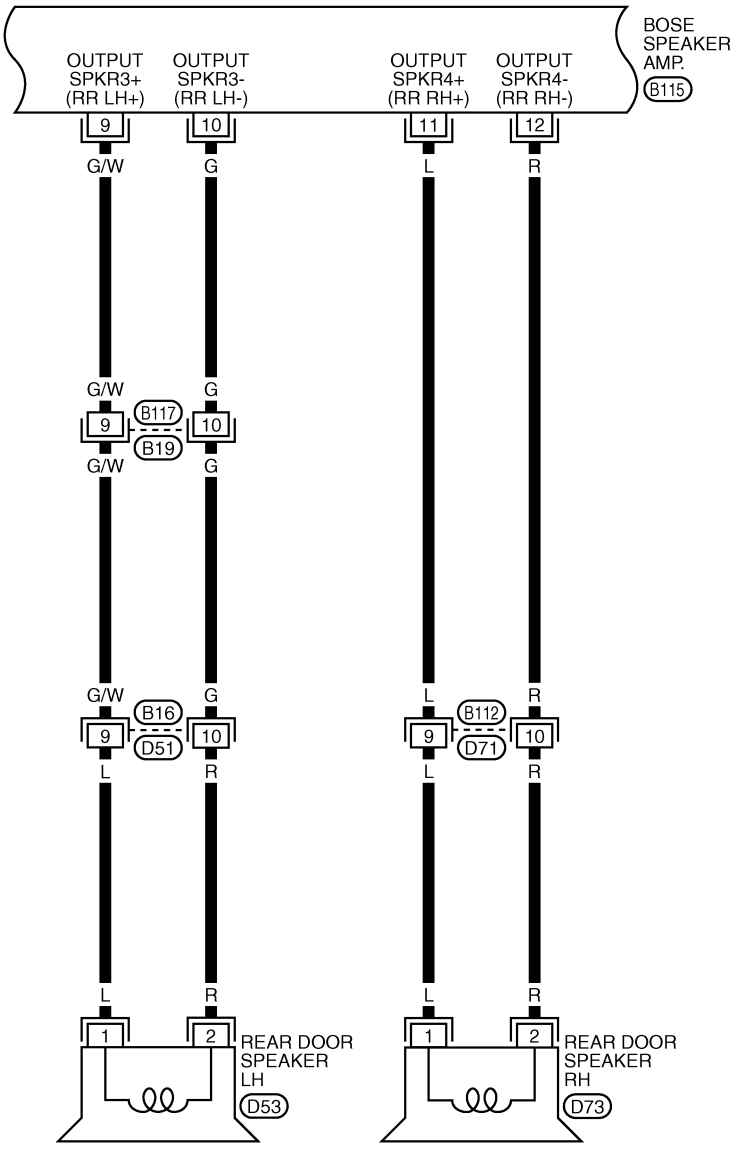
REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

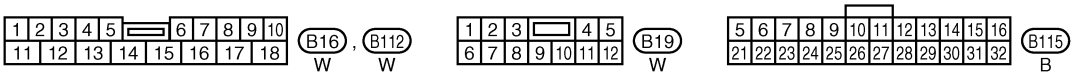
TKWB0085E

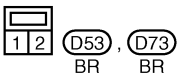
AV-AUDIO-09



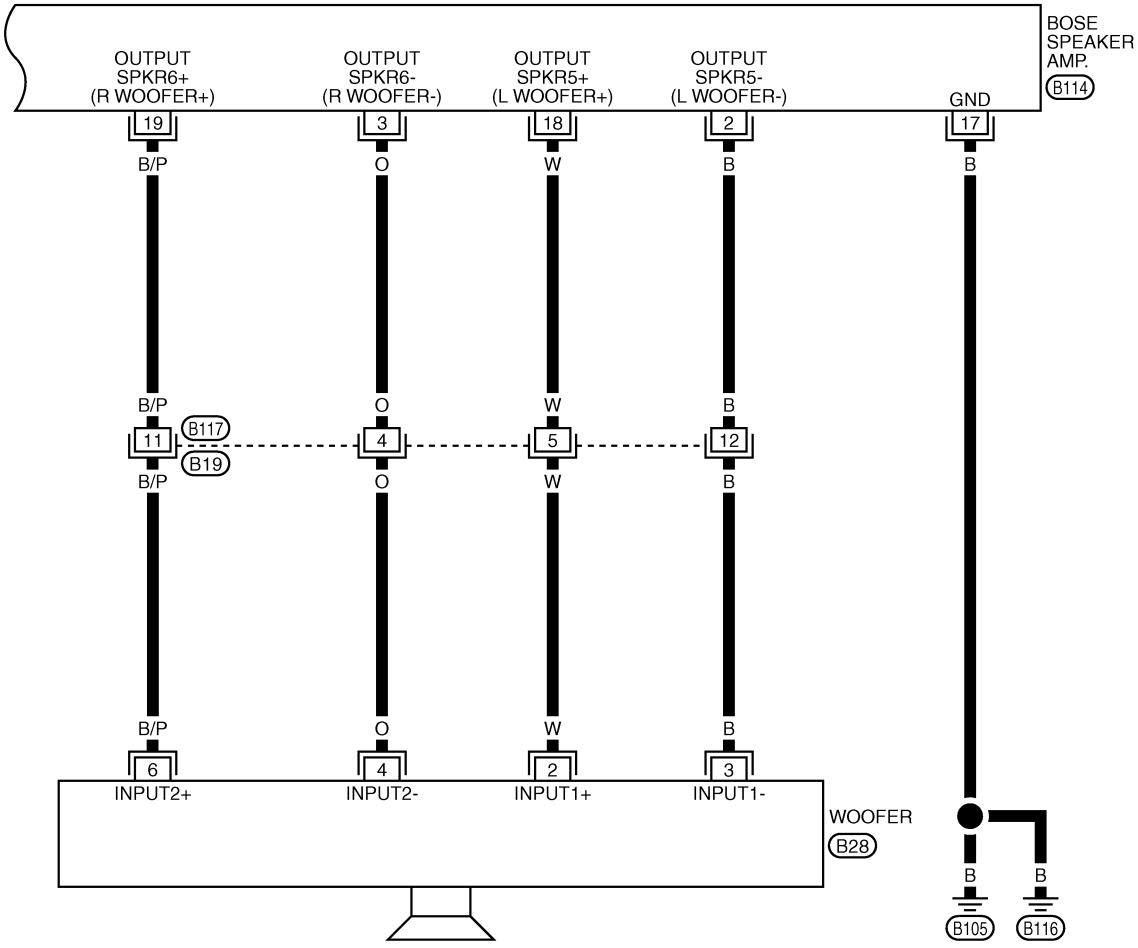
TKWB0086E

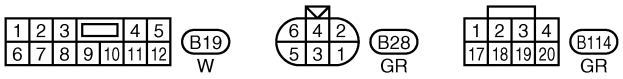

BOSE SPEAKER AMP.
B115
OUTPUT SPKR3+ (RR LH+)
OUTPUT SPKR3- (RR LH-)
OUTPUT SPKR4+ (RR RH+)
OUTPUT SPKR4- (RR RH-)
9
10
11
12
G/W
G
L
R
B117
B19
B16
D51
B112
D71
REAR DOOR SPEAKER LH
D53
REAR DOOR SPEAKER RH
D73


B16
W
B112
W
B19
W
B115
B


D53
BR
D73
BR

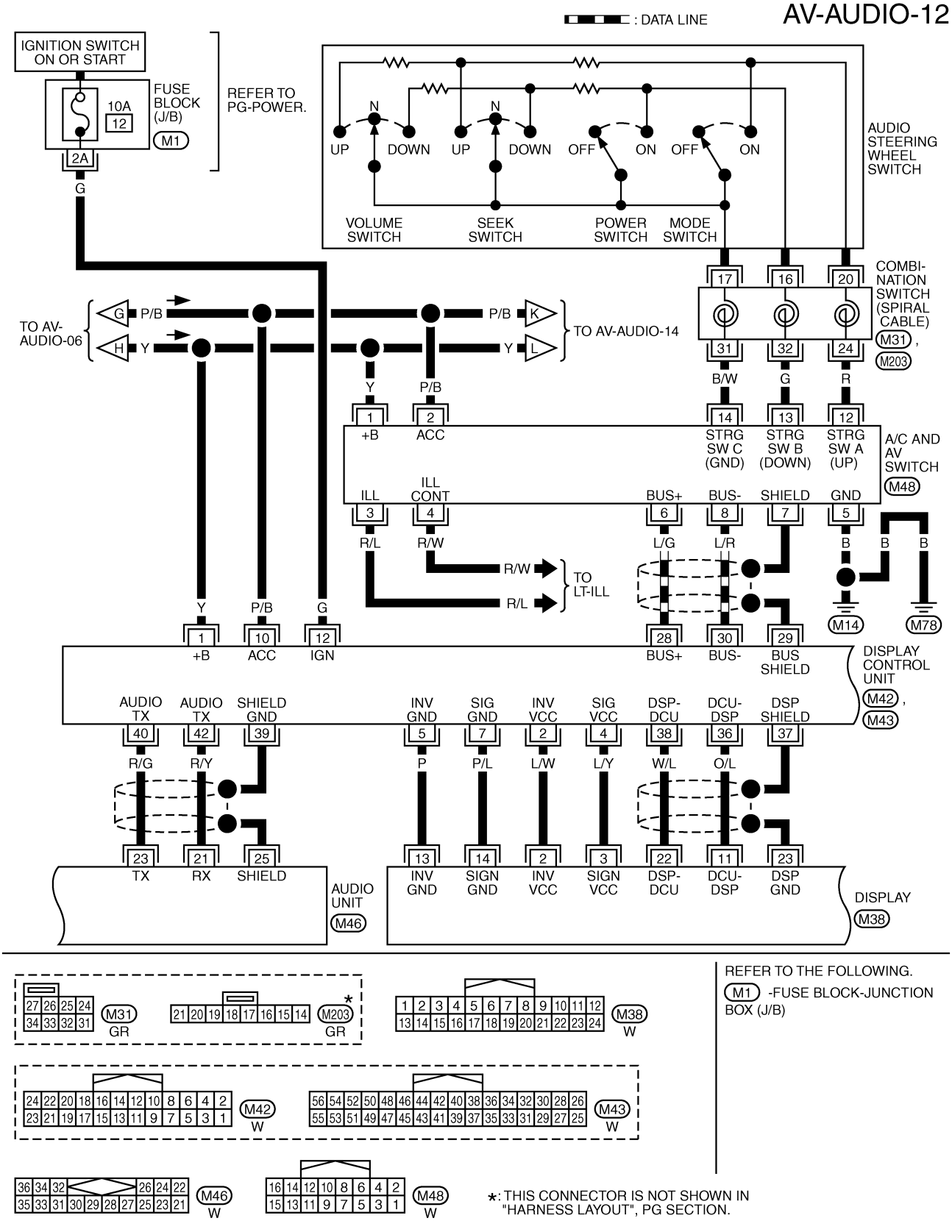
TKWA1725E


BOSE
SPEAKER
AMP.
B114
OUTPUT
SPKR6+
(R WOOFER+)
OUTPUT
SPKR6-
(R WOOFER-)
OUTPUT
SPKR5+
(L WOOFER+)
OUTPUT
SPKR5-
(L WOOFER-)
GND
19
3
18
2
17
B/P
O
W
B
B
B117
B19
11
4
5
12
6
4
2
3
INPUT2+
INPUT2-
INPUT1+
INPUT1-
WOOFER
B28
B105
B116


1 2 3 4 5
6 7 8 9 10 11 12
B19
W
6 4 2
5 3 1
B28
GR
1 2 3 4
17 18 19 20
B114
GR

TKWB0087E

AV-AUDIO-12



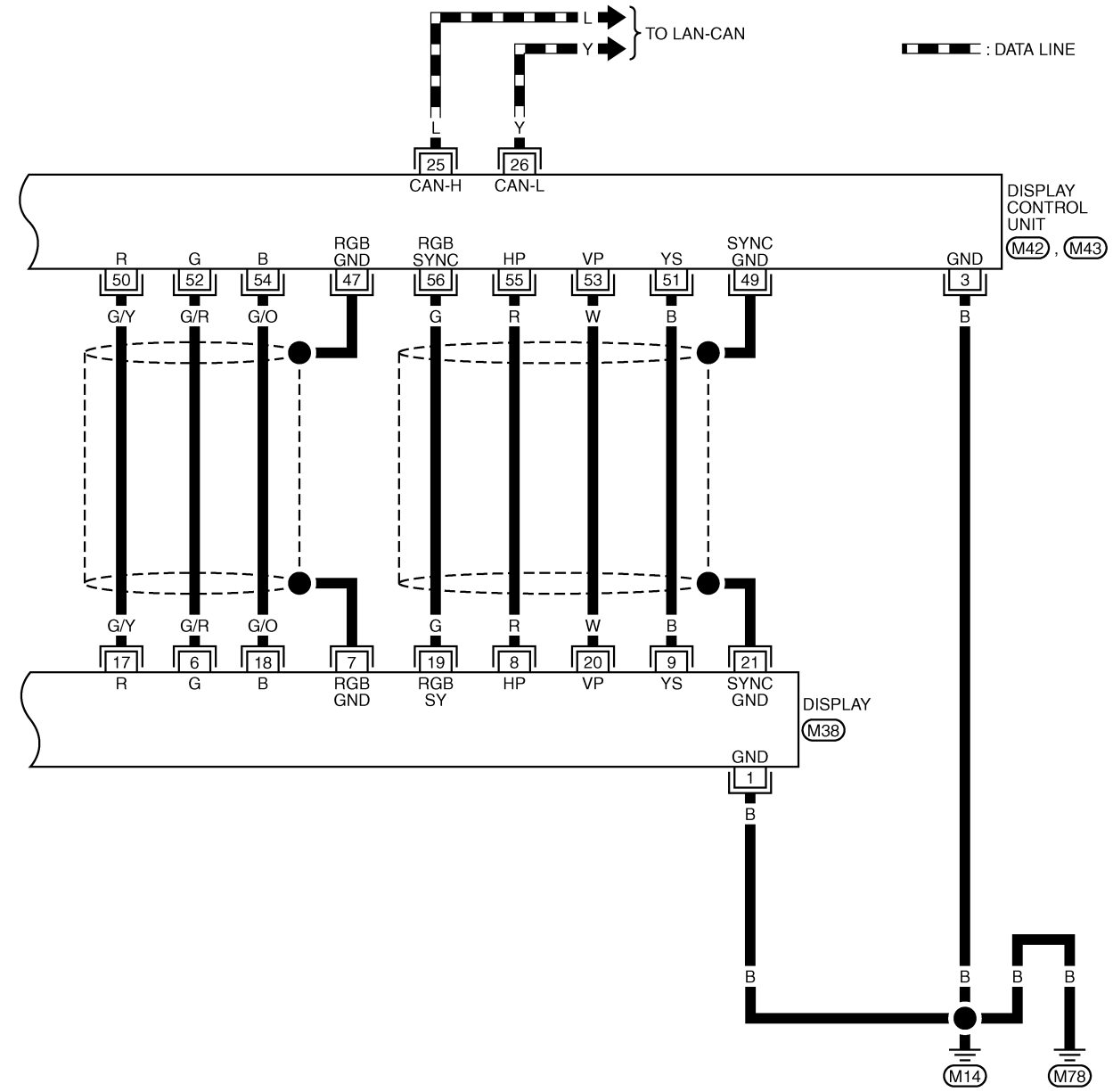
REFER TO THE FOLLOWING.

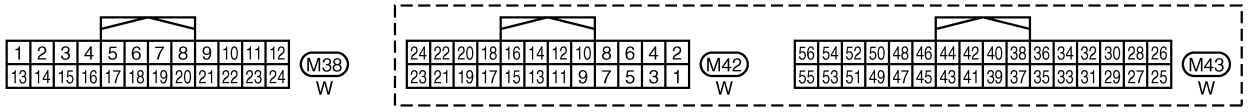
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB0088E

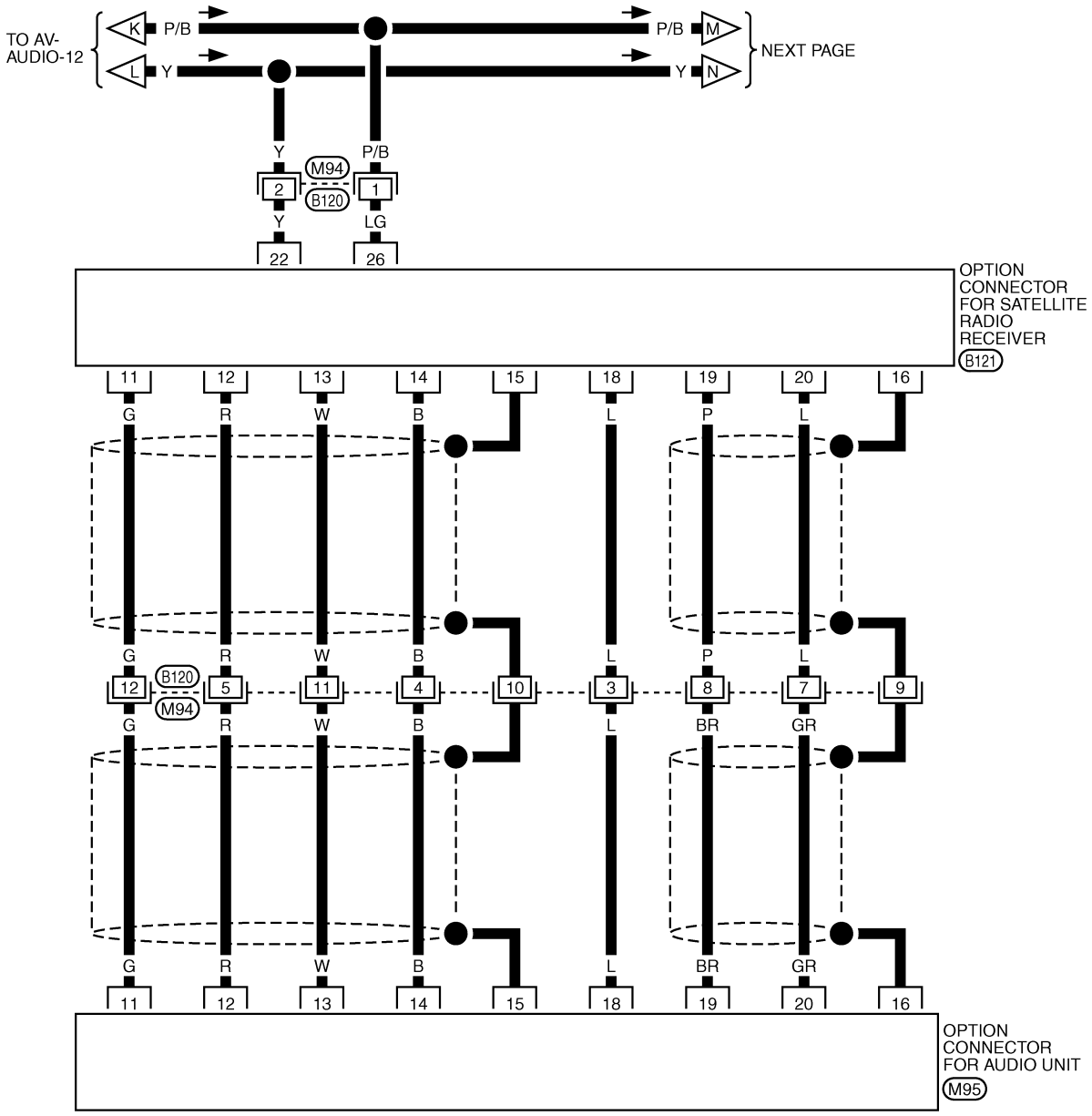
AV-AUDIO-13

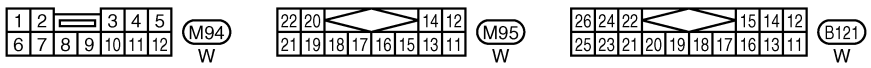




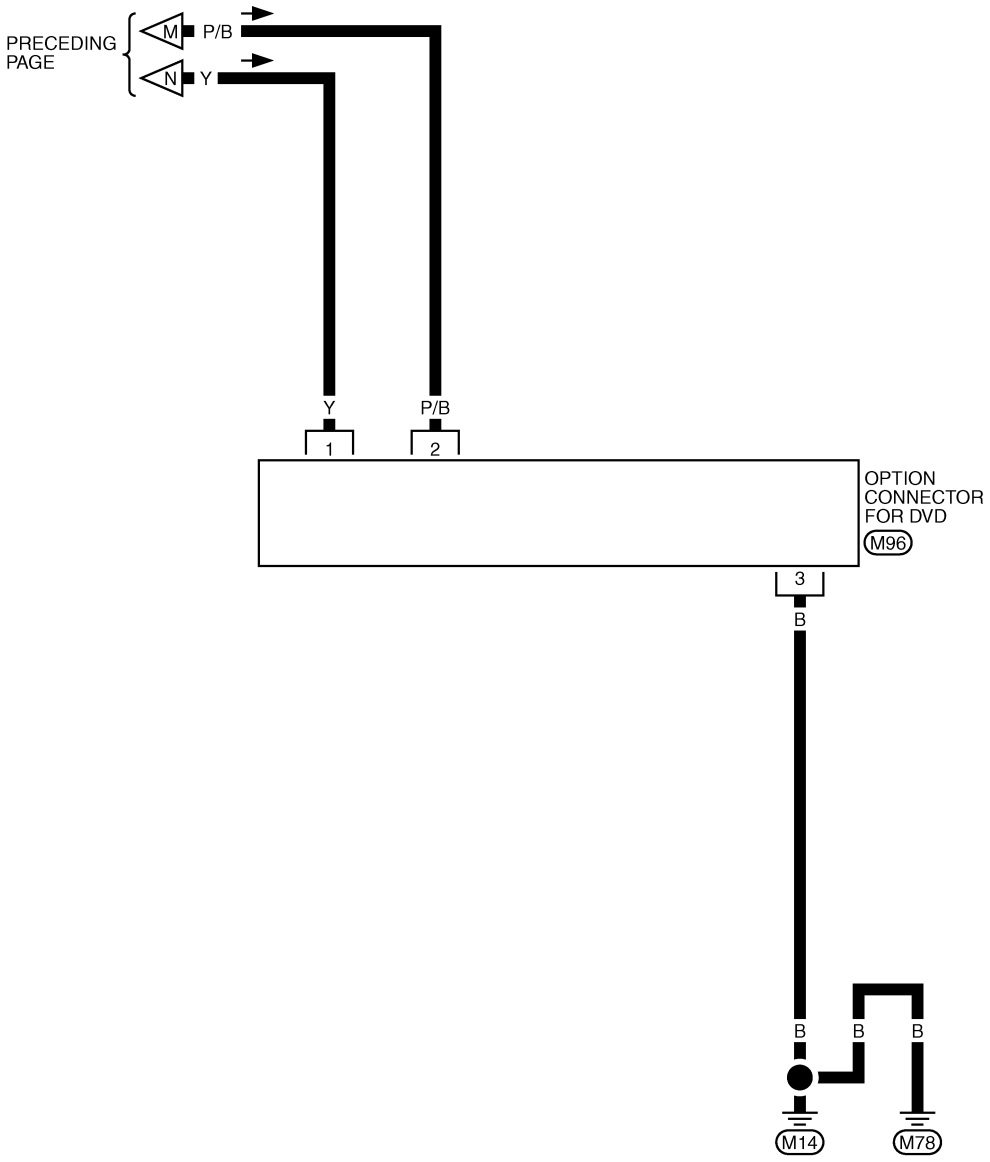
TKWB0089E

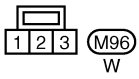
AV-AUDIO-14





TKWB0098E

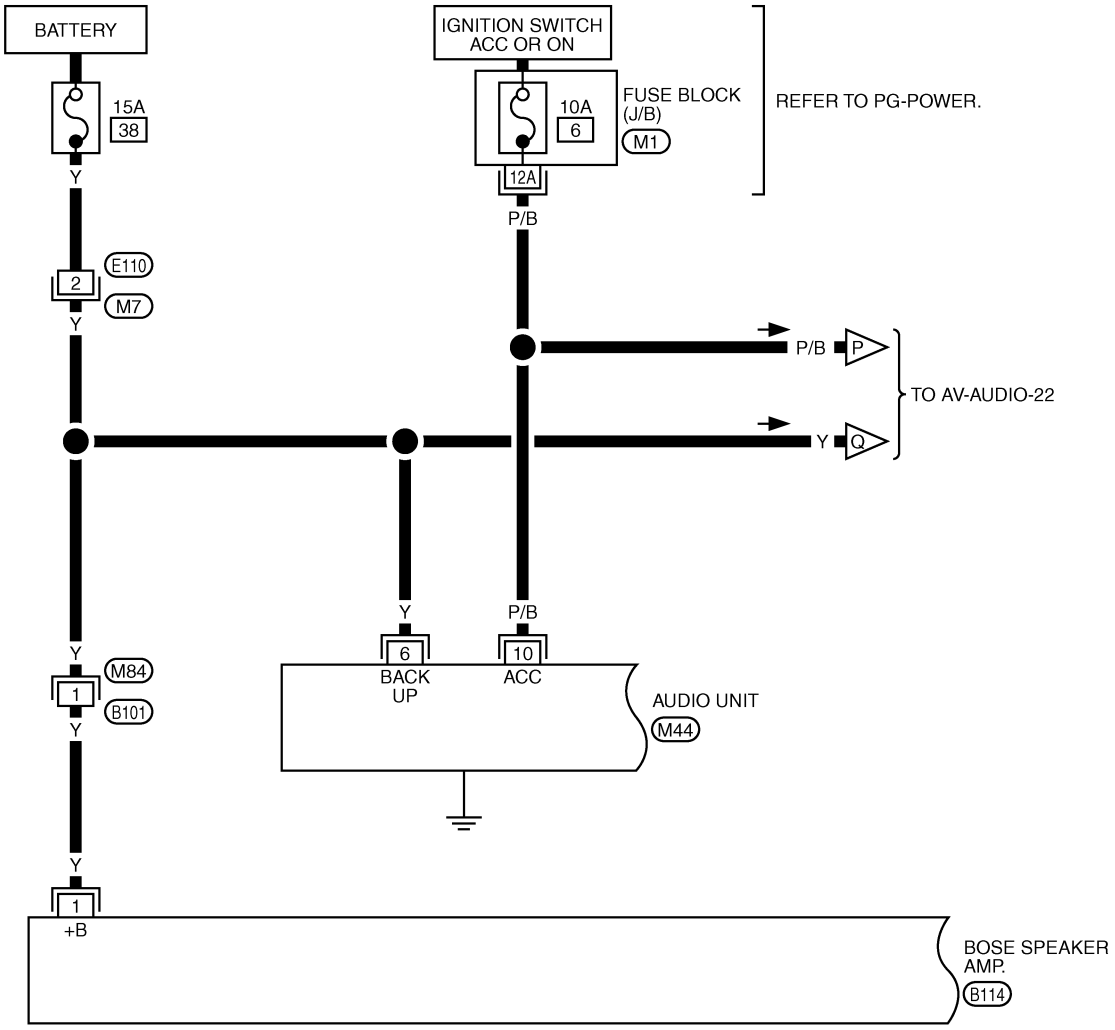

PRECEDING
PAGE
M
P/B
N
Y
Y
P/B
1
2
OPTION
CONNECTOR
FOR DVD
M96
3
B
B
B
B
M14
M78

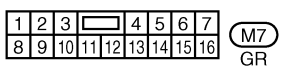

1
2
3
M96
W

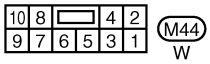
TKWB0099E

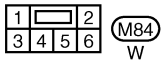
BOSE SYSTEM WITHOUT NAVIGATION SYSTEM

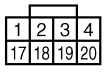
AV-AUDIO-16




M7
GR


M44
W

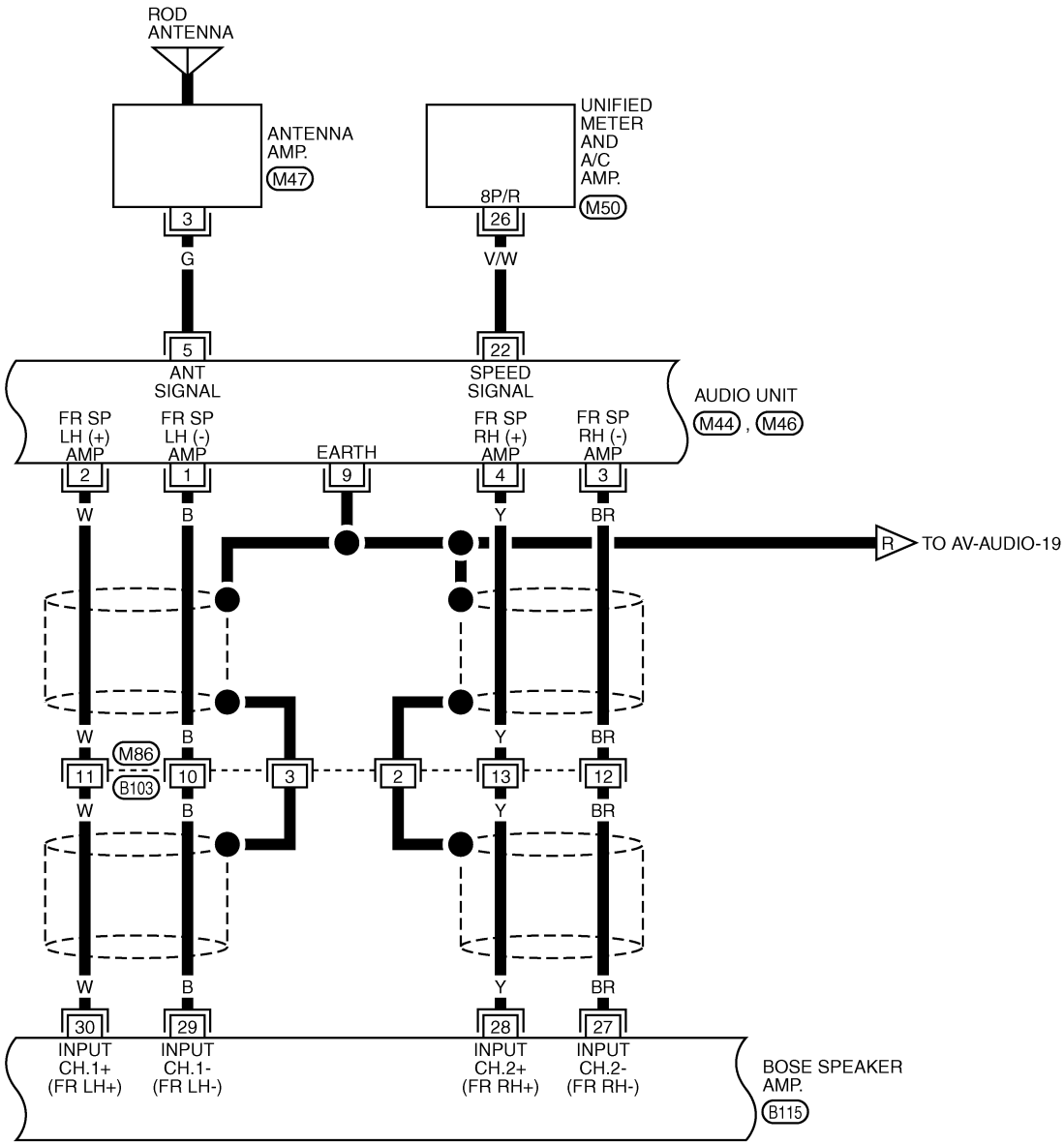

M84
W

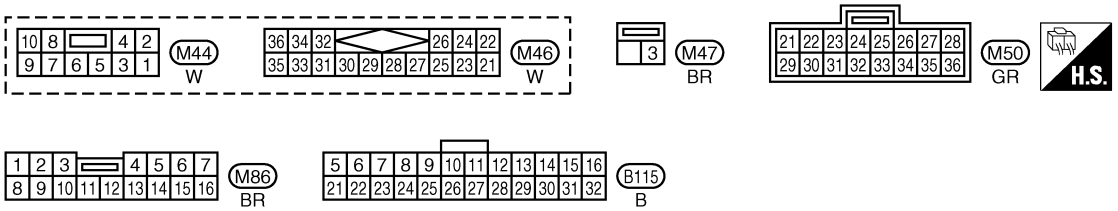

B114
GR

REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB0090E

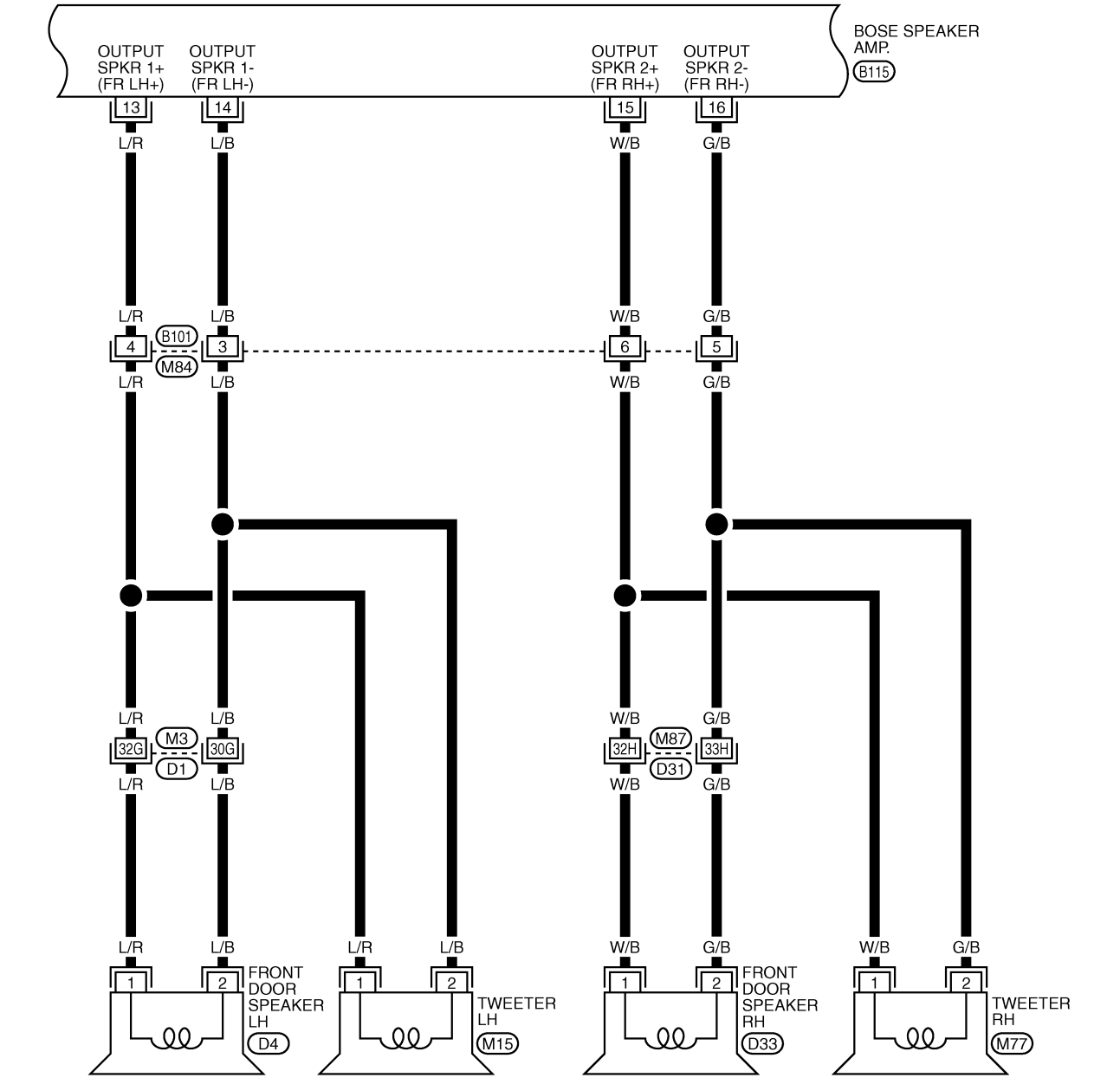
AV-AUDIO-17

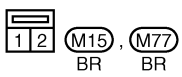


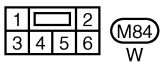


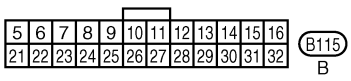
TKWA1726E

AV-AUDIO-18





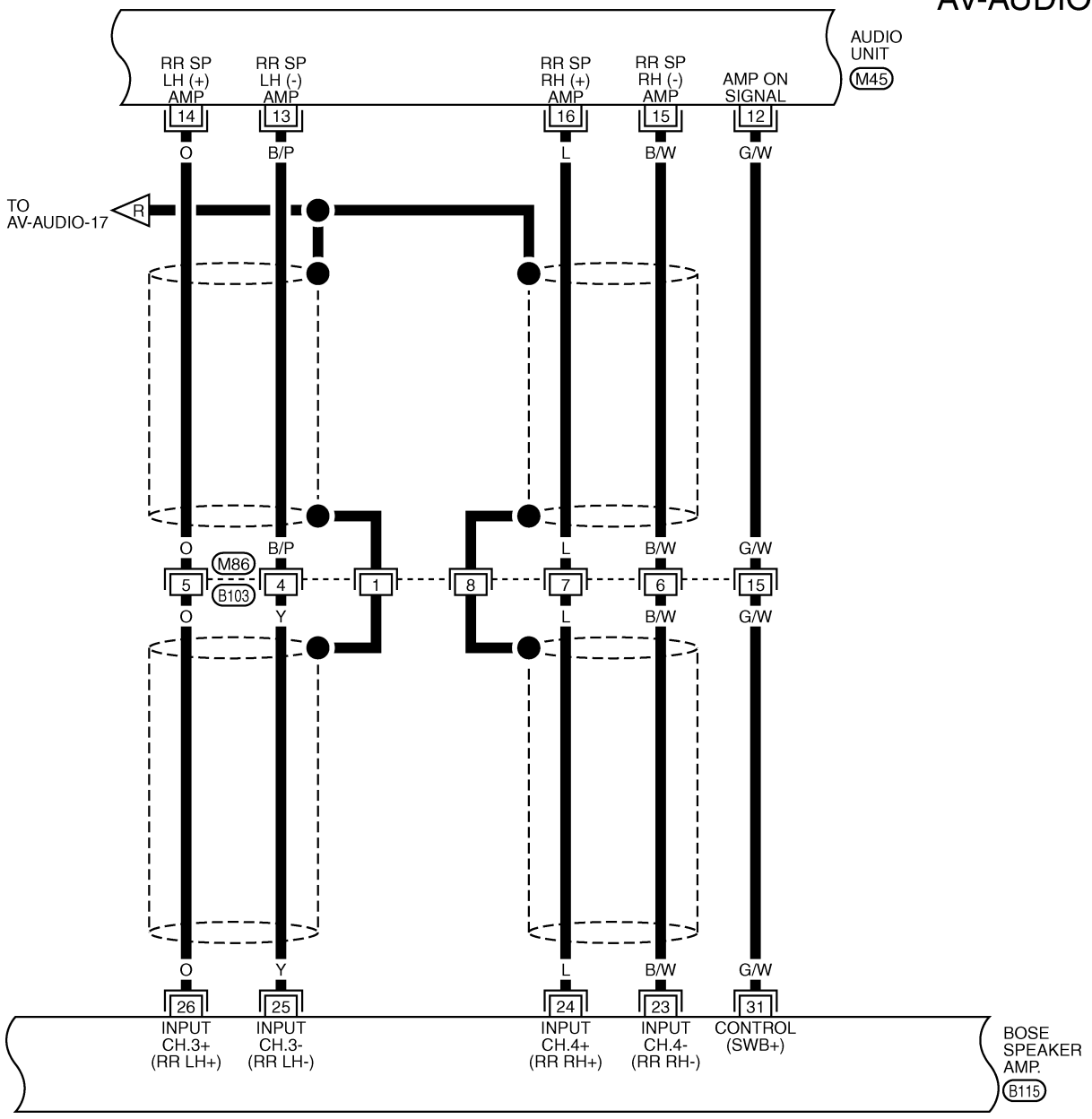




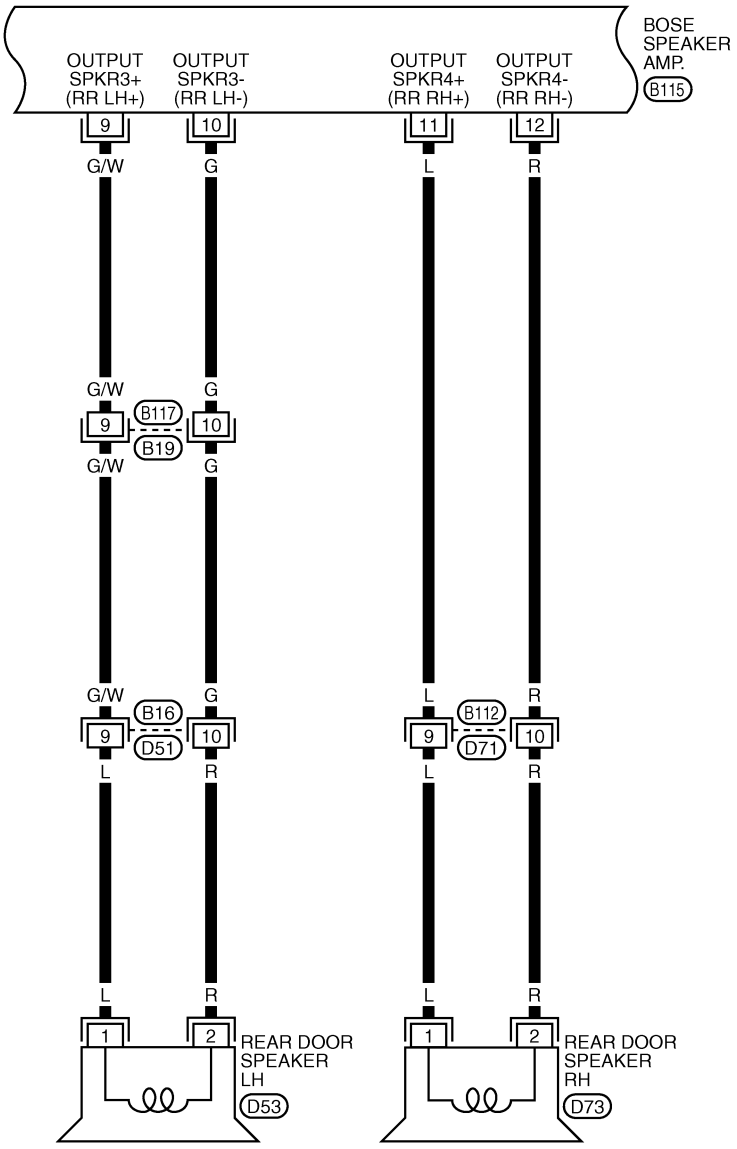
REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

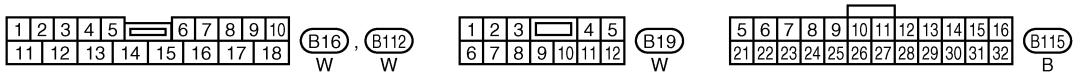
TKWB0091E

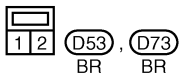
AV-AUDIO-19



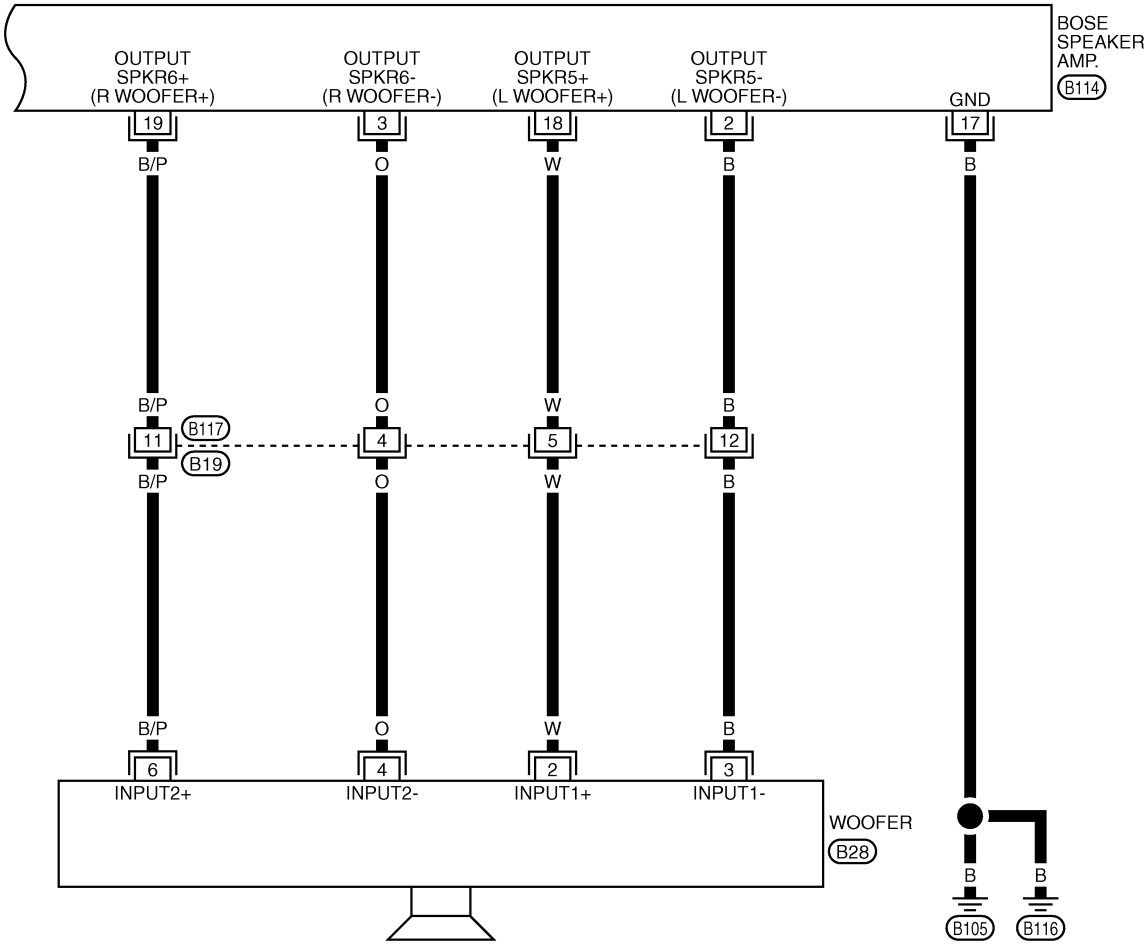
TKWB0092E

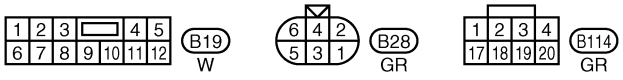

BOSE SPEAKER AMP.
B115
OUTPUT SPKR3+ (RR LH+)
OUTPUT SPKR3- (RR LH-)
OUTPUT SPKR4+ (RR RH+)
OUTPUT SPKR4- (RR RH-)
9
10
11
12
G/W
G
L
R
B117
B19
B16
D51
B112
D71
REAR DOOR SPEAKER LH
D53
REAR DOOR SPEAKER RH
D73


B16 , B112
W W
B19
W
B115
B


D53 , D73
BR BR

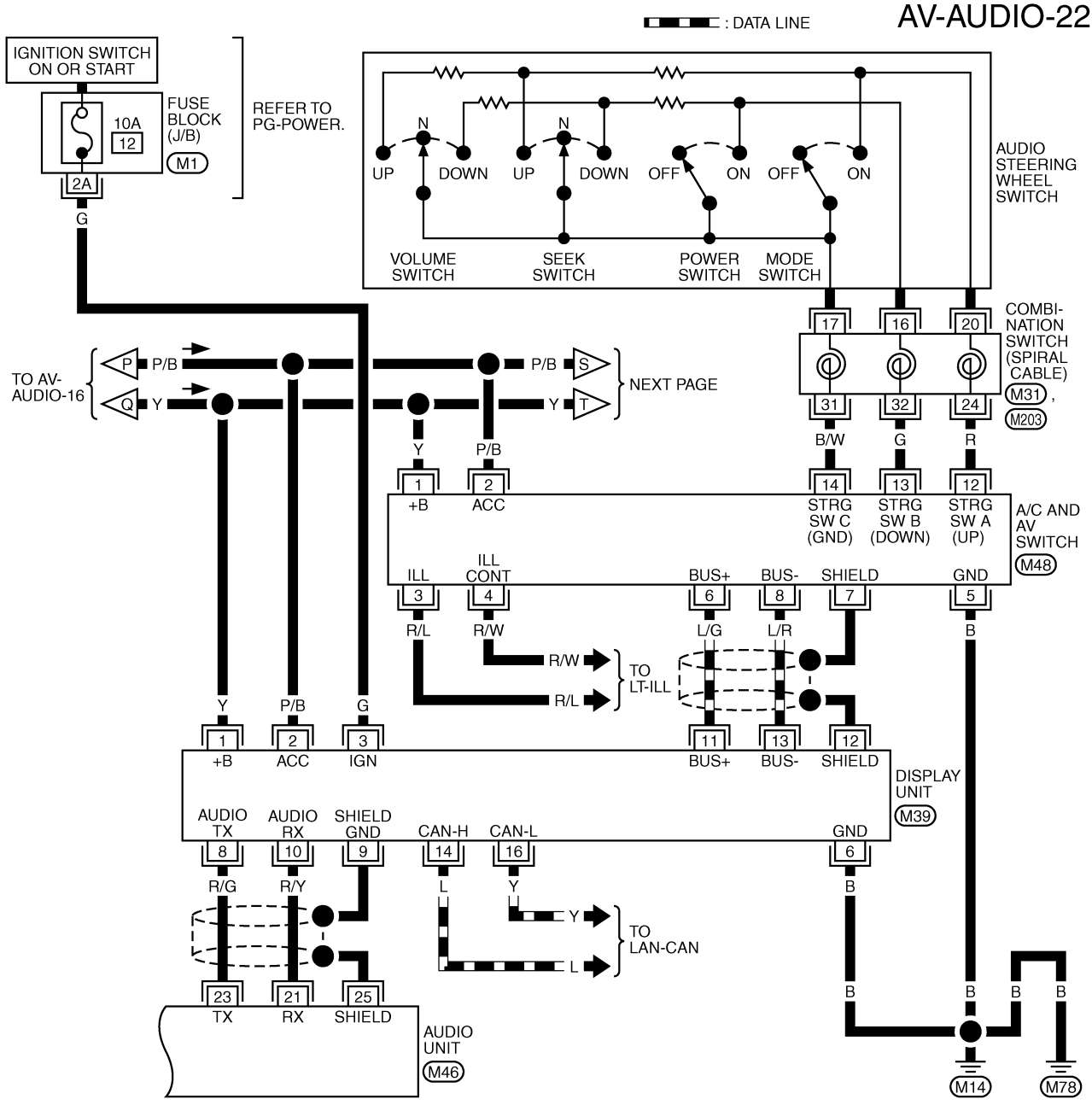
TKWA1727E

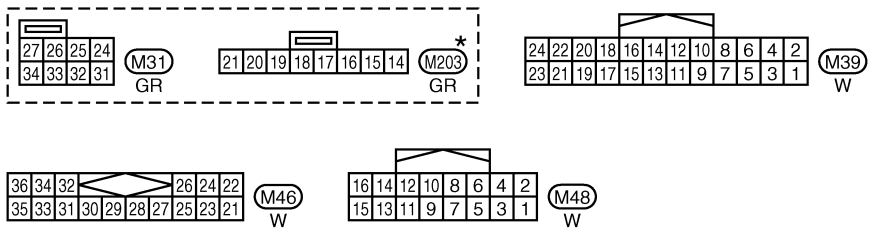

BOSE SPEAKER AMP.
B114
OUTPUT SPKR6+ (R WOOFER+)
OUTPUT SPKR6- (R WOOFER-)
OUTPUT SPKR5+ (L WOOFER+)
OUTPUT SPKR5- (L WOOFER-)
GND
19
3
18
2
17
B/P
O
W
B
B
B117
B19
11
4
5
12
6
4
2
3
INPUT2+
INPUT2-
INPUT1+
INPUT1-
WOOFER
B28
B105
B116


1 2 3 4 5
6 7 8 9 10 11 12
B19
W
6 4 2
5 3 1
B28
GR
1 2 3 4
17 18 19 20
B114
GR

TKWB0093E

AV-AUDIO-22





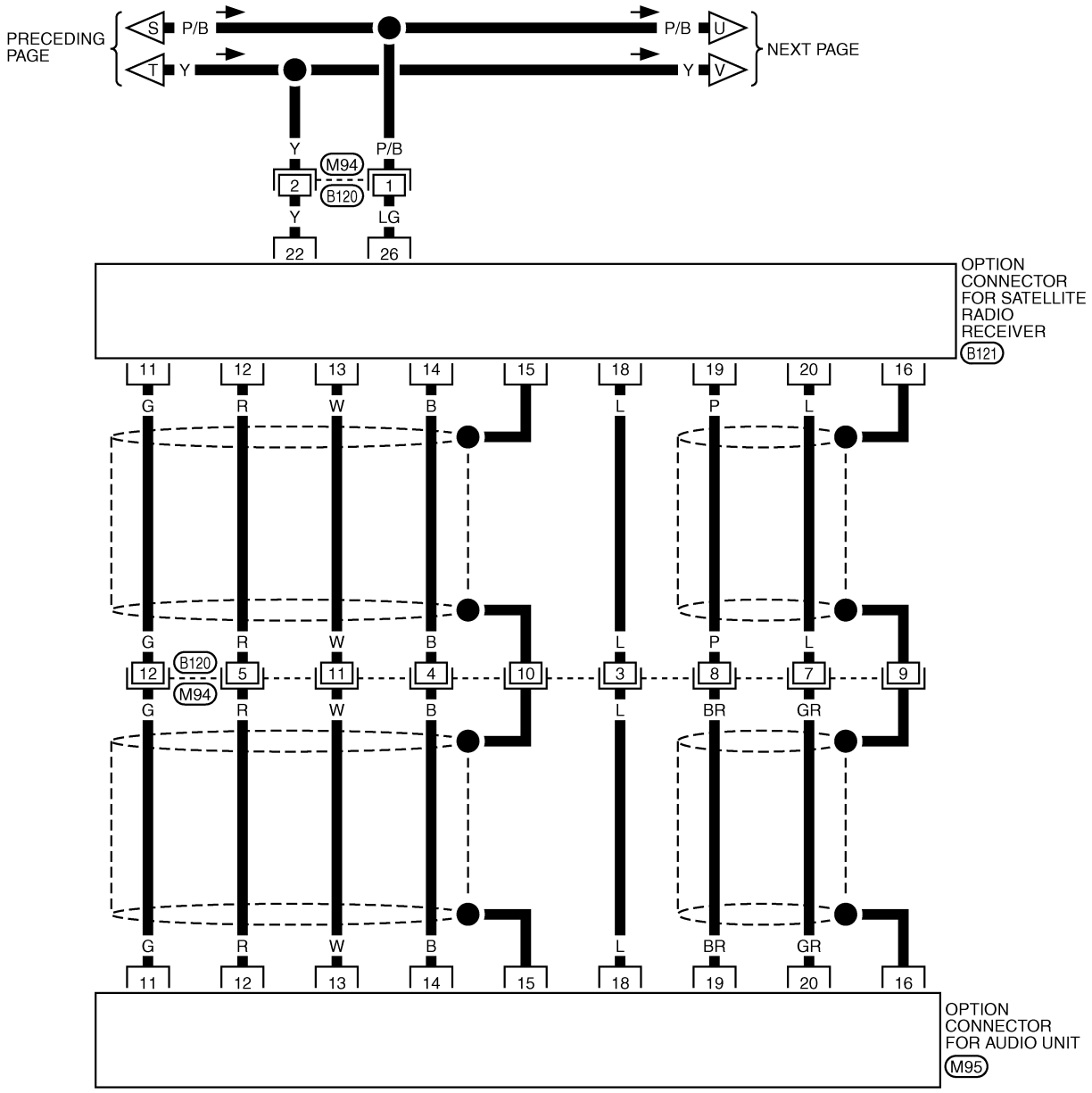
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

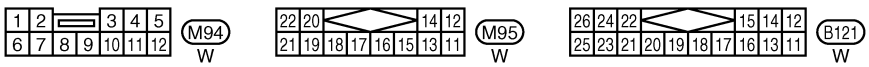
REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB0094E

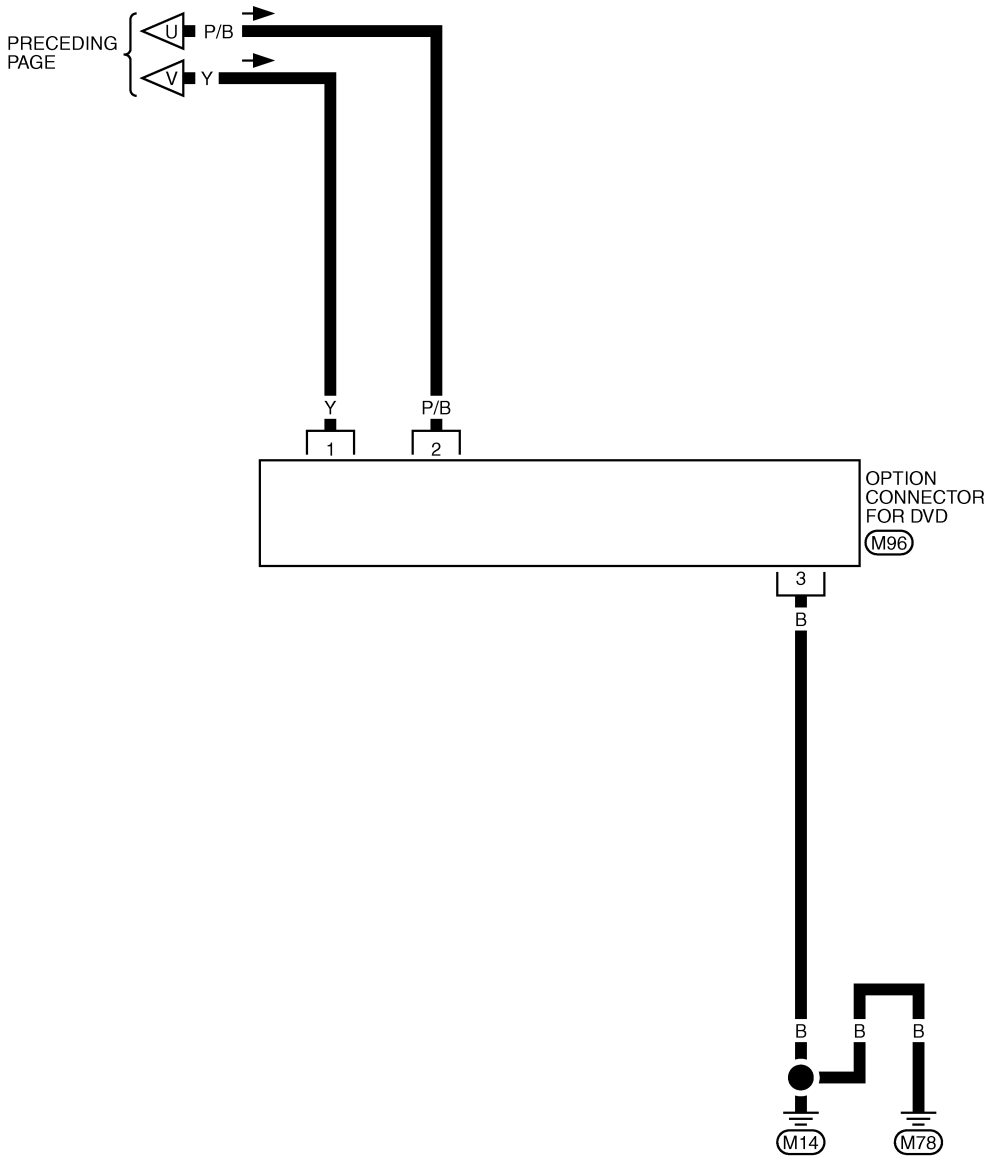
AV-AUDIO-23

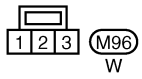




TKWB0100E

AV-AUDIO-24

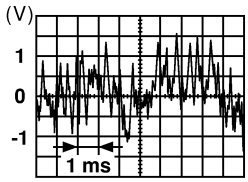
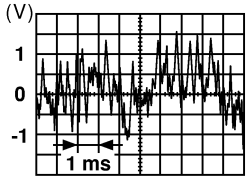
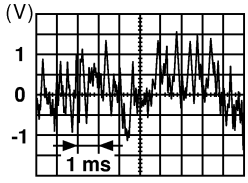
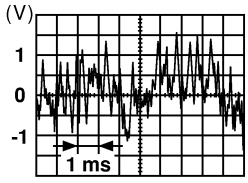
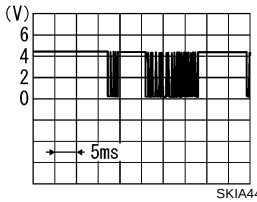
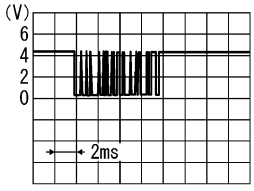




TKWB0101E

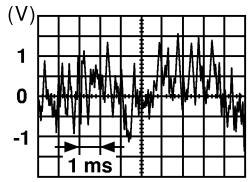
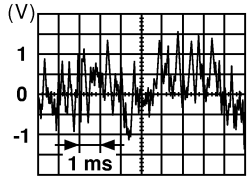
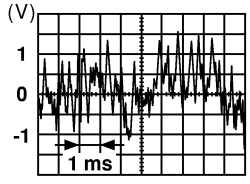
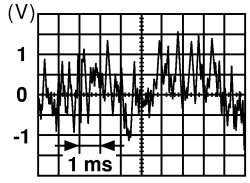
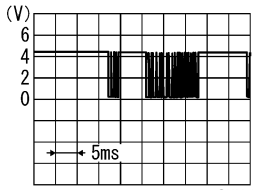
Terminals and Reference Value for Audio Unit for Base System

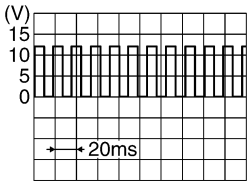
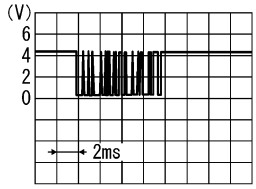
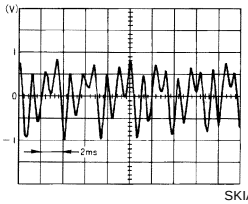
AKS005EY

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
2 (W)	1 (B)	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH and tweeter LH.
4 (Y)	3 (BR)	Audio sound signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH and tweeter RH.
5 (G)	Ground	Antenna signal	Output	ON	–	Approx. 12V	Antenna amp. does not work properly.
6 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
10 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
14 (O)	13 (B/P)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker LH.
16 (L)	15 (B/W)	Audio sound signal rear RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker RH.
21 (R/Y)	Ground	Audio RX	Output	ON	Operate audio volume switch	 SKIA4403E	Audio unit does not operate properly.
23 (R/G)	Ground	Audio TX	Input	ON	Operate audio volume switch	 SKIA4402E	Audio unit does not operate properly.
25	Ground	Shield	–	ON	–	Approx. 0V	–

Terminals and Reference Value for Audio Unit for BOSE System

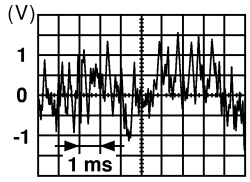
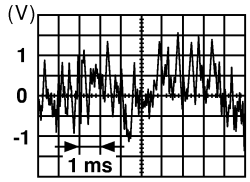
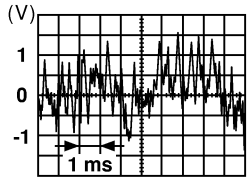
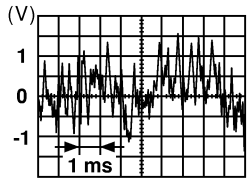
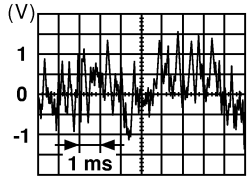
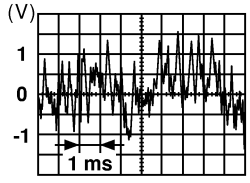
AKS005EZ

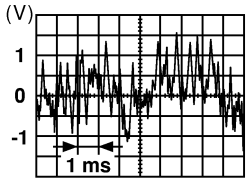
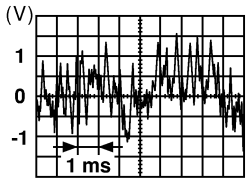
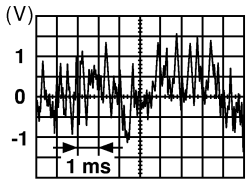
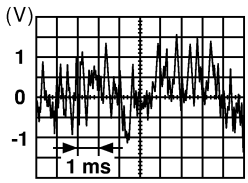
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
2 (W)	1 (B)	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH and tweeter LH.
4 (Y)	3 (BR)	Audio sound signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH and tweeter RH.
5 (G)	Ground	Antenna signal	Output	ON	–	Approx. 12V	Antenna amp. does not work properly.
6 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
9	Ground	Shield	–	ON	–	Approx. 0V	–
10 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
12 (G/W)	Ground	Amp. ON signal	Output	ON	–	Approx. 12V	BOSE speaker amp. does not work properly.
14 (O)	13 (B/P)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker LH.
16 (L)	15 (B/W)	Audio sound signal rear RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker RH.
21 (R/Y)	Ground	Audio RX	Output	ON	Operate audio volume switch	 SKIA4403E	Audio unit does not operate properly.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
22 (V/W)	Ground	Vehicle speed signal (8- pulse)	Input	ON	When vehicle speed is approx. 25 MPH (40 km/h)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E	Speed sensitive volume system dose not work properly.
23 (R/G)	Ground	Audio TX	Input	ON	Operate audio volume switch	 SKIA4402E	Audio unit does not operate properly.
25	Ground	Shield	–	ON	–	Approx. 0V	–
35	Ground	Shield	–	ON	–	Approx. 0V	–
36 (V)	34 (LG)	Voice guide signal	Input	ON	Push the “GUIDE/ VOICE” button	 SKIA0171E	Only route guide and operation guide are not heard.

Terminals and Reference Value for BOSE Speaker Amp.

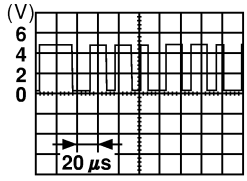
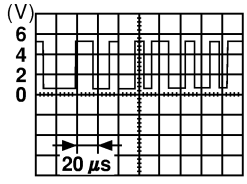
AKS005F0

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
9 (G/W)	10 (G)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker LH.
11 (L)	12 (R)	Audio sound signal rear RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker RH.
13 (L/R)	14 (L/B)	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH and tweeter LH.
15 (W/B)	16 (G/B)	Audio sound signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH and tweeter RH.
17 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
18 (W)	2 (B)	Audio sound signal woofer 1	Output	ON	Receive audio signal	 SKIA0177E	No sound from woofer.
19 (B/P)	3 (O)	Audio sound signal woofer 2	Output	ON	Receive audio signal	 SKIA0177E	No sound from woofer.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
24 (L)	23 (B/W)	Audio sound signal rear RH	Input	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker RH.
26 (O)	25 (Y)	Audio sound signal rear LH	Input	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker LH.
28 (Y)	27 (BR)	Audio sound signal front RH	Input	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH and tweeter RH.
30 (W)	29 (B)	Audio sound signal front LH	Input	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH and tweeter LH.
31 (G/W)	Ground	Control signal (SWB+)	Input	ON	–	Approx. 12V	BOSE speaker amp. does not work properly.

Terminals and Reference Value for A/C and AV Switch

AKS00AJP

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
2 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
3 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12V	A/C and AV switch illumination does not function when lighting switch is ON.
					Lighting switch OFF	Approx. 0V	
4 (R/W)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12V	A/C and AV switch illumination cannot be controlled.
5 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
6 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	–	 SKIA0175E	System does not work properly.
7	Ground	Shield	–	ON	–	Approx. 0V	–
8 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	–	 SKIA0176E	System does not work properly.
12 (R)	Ground	Remote control A	Input	ON	Push MODE switch	Approx. 0V	Audio steering wheel switch controls do not function.
					Push SEEK UP switch	Approx. 1.7V	
					Push VOL UP switch	Approx. 3.3V	
					Except for above	Approx. 5V	

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
13 (G)	Ground	Remote control B	Input	ON	Push POWER switch	Approx. 0V	Audio steering wheel switch controls do not function.
					Push SEEK DOWN switch	Approx. 1.7V	
					Push VOL DOWN switch	Approx. 3.3V	
					Except for above	Approx. 5V	
14 (B/W)	Ground	Remote control ground	–	ON	–	Approx. 0V	Audio steering wheel switch controls do not function.

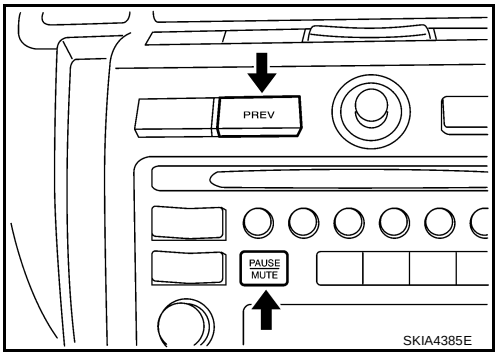
A/C and AV Switch Self-Diagnosis Function

AKS005RI

It can check ON/OFF operation of each switch in the A/C and AV switch and diagnose the input signals to the steering switch.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds push and hold the switches “PAUSE/MUTE” and “PREV” simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

- All the indicators (LED) in the A/C and AV switch.
- Continuity of the switches by sounding the buzzer when the A/C and AV switch is pushed.
- Continuity of harness between A/C and AV switch and steering switch.

NOTE:

- Indicators (LED) of REC/FRE switch change to “FRE”→“REC”→“FRE” every time the REC/FRE switch is pushed. (These two do not turn on at a time.)
- Impossible to check rear window defogger switch operation (No beep sound even under normal status).

EXITING THE SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

Trouble Diagnosis

AKS005F2

The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.

MALFUNCTION WITH RADIO AND CD (BASE SYSTEM)

Make sure that other operation except audio system can be performed with A/C and AV switch. If these operations are inoperative with A/C and AV switch, refer to AV-100, "A/C and AV Switch Does Not Operate" .

Symptom	Check item
Inoperative	● Audio unit power supply circuit. Refer to AV-47, "Power Supply Circuit Inspection" . ● Audio communication line. Refer to AV-98, "Audio Communication Line Check" . ● A/C and AV switch. Refer to AV-50, "A/C and AV Switch Check" . ● Audio unit
Audio steering wheel switch dose not operate	● Audio steering wheel switch. Refer to AV-48, "Audio Steering Wheel Switch Check" . ● A/C and AV switch. Refer to AV-50, "A/C and AV Switch Check" .
One or several speaker does not sound	● Front door speaker. Refer to AV-51, "Front Door Speaker Check (Base System)" . ● Rear door speaker. Refer to AV-53, "Rear Door Speaker Check (Base System)" . ● Audio unit

Symptom	Check item
Poor sound	● Audio unit ● Speaker
Noisy	● Audio unit ● Each electrical equipment

MALFUNCTION WITH RADIO, TAPE AND CD (BOSE SYSTEM)

Make sure that other operation except audio system can be performed with A/C and AV switch. If these operations are inoperative with A/C and AV switch, refer to AV-100, "A/C and AV Switch Does Not Operate" (without navigation system), AV-187, "Unable to Operate All of A/C and AV Switches (Unable to Start Self-Diagnosis)" .

Symptom	Check item
Inoperative	● Audio unit power supply circuit. Refer to AV-47, "Power Supply Circuit Inspection" . ● Audio communication line (Without Navigation System). Refer to AV-98, "Audio Communication Line Check" . ● Audio communication line (With Navigation System). Refer to AV-144, "Self-Diagnosis Mode (DCU)" . ● A/C and AV switch. Refer to AV-50, "A/C and AV Switch Check" . ● Audio unit
Audio steering wheel switch dose not operate	● Audio steering wheel switch. Refer to AV-48, "Audio Steering Wheel Switch Check" . ● A/C and AV switch. Refer to AV-50, "A/C and AV Switch Check" .
One or several speaker does not sound	● BOSE speaker amp. power supply and ground circuit. Refer to AV-47, "Power Supply Circuit Inspection" . ● Front door speaker. Refer to AV-55, "Front Door Speaker Check (BOSE System)" . ● Rear door speaker. Refer to AV-59, "Rear Door Speaker Check (BOSE System)" . ● BOSE speaker amp. ● Audio unit
Woofer does not sound	● Woofer. Refer to AV-63, "Woofer Check (BOSE System)" . ● BOSE speaker amp.
Speed sensitive volume system dose not work	● Vehicle speed signal. Refer to AV-64, "Vehicle Speed Signal Check" . ● Audio unit
Poor sound	● Audio unit ● BOSE speaker amp. ● Speaker ● Woofer
Noisy	● Audio unit ● BOSE speaker amp. ● Each electrical equipment

FOR RADIO ONLY

Symptom	Check item
No sound	● Audio unit ● Antenna feeder ● Antenna amp.
Noisy	● Audio unit ● Antenna feeder ● Antenna amp. ● Noise prevention parts ● Each electrical equipment ● Wire harness of each piece of electrical equipment
Selected radio stations stored in memory are deleted	Audio unit

NOTE:
This is noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off of mountains or buildings.

FOR CASSETTE PLAYER ONLY

Symptom	Check item
Cassette tape cannot be inserted	● Cassette tape ● Audio unit
Cassette tape cannot be ejected	
Auto reverse does not work, or the tape direction changes in the middle of play	
There is much noise	
The sound is not clear	
Sound fluctuates/tape speed not correct	
No sound	

FOR CD ONLY

Symptom	Check item
CD cannot be inserted	● CD ● Audio unit
CD cannot be ejected	
The CD cannot be played	
The sound skips, stops suddenly, or is distorted	

Noise Inspection

AKS005F3

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunction. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause.

NOTE:
The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

TYPE OF NOISE AND POSSIBLE CAUSE

Occurrence condition		Check item
Occurs only when engine is ON	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed	● Ignition condenser
	A whistling noise occurs while the engine speed is high. A booming noise occurs while the engine is running and the lighting switch is ON	● Alternator
The occurrence of the noise is linked with the operation of the fuel pump		● Fuel pump condenser
Noise only occurs when various electrical components are operating	A cracking or snapping sound occurs with the operation of various switches	● Relay malfunction, radio malfunction
	The noise occurs when various motors are operating	● Motor case ground ● Motor
The noise occurs constantly, not just under certain conditions		● Poor ground of antenna amp. or antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively		● Ground wire of body parts ● Ground due to incorrect installation of parts ● Wiring connections or a short circuit

Power Supply Circuit Inspection

AKS005F4

1. CHECK FUSE

Make sure that the following fuses of the BOSE speaker amp. and audio unit are not blown.

Unit	Signal	Fuse No.
Audio unit	Battery power supply	38
	Ignition switch ACC or ON	6
BOSE speaker amp.	Battery power supply	38

OK or NG

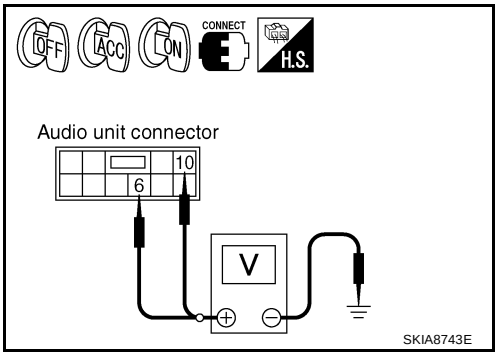
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

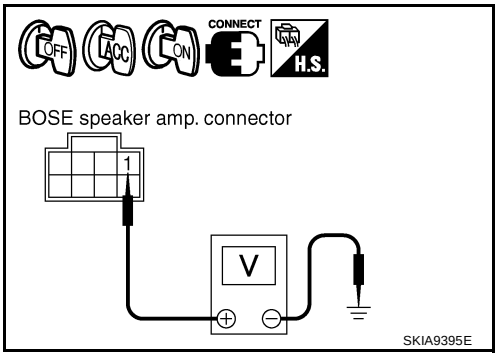
1. Check voltage between audio unit harness connector terminals and ground.

Terminals (+) Connector	Terminals (+) Terminal (Wire color)	Terminals (–)	OFF	ACC	ON
M44	6 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	10 (P/B)	Ground	0 V	Battery voltage	Battery voltage



2. Check voltage between BOSE speaker amp. harness connector terminal and ground.

Terminals (+) Connector	Terminals (+) Terminal (Wire color)	Terminals (–)	OFF	ACC	ON
B114	1 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage



OK or NG

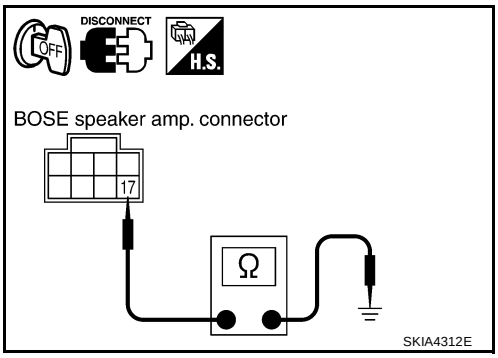
OK >> ● INSPECTION END (Base system)
● GO TO 3 (BOSE system).

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. connector.
3. Check continuity between BOSE speaker amp. harness connector B114 terminal 17 (B) and ground.

17 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.

Power Supply and Ground Circuit Check for A/C and AV Switch

AKS00AJO

1. CHECK FUSE

Make sure that the following fuses of the A/C and AV switch are not blown.

Unit	Signal	Fuse No.
A/C and AV switch	Battery power supply	38
	Ignition switch ACC or ON	6

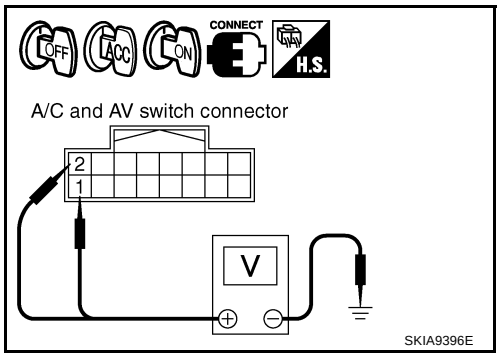
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between A/C and AV switch harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal (Wire color)				
M48	1 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	2 (P/B)		0V	Battery voltage	Battery voltage



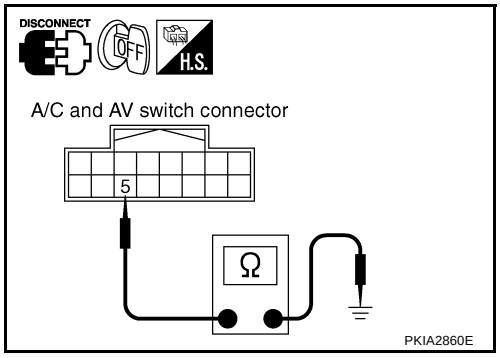
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect A/C and AV switch connector.
3. Check continuity between A/C and AV switch harness connector M48 terminal 5 (B) and ground.

5 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Audio Steering Wheel Switch Check

AKS0069B

1. CHECK A/C AND AV SWITCH SELF-DIAGNOSIS FUNCTION

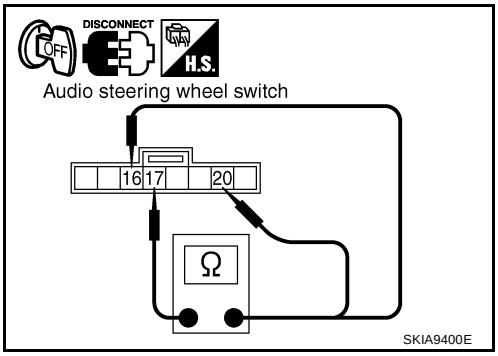
1. Start A/C and AV switch self-diagnosis function. Refer to AV-43, "A/C and AV Switch Self-Diagnosis Function" .
2. Operate audio steering wheel switch.

Does audio steering wheel switch operate normally?

YES >> INSPECTION END
NO >> GO TO 2.

2. CHECK AUDIO STEERING WHEEL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect spiral cable connector.
3. Check resistance audio steering wheel switch harness connector terminals.



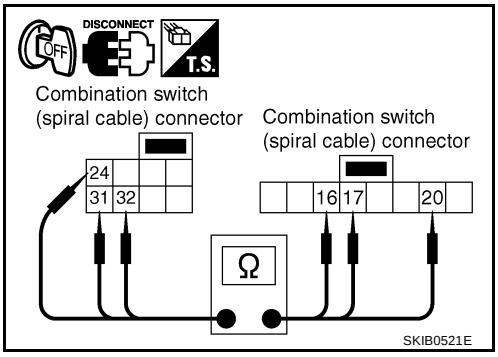
Terminal		Signal name	Condition	Resistance (Ω)
16	17	Seek down	Depress (station) down switch.	Approx.165
		Power	Depress power switch.	Approx.0
		Volume (down)	Depress volume down switch.	Approx.652
20		Seek up	Depress (station) up switch.	Approx.165
		Mode	Depress mode switch.	Approx.0
		Volume (up)	Depress volume up switch.	Approx.652

OK or NG

OK >> GO TO 3.
NG >> Replace audio steering wheel switch.

3. CHECK SPIRAL CABLE

1. Disconnect spiral cable connector.
2. Check continuity between combination switch (spiral cable) terminals.



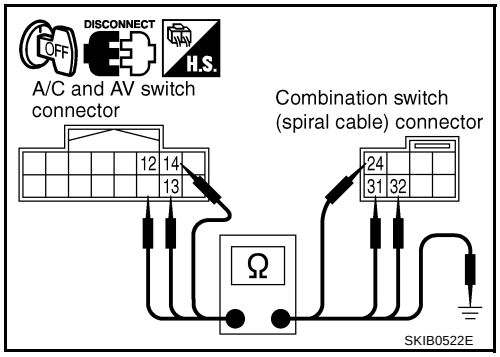
Terminals				Continuity
Combination switch (spiral cable)				
Connector	Terminal	Connector	Terminal	
M31	32	M203	16	Yes
	31		17	
	24		20	

OK or NG

OK >> GO TO 4.
NG >> Replace spiral cable.

4. CHECK HARNESS

1. Disconnect A/C and AV switch connector.
2. Check continuity between A/C and AV switch harness connector terminals and combination switch (spiral cable) harness connector terminals.



Terminals				Continuity
A/C and AV switch		Combination switch (spiral cable)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M48	13 (G)	M31	32 (G)	Yes
	14 (B/W)		31 (B/W)	
	12 (R)		24 (R)	

3. Check continuity between A/C and AV switch harness connector terminals and ground.

Terminals			Continuity
A/C and AV switch			
Connector	Terminal (Wire color)		
M48	12 (R)	Ground	No
	13 (G)		
	14 (B/W)		

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

A/C and AV Switch Check

AKS007H8

1. CHECK A/C AND AV SWITCH SELF-DIAGNOSIS FUNCTION

1. Start A/C and AV switch self-diagnosis function. Refer to AV-43, "A/C and AV Switch Self-Diagnosis Function" .
2. Operate voluntary switch.

Does A/C and AV switch operate normally?

YES >> INSPECTION END
NO >> GO TO 2.

2. CHECK A/C AND AV SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check A/C and AV switch power supply and ground circuit. Refer to AV-48, "Power Supply and Ground Circuit Check for A/C and AV Switch" .

OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair malfunctioning parts.

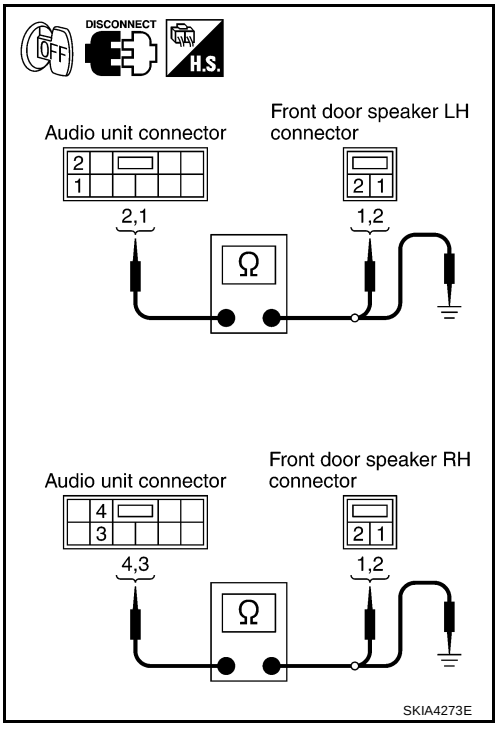
Front Door Speaker Check (Base System)

AKS005FT

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and front door speaker connectors.
3. Check continuity between audio unit harness connector terminals and front door speaker harness connector terminals.

Terminals				Continuity
Audio unit		Front door speaker		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M44	2 (W)	D5	1 (L/R)	Yes
	1 (B)		2(L/B)	
	4 (Y)	D34	1 (W/B)	
	3 (BR)		2 (G/B)	



4. Check continuity between audio unit harness connector terminals and ground.

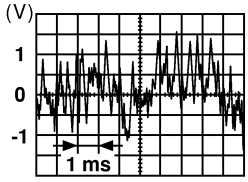
Terminals			Continuity
Audio unit			
Connector	Terminal (Wire color)		
M44	2 (W)	Ground	No
	1 (B)		
	4 (Y)		
	3 (BR)		

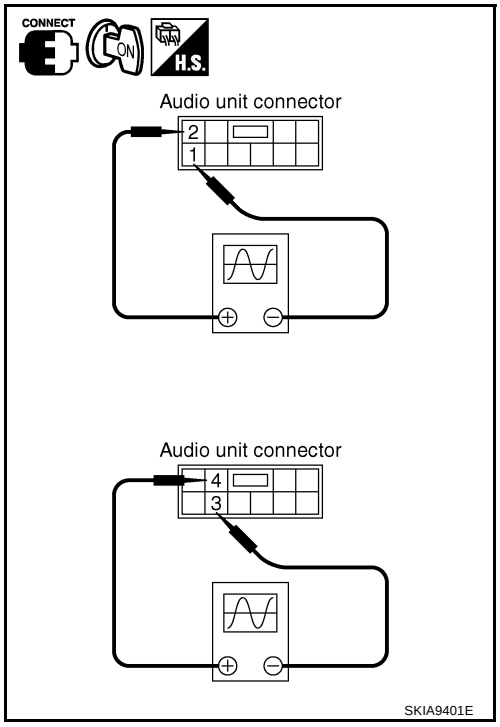
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK FRONT SPEAKER SIGNAL

1. Connect audio unit and front door speaker connectors.
2. Turn ignition switch ON.
3. Push “POWER” switch.
4. Check voltage waveform between audio unit harness connector terminals and ground using CONSULT-II or oscilloscope.

Terminals				Condition	Reference signal
(+)		(–)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
M44	2 (W)	M44	1 (B)	Receive audio signal	 SKIA0177E
	4 (Y)		3 (BR)		



OK or NG

OK >> INSPECTION END
NG >> Replace audio unit.

Rear Door Speaker Check (Base System)

AKS005FU

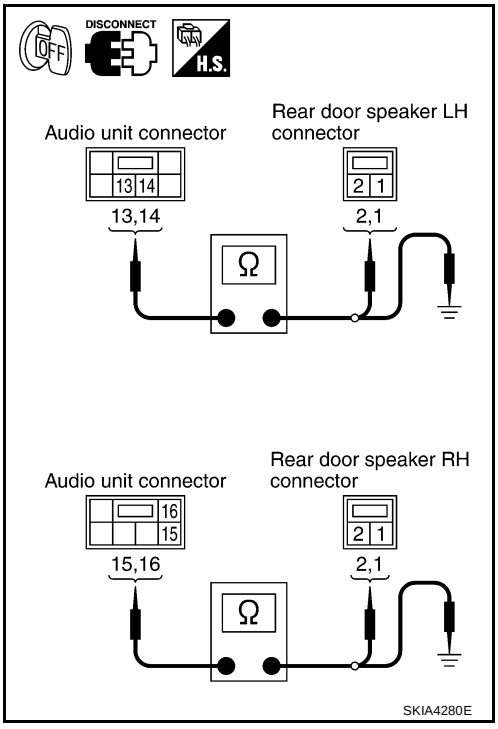
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and rear door speaker connectors.
3. Check continuity between audio unit harness connector terminals and rear door speaker harness connector terminals.

Terminals				Continuity
Audio unit		Rear door speaker		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M45	13 (B/P)	D54	2 (R)	Yes
	14 (O)		1(L)	
	15 (B/W)	D74	2 (R)	
	16 (L)		1 (L)	

4. Check continuity between audio unit harness connector terminals and ground.

Terminals			Continuity
Audio unit		Ground	
Connector	Terminal (Wire color)		
M45	13 (B/P)		No
	14 (O)		
	15 (B/W)		
	16 (L)		

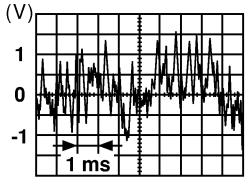


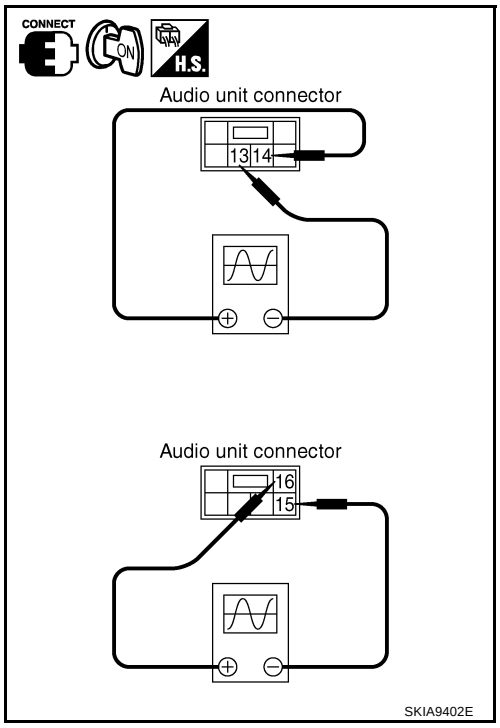
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK REAR SPEAKER SIGNAL

1. Connect audio unit and rear door speaker connectors.
2. Turn ignition switch ON.
3. Push “POWER” switch.
4. Check voltage waveform audio unit harness connector terminals using CONSULT-II or oscilloscope.

Terminals				Condition	Reference signal
(+)		(–)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
M45	14 (O)	M45	13 (B/P)	Receive audio signal	 SKIA0177E
	16 (L)		15 (B/W)		



OK or NG

OK >> INSPECTION END
NG >> Replace audio unit.

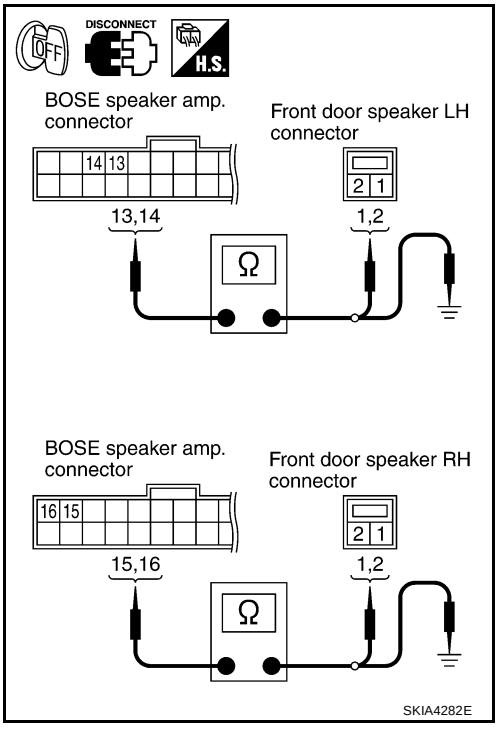
Front Door Speaker Check (BOSE System)

AKS005FV

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and front door speaker connectors.
3. Check continuity between BOSE speaker amp. harness connector terminals and front door speaker harness connector terminals.

Terminals				Continuity
BOSE speaker amp.		Front door speaker		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B115	13 (L/R)	D4	1 (L/R)	Yes
	14 (L/B)		2 (L/B)	
	15 (W/B)	D34	1 (W/B)	
	16 (G/B)		2 (G/B)	



4. Check continuity between BOSE speaker amp. harness connector terminals and ground.

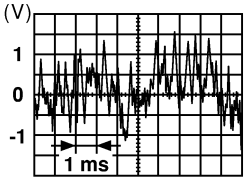
Terminals			Continuity
BOSE speaker amp.		Ground	
Connector	Terminal (Wire color)		
B115	13 (L/R)		No
	14 (L/B)		
	15 (W/B)		
	16 (G/B)		

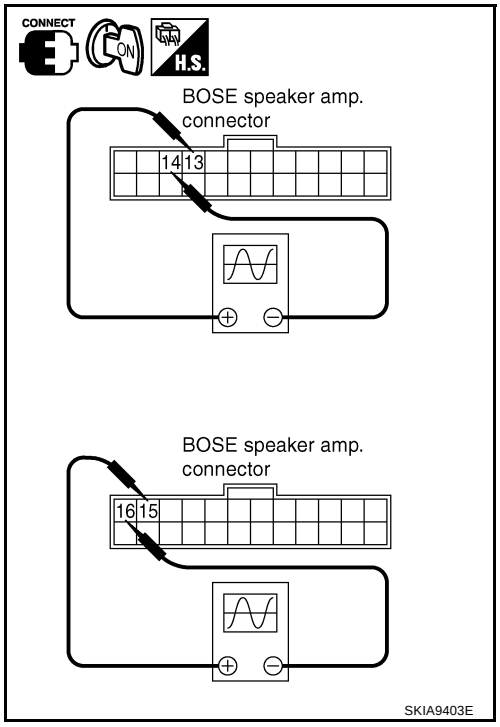
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK FRONT SPEAKER SIGNAL

1. Connect BOSE speaker amp. and front door speaker connectors.
2. Turn ignition switch ON.
3. Push “POWER” switch.
4. Check voltage waveform BOSE speaker amp. harness connector terminals using CONSULT-II or oscilloscope.

Terminals				Condition	Reference signal
(+)		(–)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
B115	13 (L/R)	B115	14 (L/B)	Receive audio signal	 SKIA0177E
	15 (W/B)		16 (G/B)		



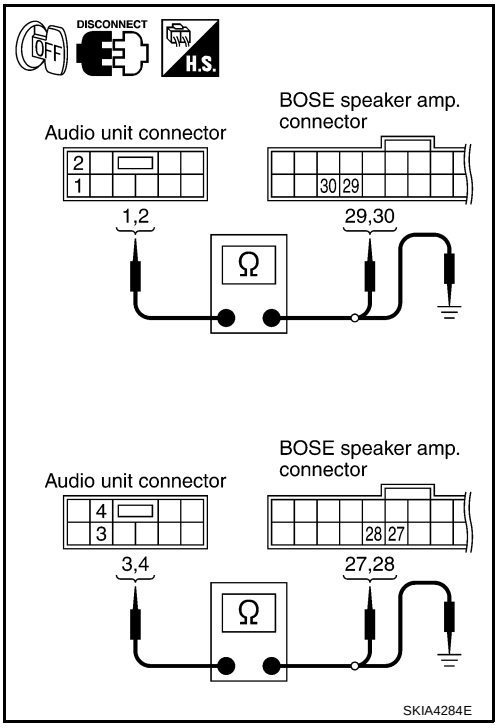
OK or NG

OK >> Replace front door speaker.
NG >> GO TO 3.

3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and BOSE speaker amp. connectors.
3. Check continuity between audio unit harness connector terminals and BOSE speaker amp. harness connector terminals.

Terminals				Continuity
Audio unit		BOSE speaker amp.		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M44	1 (B)	B115	29 (B)	Yes
	2 (W)		30 (W)	
	3 (BR)		27 (BR)	
	4 (Y)		28 (Y)	



4. Check continuity between audio unit harness connector terminals and ground.

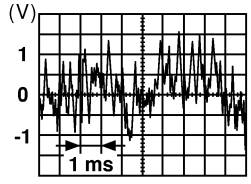
Terminals			Continuity
Audio unit			
Connector	Terminal (Wire color)		
M44	1 (B)	Ground	No
	2 (W)		
	3 (BR)		
	4 (Y)		

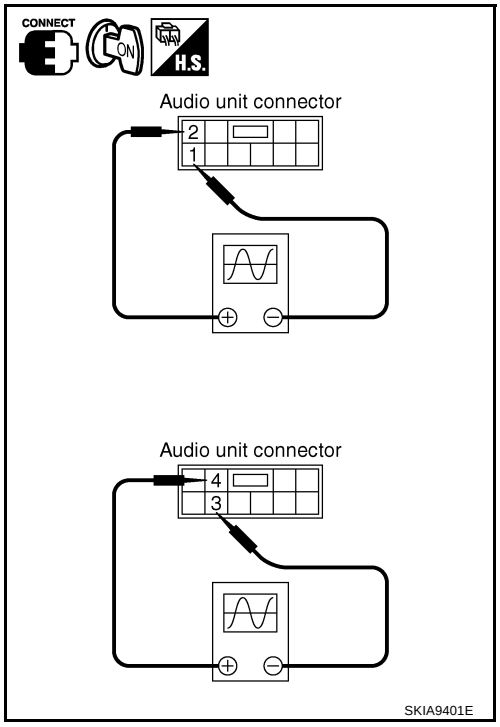
OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

4. CHECK FRONT SPEAKER SIGNAL

1. Connect audio unit and BOSE speaker amp. connectors.
2. Turn ignition switch ON.
3. Push “POWER” switch.
4. Check voltage waveform audio unit harness connector terminals using CONSULT-II or oscilloscope.

Terminals				Condition	Reference signal
(+)		(–)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
M44	2 (W)	M44	1 (B)	Receive audio signal	 SKIA0177E
	4 (Y)		3 (BR)		



OK or NG

OK >> INSPECTION END
NG >> Replace audio unit.

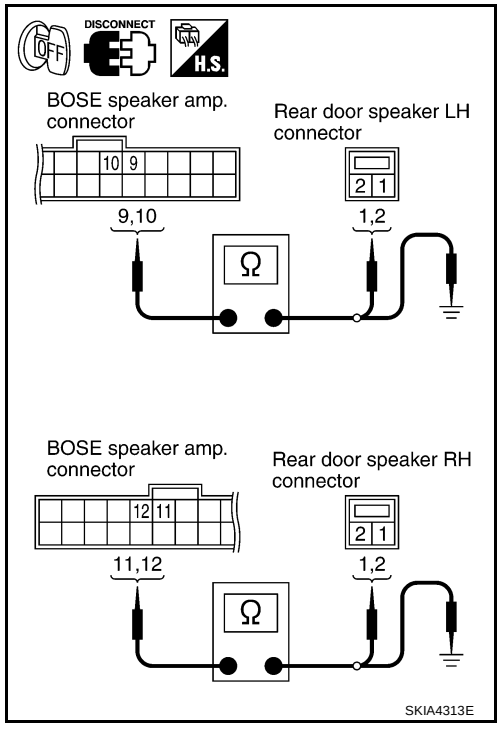
Rear Door Speaker Check (BOSE System)

AKS005FW

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and rear door speaker connectors.
3. Check continuity between BOSE speaker amp. harness connector terminals and rear door speaker harness connector terminals.

Terminals				Continuity
BOSE speaker amp.		Rear door speaker		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B115	9 (G/W)	D53	1 (L)	Yes
	10 (G)		2 (R)	
	11 (L)	D73	1 (L)	
	12 (R)		2 (R)	



4. Check continuity between BOSE speaker amp. harness connector terminals and ground.

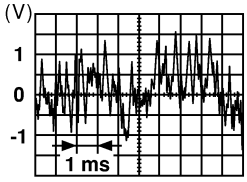
Terminals			Continuity
BOSE speaker amp.			
Connector	Terminal (Wire color)		
B115	9 (G/W)	Ground	No
	10 (G)		
	11 (L)		
	12 (R)		

OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

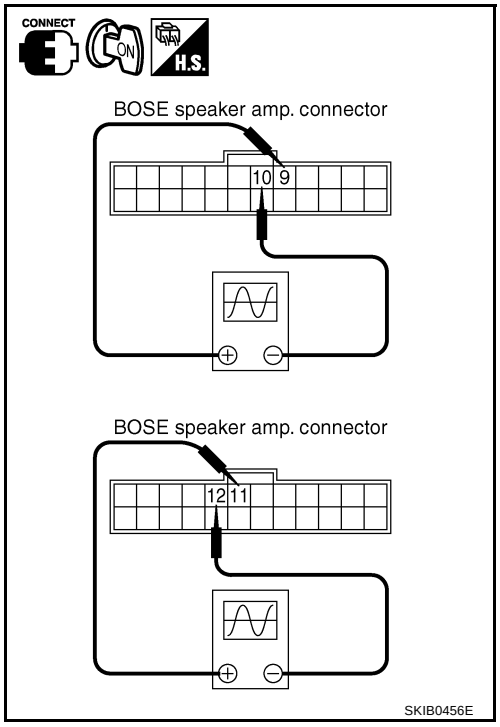
2. CHECK REAR SPEAKER SIGNAL

1. Connect BOSE speaker amp. and rear door speaker connectors.
2. Turn ignition switch ON.
3. Push “POWER” switch.
4. Check voltage waveform BOSE speaker amp. harness connector terminals using CONSULT-II or oscilloscope.

Terminals				Condition	Reference signal
(+)		(–)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
B115	9 (G/W)	B115	10 (G)	Receive audio signal	 SKIA0177E
	11 (L)		12 (R)		

OK or NG

OK >> Replace rear door speaker.
NG >> GO TO 3.



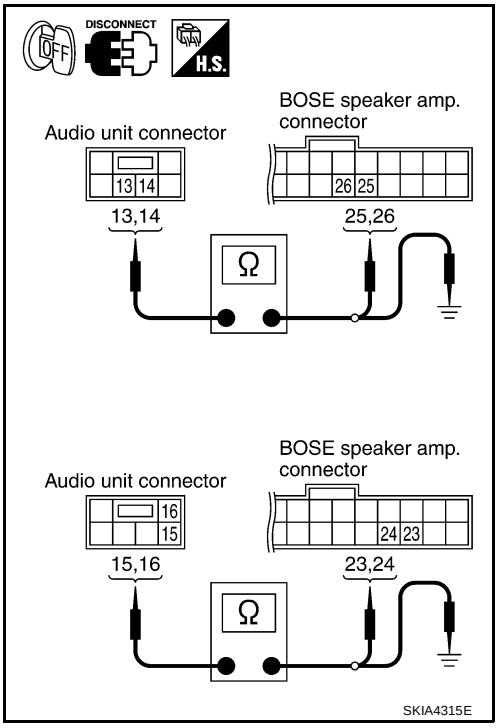
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and BOSE speaker amp. connectors.
3. Check continuity between audio unit harness connector terminals and BOSE speaker amp. harness connector terminals.

Terminals				Continuity
Audio unit		BOSE speaker amp.		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M45	13 (B/P)	B115	25 (Y)	Yes
	14 (O)		26 (O)	
	15 (B/W)		23 (B/W)	
	16 (L)		24 (L)	

4. Check continuity between audio unit harness connector terminals and ground.

Terminals			Continuity
Audio unit			
Connector	Terminal (Wire color)		
M45	13 (B/P)	Ground	No
	14 (O)		
	15 (B/W)		
	16 (L)		

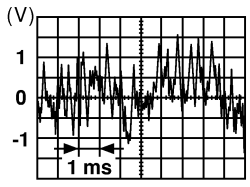


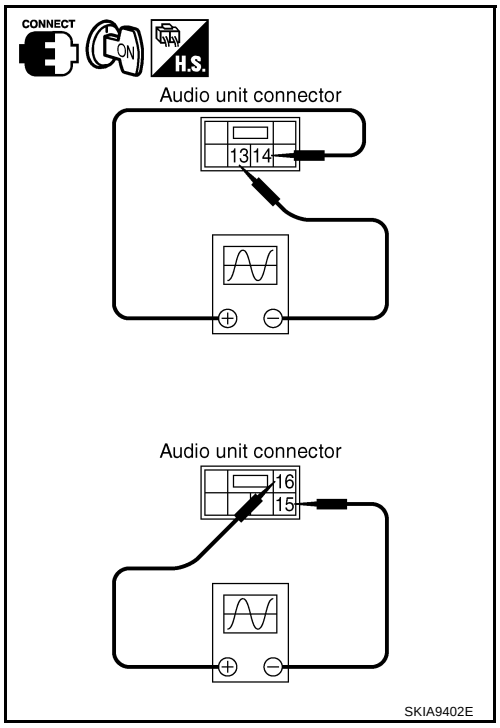
OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

4. CHECK REAR SPEAKER SIGNAL

1. Connect audio unit and BOSE speaker amp. connectors.
2. Turn ignition switch ON.
3. Push “POWER” switch.
4. Check voltage waveform audio unit harness connector terminals using CONSULT-II or oscilloscope.

Terminals				Condition	Reference signal
(+)		(–)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
M45	14 (O)	M45	13 (B/P)	Receive audio signal	 SKIA0177E
	16 (L)		15 (B/W)		



OK or NG

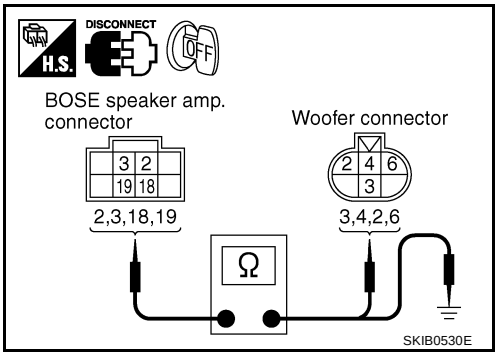
OK >> INSPECTION END
NG >> Replace audio unit.

Woofer Check (BOSE System)

AKS005FX

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and woofer connectors.
3. Check continuity between BOSE speaker amp. harness connector terminals and woofer harness connector harness connector terminals.



Terminals				Continuity
BOSE speaker amp.		Woofer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B114	2 (B)	B28	3 (B)	Yes
	3 (O)		4 (O)	
	18 (W)		2 (W)	
	19 (B/P)		6 (B/P)	

4. Check continuity between BOSE speaker amp, harness connector terminals and ground.

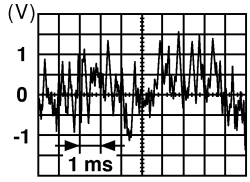
Terminals			Continuity
BOSE speaker amp.			
Connector	Terminal (Wire color)		
B114	2 (B)	Ground	No
	3 (O)		
	18 (W)		
	19 (B/P)		

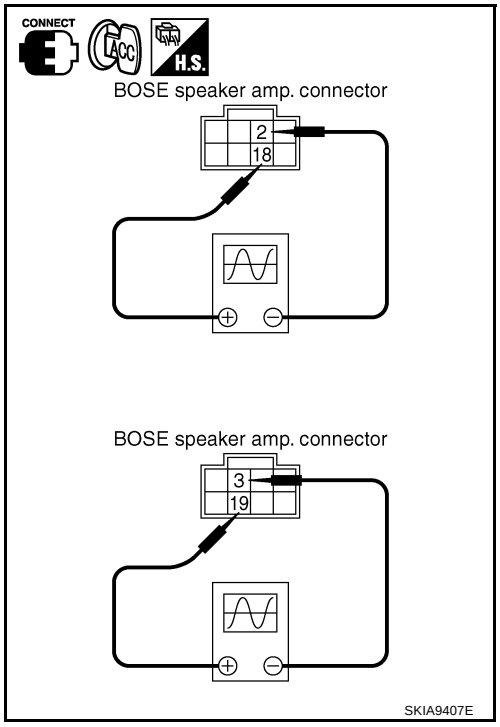
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK WOOFER SIGNAL

1. Connect BOSE speaker amp. and woofer connectors.
2. Turn ignition switch ON.
3. Push “POWER” switch.
4. Check voltage waveform BOSE speaker amp. harness connector terminals using CONSULT-II or oscilloscope.

Terminals				Condition	Reference signal
(+)		(–)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
B114	18 (W)	B114	2 (B)	Receive audio signal	 SKIA0177E
	19 (B/P)		3 (O)		



OK or NG

OK >> INSPECTION END
NG >> Replace BOSE speaker amp.

Vehicle Speed Signal Check

AKS007PM

1. CHECK SPEEDOMETER FUNCTION

Does speedometer is operated normally?

Yes or No

Yes >> GO TO 2.
No >> Check combination meter trouble diagnosis. Refer to DI-19, "Vehicle Speed Signal Inspection" .

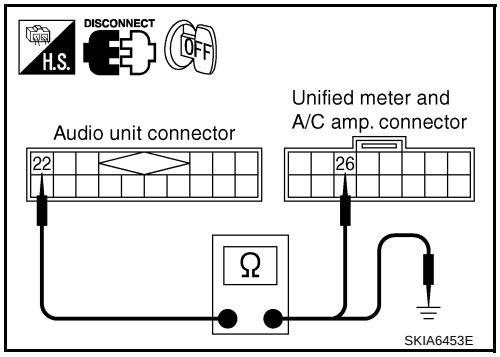
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit, unified meter and A/C amp., combination meter, shift lock control unit, NAVI control unit (With navigation system) and display unit (Without navigation system) or display control unit connectors (With navigation system).
3. Check continuity between audio unit harness connector M46 terminal 22 (V/W) and unified meter and A/C amp. harness connector M50 terminal 26 (V/W).

22 – 26 : Continuity should exist.

4. Check continuity between audio unit harness connector M46 terminal 22 (V/W) and ground.

22 – Ground : Continuity should not exist.

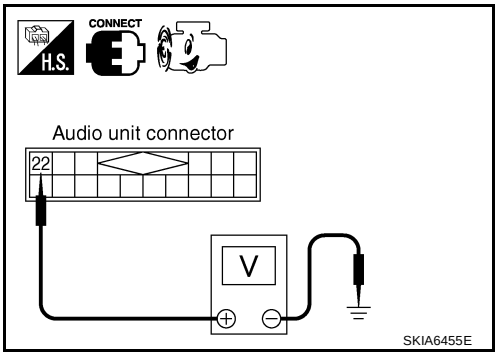


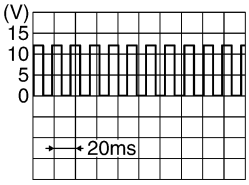
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK VEHICLE SPEED SIGNAL

1. Connect audio unit, unified meter and A/C amp., combination meter, shift lock control unit, NAVI control unit (With navigation system) and display unit (Without navigation system) or display control unit connectors (With navigation system).
2. Start engine and drive vehicle at more than 25 MPH (40 km/h).
3. Check voltage waveform between audio unit harness connector M46 terminal 22 (V/W) and ground using CONSULT-II or oscilloscope.



Terminals			Condition	Reference signal
(+)		(–)		
Connector	Terminal (Wire color)			
M46	22 (V/W)	Ground	When vehicle speed is approx. 25 MPH (40 km/h)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units). 

PKIA1935E

OK or NG

OK >> INSPECTION END

NG >> Replace unified meter and A/C amp. Refer to DI-38, "Removal and Installation of Unified Meter and A/C Amp." .

Locking CD Auto Changer Mechanism

AKS004NR

CAUTION:

- **Prior to removing a malfunctioning CD auto changer unit that will be shipped for repair, the changer mechanism MUST BE LOCKED to prevent the mechanism from being damaged during shipping.**
- **If a CD is jammed or unable to be removed from the unit, do NOT lock the changer mechanism. If the unit is to be shipped for repair, carefully package the unit to prevent vibration and shock.**

DAMPER LOCK PROCEDURE

1. Eject and remove any CDs from the CD auto changer unit.
2. Turn ignition switch OFF. Wait until CD auto changer unit display is off and mechanism stops moving (mechanism sound stops).
3. Push any one of the disc selection buttons once. When a display shows on the CD auto changer unit, push the same disc selection button again within 5 seconds.
   - The changer mechanism will lock itself within 10 seconds.
4. After mechanism stops moving (mechanism sound stops), disconnect negative battery cable.

NOTE:

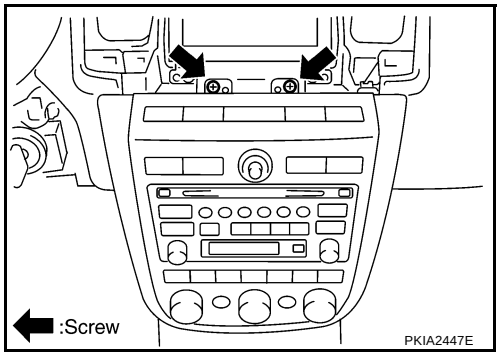
After installing a new or remanufactured CD auto changer unit, switching the CD auto changer unit ON will automatically unlock the mechanism. A special unlocking procedure is not required.

Removal and Installation of Audio Unit

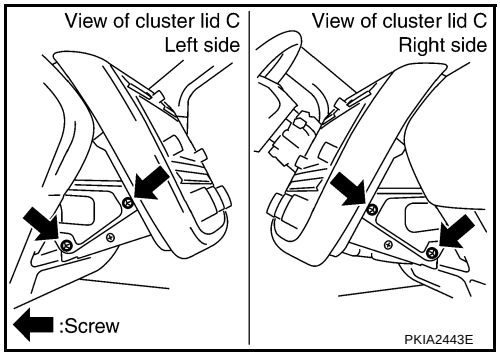
AKS004NS

REMOVAL

1. Perform damper lock operation (BOSE system). Refer to AV-66, "Locking CD Auto Changer Mechanism" .
2. Remove center ventilator. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove instrument stay cover (LH/RH). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
4. Remove screws (2).

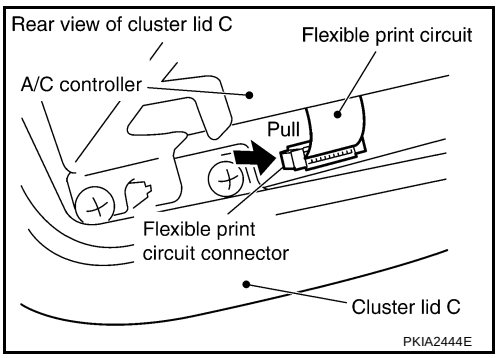


5. Remove screws (4).
6. Remove cluster lid C and audio unit.

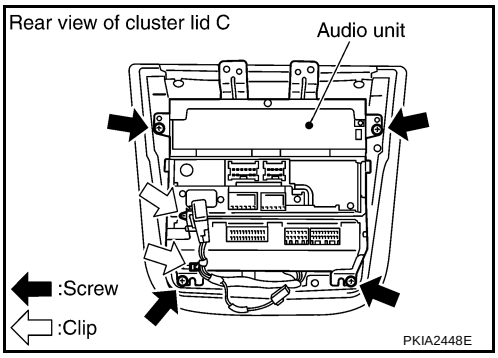


7. Unlock FPC (Flexible Print Circuit) connector lock on A/C and AV switch side.
8. Pull off flexible printed circuit from connector.

CAUTION:
Make sure mating surface of FPC (Flexible Print Circuit) and the direction of connector terminal.

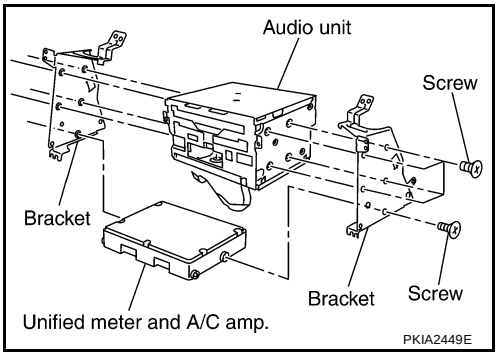


9. Remove screws (4) and clips (2). Then remove audio unit from cluster lid C.



10. Remove audio unit screws (8), unified meter and A/C amp. screws (2) and remove bracket.

CAUTION:
- **When carrying audio unit body, do not touch internal mechanism access from cassette tape slot.**
- **Be careful not to allow foreign material to enter from cassette tape slot.**
- **Use appropriate screws for each, as screws for audio unit are different from that for unified meter and A/C amp.**



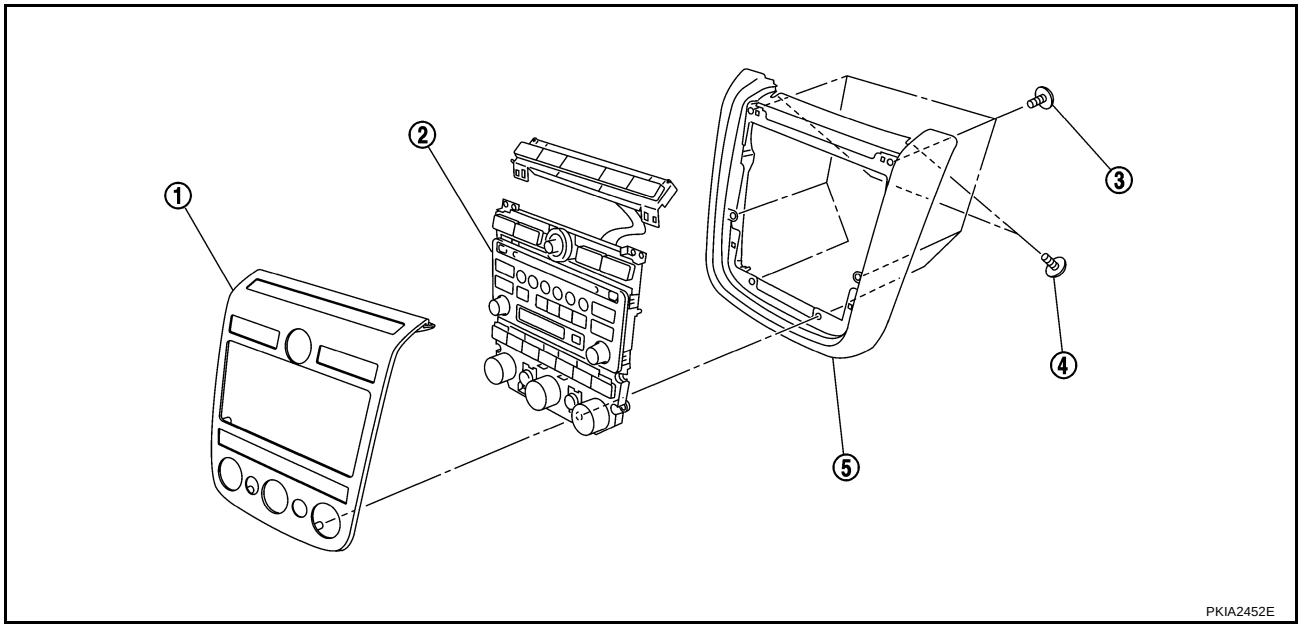
INSTALLATION

Installation is the reverse order of removal.

Removal and Installation for A/C and AV Switch

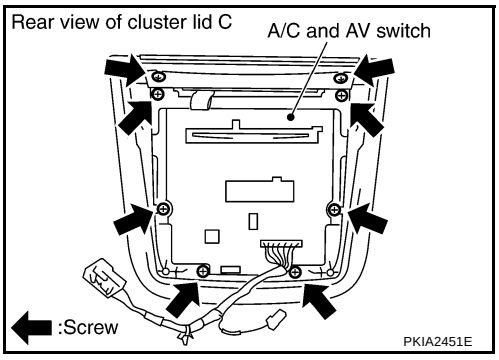
AKS004NU

REMOVAL



1. Front finisher
2. A/C and AV switch
3. Screws
4. Screws
5. Cluster lid C

1. Remove audio unit from cluster lid C. Refer to AV-66, "Removal and Installation of Audio Unit" .
2. Remove screws (8) and remove A/C and AV switch.



INSTALLATION

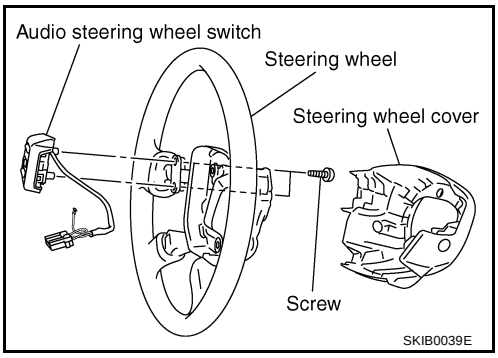
Installation is the reverse order of removal.

Removal and Installation of Audio Steering Wheel Switch

AKS00AS9

REMOVAL

1. Remove steering wheel. Refer to PS-9, "Removal and Installation" .
2. Remove steering wheel cover.
3. Remove screws (2) and remove audio steering wheel switch.



INSTALLATION

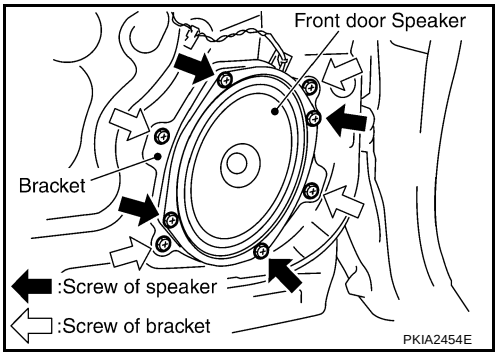
Installation is the reverse order of removal.

Removal and Installation of Front Door Speaker (Base system)

AKS004NV

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (4) and remove speaker.
3. Remove screws (4) and remove bracket.



INSTALLATION

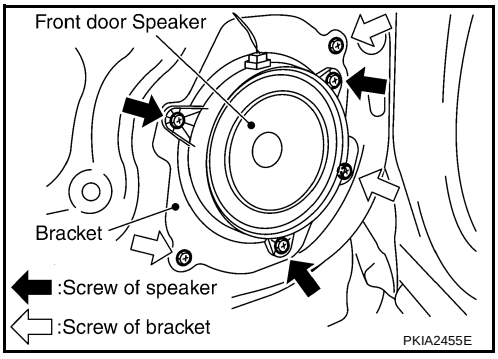
Installation is the reverse order of removal.

Removal and Installation of Front Door Speaker (BOSE system)

AKS004NW

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (3) and remove speaker.
3. Remove screws (3) and remove bracket.



INSTALLATION

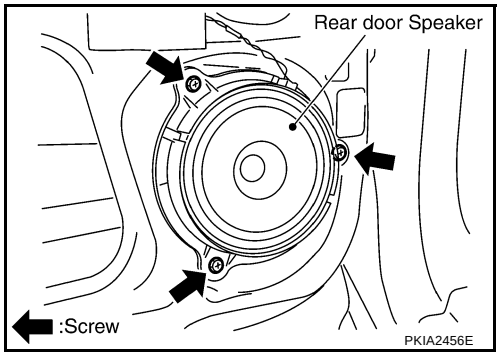
Installation is the reverse order of removal.

Removal and Installation of Rear Door Speaker (Base system)

AKS004NX

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (3) and remove speaker.



INSTALLATION

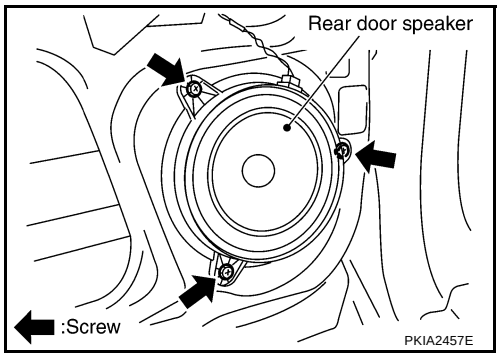
Installation is the reverse order of removal.

Removal and Installation of Rear Door Speaker (BOSE system)

AKS004NY

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (3) and remove speaker.



INSTALLATION

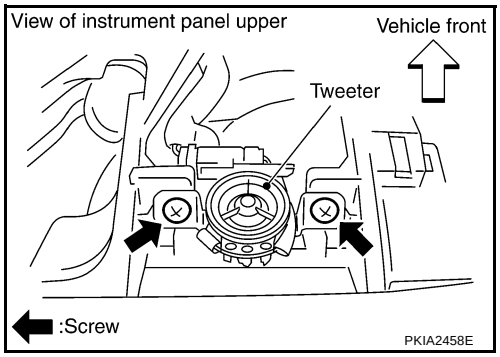
Installation is the reverse order of removal.

Removal and Installation of Tweeter

AKS004NZ

REMOVAL

1. Remove side ventilator assembly. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove instrument side finisher. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove screws (2) and remove tweeter.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Woofer

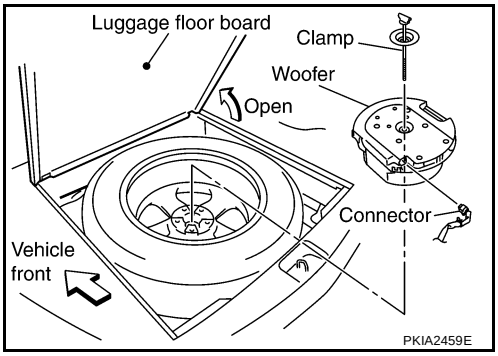
AKS004O0

REMOVAL

1. Open luggage floor finisher (center). Refer to EI-38, "LUGGAGE FLOOR TRIM" .
2. Remove woofer clamp and remove connector.
3. Remove woofer.

CAUTION:

- **Connectors must be placed in the left side, when installed.**



INSTALLATION

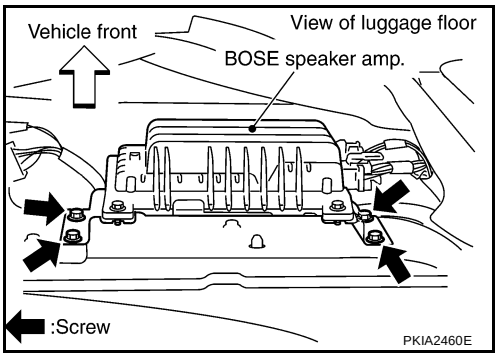
Installation is the reverse order of removal.

Removal and Installation of BOSE Speaker Amp.

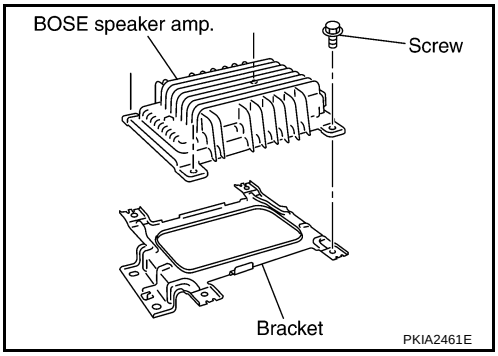
AKS004R3

REMOVAL

1. Remove luggage floor finisher (front). Refer to EI-38, "LUGGAGE FLOOR TRIM" .
2. Remove screws (4) and connectors (2) and remove BOSE speaker amp. from luggage floor.



3. Remove screws (4) and remove bracket.



INSTALLATION

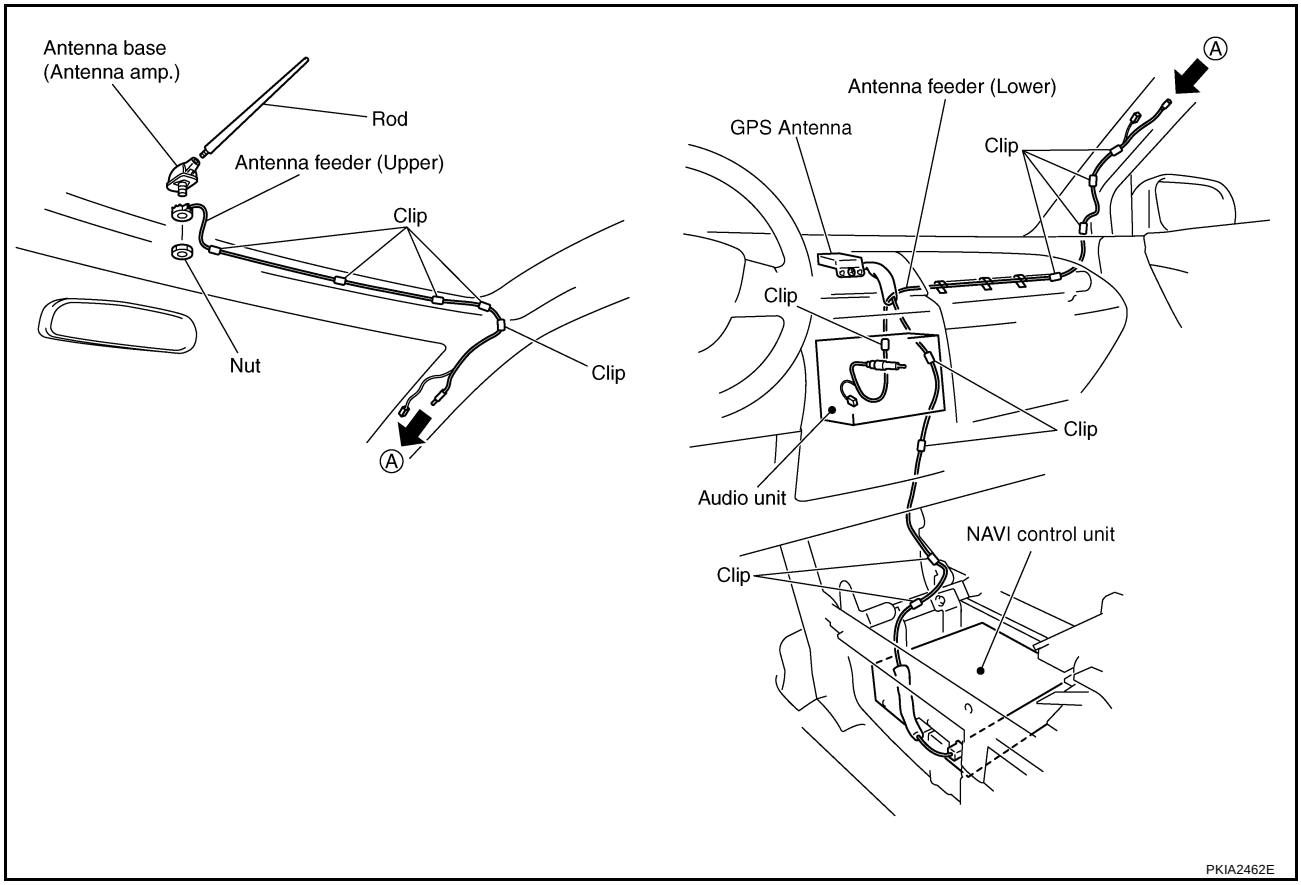
Installation is the reverse order of removal.

AUDIO ANTENNA

PFP:28200

Location of Antenna

AKS004O1

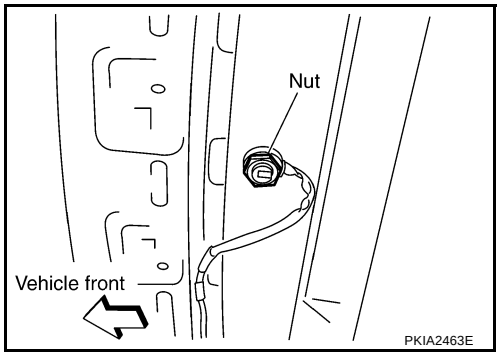


Removal and Installation of Roof Antenna

AKS004O3

REMOVAL

1. Remove head lining. Refer to EI-36, "HEADLINING" .
2. Remove nut and antenna base.



3. Remove instrument panel. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
4. Remove antenna feeder (upper) and antenna feeder (lower).
5. Remove clips (5), and separate antenna feeder (upper) from vehicle.

INSTALLATION

Installation is the reverse order of removal.

INTEGRATED DISPLAY SYSTEM

PFP:28090

System Description

AKS004XS

A/C AND AV SWITCH SYSTEM

Refer to Owner′s Manual for A/C and AV switch operating instructions.
Using the A/C and AV switch at the center of the instrument panel, the controls of the following systems are centralized:

- Integrated display system (Drive computer, setting screen, clock, etc.)
- Auto A/C system
- Audio system

PRECAUTION OF LCD MONITOR

- In order to use LED for backlight of a display, by in car temperature, brightness may change. In low temperature, the refreshing rate of the picture also becomes low because of the low response of the LCD monitor. When passenger room becomes warm, however, the LCD recovers the normal display.
- Backlight sometimes flickers or darkens according to the total consumption hours and the number of times switched ON and OFF. In this case, display unit should be replaced.(Exchange only of backlight is impossible.)

POWER SUPPLY AND GROUND

Power Is Supplied At All Times

- through 15A fuse [No. 38, located in fuse and fusible link block]
- to audio unit terminal 6
- to display unit terminal 1
- to A/C and AV switch terminal 1.

When Ignition Switch Is In ACC or ON Position, Power Is Supplied

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 35
- to display unit terminal 2
- to audio unit terminal 10
- to A/C and AV switch terminal 2
- to BCM terminal 11.

When Ignition Switch Is In ON or START Position, Power Is Supplied

- through 10A fuse [No. 12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22
- to display unit terminal 3.

Ground Is Supplied

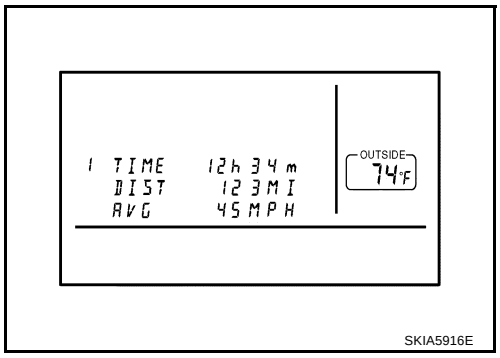
- to unified meter and A/C amp. terminals 29, 30
- to display unit terminal 6
- to A/C and AV switch terminal 5
- to BCM terminals 49, 52
- to low tire pressure warning control unit terminal 20
- through body grounds M14 and M78.

DRIVE COMPUTER

Refer to Owner's Manual for drive computer operating instructions.

TRIP Switch

When "TRIP" switch is pushed, display TRIP screen. As TRIP information, it indicates journey time (TIME), trip odometer (DIST), and average vehicle speed (AVG).
Pushing "TRIP" switch once cycles display from TRIP 1→TRIP 2→Display OFF→TRIP 1.



"TIME"

- Journey time indication is conducted by reset or battery connection.
- When pushing "TRIP RESET" or "TRIP" switch more than approximately 1.5 seconds, journey time will be reset.
- If journey time is reset, journey distance and average speed will be reset at the same time.

"DIST"

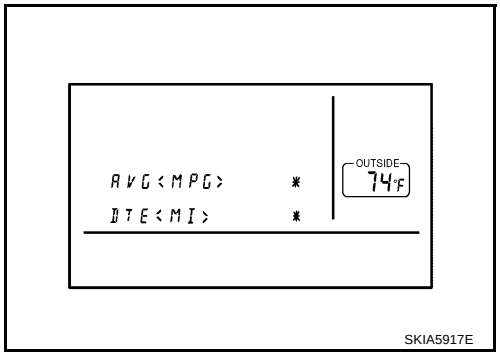
- Trip odometer indication is conducted by vehicle speed signal.
- When pushing "TRIP RESET" or "TRIP" switch more than approximately 1.5 seconds, driving distance will be reset.
- If trip odometer is reset, journey time average speed will be reset at the same time.

"AVG"

- Average speed indication is conducted by running distance and running time.
- Indication will be renewed every 30 seconds.
- When pushing "TRIP RESET" or "TRIP" switch more than approximately 1.5 seconds, average speed will be reset.
- After reset operation, the displays shows "*" for 30 seconds.

FUEL ECON Switch

When "FUEL ECON" switch is pushed, display FUEL ECON screen. As FUEL ECON information, it indicates average fuel consumption (AVG), and distance to empty (DTE).
Pushing "FUEL ECON" switch once cycles display from FUEL ECON→Display OFF→FUEL ECON.



"AVG" (Average Fuel Consumption)

- Average fuel consumption indication is conducted by ECM pulse signal and vehicle speed signal after system is reset.
- Indication will be renewed every 30 seconds.
- When pushing "TRIP RESET" or "FUEL ECON" switch more than approximately 1.5 seconds, average fuel economy will be reset.
- After reset operation, the display shows "*.*" until the vehicle is driven 1,600 ft. (500 m) or 30 seconds has passed.

"DTE" (Distance to Empty)

- Distance to empty receives via CAN communication and indicates values calculated by meter.
- Display range is max 999 miles (max 999 km).
- If low-fuel WARNING is received from combination meter via CAN communication, distance to empty indication will be "*".
- Indication will be renewed every 30 seconds.

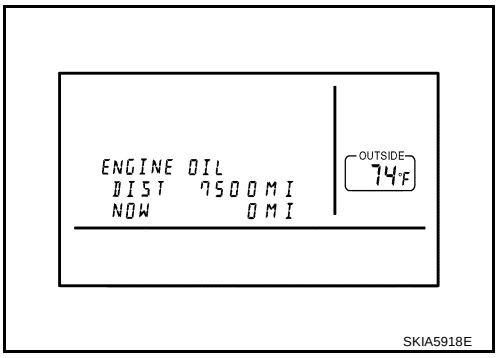
MAINT Switch (Maintenance Switch)

- When “MAINT” switch is pushed, display vehicle information screen. As vehicle information, it indicates engine oil, tire rotation, and tire pressure.
- Pushing “MAINT” switch once cycles display from engine oil→tire rotation→tire pressure[Note] →engine oil.

NOTE:
There is not low tire pressure warning system becomes display OFF.

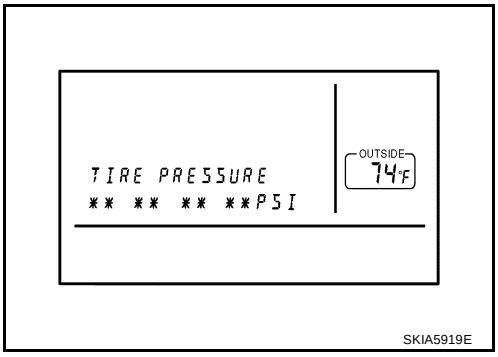
Engine Oil and Tire Rotation

- Operating the joystick left/right, replace distance can be set.
- When journey distance is the same as replace distance, alert is displayed. (SERVICE ALERT setting is ON.)
- Selected replace distance is 0 - 7,500 miles (0 - 12,000 km) in increments of 500 mile (800 km).
- Push and hold “TRIP RESET” or “MAINT” switch for 1.5 seconds or longer, reset present journey distance.
- During driving, cannot change settings.



Tire Pressure

- Tire pressure signal is received from low tire pressure warning control unit via CAN communication.
- Tire pressure is displayed.
- When FLAT TIRE signal is received from low tire pressure warning control unit, “FLAT TIRE” is displayed.



H,M Switch

- When “H” or “M” switch is pushed and held for 1.5 seconds or more, mode is changed to clock mode.
- Then “hour” and “minute” are flashed.
- When “H” switch is pushed, “hour” is adjusted.
- When “M” switch is pushed, “minute” is adjusted.

SETTING SCREEN

When the “SETTING” button is pushed, the following menu will display on the screen.
DISPLAY ON/OFF → LANGUAGE → BEEP SET → SERVICE ALERT → PERSONALIZED SETTING MENU → OFF

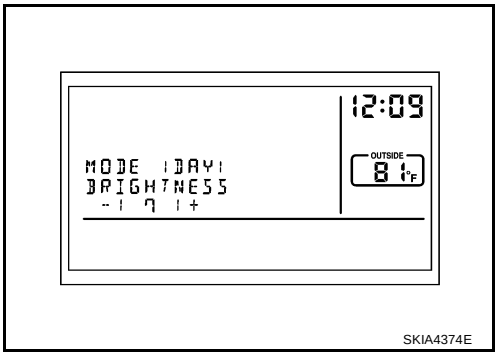
Adjustable Vehicle Status

Setting items		Operation
DISPLAY		● To turn off the display, choose “OFF” on the screen using the joystick. ● The confirmation will appear. Select “YES” to turn off, and “NO” to cancel. ● To turn on the display, push display screen control, air conditioner or audio button.
LANGUAGE		To change the language, choose English or French using the joystick.
BEEP SET		To turn on/off the button beep sound, choose “ON” or “OFF” using the joystick.
SERVICE ALERT		To display the maintenance information on the screen when it has reached to the preset distance, choose “ON”.
PERSONALIZED SETTING MENU	SLIDE BACK DR SEAT ON EXIT*	To set the driver's seat so that it automatically moves back and returns to the original position for ease of entry and exit, choose “ON”.
	REMOTE UNLOCK DOOR LOGIC*	To set the unlock doors of the 1st unlocking operation, choose the desired function. Only the driver side door ⇔ All the doors
	HORN CHIRP WITH REMOTE*	To set the horn chirp mode that occurs when pushing the LOCK button on the remote controller, choose the desired function.
	LIGHTS FLASH WITH REMOTE*	To set the hazard indicator flash mode when the “LOCK” or “UNLOCK” button on the remote controller is pushed, choose the desired function.
	AUTO RE-LOCK TIME*	To set the auto door re-lock time, choose the desired time.
	AUTO HEADLIGHTS SENSITIVITY*	To set the sensitivity level of the automatic headlights, choose the level.
	AUTO HEADLIGHTS OFF DELAY*	To set the time for how long it takes the automatic turn off timer to extinguish the headlights in the AUTO position, select the “Automatic Headlights Off Delay” key, then move the joystick to the left or right to adjust the timer.
	SPEED SENSING WIPER INTERVAL*	To turn on the speed sensing wiper, choose “ON”.
	CONFIRM RESET SETTINGS*	To reset all settings of the personalized settings to the initial conditions, choose “YES”.
	RESET ALL SETTINGS*	To reset all settings of the personalized settings to the initial conditions, push “ENTER”.

*: If equipped

D/N Screen

- When D/N switch is pushed, change screen of adjustment luminance.
- If push D/N again when display adjustment luminance, change DAY-NIGHT(NIGHT-DAY) mode (screen of adjustment luminance).
  As follows:



Now	Change display
DAY	DAY (adjustment)→NIGHT (adjustment)→DAY (adjustment)→·····
NIGHT	NIGHT (adjustment)→DAY (adjustment)→NIGHT (adjustment)→·····

- Push “PREV” or not operate for 10sec. when displayed screen of adjustment luminance, back to default screen (same mode).
- Can adjust luminance by joystick (R/L) in adjustment screen.
- Adjustment range is a 12 stage (MIN to MAX) and default set value is 10 (DAY) and 4 (NIGHT).

WARNING INDICATIONS

- The door open warning will appear when the door is not securely closed while driving over 3 MPH (5 km/h).
- The door open warning will disappear when the vehicle speed slows down under 5 km/h (3 MPH) even if the door is not securely closed yet.

AV COMMUNICATION LINE

Display unit is controlled by the following unit with AV communication line.

- A/C and AV switch

CAN Communication System Description

AKS007PU

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicles are equipped with many electronic control units and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

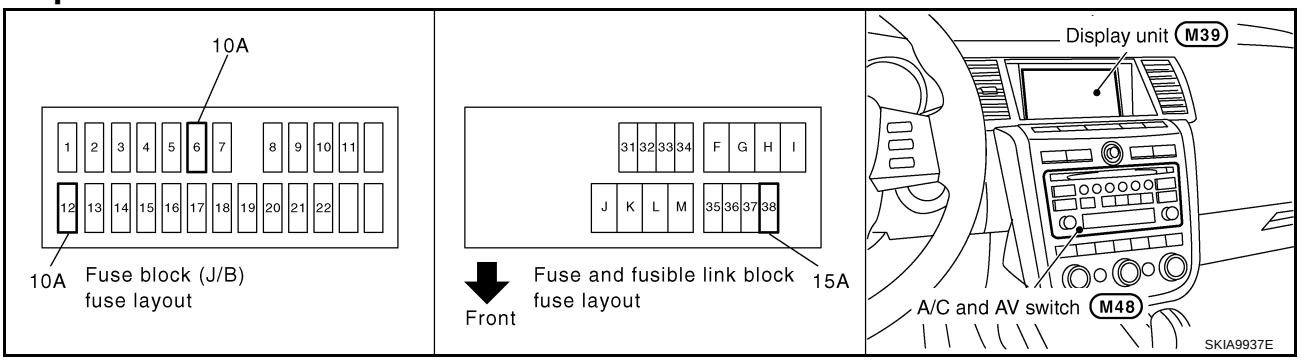
CAN Communication Unit

AKS007PV

Refer to LAN-8, "CAN Communication Unit" .

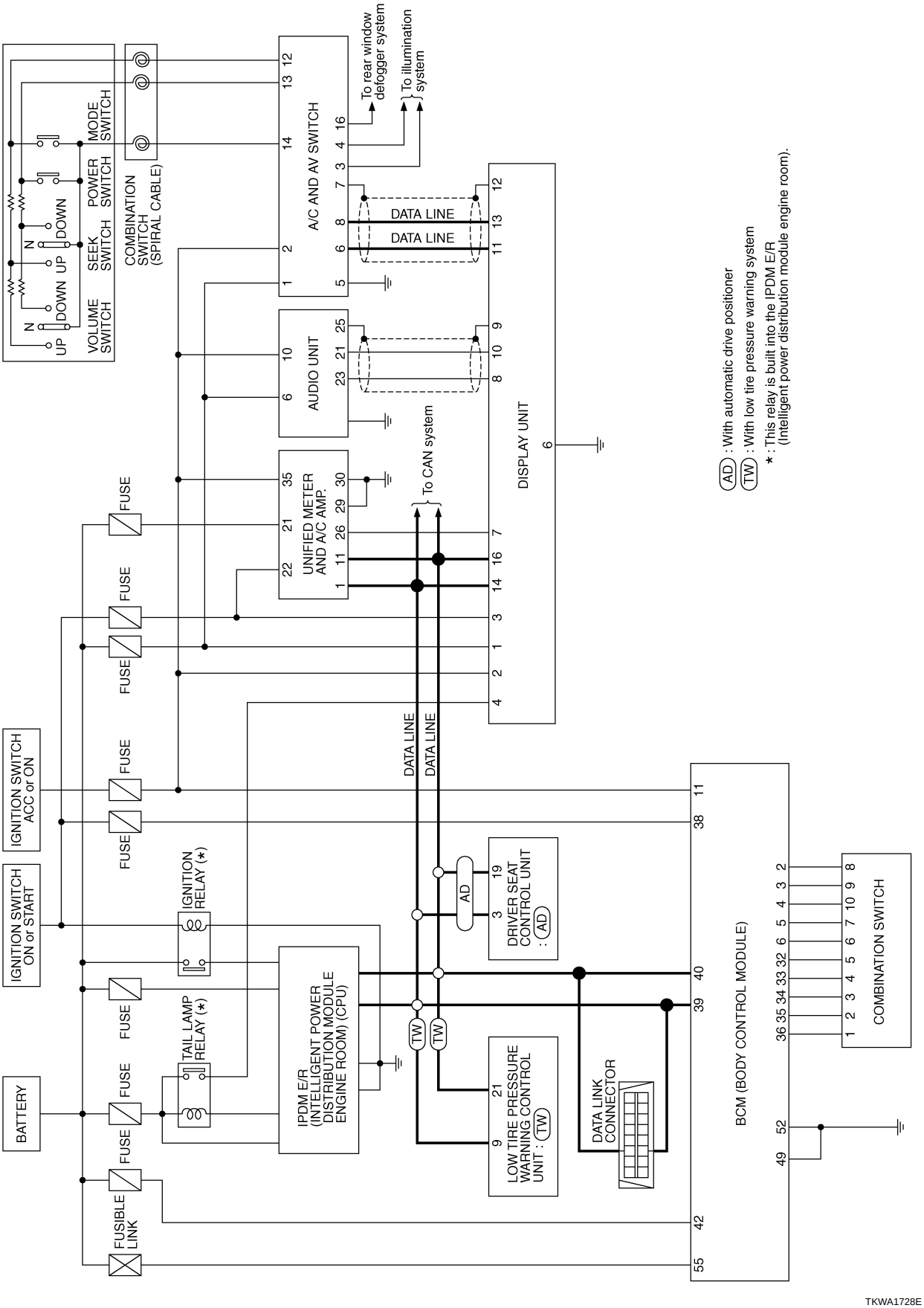
Component Parts and Harness Connector Location

AKS004XU



Schematic

AKS004YZ

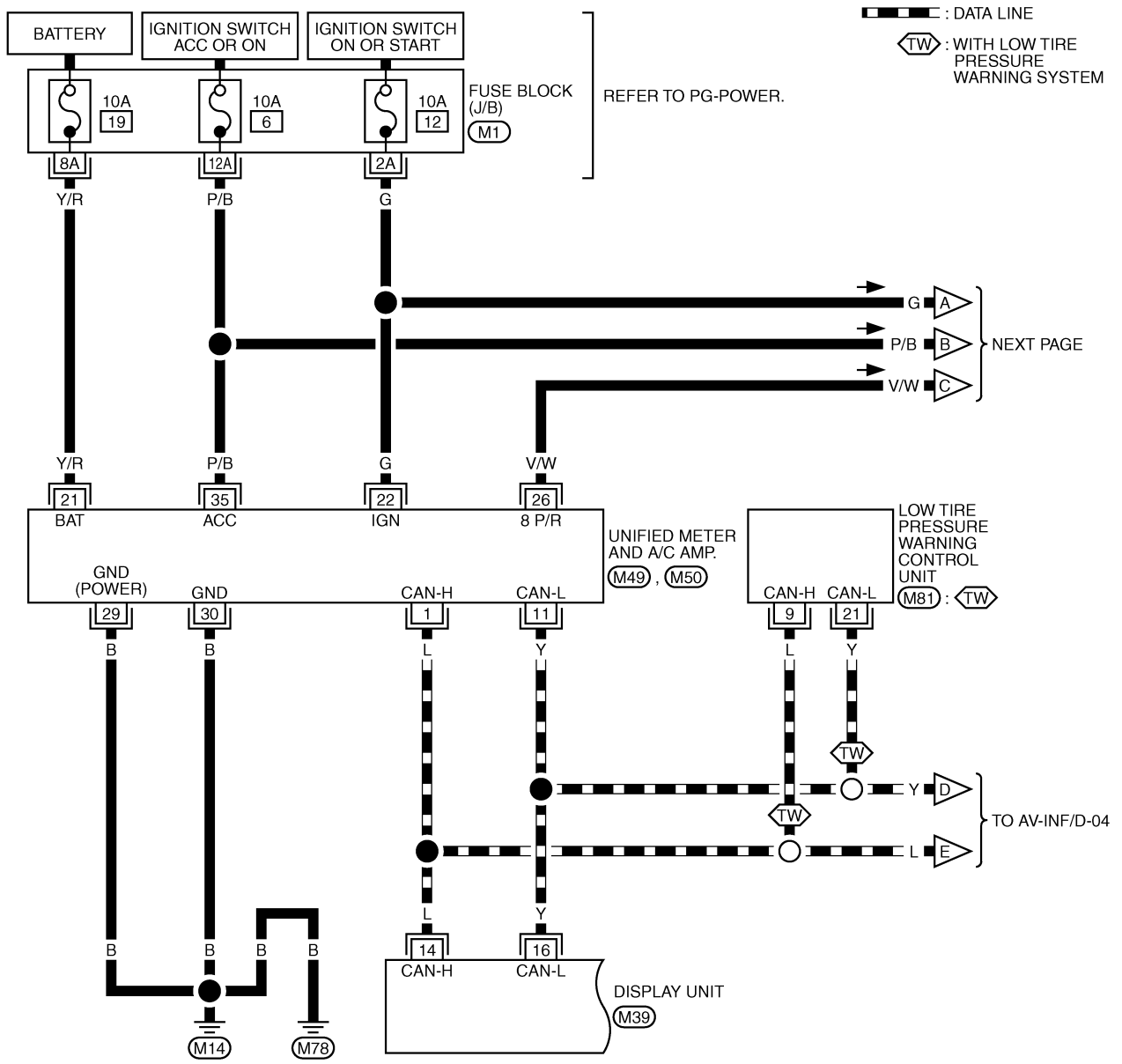


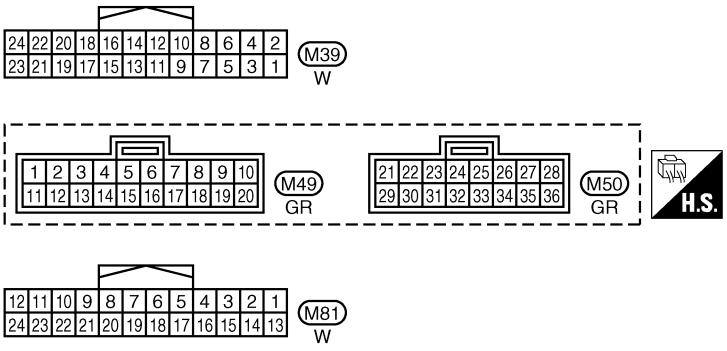
TKWA1728E

Wiring Diagram — INF/D —

AKS004Z0

AV-INF/D-01

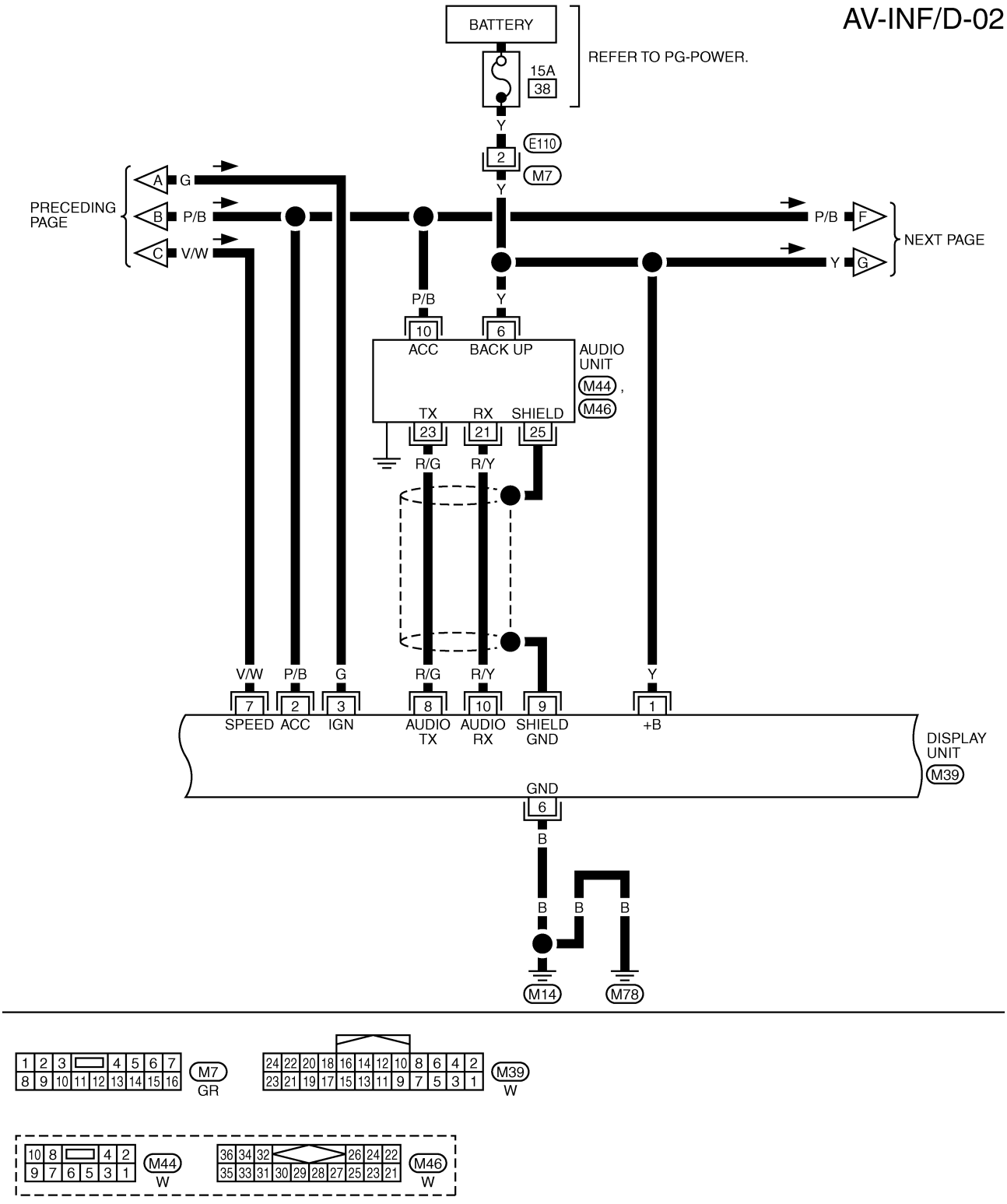




REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

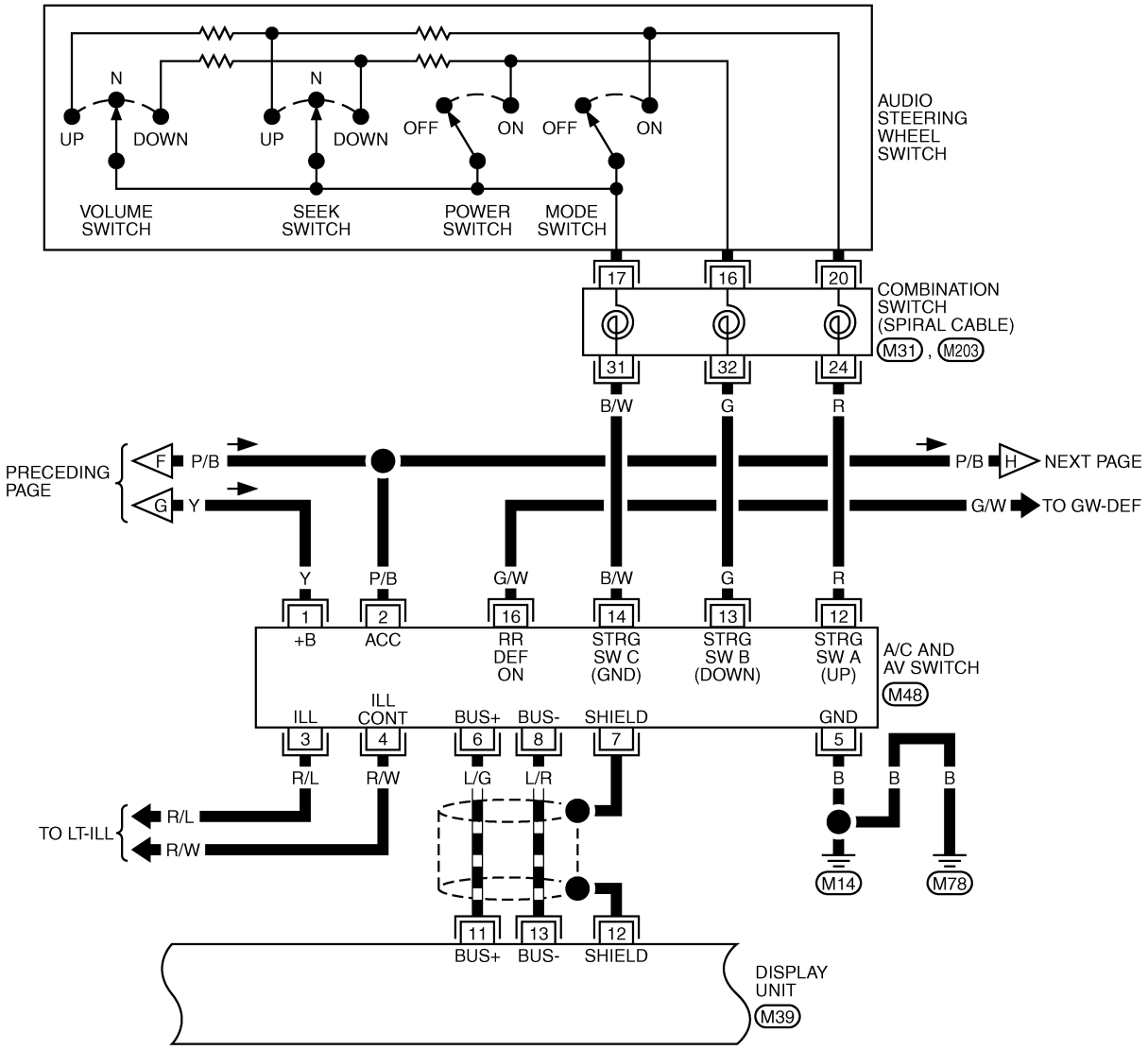
TKWA0838E

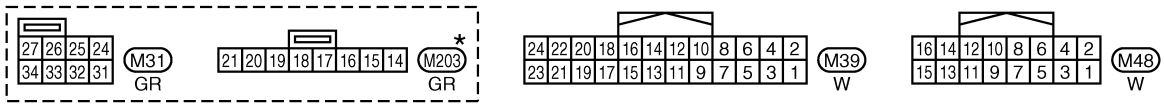

AV-INF/D-02
BATTERY
15A
38
REFER TO PG-POWER.
Y
E110
2
M7
Y
PRECEDING
PAGE
A
G
B
P/B
C
V/W
P/B
F
NEXT PAGE
Y
G
P/B
Y
10
6
ACC
BACK UP
AUDIO
UNIT
M44
,
M46
TX
RX
SHIELD
23
21
25
R/G
R/Y
V/W
P/B
G
R/G
R/Y
Y
7
2
3
8
10
9
1
SPEED
ACC
IGN
AUDIO
TX
AUDIO
RX
SHIELD
GND
+B
DISPLAY
UNIT
M39
GND
6
B
B
B
B
M14
M78
M7
GR
M39
W
M44
W
M46
W

TKWA0839E

AV-INF/D-03

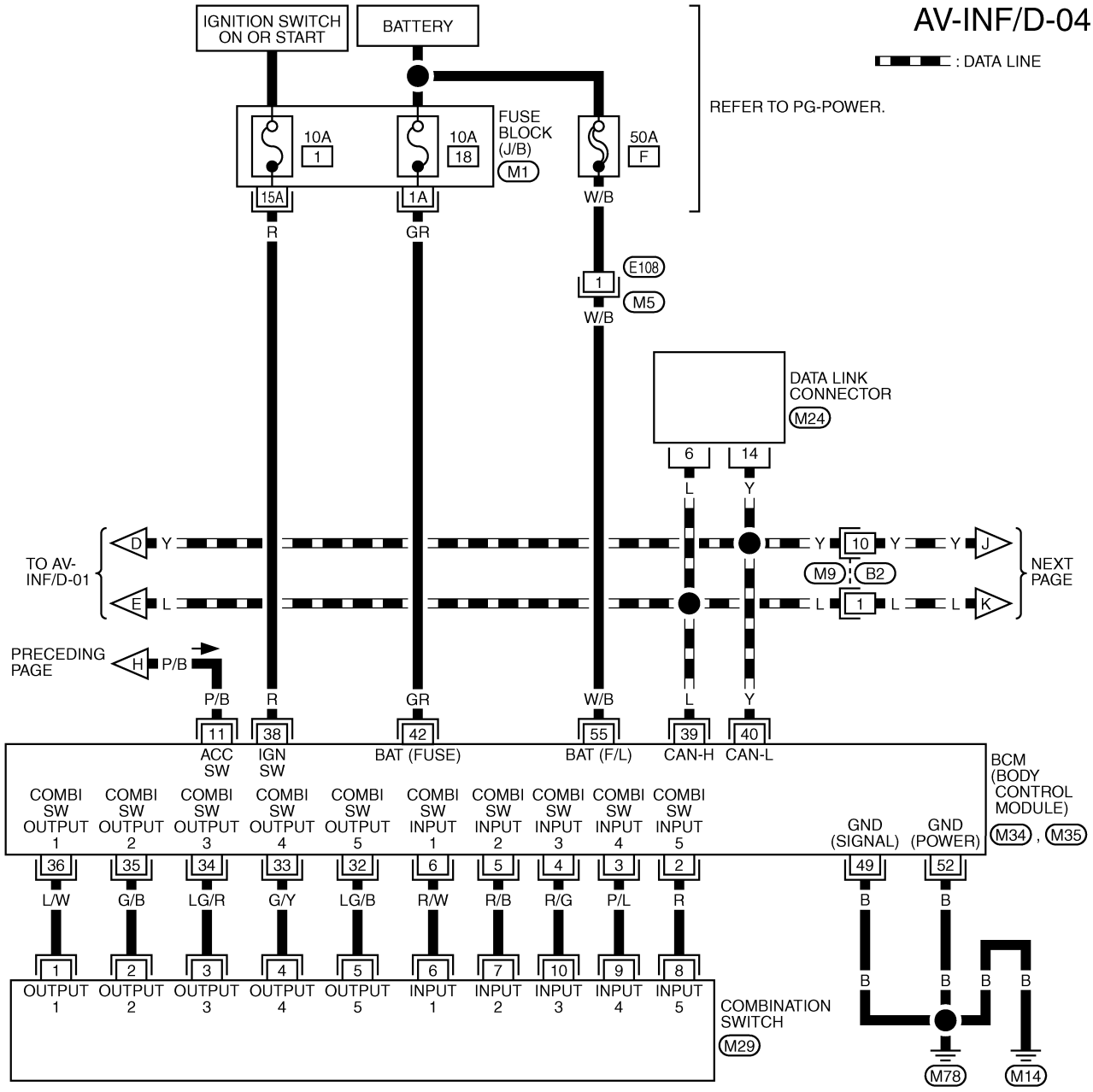
: DATA LINE

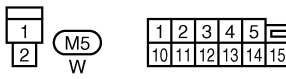


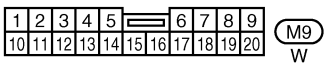


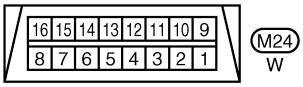
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

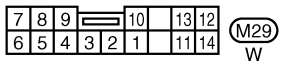
TKWA1056E









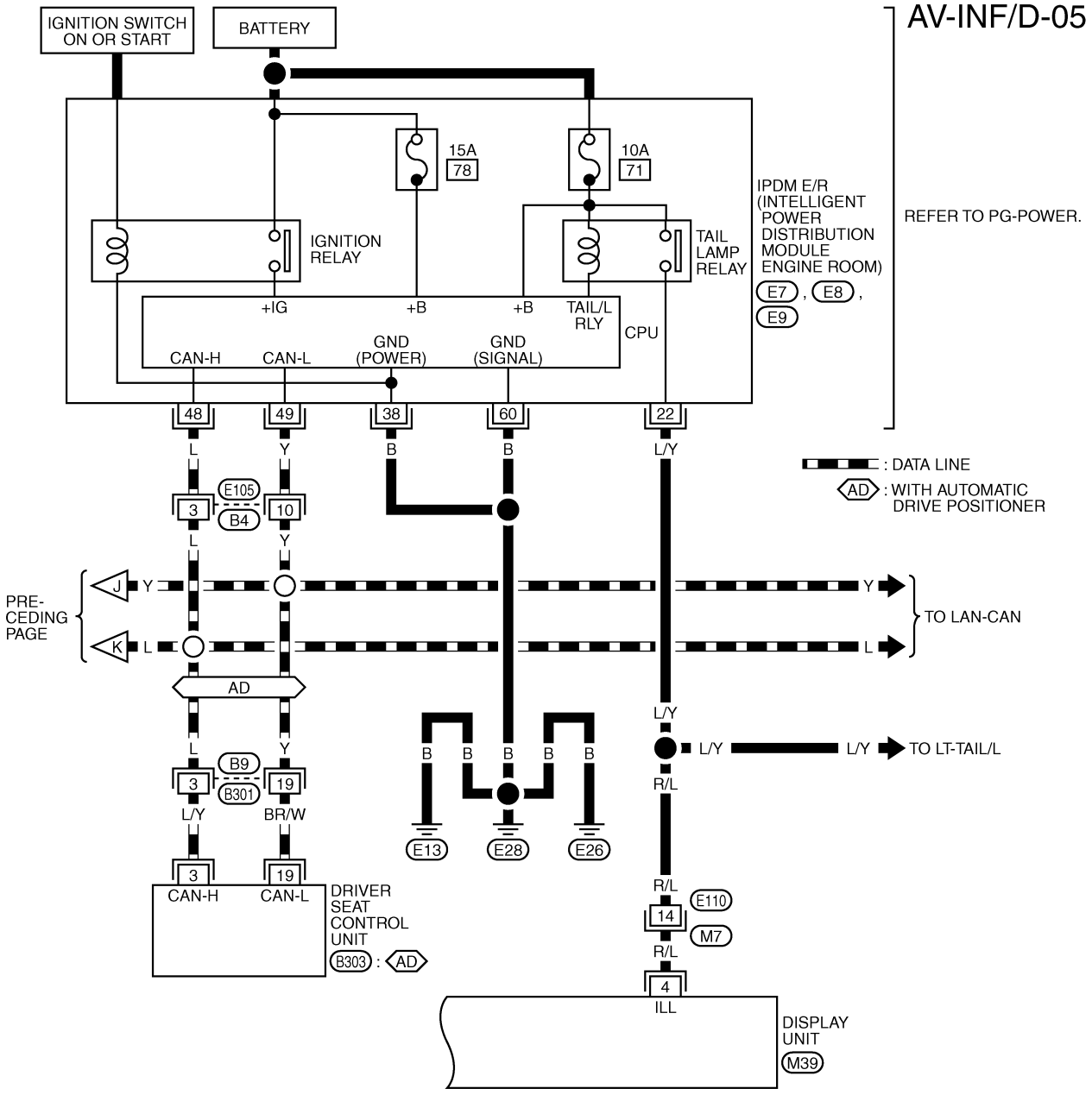


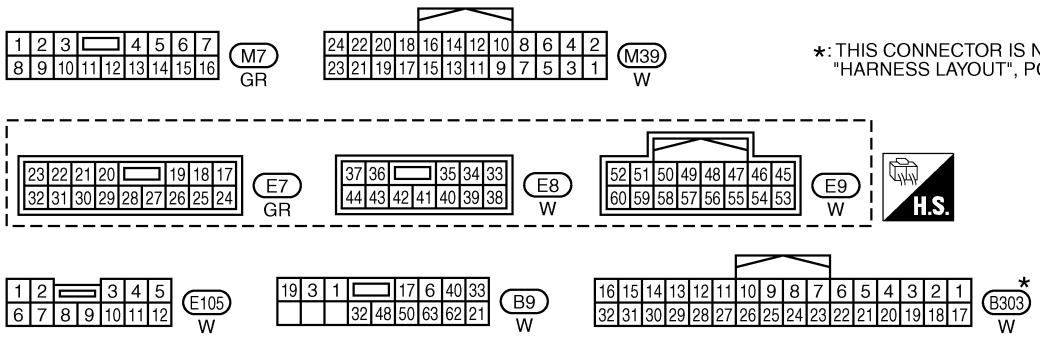
REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

M34, M35 -ELECTRICAL UNITS

TKWA1729E

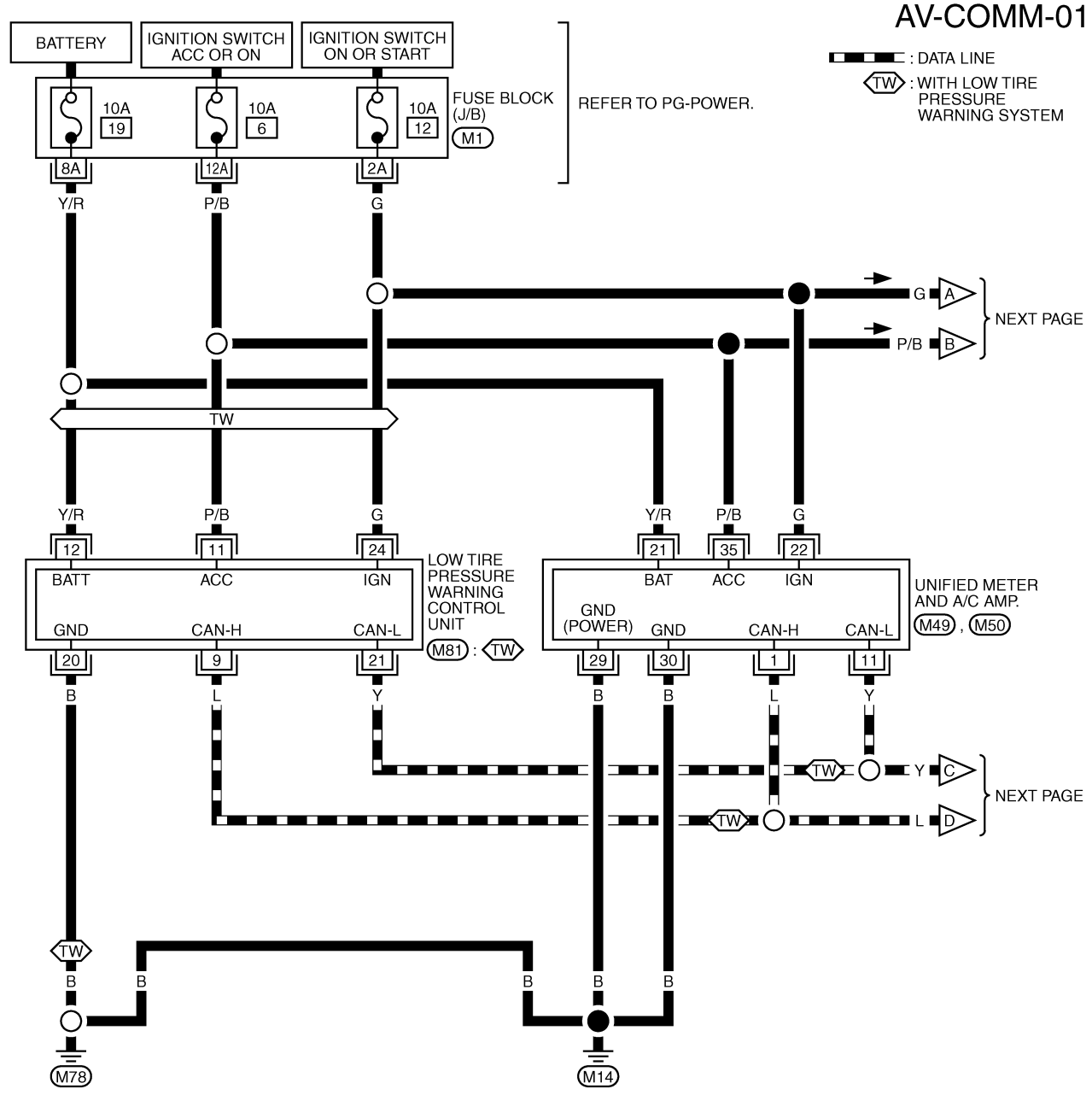

AV-INF/D-05
IGNITION SWITCH ON OR START
BATTERY
15A 78
10A 71
IGNITION RELAY
TAIL LAMP RELAY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E7, E8, E9
REFER TO PG-POWER.
+IG
+B
+B
TAIL/L RLY
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
38
60
22
L
Y
B
B
L/Y
E105
3
B4
10
: DATA LINE
AD : WITH AUTOMATIC DRIVE POSITIONER
PRE-CEDING PAGE
J
K
TO LAN-CAN
AD
B9
B301
19
L/Y
BR/W
E13
E28
E26
R/L
L/Y
TO LT-TAIL/L
E110
14
M7
4
ILL
DISPLAY UNIT M39
CAN-H
CAN-L
DRIVER SEAT CONTROL UNIT B303 : AD

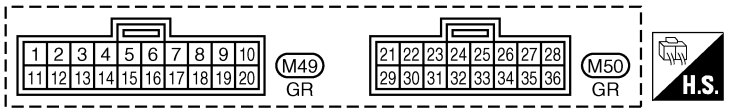

M7 GR
M39 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
E7 GR
E8 W
E9 W
H.S.
E105 W
B9 W
B303 W

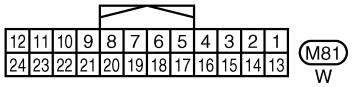
TKWA1730E

Wiring Diagram — COMM —

AKS004Z2



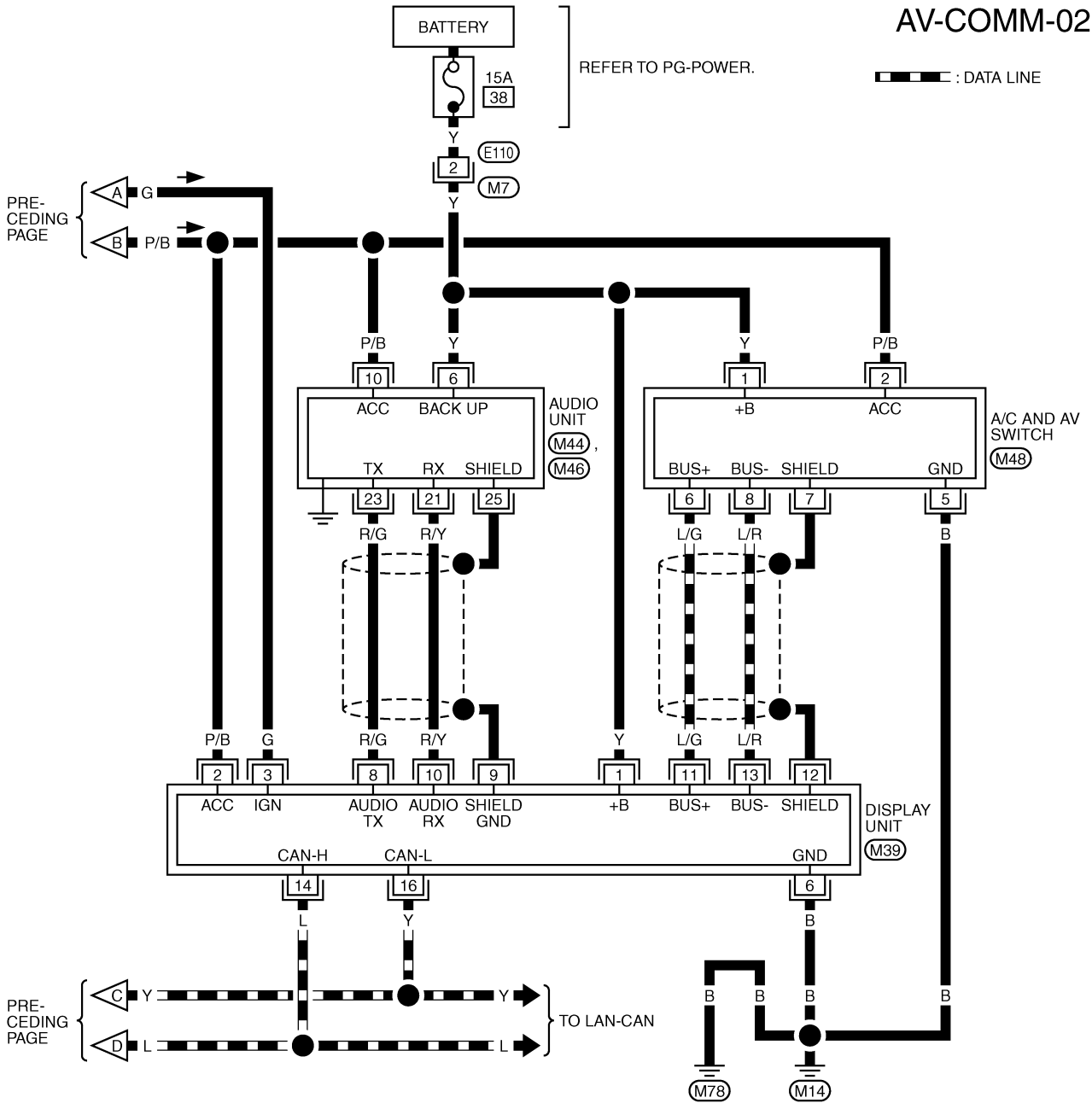




REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

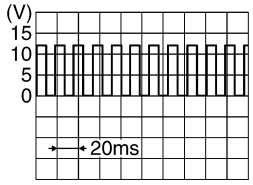
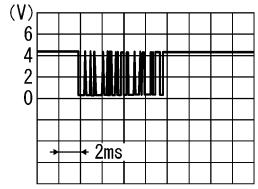
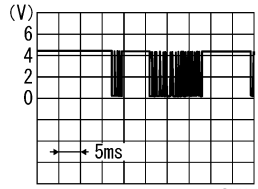
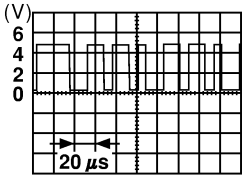
TKWA1731E

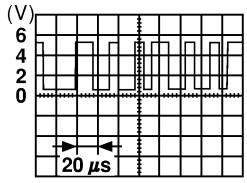

AV-COMM-02
BATTERY
15A
38
REFER TO PG-POWER.
: DATA LINE
E110
2
M7
PRE-CEDING PAGE
A
G
B
P/B
AUDIO UNIT
M44
M46
ACC
BACK UP
TX
RX
SHIELD
10
6
23
21
25
R/G
R/Y
A/C AND AV SWITCH
M48
+B
ACC
BUS+
BUS-
SHIELD
GND
1
2
6
8
7
5
L/G
L/R
B
DISPLAY UNIT
M39
IGN
AUDIO TX
AUDIO RX
SHIELD GND
CAN-H
CAN-L
GND
3
8
10
9
11
13
12
14
16
L
Y
TO LAN-CAN
C
D
M78
M14
M7
GR
M39
W
M44
W
M46
W
M48
W

TKWA1732E

Terminals and Reference Value for Display Unit

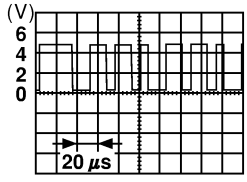
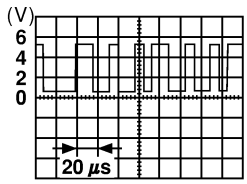
AKS004XW

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
2 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
3 (G)	Ground	Ignition signal	Input	ON	–	Battery voltage	A/C operation is not possible. Vehicle information setting is not possible.
4 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12V	Screen does not switch to night-time mode after the lighting switch is turned ON.
					Lighting switch OFF	Approx. 0V	
6 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
7 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 25 MPH (40 km/h)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E	Drive computer item is not displayed correctly.
8 (R/G)	Ground	Audio TX	Output	ON	Operate audio volume switch	 SKIA4402E	Audio unit does not operate properly.
9	Ground	Shield	–	ON	–	Approx. 0V	–
10 (R/Y)	Ground	Audio RX	Input	ON	Operate audio volume switch	 SKIA4403E	Audio unit does not operate properly.
11 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	Operate A/C and AV switch	 SKIA0175E	System does not work properly.
12	Ground	Shield	–	ON	–	Approx. 0V	–

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
13 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	Operate A/C and AV switch	 SKIA0176E	System does not work properly.
14 (L)	–	CAN-H	–	–	–	–	–
16 (Y)	–	CAN-L	–	–	–	–	–

Terminals and Reference Value for A/C and AV Switch

AKS004XX

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
2 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
3 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12V	A/C and AV switch illumination does not function when lighting switch is ON.
					Lighting switch OFF	Approx. 0V	
4 (R/W)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12V	A/C and AV switch illumination cannot be controlled.
5 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
6 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	Operate A/C and AV switch	 SKIA0175E	System does not work properly.
7	Ground	Shield	–	ON	–	Approx. 0V	–
8 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	Operate A/C and AV switch	 SKIA0176E	System does not work properly.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
12 (R)	Ground	Remote control A	Input	ON	Push MODE switch	Approx. 0V	Audio steering wheel switch controls do not function.
					Push SEEK UP switch	Approx. 1.7V	
					Push VOL UP switch	Approx. 3.3V	
					Except for above	Approx. 5V	
13 (G)	Ground	Remote control B	Input	ON	Push POWER switch	Approx. 0V	Audio steering wheel switch controls do not function.
					Push SEEK DOWN switch	Approx. 1.7V	
					Push VOL DOWN switch	Approx. 3.3V	
					Except for above	Approx. 5V	
14 (B/W)	Ground	Remote control ground	–	ON	–	Approx. 0V	Audio steering wheel switch controls do not function.
16 (G/W)	Ground	Rear window defogger switch signal	Output	ON	Push rear window defogger switch	Approx. 0V	Rear window defogger does not operate.
					–	Approx. 5V	

On Board Self-Diagnosis Function

AKS004XY

DESCRIPTION

- Diagnosis function consists of the self-diagnosis mode performed automatically.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.

DIAGNOSIS ITEM

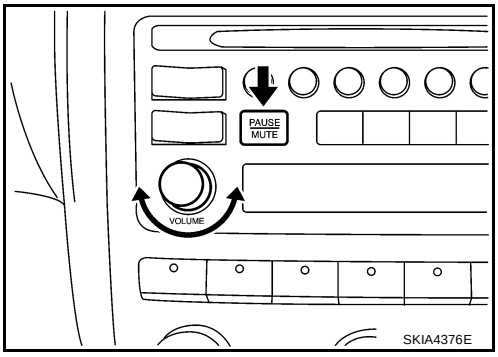
Mode	Item	Description	Reference page
Self-diagnosis	NETWORK CHECK	Check network between control unit and switch connected from display unit via communication line.	AV-90, "NETWORK CHECK"
	PARTS CHECK	● Perform diagnosis and setting of display unit. ● Perform self-diagnosis for auto air conditioner system.	AV-90, "PARTS CHECK"
	VERSION CHECK	Displays version of each unit.	AV-91, "VERSION CHECK"
	CAN DIAG MNTR	Display unit displays CAN communication status.	AV-91, "CAN DIAG MNTR (CAN DIAG MONITOR)"

Self-Diagnosis Mode

AKS004XZ

OPERATION PROCEDURES

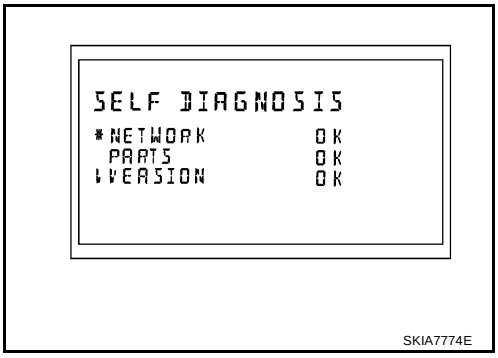
1. Start the engine.
2. Turn the audio system OFF.
3. While pushing the “PAUSE/MUTE” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)



4. Display unit connection check screen.
5. Select each connecting unit (IVCS, CHANGER, SATELLITE RADIO).

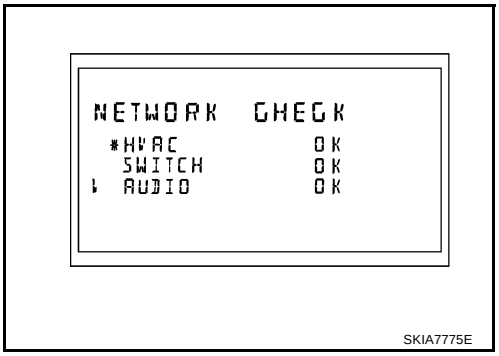
6. Self-diagnosis screen is displayed.
   - Using the joystick, select each item, and perform diagnosis.

CAUTION:
If self-diagnosis cannot activated, refer to AV-93, "Trouble Diagnosis Chart by Symptom" .



NETWORK CHECK

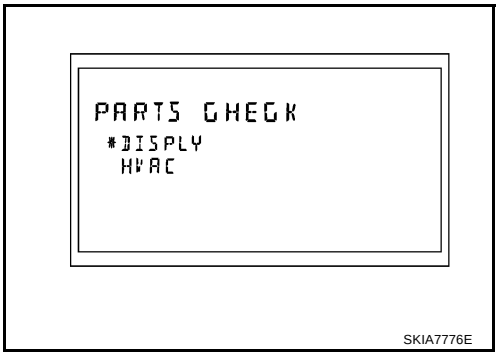
Selecting NETWORK CHECK on self-diagnosis screen, display self-diagnostic results.



Diagnosis item	Contents	DTC return condition	Reference at error
HVAC	OK/NG	Communication error between unified meter and A/C amp. and display unit.	AV-101, "CAN Communication Line Check"
SWITCH	OK/NG	Communication error between A/C and AV switch and display unit.	AV-100, "A/C and AV Switch Does Not Operate"
AUDIO	OK/NG	Communication error between audio and display unit.	AV-98, "Audio Communication Line Check"

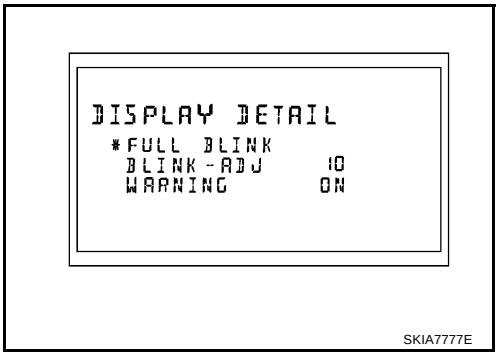
PARTS CHECK

- Selecting PARTS CHECK on self-diagnosis screen, display selection screen.
- Select DISPLAY, indicate DISPLAY DETAIL screen. Display diagnosis and setting can be performed.
- Select HVAC, Indicate HVAC DETAIL screen. Auto air conditioner system self-diagnosis can be performed.



Display Detail Screen

Items	Description
FULL BLINK	All display unit segments turn ON.
BLANK–ADJ	Adjust the display timeout.
WARNING	Select warning indication ON/OFF.



HVAC DETAIL SCREEN

Push the joystick, start auto air conditioner system self-diagnosis. Refer to ATC-47, "Self-Diagnosis Function" .

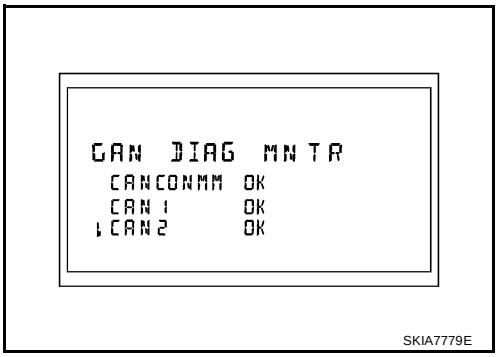
VERSION CHECK

Check ID and version of display, A/C and AV switch, and audio.

CAN DIAG MNTR (CAN DIAG MONITOR)

Display CAN communication status.

Items shown	Contents
CANCOMM	OK/NG
CAN1	OK/UNKWN
CAN2	OK/UNKWN
CAN3	OK/UNKWN
CAN4	OK/UNKWN
CAN5	OK/UNKWN
CAN6	OK/UNKWN
CAN7	OK/UNKWN
CAN8	OK/UNKWN
CAN9	OK/UNKWN



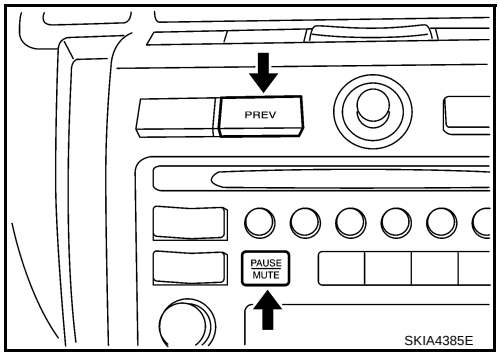
A/C and AV Switch Self-Diagnosis Function

AKS005FY

It can check ON/OFF operation of each switch in the A/C and AV switch and diagnose the input signals to the audio steering wheel switch.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds push and hold the witches “PAUSE/MUTE” and “PREV” simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

- All the indicators (LED) in the A/C and AV switch.
- Continuity of the switches by sounding the buzzer when the A/C and AV switch is pushed.
- Continuity of harness between A/C and AV switch and audio steering wheel switch.

NOTE:

- Indicators (LED) of REC/FRE switch change to “FRE”→“REC”→“FRE” every time the REC/FRE switch is pushed. (These two do not turn on at a time.)
- Impossible to check rear window defogger switch operation (No beep sound even under normal status).

EXITING THE SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

Trouble Diagnosis Chart by Symptom

AKS005IF

Symptom	Check item
No screen is shown.	● Display unit power supply and ground circuit. Refer to AV-94, "Power Supply and Ground Circuit Check for Display Unit" . ● Display unit
Screen does not switch to nighttime mode after the lighting switch is turned ON.	● Illumination signal. Refer to AV-97, "Illumination Signal Check" . ● Display unit
TRIP and FUEL ECON screen do not appear.	● Ignition signal. Refer to AV-97, "Ignition Signal Check" . ● Display unit
● Trip odometer (DIST) is not added up. ● Average vehicle speed (AVG) is not displayed.	● Vehicle speed signal. Refer to AV-96, "Vehicle Speed Signal Check" . ● Display unit
Average fuel consumption (AVG) is not displayed.	● Vehicle speed signal. Refer to AV-96, "Vehicle Speed Signal Check" . ● CAN communication line. Refer to AV-101, "CAN Communication Line Check" . ● Display unit
Distance to empty (DTE) is not displayed.	● Check if speedometer operates. If it does not operate, go to DI-19, "Vehicle Speed Signal Inspection" . ● Check if fuel gauge operates. If it does not operate, go to DI-22, "Fuel Level Sensor Signal Inspection 1" . ● CAN communication line. Refer to AV-101, "CAN Communication Line Check" . ● Display unit
Tire pressure is not displayed.	● Ignition signal. Refer to AV-97, "Ignition Signal Check" . ● Low tire pressure warning control unit. Refer to WT-17, "Self-Diagnosis" . ● CAN communication line. Refer to AV-101, "CAN Communication Line Check" . ● Display unit
Door warning screen does not appear.	● Ignition signal. Refer to AV-97, "Ignition Signal Check" . ● Vehicle speed signal. Refer to AV-96, "Vehicle Speed Signal Check" . ● CAN communication line. Refer to AV-101, "CAN Communication Line Check" . ● Display unit
A/C and AV switch and all switch operation are not possible. (Do not start self-diagnosis.)	Refer to AV-100, "A/C and AV Switch Does Not Operate" .
Air conditioner operation is not possible.	● Ignition signal. Refer to AV-97, "Ignition Signal Check" . ● A/C and AV switch. Refer to AV-98, "A/C and AV Switch Check" . ● CAN communication line. Refer to AV-101, "CAN Communication Line Check" .

Power Supply and Ground Circuit Check for Display Unit

AKS005FF

1. CHECK FUSE

Make sure that the following fuses of the display unit are not blown.

Unit	Signal	Fuse No.
Display unit	Battery power supply	38
	Ignition switch ACC or ON	6

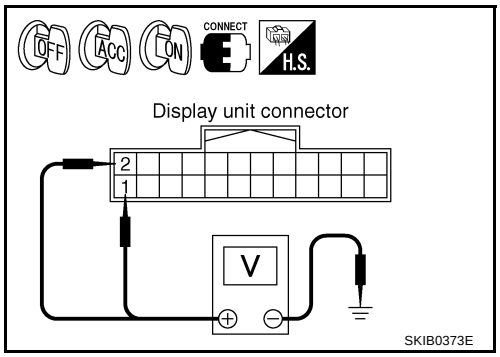
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between display unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal (Wire color)				
M39	1 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	2 (P/B)	Ground	0V	Battery voltage	Battery voltage



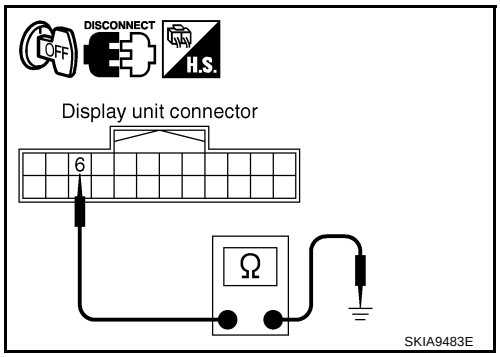
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector.
3. Check continuity between display unit harness connector M39 terminal 6 (B) and ground.

6 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Power Supply and Ground Circuit Check for A/C and AV Switch

AKS005FG

1. CHECK FUSE

Make sure that the following fuses of the A/C and AV switch are not blown

Unit	Signal	Fuse No.
A/C and AV switch	Battery power supply	38
	Ignition switch ACC or ON	6

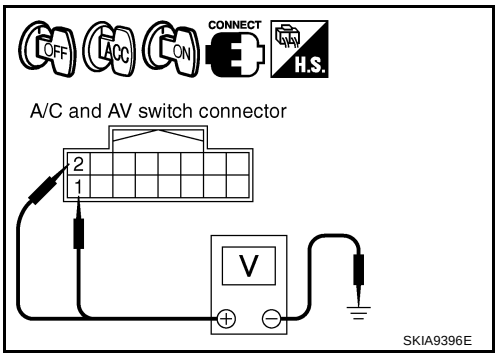
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between A/C and AV switch harness connector terminals and ground.

Terminals (+) Connector	Terminals (+) Terminal (Wire color)	Terminals (–)	OFF	ACC	ON
M48	1 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	2 (P/B)	Ground	0V	Battery voltage	Battery voltage



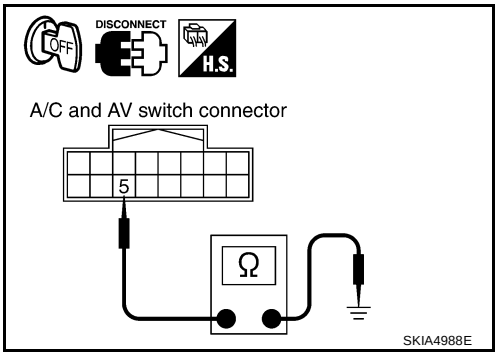
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect A/C and AV switch connector.
3. Check continuity between A/C and AV switch harness connector M48 terminal 5 (B) and ground.

5 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Vehicle Speed Signal Check

AKS005G9

1. VEHICLE SPEED OPERATION CHECK

Does speedometer is operated normally?

YES or NO

YES >> GO TO 2.
NO >> Check combination meter trouble diagnosis. Refer to DI-19, "Vehicle Speed Signal Inspection" .

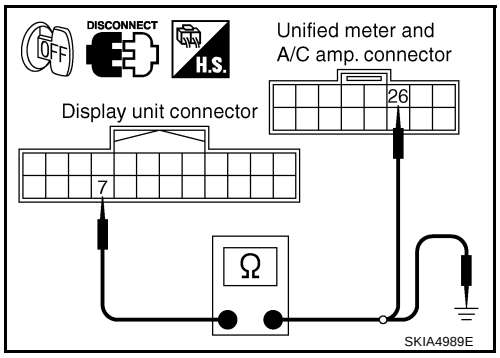
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display unit, unified meter and A/C amp., combination meter, audio unit and shift lock control unit connectors.
3. Check continuity between display unit harness connector M39 terminal 7 (V/W) and unified meter and A/C amp. harness connector M50 terminal 26 (V/W).

7 – 26 : Continuity should exist.

4. Check continuity between display unit harness connector M39 terminal 7 (V/W) and ground.

7 – Ground : Continuity should not exist.



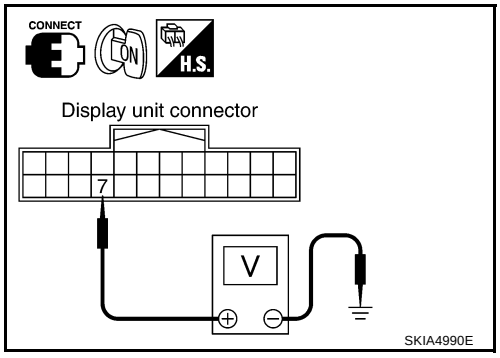
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK DISPLAY UNIT

1. Connect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M39 terminal 7 (V/W) and ground.

7 – Ground : Approx. 5V



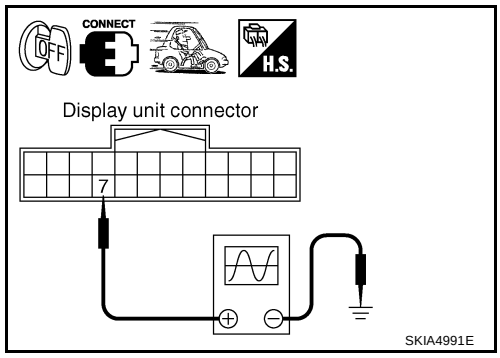
OK or NG

OK >> GO TO 4.
NG >> Replace display unit.

4. CHECK VEHICLE SPEED SIGNAL

1. Turn ignition switch OFF.
2. Connect unified meter and A/C amp., combination meter, audio unit and shift lock control unit connectors.
3. Drive vehicle at a constant speed.
4. Check voltage waveform between display unit harness connector M39 terminal 7 (V/W) and ground using CONSULT-II or oscilloscope.

7 – Ground **: Refer to AV-86, "Terminals and Reference Value for Display Unit" .**



OK or NG

OK >> INSPECTION END
NG >> Replace unified meter and A/C amp. Refer to DI-38, "Removal and Installation of Unified Meter and A/C Amp." .

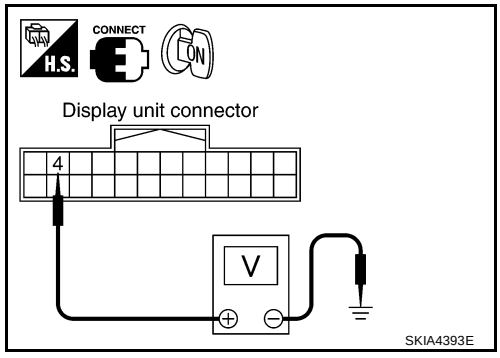
Illumination Signal Check

AKS005GA

1. CHECK ILLUMINATION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between display unit harness connector terminals and ground.

Terminals			Lighting switch position	
(+)		(–)		
Connector	Terminal (Wire color)		ON	OFF
M39	4 (R/L)	Ground	Approx. 12V	Approx. 0V



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

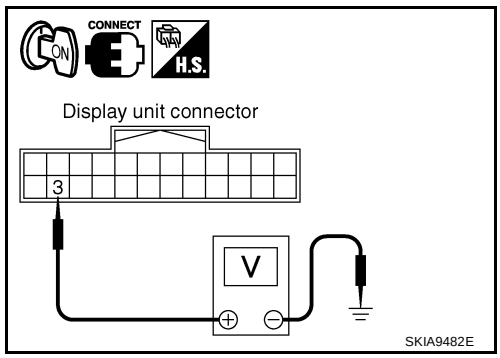
Ignition Signal Check

AKS005GB

1. CHECK IGNITION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between display unit harness connector M39 terminal 3 (G) and ground.

3 – Ground **: Battery voltage**



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

A/C and AV Switch Check

AKS00AS1

1. CHECK A/C AND AV SWITCH SELF-DIAGNOSIS FUNCTION

1. Start A/C and AV switch self-diagnosis function. Refer to AV-92, "A/C and AV Switch Self-Diagnosis Function" .
2. Operate voluntary switch.

Does A/C and AV switch operate normally?

YES >> INSPECTION END
NO >> GO TO 2.

2. CHECK A/C AND AV SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check A/C and AV switch power supply and ground circuit. Refer to AV-95, "Power Supply and Ground Circuit Check for A/C and AV Switch" .

OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair malfunctioning parts.

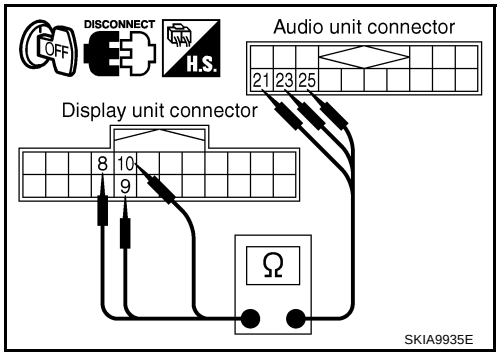
Audio Communication Line Check

AKS005FK

1. CHECK HARNESS

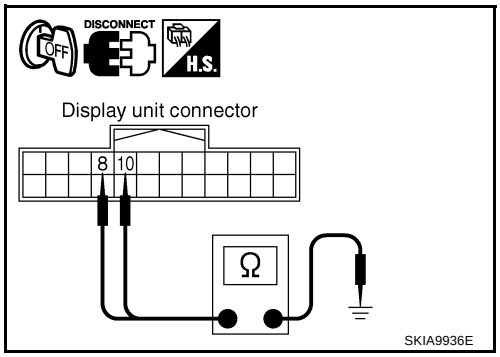
1. Turn ignition switch OFF.
2. Disconnect audio unit and display unit connectors.
3. Check continuity between audio unit harness connector terminals and display unit harness connector terminals.

Terminals				Continuity
Display unit		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M39	8 (R/G)	M46	23 (R/G)	Yes
	10 (R/Y)		21 (R/Y)	
	9		25	



4. Check continuity between display unit harness connector terminals and ground.

Terminals			Continuity
Display unit		Ground	
Connector	Terminal (Wire color)		
M39	8 (R/G)		No
	10 (R/Y)		



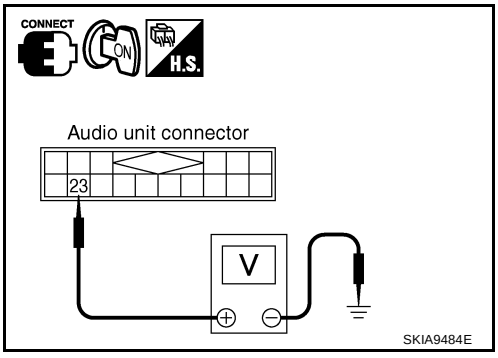
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK AUDIO UNIT

1. Connect audio unit connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector M46 terminal 23 (R/G) and ground.

23 – Ground : Approx. 4V



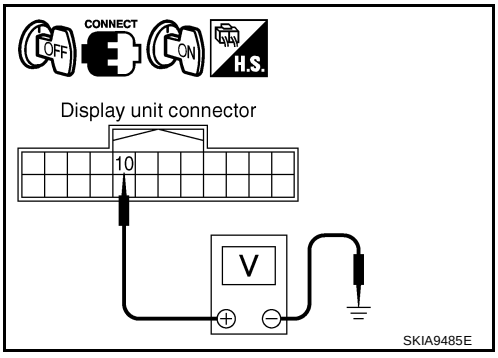
OK or NG

OK >> GO TO 3.
NG >> Replace audio unit.

3. CHECK DISPLAY UNIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector, and connect display unit connector.
3. Turn ignition switch ON.
4. Check voltage between display unit harness connector M39 terminal 10 (R/Y) and ground.

10 – Ground : Approx. 4V



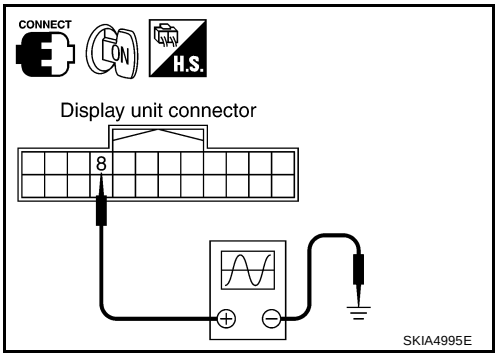
OK or NG

OK >> GO TO 4.
NG >> Replace display unit.

4. CHECK AUDIO TX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Connect audio unit connector.
3. Turn ignition switch ON.
4. Check voltage waveform between display unit harness connector M39 terminal 8 (R/G) and ground using CONSULT-II or oscilloscope.

8 – Ground : Refer to AV-86, "Terminals and Reference Value for Display Unit" .



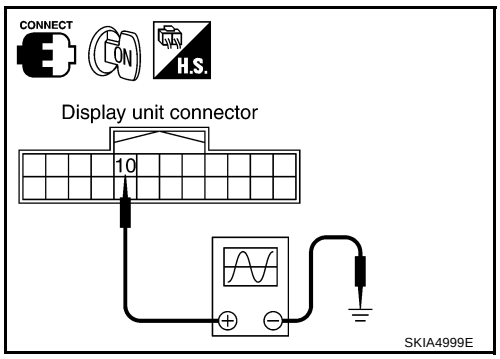
OK or NG

OK >> GO TO 5.
NG >> Replace display unit.

5. CHECK AUDIO RX COMMUNICATION SIGNAL

1. Turn ignition switch ON.
2. Check voltage waveform between display unit harness connector M39 terminal 10 (R/Y) and ground using CONSULT-II or oscilloscope.

10 – Ground **: Refer to AV-86, "Terminals and Reference Value for Display Unit" .**



OK or NG

OK >> INSPECTION END
NG >> Replace audio unit.

A/C and AV Switch Does Not Operate

AKS005FL

1. CHECK A/C AND AV SWITCH

Check A/C and AV switch. Refer to AV-98, "A/C and AV Switch Check" .

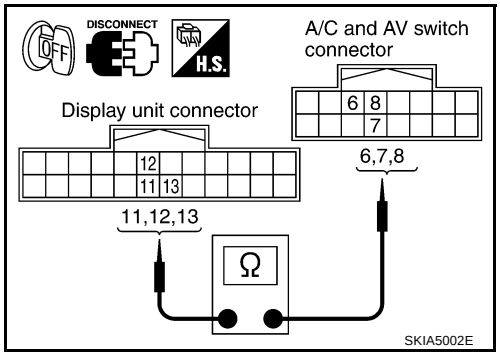
OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. CHECK A/C AND AV SWITCH CIRCUIT

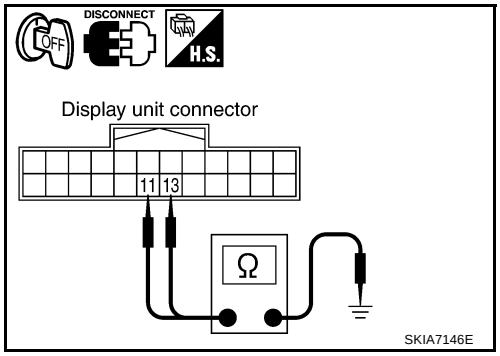
1. Turn ignition switch OFF.
2. Disconnect display unit and A/C and AV switch connectors.
3. Check continuity between display unit harness connector terminals and A/C and AV switch harness connector terminals.

Terminals				Continuity
Display unit		A/C and AV switch		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M39	11 (L/G)	M48	6 (L/G)	Yes
	13 (L/R)		8 (L/R)	
	12		7	



4. Check continuity between display unit harness connector terminals and ground.

Terminals			Continuity
Display unit		Ground	
Connector	Terminal (Wire color)		
M39	11 (L/G)		No
	13 (L/R)		



OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK A/C AND AV SWITCH

1. Replace A/C and AV switch.
2. Check A/C and AV switch if it functions normally.

OK or NG

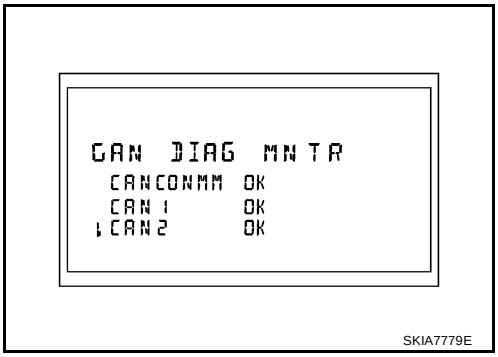
OK >> INSPECTION END
NG >> Replace display unit.

CAN Communication Line Check

AKS005H0

1. CHECK MONITOR DESCRIPTION

1. Start display unit self-diagnosis. Refer to AV-89, "Self-Diagnosis Mode" .
2. Select “CAN DIAG MNTR”. Refer to AV-91, "CAN DIAG MNTR (CAN DIAG MONITOR)" .



SKIA7779E

Diagnosis item	Data monitor display description	
	Normal condition	Error (example)
CANCOMM	OK	NG
CAN1	OK	UNKWN
CAN2	OK	UNKWN
CAN3	OK	UNKWN
CAN4	OK	UNKWN
CAN5	OK	UNKWN
CAN6	OK	UNKWN
CAN7	OK	UNKWN
CAN8	OK	UNKWN
CAN9	UNKWN	UNKWN

3. Record each item display description (OK/NG/UNKWN) displayed on the following CAN DIAG MONITOR Check Sheet.

CAN DIAG MONITOR Check Sheet

Diagnosis item	Screen display		Diagnosis item	Screen display	
CANCOMM	OK	NG	CAN5	OK	UNKWN
CAN1	OK	UNKWN	CAN6	OK	UNKWN
CAN2	OK	UNKWN	CAN7	OK	UNKWN
CAN3	OK	UNKWN	CAN8	OK	UNKWN
CAN4	OK	UNKWN	CAN9	OK	UNKWN

>> After filling in CAN DIAG MONITOR Check Sheet, go to LAN-6, "Precautions When Using CONSULT-II" .

Audio Steering Wheel Switch Check

AKS005FZ

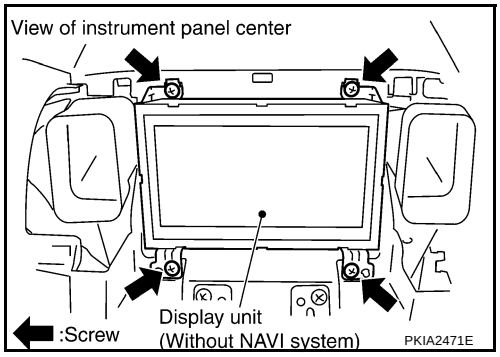
Refer to AV-48, "Audio Steering Wheel Switch Check" .

Removal and Installation of Display Unit

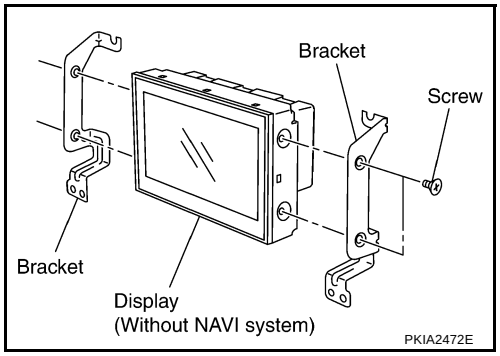
AKS005R3

REMOVAL

1. Remove center ventilator grille. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4) and remove display unit.



3. Remove screws (4) and remove bracket.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of A/C and AV Switch

AKS005R2

Refer to AV-68, "Removal and Installation for A/C and AV Switch" .

Removal and Installation of Audio Steering Wheel Switch

AKS00ASA

Refer to AV-69, "Removal and Installation of Audio Steering Wheel Switch" .

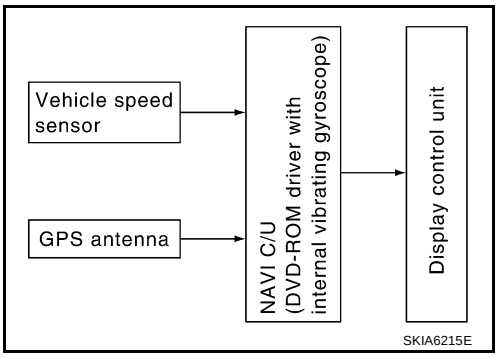
NAVIGATION SYSTEM

PFP:25915

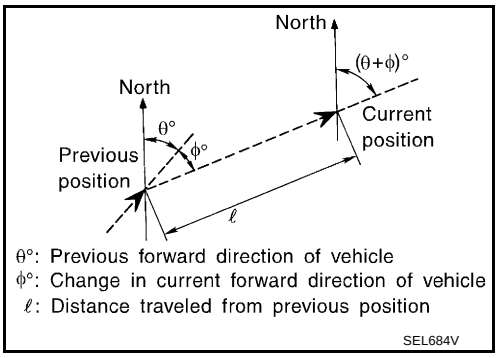
System Description

AKS004R4

The navigation system periodically calculates the vehicle's current position according to the following three signals: Travel distance of the vehicle as determined by the vehicle speed sensor, turning angle of the vehicle as determined by the gyroscope (angular velocity sensor), and the direction of vehicle travel as determined by the GPS antenna (GPS information).
The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen with a current–location mark.



By comparing the vehicle position detection results found by the GPS and by map–matching, more accurate vehicle position data can be used.
The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.



TRAVEL DISTANCE

Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance fine adjustment function has been adopted.

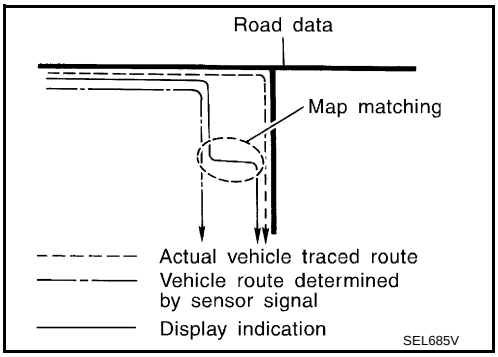
TRAVEL DIRECTION

Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). As the gyroscope and GPS antenna have both merit and demerit, input signals from them are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	● Can detect the vehicle's turning angle quite accurately.	● Direction errors may accumulate when the vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	● Can detect the vehicle's travel direction (North/South/East/West).	● Correct direction cannot be detected when the vehicle speed is low.

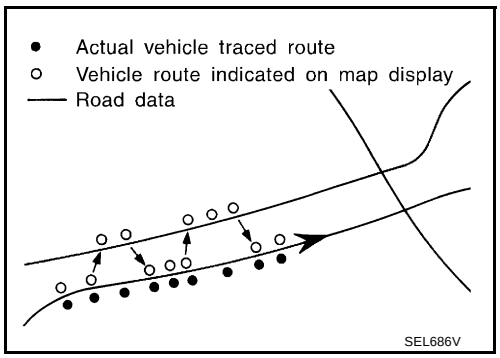
MAP–MATCHING

Map–matching is a function that repositions the vehicle on the road map when a new location is judged to be the most accurate. This is done by comparing the current vehicle position, calculated by the method described in the position detection principle, with the road map data around the vehicle, read from the map DVD-ROM stored in the DVD-ROM drive.
Therefore, the vehicle position may not be corrected after the vehicle is driven over a certain distance or time in which GPS information is hard to receive. In this case, the current–location mark on the display must be corrected manually.

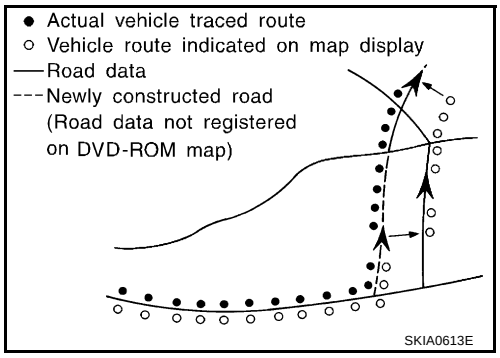


CAUTION:
The road map data is based on data stored in the map DVD-ROM.

- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the current-location mark has been repositioned.
  If there is an error in distance and/or direction, the alternative routes will be shown in different order of priority, and the wrong road can be avoided.
  If two roads are running in parallel, they are of the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

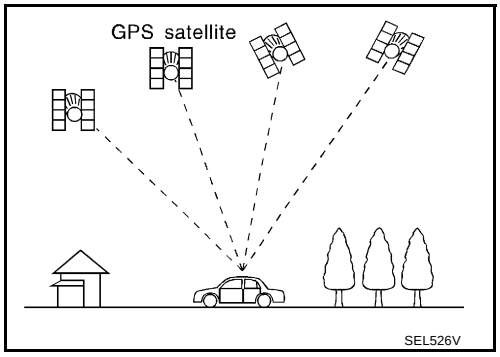


- Map-matching does not function correctly when the road on which the vehicle is driving is new and not recorded in the map DVD-ROM, or when the road pattern stored in the map data and the actual road pattern are different due to repair.
  When driving on a road not present in the map, the map-matching function may find another road and position the current-location mark on it. Then, when the correct road is detected, the current-location mark may leap to it.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map DVD-ROM is limited. Therefore, when there is an excessive gap between the current vehicle position and the position on the map, correction by map-matching is not possible.



GPS (GLOBAL POSITIONING SYSTEM)

GPS (Global Positioning System) has been developed and controlled by the US Department of Defense. The system utilizes GPS satellite (NAVSTAR), sending out radio waves while flying on an orbit around the earth at the height of approx. 21,000 km(13,000 miles).
The GPS receiver calculates the vehicle's position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves received from four or more GPS satellites (three–dimensional positioning). If radio waves were received only from three GPS satellites, the GPS receiver calculates the vehicle's position in two dimensions (latitude/longitude), utilizing the altitude data calculated previously by using radio waves from four or more GPS satellites (two–dimensional positioning).



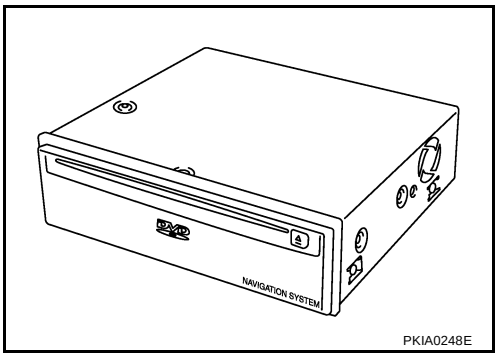
Accuracy of the GPS will deteriorate under the following conditions.

- In two–dimensional positioning, the GPS accuracy will deteriorate when the altitude of the vehicle position changes.
- There may be an error of approximately 10 m (30 ft) in position detected by three-dimensional positioning, which is more accurate than two–dimensional positioning. The accuracy can be even lower depending on the arrangement of the GPS satellites utilized for the positioning.
- Position detection is not possible when the vehicle is in an area where radio waves from the GPS satellite do not reach, such as in a tunnel, parking lot in a building, and under an elevated highway. Radio waves from the GPS satellites may not be received when some object is located over the GPS antenna.
- Position correction by GPS is not available while the vehicle is stopped.

COMPONENT DESCRIPTION

NAVI Control Unit

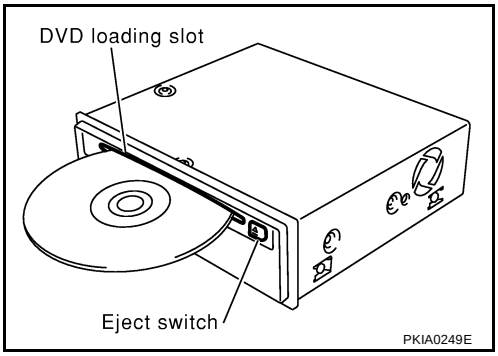
- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the DVD-ROM map. Locational information is shown on liquid crystal display panel.



PKIA0248E

DVD-ROM Drive

Maps, traffic control regulations, and other pertinent information can be easily read from the DVD-ROM disc.



PKIA0249E

Map DVD-ROM

- The map DVD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve DVD-ROM map matching and route determination functions, the DVD-ROM uses an exclusive Nissan format. Therefore, the use of a DVD-ROM provided by other manufacturers cannot be used.

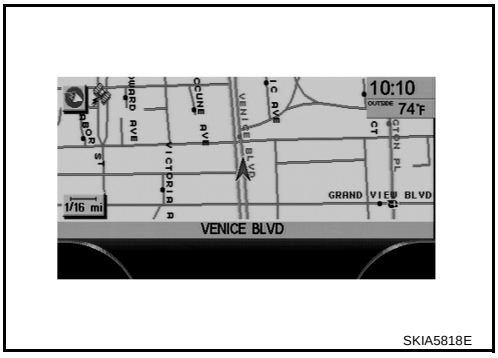
Gyro (Angular Speed Sensor)

- The oscillator gyro sensor is used to detect changes in vehicle steering angle.
- The gyro is built into the navigation (NAVI) control unit.

BIRDVIEW™

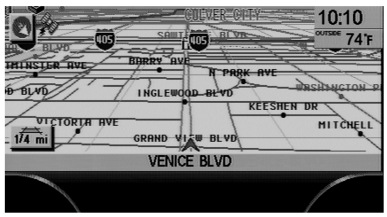
The BIRDVIEW™ provides a detailed and easily seen display of road conditions covering the vehicle's immediate to distant area.

- MAP DISPLAY



SKIA5818E

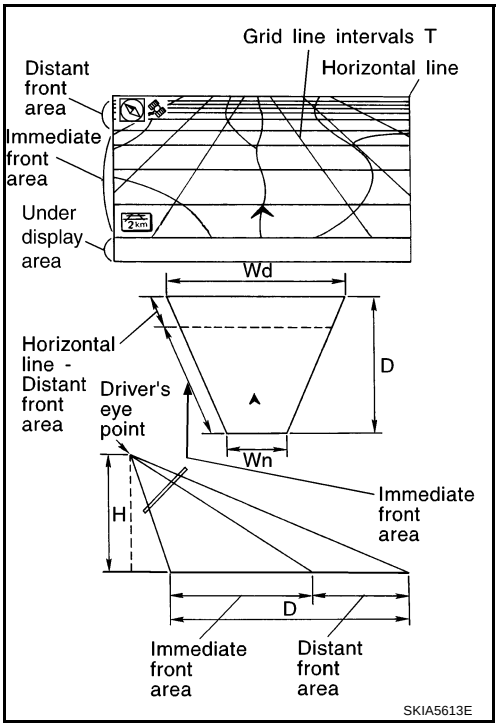
- BIRDVIEW™



SKIA5816E

Description

- Display area: Trapezoidal representation showing approximate distances (Wn, D, and Wd).
- Ten horizontal grid lines indicate display width while six vertical grid lines indicate display depth and direction.
- Pushing the “ZOOM IN” button during operation displays the scale change and the view point height on the left side of the screen.
  The height of the view point increases or decreases when “ZOOM” or “WIDE” is selected with the joystick.

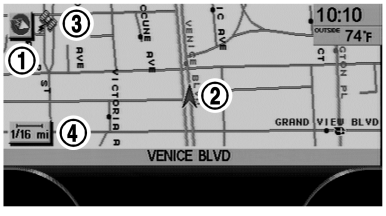


SKIA5613E

MAP DISPLAY

Function of each icon is as follows:

1. Azimuth indication.
2. Position marker.
   - The tip of the arrow shows the current location. The shaft of the arrow indicates the direction in which the vehicle is traveling.
3. GPS reception signal (indicates current reception conditions).
4. Distance display (shows the distance in a reduced scale).



SKIA5817E

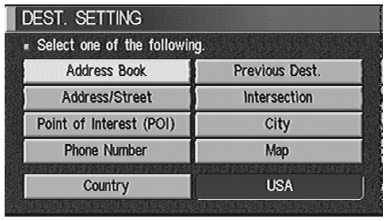
FUNCTION OF CENTER SWITCH

Display with Pushed “DEST” Button

- Easy Mode

SKIA3509E

- Expert Mode



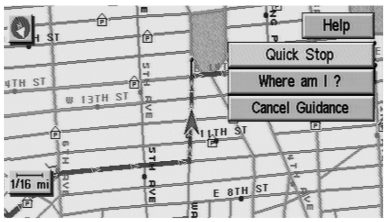
SKIA3510E

The function of each icon is as follows:

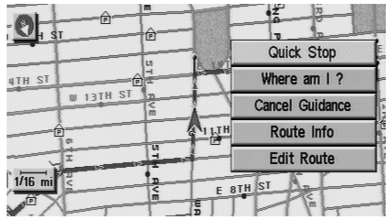
Icon	Mode		Description
	Easy	Expert	
Address Book		×	Favorite place can be saved to memory.
Address/Street	×	×	The destination can be searched from the address.
Point of Interest (POI)	×	×	The destination of favorite facility can be searched.
Previous Dest.		×	The previous ten destinations stored in memory are displayed.
Intersection		×	The destination can be searched from the intersection.
City		×	The destination can be searched from city name.
Map		×	The destination can be searched from the map.
Phone Number		×	When two or more countries are included in one DVD-ROM, the destination can be searched for under the country name.
Home	×		Sets the home as a destination.
Help	×		Explanation of navigational functions appear on the display.
Country	×	×	Select country (USA, CANADA)

Display with Pushed “ROUTE” Button

- Easy Mode



- Expert Mode



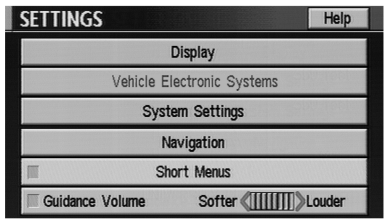
The function of each icon is as follows:

Icon	Mode		Description
	Easy	Expert	
Quick Stop	×	×	The selected facility is set as the destination or waypoint. (Route guidance has been turned OFF or the destination has been reached.)
Where am I?	×	×	Next, current and previous street names can be displayed.
Cancel Guidance	×	×	The following items can be set. ● All Destinations ● Way point ● Not Cancel
Route Info.*		×	The following items can be set. ● Complete Route ● Turn List ● Route Simulation (Displayed only when the destination area has been set.)
Edit Route*		×	Change the destination or add the transit points of the route set in the route guide. (Displayed only when the automatic reroute function has been turned OFF and the recommended route is not followed.)
Help	×		Explanation of navigational functions appear on the display.

*: When destinations have been entered, route guidance has been turned OFF or destination has been reached, “Route Info.” and “Edit Route” are not displayed.

Display with Pushed “SETTING” Button

The function of each icon is as follows:



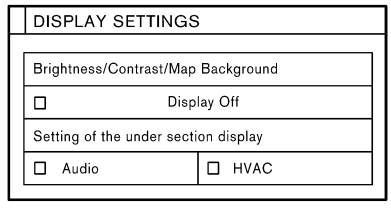
SKIA4496E

Icon	Description
Display	Settings of display can be performed.
Vehicle Electronic Systems	Settings of vehicle electrical equipment can be performed.
System Settings	Settings of linguistic select , time adjusting and beep sound can be performed.
Navigation	Settings and adjusting of navigation can be performed.
Short Menus	Easy Mode and Expert Easy Mode can be switched.
Guidance Volume	The volume and/or on/off of voice prompt can be controlled by the joystick.
Help (only easy mode)	Explanation of navigational functions appear on the display.

Display Settings

How To Perform Display Settings.

1. Start the engine.
2. Push “SETTING” button.
3. Select “Display”.



SKIA5791E

Application Items

Icon	Description	Reference page
Brightness/Contrast/Map Background	Brightness, Contrast and Map Background can be set.	AV-109
Display Off	Display sleep mode ON/OFF can be switched.	AV-109
Setting of the under section display	The setting status of A/C or AV can be shown.	AV-109

Brightness/Contrast/Map Background

Select “Brightness/Contrast/Map Background”.

- Brightness, Contrast and Back ground are shown at the lower part of the screen, and it can be set by pushing joystick.

Display Off

Select “Display Off”.

- When setting is turned on (Indicator light ON), the display will be under sleep mode.

Setting Of the Under Section Display

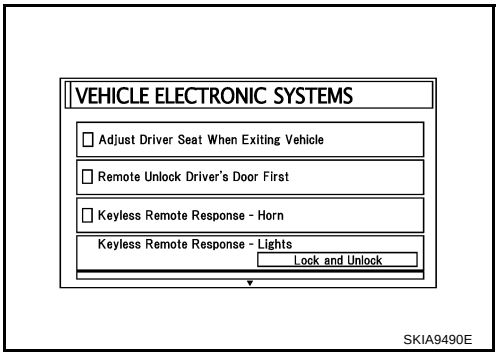
Select “Setting of the under section display”.

- The setting status that is selected from A/C or AV is shown at the lower part of the screen.

Vehicle Electronic Systems

How To Perform Vehicle Electronic Systems.

1. Start the engine.
2. Push “SETTING” button.
3. Select “Vehicle Electronic Systems”.



Application Items

Icon	Description	Reference page
Adjust Driver Seat When Exiting Vehicle	The driver's seat automatically moves back and returns to the original position.	AV-111
Remote Unlock Driver's Door First	This key can switch the unlock doors of the 1st unlocking operation as follows.	AV-111
Keyless Remote Response-Horn	This key changes the horn chirp mode occurring when pushing the lock button on the keyfob.	AV-111
Keyless Remote Response-Lights	This key changes the hazard indicator flash mode occurring when pushing the lock or unlock button on the keyfob.	AV-111
Auto Re-Lock Time	The length of auto door relock time can be set. (Setting value : OFF, 1min, or 5min)	AV-111
Sensitivity of Automatic Headlights	Sensitivity of automatic light can be set as desired.	AV-111
Automatic Headlights Off Delay	You can control how long it takes the automatic turn off timer to extinguish the headlights in AUTO position. (Setting value : OFF, 30sec, 45sec, 60sec, 90sec, 120sec, 150sec, or 180sec)	AV-111
Speed Dependent Wiper	This function can be performed to On or Off.	AV-111
Return All Settings to Default	All settings will return to the initial conditions.	AV-111

Adjust Driver Seat When Exiting Vehicle

1. Select “Adjust Driver Seat When Exiting Vehicle”.
2. Push “Enter” switch.

- The indicator light alternately turns on and off each time the “Enter” switch is pushed.

Remote Unlock Driver's Door First

1. Select “Remote Unlock Driver's Door First”.
2. Push “Enter” switch.

- The indicator light alternately turns on and off each time the “Enter” switch is pushed.

Keyless Remote Response-Horn

1. Select “Keyless Remote Response-Horn”.
2. Push “Enter” switch.

- The indicator light alternately turns on and off each time the “Enter” switch is pushed.

Keyless Remote Response-Lights

1. Select “Keyless Remote Response-Lights”.
2. Push “Enter” switch.

Auto Re-Lock Time

1. Select “Auto Re-Lock Time”.
2. Move the joystick and push “Enter” switch to adjust the time.

Sensitivity of Automatic Headlights

1. Select “Sensitivity of Automatic Headlights”.
2. Move the joystick to left (lower) or right (higher) and push “Enter” switch.

Automatic Headlights Off Delay

1. Select “Automatic Headlights Off Delay”.
2. Move the joystick left or right to adjust the timer and push “Enter” switch.

Speed Dependent Wiper

1. Select “Speed Dependent Wiper”.
2. Push “Enter” switch.

- The indicator light alternately turns on and off each time the “Enter” switch is pushed.

Return All Settings to Default

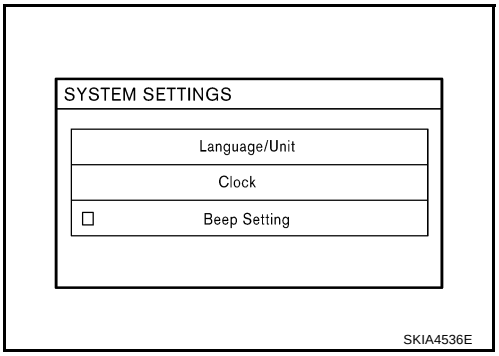
1. Select “Return All Settings to Default”.
2. Push “Enter” switch.

- The indicator light alternately turns on and off each time the “Enter” switch is pushed.

System Settings

How To Perform System Settings.

1. Start the engine.
2. Push “SETTING” button.
3. Select “System Settings”.



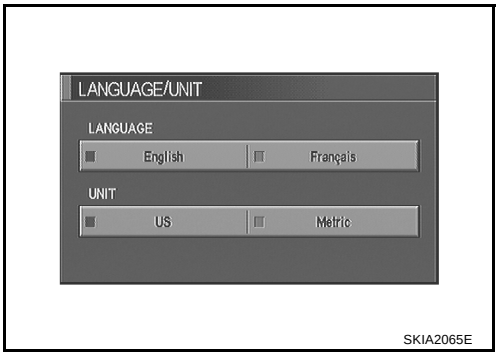
Application Items

Icon	Description	Reference page
Language/Unit	Settings of Language or unit can be performed.	AV-112
Clock	Settings of clock can be performed.	AV-112
Beep Setting	Settings of Beep sound can be performed.	AV-113

Language Setting

Select “Language/ Unit”.

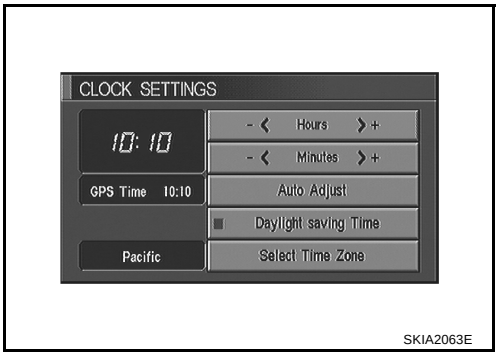
- Language setting can be switched.
- Unit setting can be changed.



Clock Settings

Select “Clock”.

- Select the “Hours” or “Minutes” key and tilt the joystick to the right or left to adjust the time.
- Turn ON and OFF daylight saving time.
- Select the “Auto Adjust” key. The time will be reset to the GPS time.
- Select the “Select Time Zone” key. The [TIME ZONE] screen will appear.



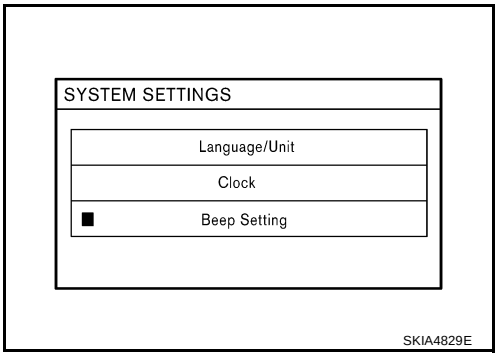
Beep Setting

Select “Beep Setting”.

- When Beep Setting is on (indicator light on), a beep will sound if the button is pushed.

NOTE:
Items in exception of Beep Setting ON/OFF.

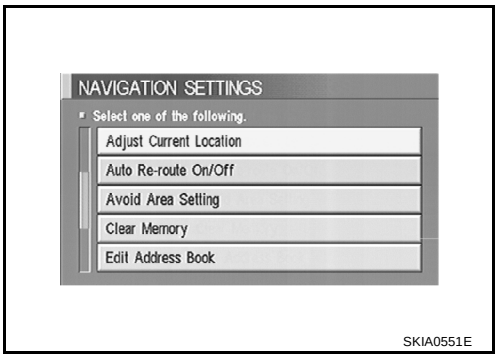
- An error beep.
- An interrupted-screen beep.



Navigation Settings

How To Perform Navigation Settings.

1. Start the engine.
2. Push “SETTING” button.
3. Select “Navigation”.

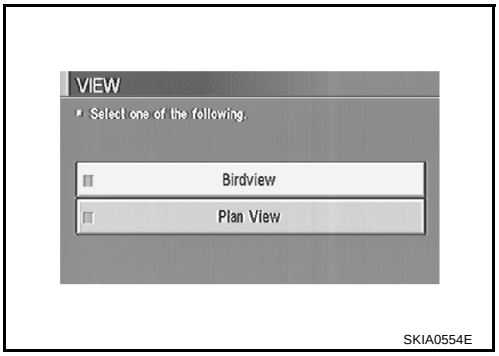


Application Items

Icon	Description	Reference page
View	Map display mode can be switched.	AV-114
Heading	Heading of the map display can be customized for either north heading or the actual driving direction of the vehicle.	AV-114
Nearby Display Icons	Icons of facilities can be displayed. Facilities to be displayed can be selected from the variety selections.	AV-114
Save Current Location	Current vehicle location can be registered in Address Book.	AV-114
Adjust Current Location	Current location of position marker can be adjusted. Direction of position marker also can be calibrated when heading direction of the vehicle on the display is not matched with the actual direction.	AV-115
Auto Re-route On/Off	ON/OFF of Auto Re-route can be switched.	AV-115
Avoid Area Setting	A particular area can be avoided when routing.	AV-115
Clear Memory	Address Book, Previous destination or Avoid area can be deleted.	AV-116
Edit Address Book	Address Book can be edited.	AV-116
GPS Information	The GPS data includes longitude, latitude and altitude (distance above sea level) of the present vehicle position, and current date and time for the area in which the vehicle is being driven. Also indicated are the GPS reception conditions and the GPS satellite position.	AV-116
Quick Stop Customer Setting	One facility of your selection can be added to your Quick Stop.	AV-116
Set Average Speed for Estimated Journey Time	Average vehicle speed can be set to calibrate estimated journey time for the destination.	AV-117
Tracking On/Off	Tracking to the present vehicle position can be displayed.	AV-117

“VIEW” MODE

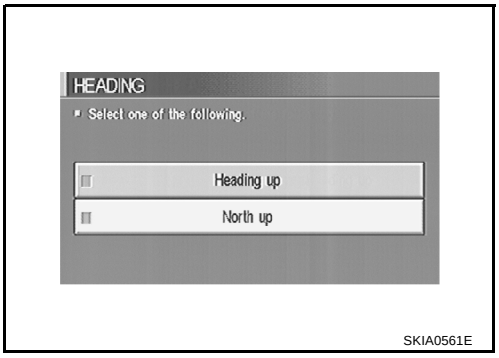
- To open the map screen display with BIRDVIEW™, select “BIRDVIEW”.
- To open the map screen display with Plan View, select “Plan View”.



SKIA0554E

“HEADING” MODE

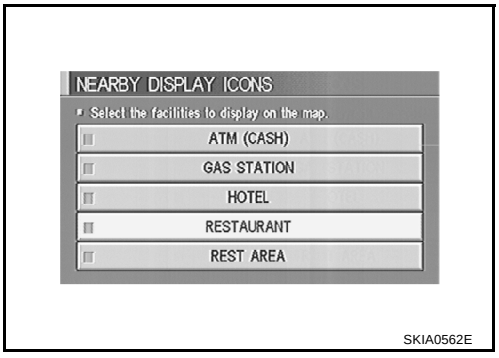
- To display North up, select “North up”.
- To display the car heading up, select “Heading up”.



SKIA0561E

“NEARBY DISPLAY ICONS” MODE

- Select an icon to display on the map screen.

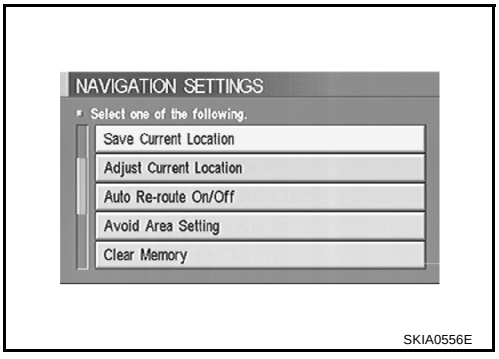


SKIA0562E

“SAVE CURRENT LOCATION” MODE

- The current vehicle location can be registered in “Address Book”.

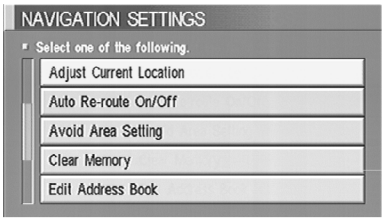
  NOTE:
  “Address Book” can store 50 items max.



SKIA0556E

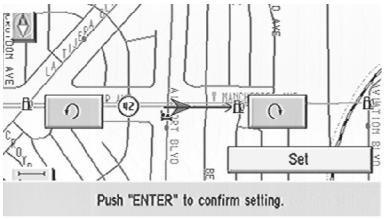
“ADJUST CURRENT LOCATION” MODE

- Select an icon “right” or “left” to calibrate the heading direction. (Arrow marks will rotate corresponding to the calibration key.)



SKIA0563E

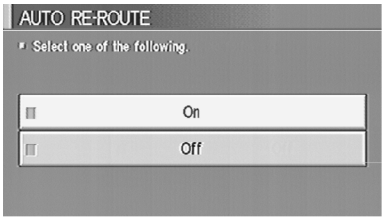
- Select “Set”. Then the vehicle mark will be matched to the arrow mark.



SKIA0564E

“AUTO RE-ROUTE” MODE

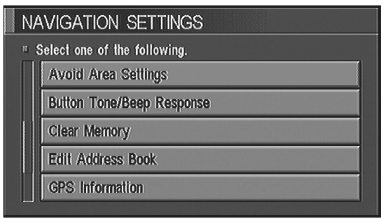
- To activate “AUTO RE-ROUTE” mode, select “On”.
- To disactivate “AUTO RE-ROUTE” mode, select “Off”.



SKIA0558E

“AVOID AREA SETTINGS” MODE

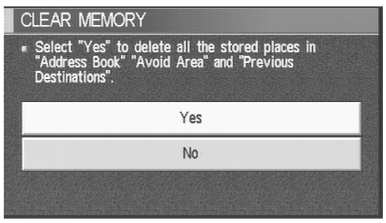
- Areas to avoid can be registered.



SKIA2058E

“CLEAR MEMORY” MODE

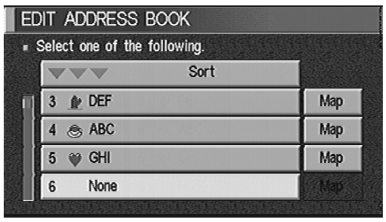
- To delete all the stored places in “Address Book”, “Avoid Area” and “Previous Dest”, select “Yes”.



SKIA3572E

“EDIT ADDRESS BOOK” MODE

- Edit the items registered in Address Book.

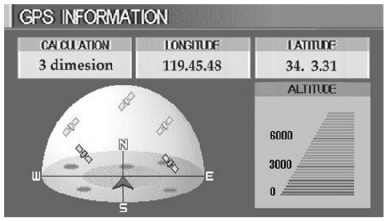


SKIA3511E

“GPS INFORMATION” MODE

- Latitude, longitude, altitude, astrometric state, and satellite location are displayed as GPS information.

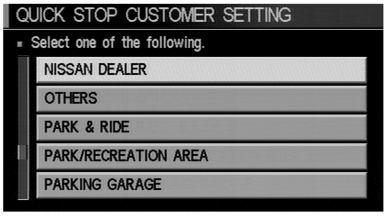
  NOTE:
  Altitude is displayed only in three–dimensional status.



SKIA0555E

“QUICK STOP CUSTOMER SETTING” MODE

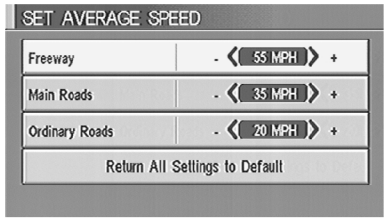
- Select a category for the “Quick Stop” menu.



SKIA5820E

“SET AVERAGE SPEED” MODE

- Set the average vehicle speed to calibrate the estimated journey time for the destination.
- Set three items; “Freeway”, “Main Roads”, and “Ordinary Roads”.

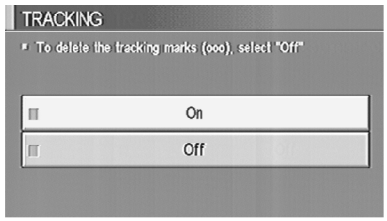


SKIA0565E

“TRACKING” MODE

- To delete the tracking marks on the map, select “Off”.
- To leave the tracking marks on the map, select “On”.

NOTE:
When a trail display is turned Off, trail data is erased from the memory.

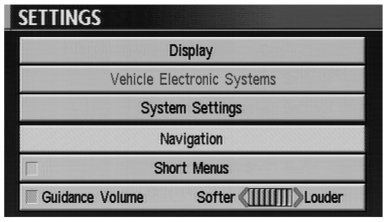


SKIA0559E

GUIDANCE VOLUME

Description

Following guidance volume setting can be changed.



SKIA4497E

Activation/Deactivation Setting

- The voice prompt can be turned on/off by pushing the “Guidance Volume” button.

Voice Volume Setting

- Volume of the voice can be controlled by bending the joystick to left/right.

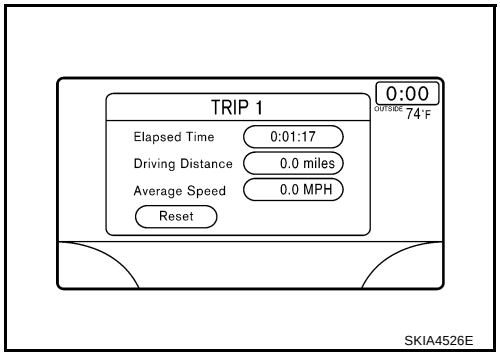
DISPLAY WITH PUSHED “TRIP” BUTTON

- When the “TRIP” button is pushed, the following models will display on the screen.
- Warning message (if there are any) →TRIP 1→TRIP 2→FUEL ECONOMY→MAINTENANCE→OFF.

Display items	Display/Setting contents		Reference page
Trip 1 or Trip 2	Elapsed Time	Displays driving time with a range of 0000:00:00 to 9999:59:59.	AV-118, "TRIP 1 OR TRIP 2"
	Driving Distance [(miles) or (km)]	Displays driving distance with a range of 00000.0 to 99999.9.	
	Average speed [(MPH) or (km/h)]	Displays average speed with a range of 000.0 to 999.9.	
Fuel Economy	Average Fuel Economy [(MPG) or (l/100km)]	Displays fuel economy with ignition switch ON, average fuel economy each 30 minutes.	AV-118, "FUEL ECONOMY"
	Distance to Empty [(miles) or (km)]	Displays possible driving distance with remaining fuel.	
	Fuel Economy [(MPG) or (l/100km)]	Displays fuel economy each approx. 100 ms.	
Maintenance	Engine oil	Maintenance intervals of engine oil and setting of oil change cycle.	AV-119, "MAINTE-NANCE"
	Tire rotation	Maintenance intervals of tire and setting of tire replace-ment cycle.	
	Tire pressure	Tire pressure displayed as tire pressure information.	

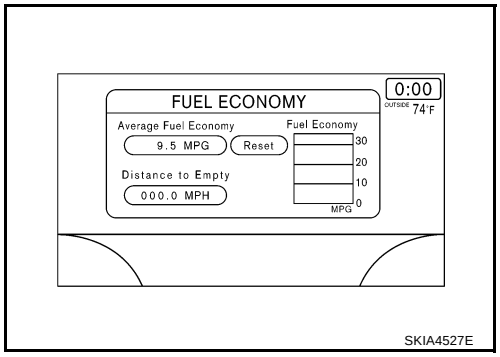
TRIP 1 OR TRIP 2

- Elapsed time, Driving distance and Average speed are displayed as Trip 1 information or Trip 2 information.
- The way to reset is by pushing the “Reset” switch or by keeping pushing “TRIP” button more than 1.5 seconds.



FUEL ECONOMY

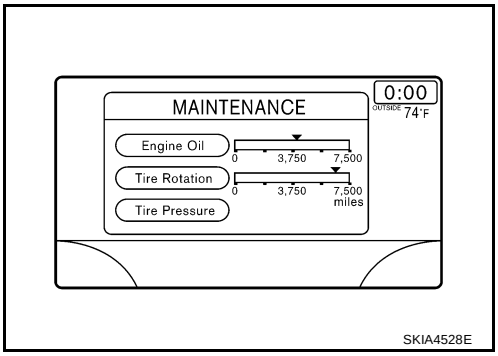
- Average Fuel Economy, Distance to Empty, Fuel Economy are displayed as Fuel Economy information.
- The way to reset is by pushing the “Reset” switch or by keeping pushing “TRIP” button more than 1.5 seconds.



MAINTENANCE

- Engine Oil, Tire Rotation and Tire pressure are displayed as Maintenance information.

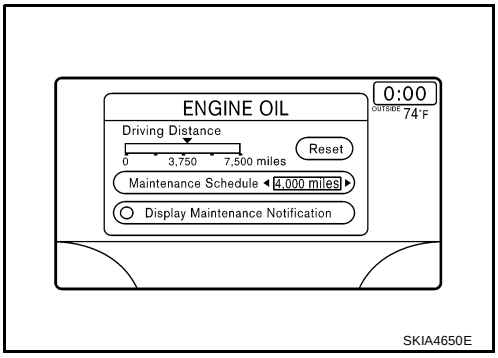
NOTE:
In a case of a vehicle with Low tire pressure warning control unit, “Tire Pressure” switch is displayed.



SKIA4528E

ENGINE OIL OR TIRE ROTATION

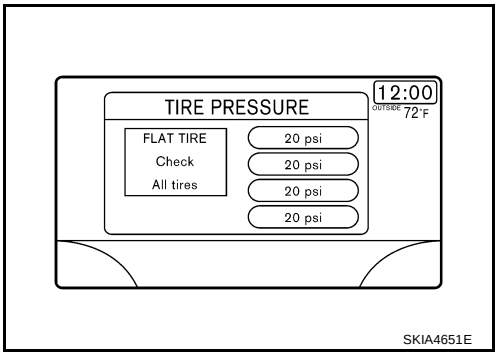
- Possible to set up interval of engine oil and tire rotation by moving joystick right and left.



SKIA4650E

TIRE PRESSURE

- Pressure indication in ** psi on the screen indicates that the pressure is being measured. After a few driving trips, the pressures for all four tires will be displayed.
- The order of tire pressure figures displayed on the screen does not correspond with the actual order of the tire position.
- Tire pressure rises and falls depending on the heat caused by the vehicle's traveling condition and the temperature.
- In case of low tire pressure, the low tire pressure warning light will come on and/or a warning is displayed on the screen.
- FLAT TIRE–very low tire air pressure.

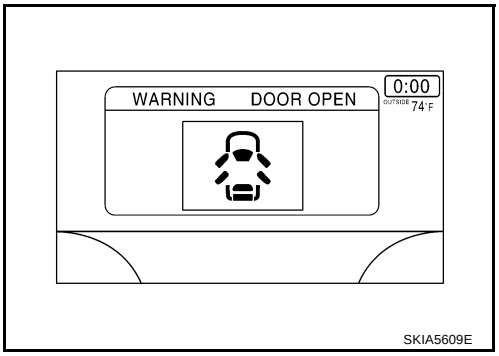


SKIA4651E

NOTE:
- In a case of FLAT TIRE pressure, interrupt screen is not shown on the display.
- On the screen of TIRE PRESSURE, “FLAT TIRE”, “Check”, “All tire” is displayed.

WARNING INDICATIONS

Warning signal (Door switch signal) is received from BCM through CAN communication line.



Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
DOOR OPEN	Door	Detection condition	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Door is open
		Cancel condition	Vehicle is stopped and all the doors lock.	

CAN Communication System Description

AKS007PX

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicles are equipped with many electronic control units and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

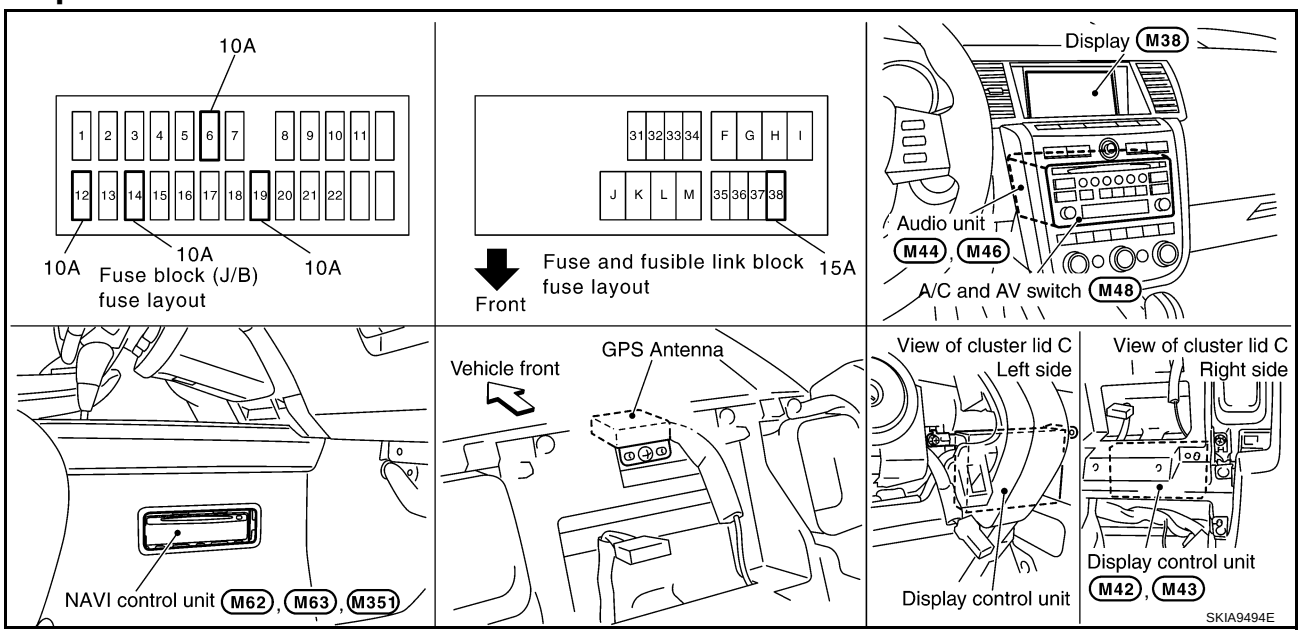
CAN Communication Unit

AKS007PY

Refer to LAN-8, "CAN Communication Unit" .

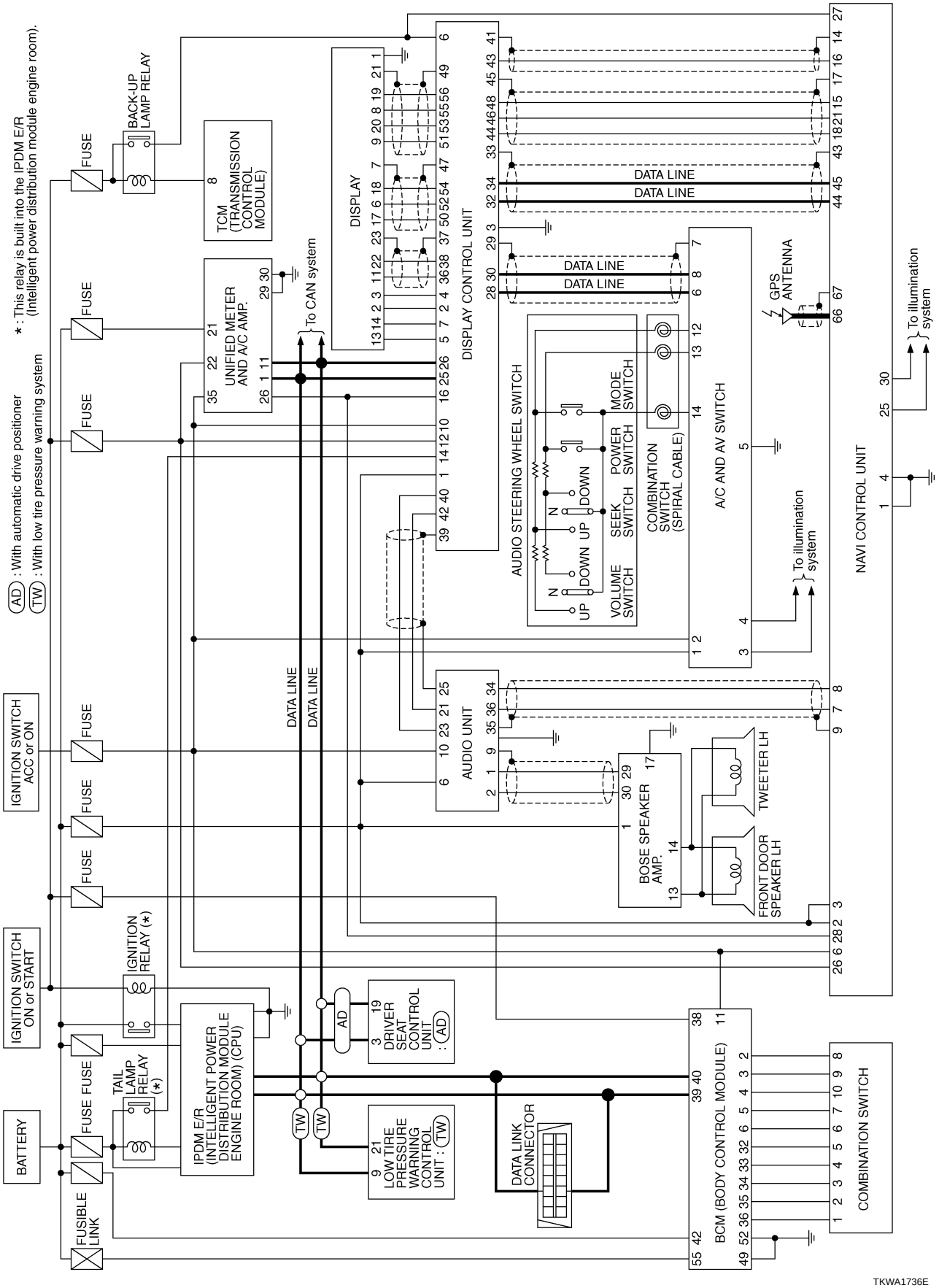
Component Parts Location

AKS004R6



Schematic — NAVI —

AKS004R8

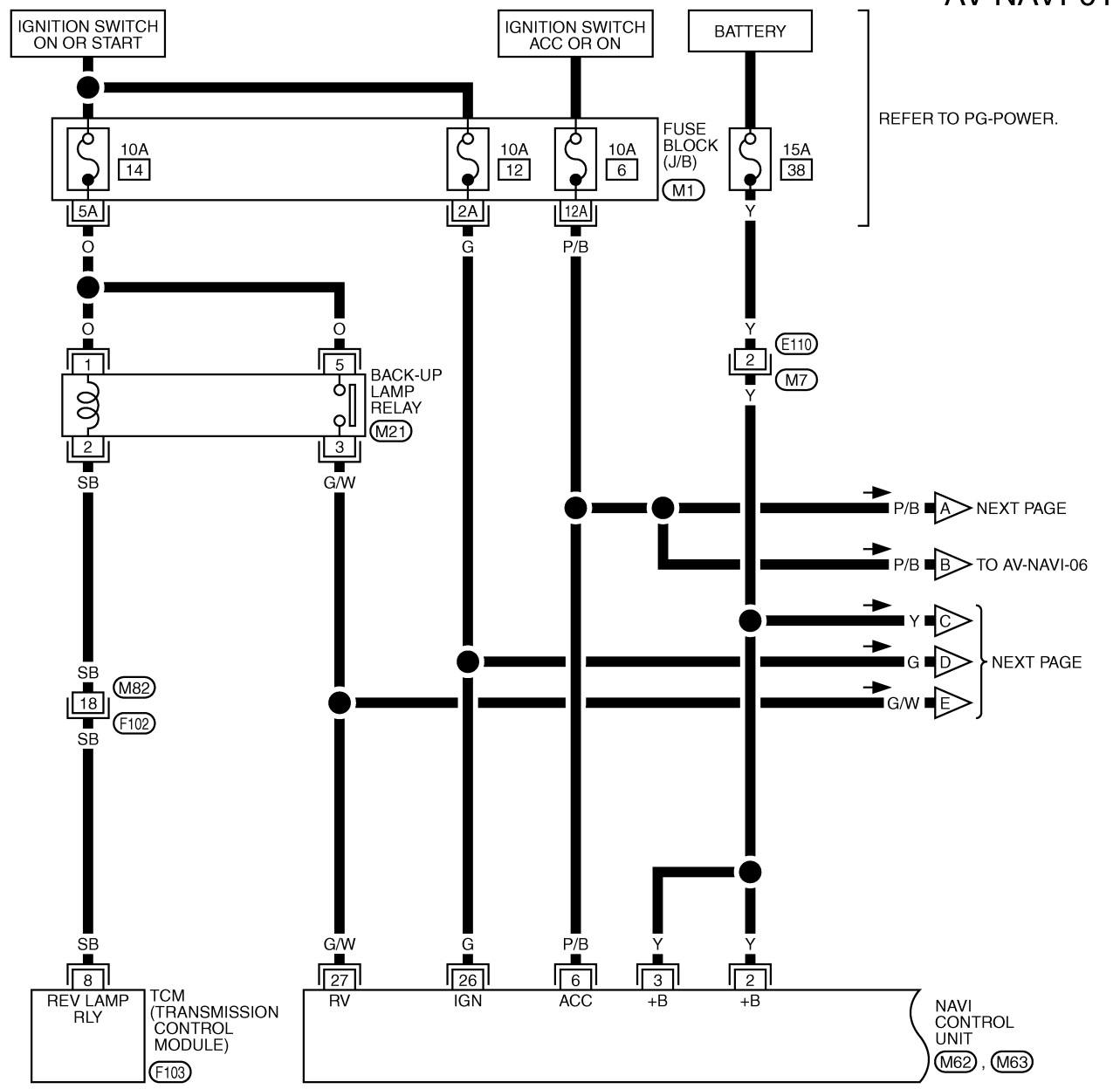


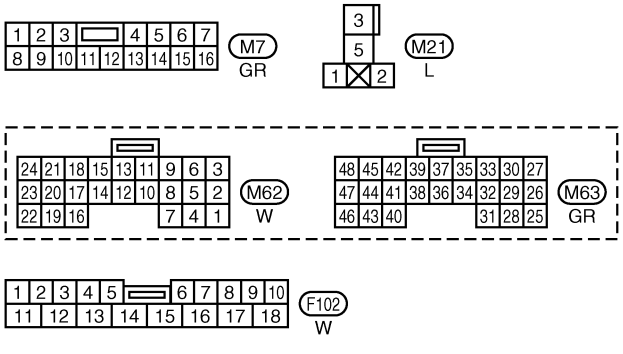
TKWA1736E

Wiring Diagram — NAVI —

AKS004R9

AV-NAVI-01





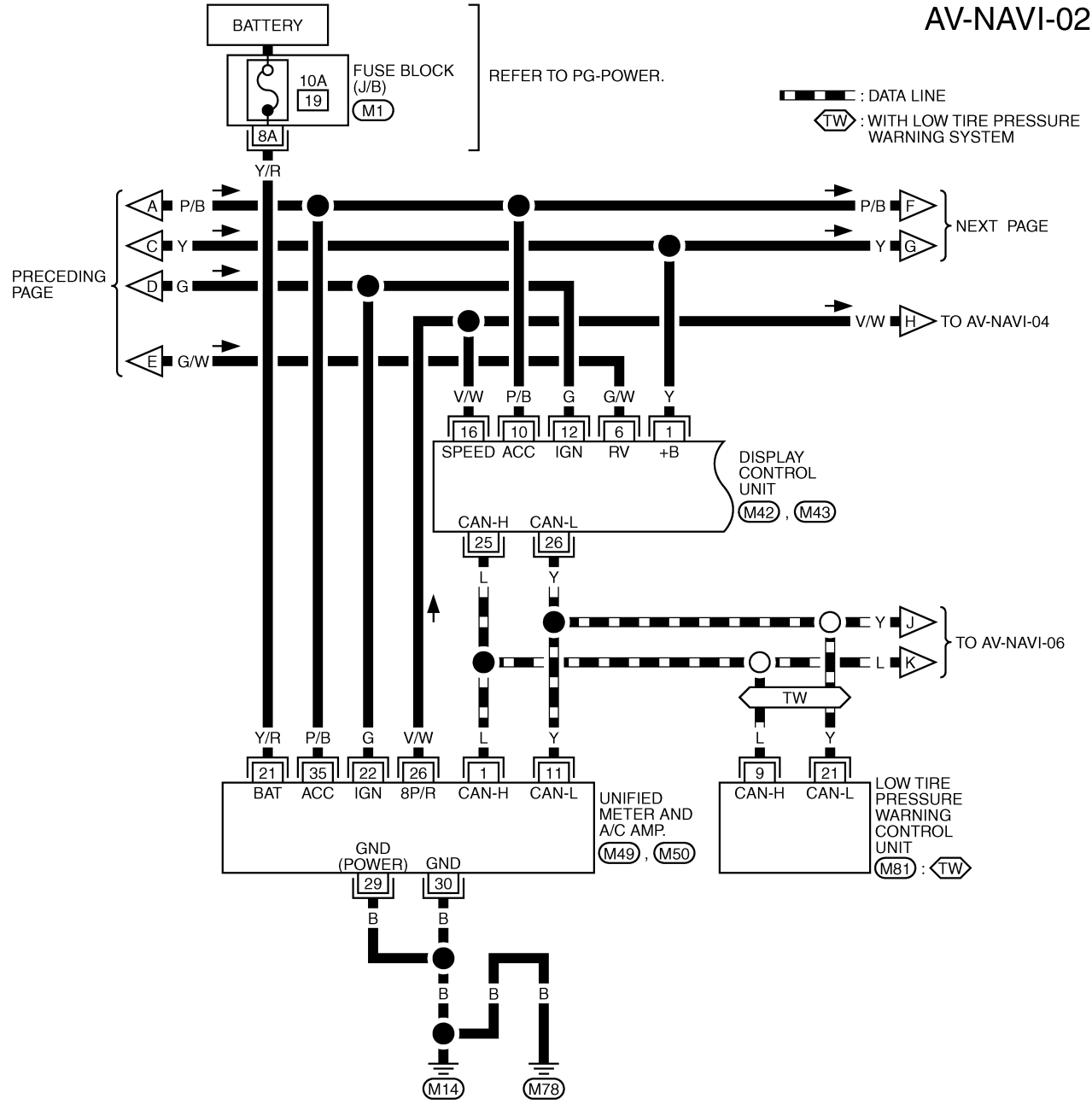
REFER TO THE FOLLOWING.

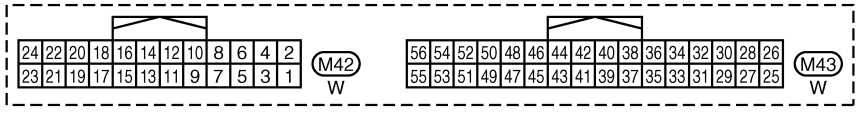
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

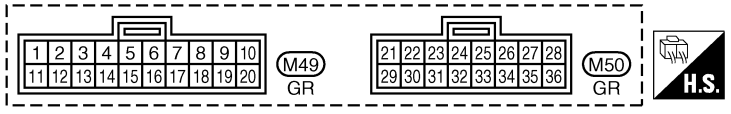
F103 -ELECTRICAL UNITS

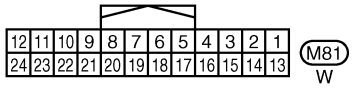
TKWA0895E

AV-NAVI-02







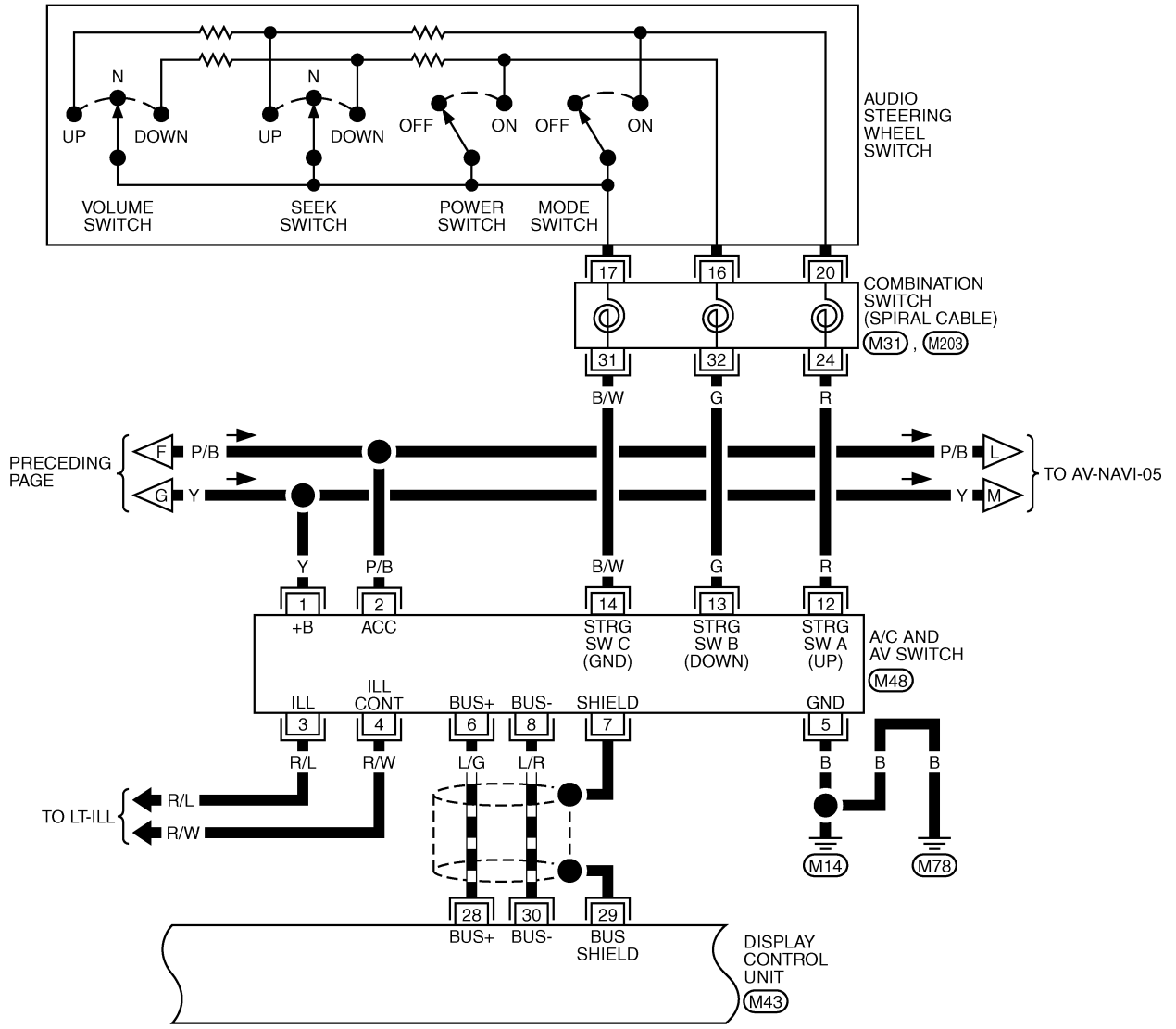


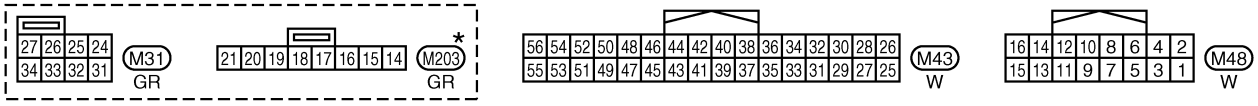
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWA0896E

AV-NAVI-03

: DATA LINE

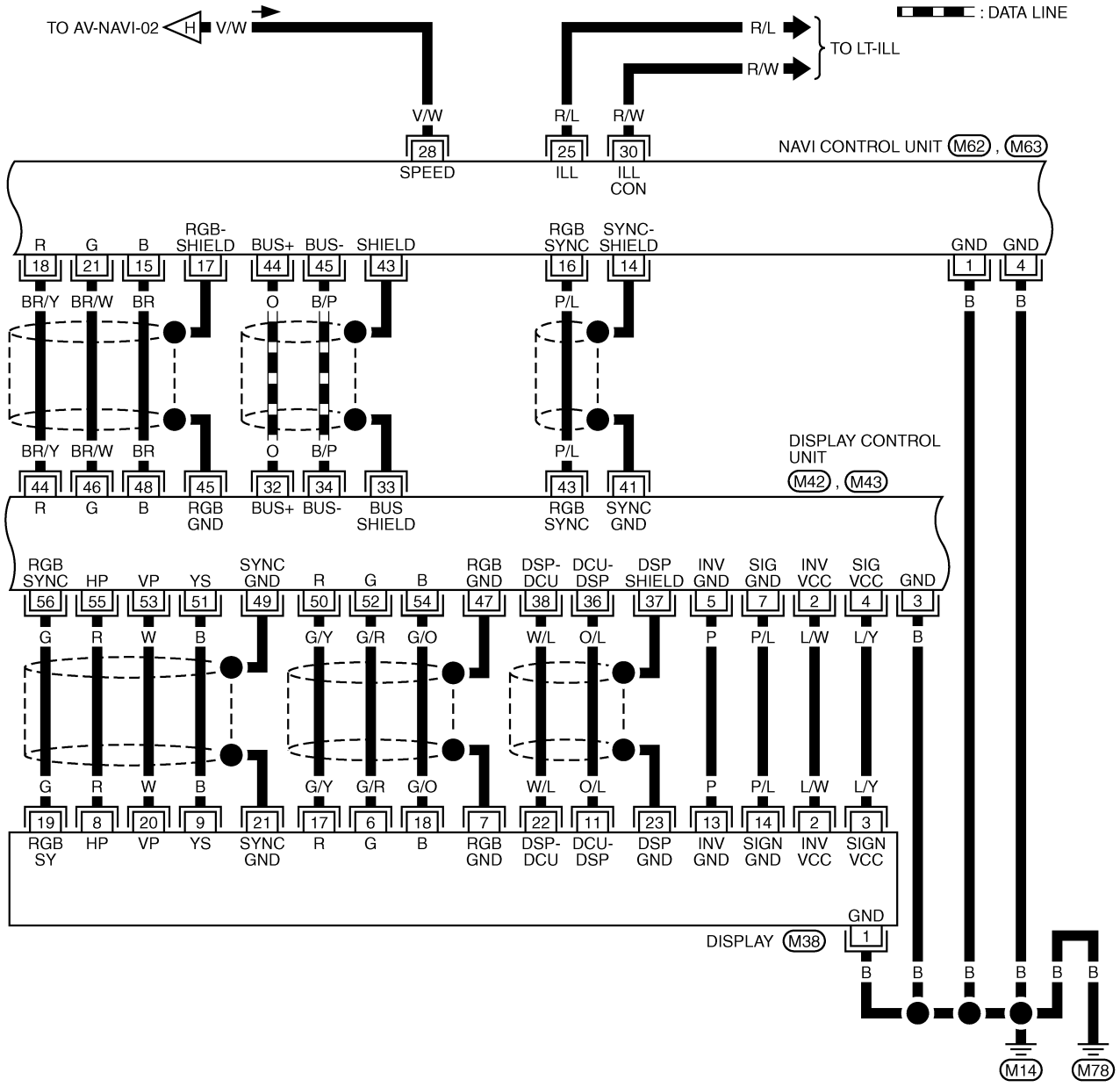


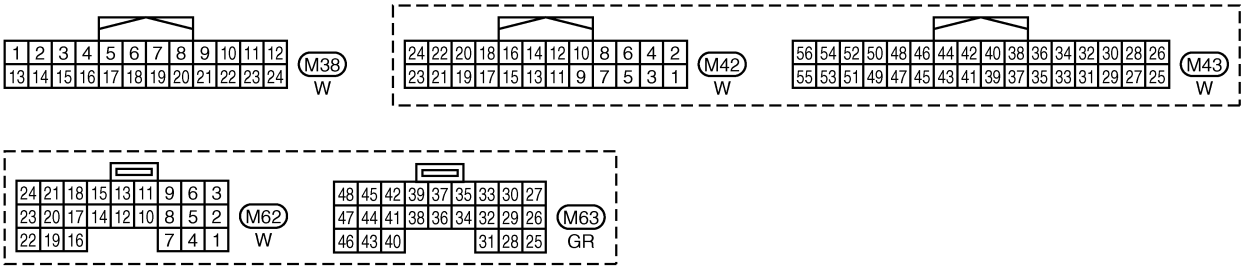


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

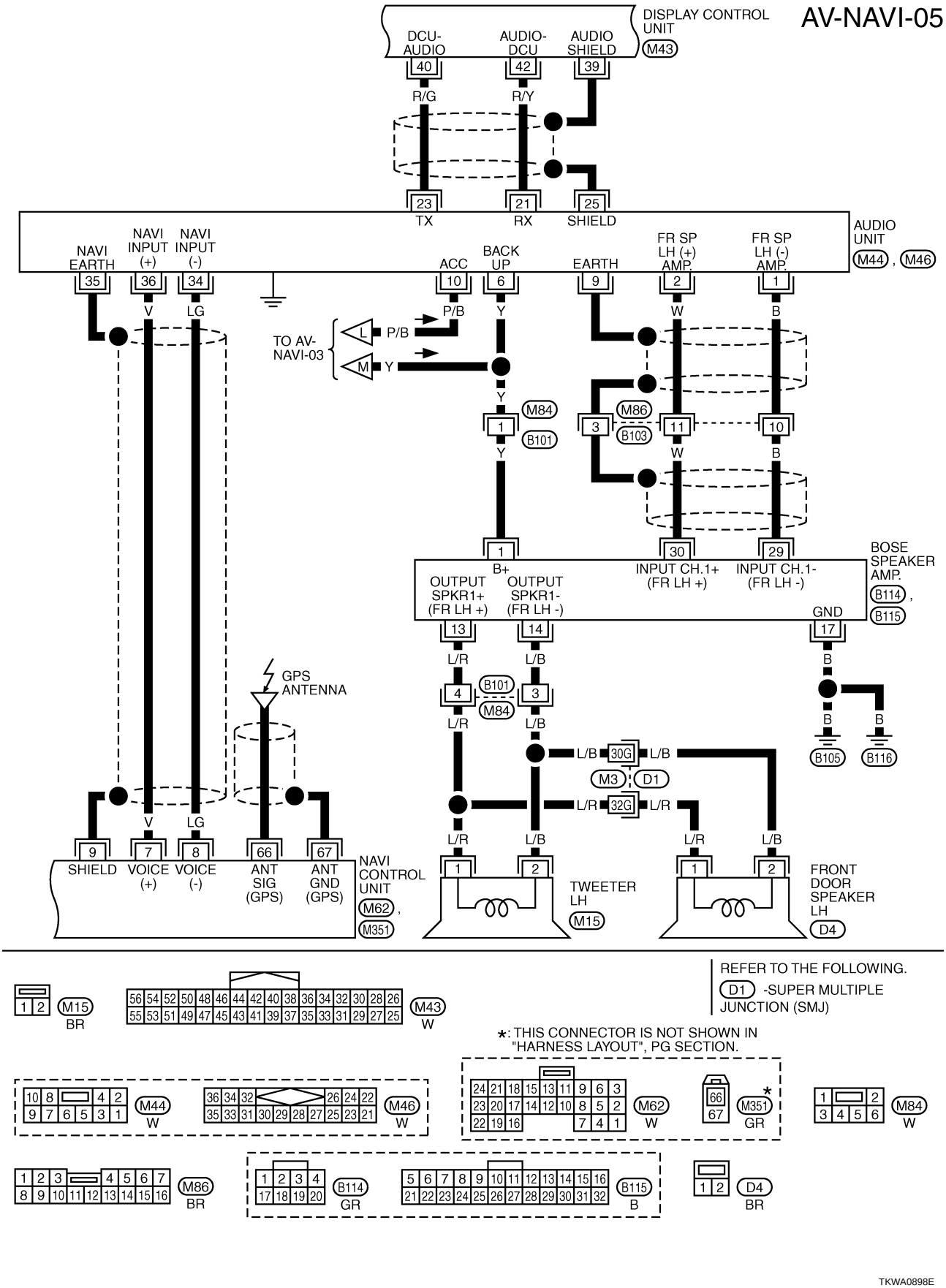
TKWA1055E

AV-NAVI-04

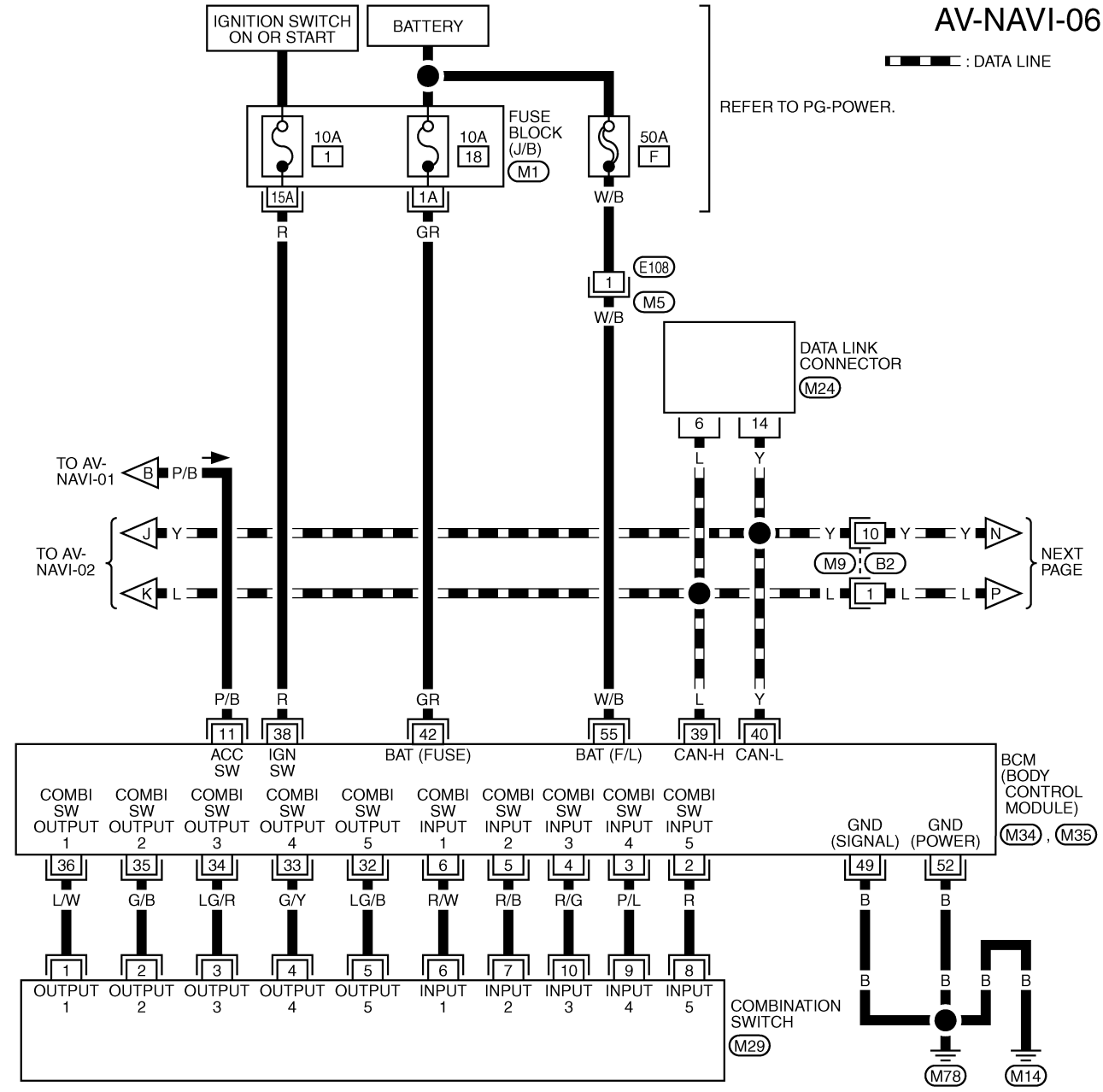




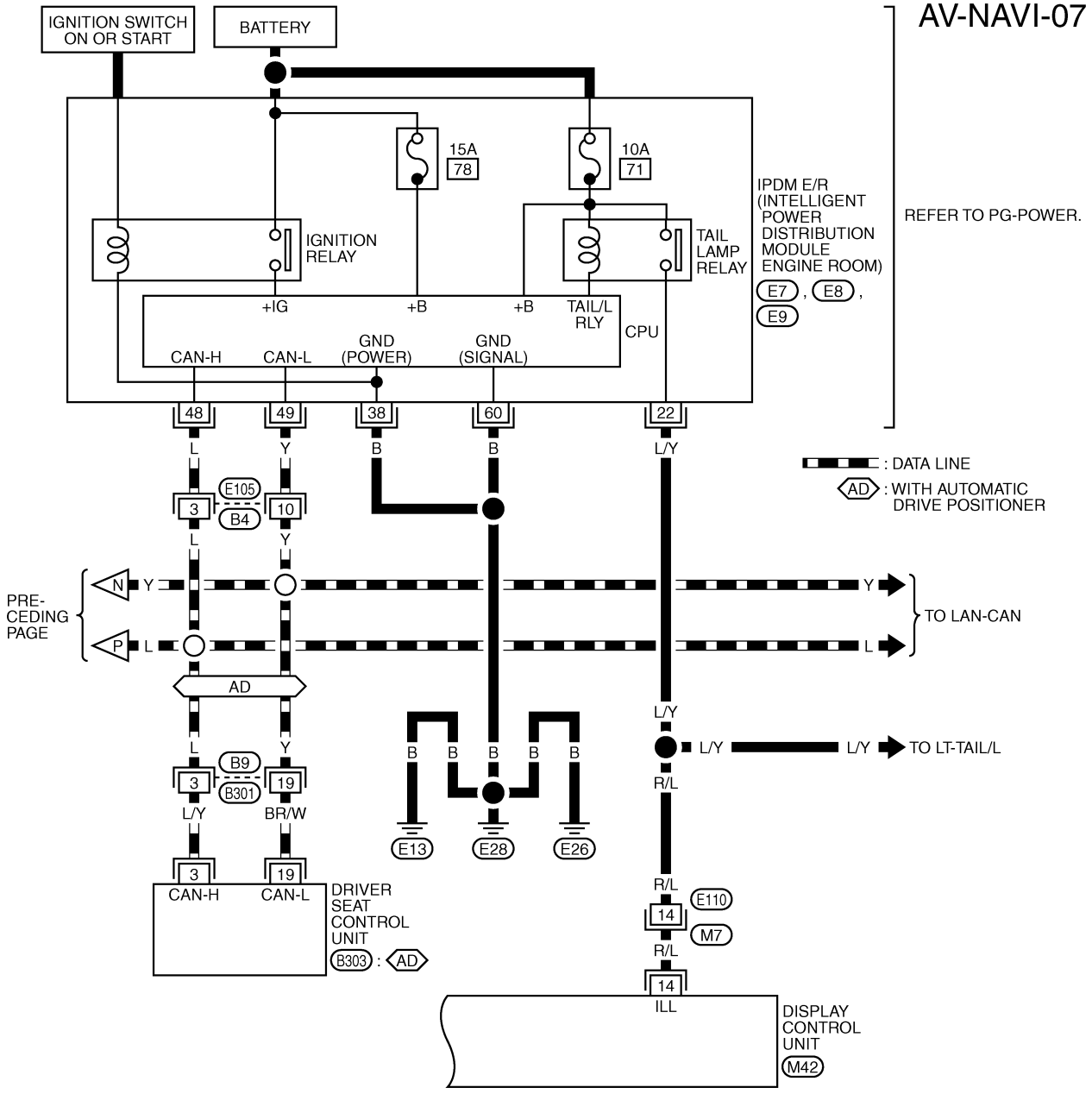
TKWA1737E

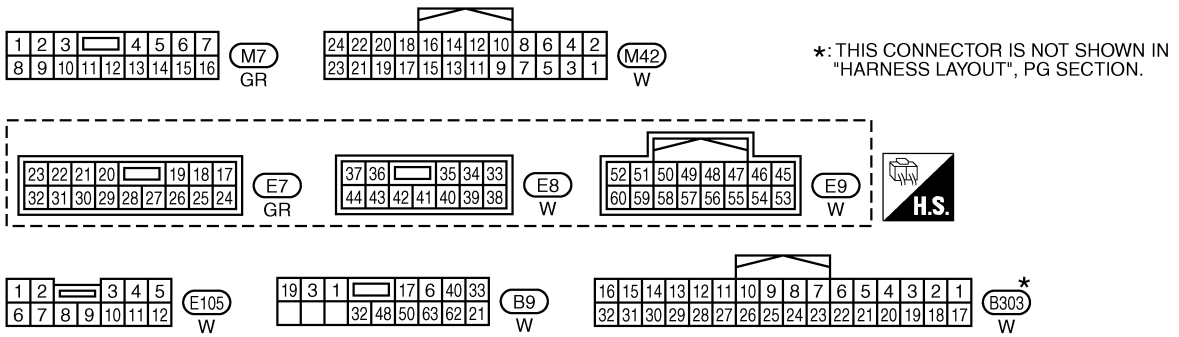

AV-NAVI-05
DISPLAY CONTROL UNIT
M43
DCU-AUDIO
AUDIO-DCU
AUDIO SHIELD
40
42
39
R/G
R/Y
23
21
25
TX
RX
SHIELD
AUDIO UNIT
M44 , M46
NAVI EARTH
NAVI INPUT (+)
NAVI INPUT (-)
ACC
BACK UP
EARTH
FR SP LH (+) AMP.
FR SP LH (-) AMP.
35
36
34
10
6
9
2
1
V
LG
P/B
Y
W
B
TO AV-NAVI-03
L
M
P/B
Y
M84
1
B101
M86
3
B103
11
10
BOSE SPEAKER AMP.
B114 , B115
B+
OUTPUT SPKR1+ (FR LH +)
OUTPUT SPKR1- (FR LH -)
INPUT CH.1+ (FR LH +)
INPUT CH.1- (FR LH -)
GND
13
14
30
29
17
L/R
L/B
B
GPS ANTENNA
4
3
B105
B116
30G
M3
D1
32G
9
7
8
66
67
SHIELD
VOICE (+)
VOICE (-)
ANT SIG (GPS)
ANT GND (GPS)
NAVI CONTROL UNIT
M62 , M351
TWEETER LH
M15
FRONT DOOR SPEAKER LH
D4
REFER TO THE FOLLOWING.
D1 -SUPER MULTIPLE JUNCTION (SMJ)
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
M15 BR
M43 W
M44 W
M46 W
M62 W
M351 GR
M84 W
M86 BR
B114 GR
B115 B
D4 BR

TKWA0898E


AV-NAVI-06
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
REFER TO PG-POWER.
FUSE BLOCK (J/B) M1
10A 1
10A 18
50A F
15A
1A
W/B
R
GR
E108
1
M5
DATA LINK CONNECTOR M24
6
14
L
Y
TO AV-NAVI-01
B P/B
TO AV-NAVI-02
J Y
K L
10
M9
B2
N
P
NEXT PAGE
P/B
R
GR
W/B
L
Y
11
38
42
55
39
40
ACC SW
IGN SW
BAT (FUSE)
BAT (F/L)
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M34, M35
COMBI SW OUTPUT 1
COMBI SW OUTPUT 2
COMBI SW OUTPUT 3
COMBI SW OUTPUT 4
COMBI SW OUTPUT 5
COMBI SW INPUT 1
COMBI SW INPUT 2
COMBI SW INPUT 3
COMBI SW INPUT 4
COMBI SW INPUT 5
GND (SIGNAL)
GND (POWER)
36
35
34
33
32
6
5
4
3
2
49
52
L/W
G/B
LG/R
G/Y
LG/B
R/W
R/B
R/G
P/L
R
B
B
1
2
3
4
5
6
7
10
9
8
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
COMBINATION SWITCH M29
M78
M14
M5 W
M9 W
M24 W
M29 W
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
M34, M35 -ELECTRICAL UNITS

TKWA1738E

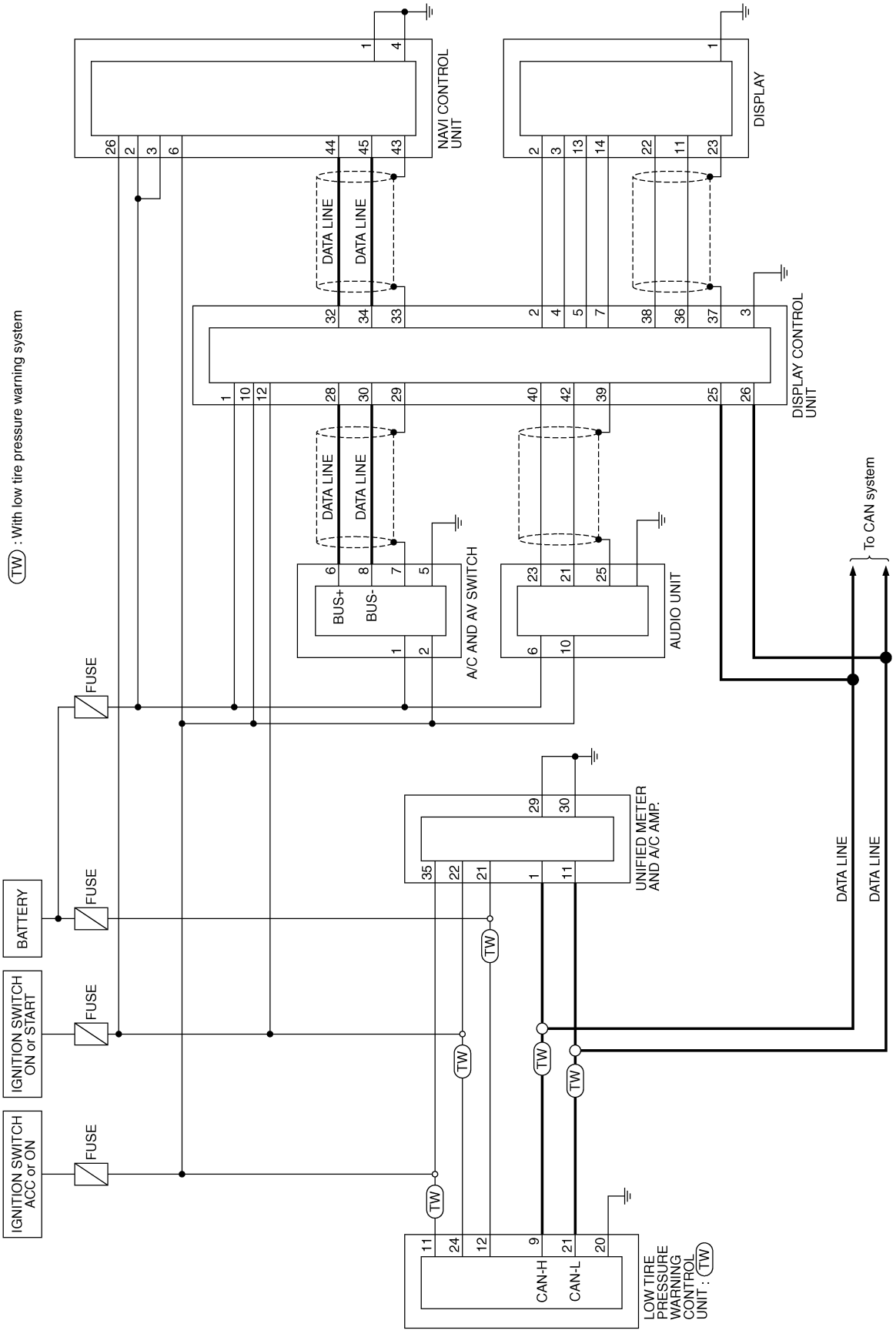

AV-NAVI-07
IGNITION SWITCH ON OR START
BATTERY
15A 78
10A 71
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7, E8, E9
REFER TO PG-POWER.
IGNITION RELAY
TAIL LAMP RELAY
+IG
+B
+B
TAIL/L RLY
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
38
60
22
L
Y
B
B
L/Y
: DATA LINE
AD : WITH AUTOMATIC DRIVE POSITIONER
E105
B4
3
10
PRE-CEDING PAGE
N
P
Y
L
TO LAN-CAN
AD
B9
B301
19
L/Y
BR/W
E13
E28
E26
R/L
L/Y
TO LT-TAIL/L
E110
14
M7
ILL
DRIVER SEAT CONTROL UNIT
B303 : AD
DISPLAY CONTROL UNIT
M42


M7 GR
M42 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
E7 GR
E8 W
E9 W
H.S.
E105 W
B9 W
B303 W

TKWA1739E

Schematic — COMM —

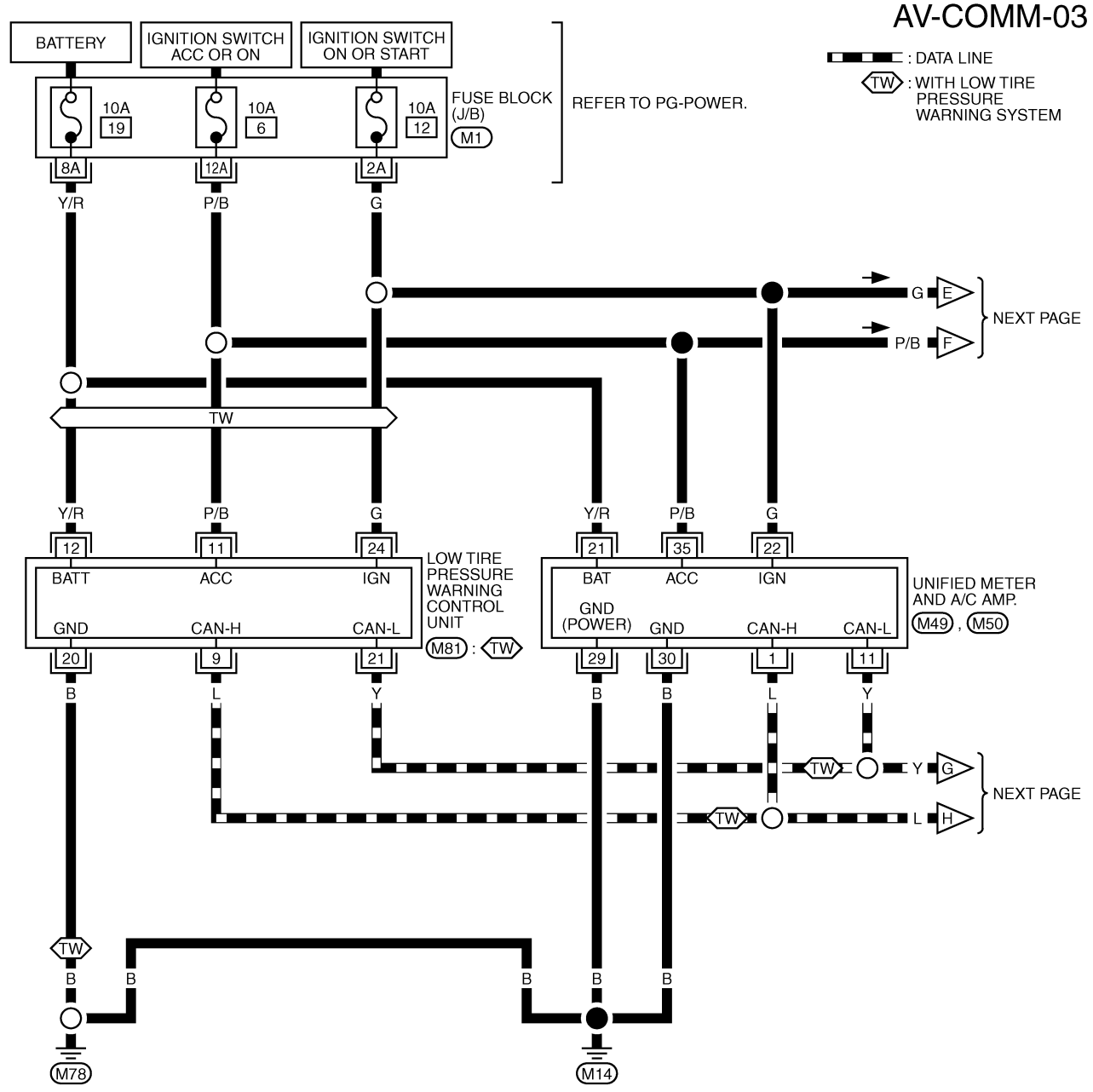
AKS007WB

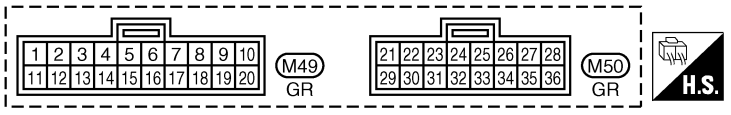


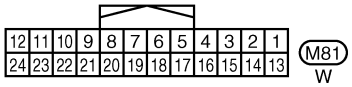
TKWA0842E

Wiring Diagram — COMM —

AKS004RB



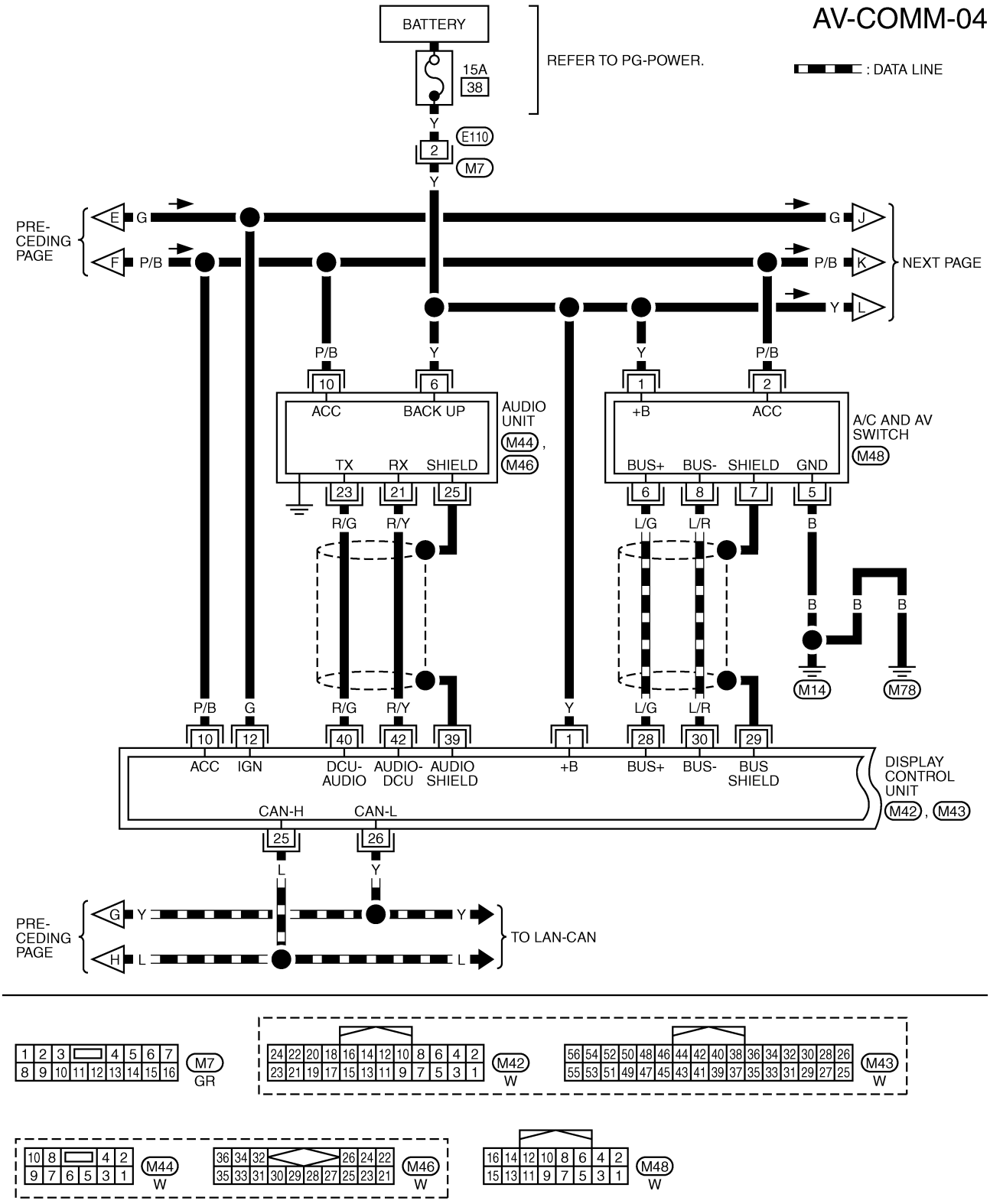




REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

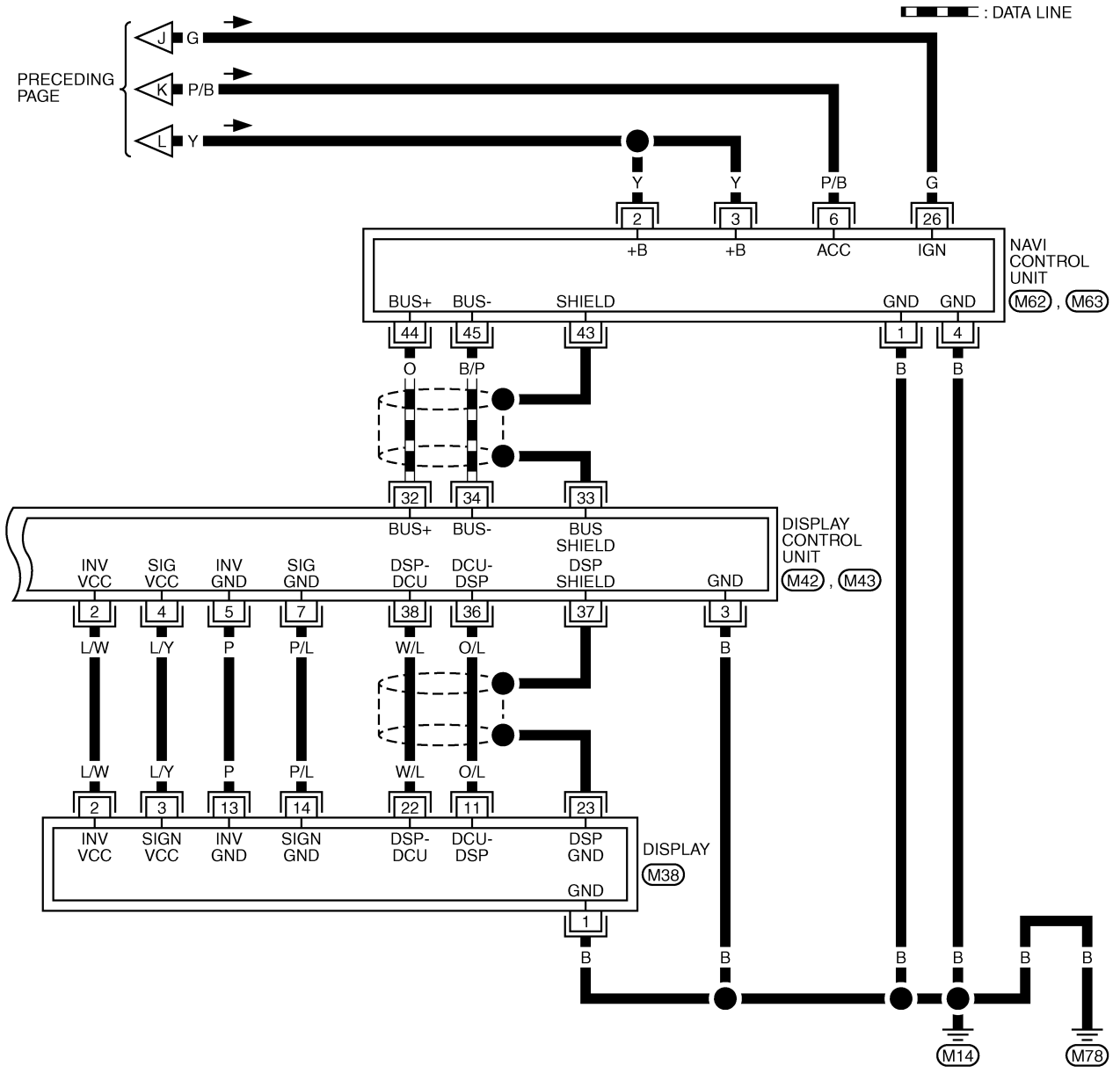
TKWA1733E

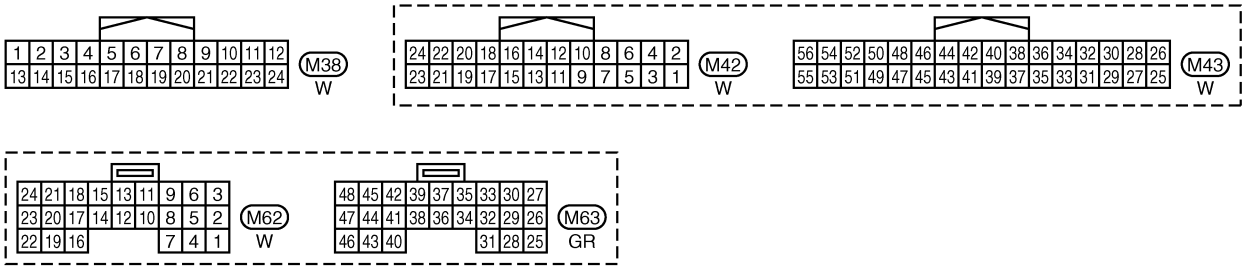

AV-COMM-04
BATTERY
15A
38
REFER TO PG-POWER.
: DATA LINE
E110
2
M7
PRE-CEDING PAGE
NEXT PAGE
AUDIO UNIT
M44, M46
ACC
BACK UP
TX
RX
SHIELD
A/C AND AV SWITCH
M48
+B
BUS+
BUS-
GND
M14
M78
DISPLAY CONTROL UNIT
M42, M43
IGN
DCU-AUDIO
AUDIO-DCU
AUDIO SHIELD
BUS SHIELD
CAN-H
CAN-L
TO LAN-CAN

M7 GR
M42 W
M43 W
M44 W
M46 W
M48 W

TKWA1734E

AV-COMM-05

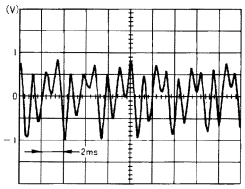
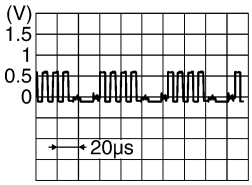
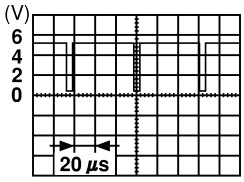
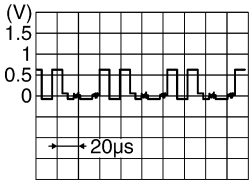
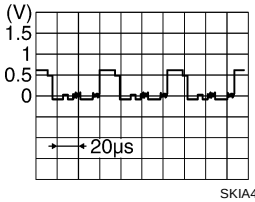


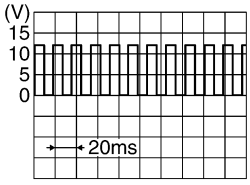
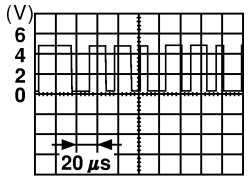
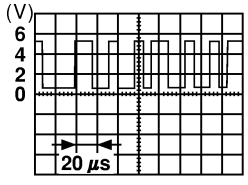


TKWA1735E

Terminals and Reference Value for NAVI Control Unit

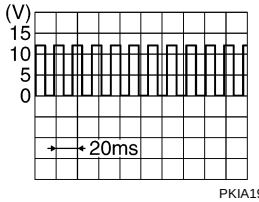
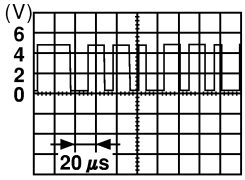
AKS004RC

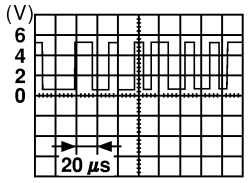
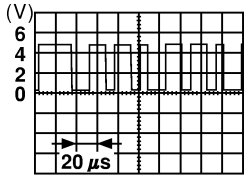
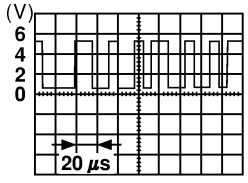
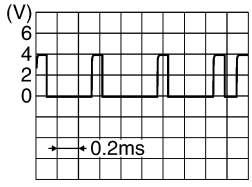
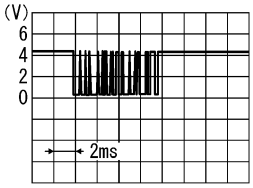
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
2 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
3 (Y)							
4 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
6 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
7 (V)	8 (LG)	Voice guide signal	Output	ON	Push the “GUIDE/ VOICE” button	 SKIA0171J	Only route guide and operation guide are not heard.
9	Ground	Shield	–	ON	–	Approx. 0V	–
14	Ground	Shield	–	ON	–	Approx. 0V	–
15 (BR)	17	RGB signal (B: blue)	Output	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4979E	NAVI screen looks yellowish.
16 (P/L)	14	RGB synchronizing signal	Output	ON	–	 SKIA0164E	NAVI screen is rolling.
17	Ground	Shield	–	ON	–	Approx. 0V	–
18 (BR/Y)	17	RGB signal (R: red)	Output	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4977E	NAVI screen looks bluish.
21 (BR/W)	17	RGB signal (G: green)	Output	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4978E	NAVI screen looks reddish.

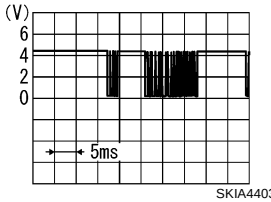
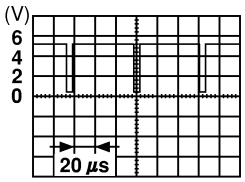
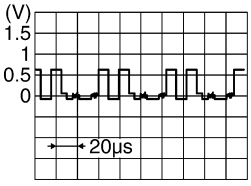
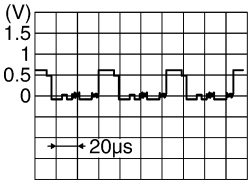
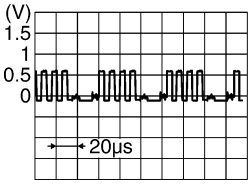
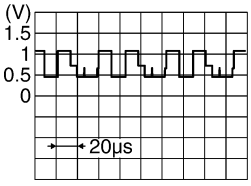
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
25 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch ON	Approx. 12V	NAVI screen does not switch to night-time mode after the lighting switch is turned ON.
					Lighting switch OFF	Approx. 0V	
26 (G)	Ground	Ignition signal	Input	ON	–	Battery voltage	Navigation current-location mark does not indicate the correct position.
27 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12V	Navigation current-location mark moves strangely when the vehicle is moving backwards.
					Selector lever except R position	Approx. 0V	
28 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E	Navigation current-location mark does not indicate the correct position.
30 (R/W)	Ground	Illuminatioin control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12V	NAVI control unit illumination cannot be controlled.
43	Ground	Shield	–	ON	–	Approx. 0V	–
44 (O)	Ground	Communication signal (+)	Input/ Output	ON	–	 SKIA0175E	System does not work properly.
45 (B/P)	Ground	Communication signal (–)	Input/ Output	ON	–	 SKIA0176E	System does not work properly.
66	67	GPS signal	Input	ON	Connector is not connected	Approx. 5V	Navigation system GPS correction is not possible.

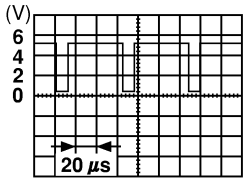
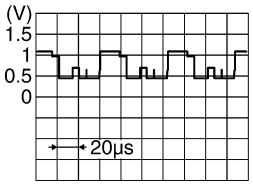
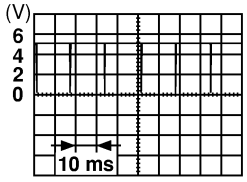
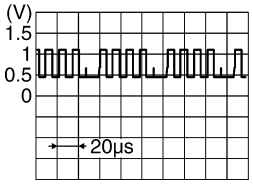
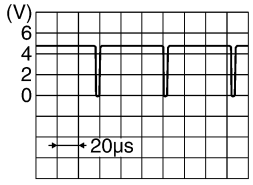
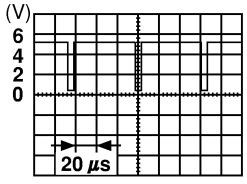
Terminals and Reference Value for Display Control Unit

AKS004YU

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
2 (L/W)	Ground	Power supply (Inverter)	Output	ON	–	Approx. 9V	Screen is not shown.
3 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
4 (L/Y)	Ground	Power supply (Signal)	Output	ON	–	Approx. 9V	Screen is not shown.
5 (P)	Ground	(Inverter) Ground	–	ON	–	Approx. 0V	–
6 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12V	The column of reverse on the vehicle signals screen does not show ON/OFF.
					Selector lever except R position	Approx. 0V	
7 (P/L)	Ground	(Signal) Ground	–	ON	–	Approx. 0V	–
10 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
12 (G)	Ground	Ignition signal	Input	ON	–	Battery voltage	A/C operation is not possible. Vehicle information setting is not possible.
14 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch ON	Approx. 12V	Audio screen does not switch to night-time mode after the lighting switch is turned ON.
					Lighting switch OFF	Approx. 0V	
16 (V/W)	Ground	Vehicle speed signal (8–pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E	Value of vehicle information is not accurately displayed.
25 (L)	–	CAN H	–	–	–	–	–
26 (Y)	–	CAN L	–	–	–	–	–
28 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	–	 SKIA0175E	System does not work properly.
29	Ground	Shield	–	ON	–	Approx. 0V	–

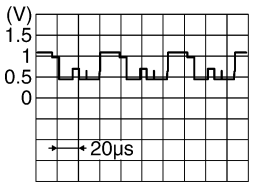
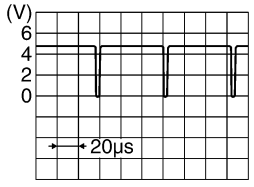
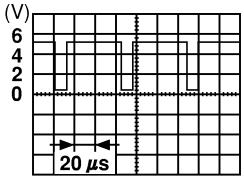
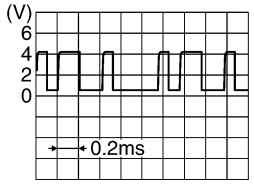
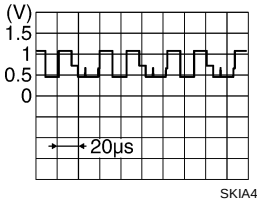
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
30 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	–	 SKIA0176E	System does not work properly.
32 (O)	Ground	Communication signal (+)	Input/ Output	ON	–	 SKIA0175E	System does not work properly.
33	Ground	Shield	–	ON	–	Approx. 0V	–
34 (B/P)	Ground	Communication signal (–)	Input/ Output	ON	–	 SKIA0176E	System does not work properly.
36 (O/L)	Ground	Communication signal (DCU-DSP)	Output	ON	–	 SKIA4364E	Though a screen is displayed, it is impossible to adjust brightness.
37	Ground	Shield	–	ON	–	Approx. 0V	–
38 (W/L)	Ground	Communication signal (DSP-DCU)	Input	ON	–	 SKIA4363E	Though a screen is displayed, it is impossible to adjust brightness.
39	Ground	Shield	–	ON	–	Approx. 0V	–
40 (R/G)	Ground	Communication signal (Audio TX)	Output	ON	Operate audio volume	 SKIA4402E	Audio unit dose not operate properly.
41	Ground	Shield	–	ON	–	Approx. 0V	–

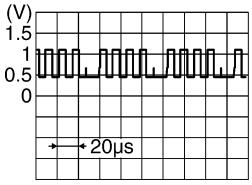
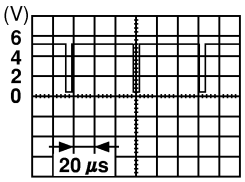
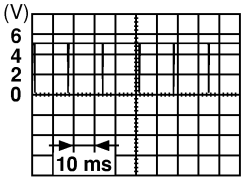
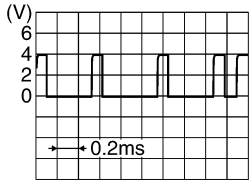
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
42 (R/Y)	Ground	Communication signal (Audio RX)	Input	ON	Operate audio volume	 SKIA4403E	Audio unit dose not operate properly.
43 (P/L)	41	RGB synchronizing signal	Input	ON	–	 SKIA0164E	NAVI screen is rolling.
44 (BR/Y)	45	RGB signal (R: red)	Input	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4977E	NAVI screen looks bluish.
45	Ground	Shield	–	ON	–	Approx. 0V	–
46 (BR/W)	45	RGB signal (G: green)	Input	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4978E	NAVI screen looks reddish.
47	Ground	Shield	–	ON	–	Approx. 0V	–
48 (BR)	45	RGB signal (B: blue)	Input	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4979E	NAVI screen looks yellowish.
49	Ground	Shield	–	ON	–	Approx. 0V	–
50 (G/Y)	47	RGB signal (R: red)	Output	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4980E	Screen looks bluish.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
51 (B)	49	RGB area (YS) signal	Output	ON	Push the “TRIP” button	 SKIA0162E	Screen is not shown.
52 (G/R)	47	RGB signal (G: green)	Output	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4981E	Screen looks reddish.
53 (W)	49	Vertical synchronizing (VP) signal	Input	ON	–	 SKIA0161E	Operating screen for audio and A/C is not displayed when showing NAVI screen.
54 (G/O)	47	RGB signal (B: blue)	Output	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4982E	Screen looks yellowish.
55 (R)	49	Horizontal synchronizing (HP) signal	Input	ON	–	 SKIA4983E	Operating screen for audio and A/C is not displayed when showing NAVI screen.
56 (G)	49	RGB synchronizing signal	Output	ON	Push the “TRIP” button	 SKIA0164E	NAVI screen is rolling.

Terminals and Reference Value for Display

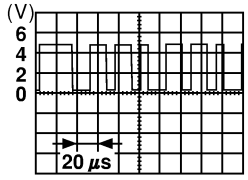
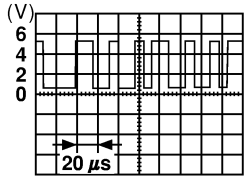
AKS004YV

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
2 (L/W)	Ground	Power supply (Inverter)	Input	ON	–	Approx. 9V	Screen is not shown.
3 (L/Y)	Ground	Power supply (Signal)	Input	ON	–	Approx. 9V	Screen is not shown.
6 (G/R)	7	RGB signal (G: green)	Input	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4981E	Screen looks reddish.
7	Ground	Shield	–	ON	–	Approx. 0V	–
8 (R)	21	Horizontal synchronizing (HP) signal	Output	ON	–	 SKIA4983E	Operating screen for audio and A/C is not displayed when showing NAVI screen.
9 (B)	21	RGB area (YS) signal	Input	ON	Push the “TRIP” button	 SKIA0162E	Screen is not shown.
11 (O/L)	Ground	Communication signal (DCU-DSP)	Input	ON	–	 SKIA4364E	Though a screen is displayed, it is impossible to adjust brightness.
13 (P)	Ground	(Inverter) Ground	–	ON	–	Approx. 0V	–
14 (P/L)	Ground	(Signal) Ground	–	ON	–	Approx. 0V	–
17 (G/Y)	7	RGB signal (R: red)	Input	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4980E	Screen looks bluish.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
18 (G/O)	7	RGB signal (B: blue)	Input	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function	 SKIA4982E	Screen looks yellowish.
19 (G)	21	RGB synchronizing signal	Input	ON	Push the “TRIP” button	 SKIA0164E	NAVI screen is rolling.
20 (W)	21	Vertical synchronizing (VP) signal	Output	ON	–	 SKIA0161E	Operating screen for audio and A/C is not displayed when showing NAVI screen.
21	Ground	Shield	–	ON	–	Approx. 0V	–
22 (W/L)	Ground	Communication signal (DSP-DCU)	Output	ON	–	 SKIA4363E	Though a screen is displayed, it is impossible to adjust brightness.
23	Ground	Shield	–	ON	–	Approx. 0V	–

Terminals and Reference Value for A/C and AV Switch

AKS005LS

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
2 (P/B)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
3 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch ON	Approx. 12V	A/C and AV switch illumination does not function when lighting switch is ON.
					Lighting switch OFF	Approx. 0V	
4 (R/W)	Ground	Illumination control signal	Output	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12V	A/C and AV switch illumination cannot be controlled.
5 (B)	Ground	Ground	–	ON	–	Approx. 0V	–
6 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	–	 SKIA0175E	System does not work properly.
7	Ground	Shield	–	ON	–	Approx. 0V	–
8 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	–	 SKIA0176E	System does not work properly.
12 (R)	Ground	Remote control A	Input	ON	Push MODE switch	Approx. 0V	Audio steering wheel switch controls do not function.
					Push SEEK UP switch	Approx. 1.7V	
					Push VOL UP switch	Approx. 3.3V	
					Except for above	Approx. 5V	

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	–			Ignition switch	Operation		
13 (G)	Ground	Remote control B	Input	ON	Push POWER switch	Approx. 0V	Audio steering wheel switch controls do not function.
					Push SEEK DOWN switch	Approx. 1.7V	
					Push VOL DOWN switch	Approx. 3.3V	
					Except for above	Approx. 5V	
14 (B/W)	Ground	Remote control ground	–	ON	–	Approx. 0V	Audio steering wheel switch controls do not function.

On Board Self-Diagnosis Function

AKS004RD

DESCRIPTION

- Diagnosis function consists of the self-diagnosis mode performed automatically and the CONFIRMATION/ ADJUSTMENT mode operated manually.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.
- CONFIRMATION/ADJUSTMENT mode is used to perform trouble diagnosis that require operation and judgment by an operator (incident that cannot be automatically judged by the system), to check/change the set value, and to display the History of Errors of the navigation system.

DIAGNOSIS ITEM

Mode				Description
Self-diagnosis (DCU)				Display control unit diagnosis
Self-diagnosis (NAVI)				● NAVI Control unit diagnosis (DVD-ROM drive will not be diagnosed when no map DVD-ROM is in it) ● Analyzes connection between the NAVI control unit and the GPS antenna connection between the NAVI control unit and each unit, and operation of each unit.
CONFIRMATION/ ADJUSTMENT	Display diagnosis			On display control unit mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle signals			On display control unit mode, analyzes the following vehicle signals: Vehicle speed signal, light signal[NOTE] , ignition switch signal, and reverse signal.
	Auto Climate Control			A/C self-diagnosis of A/C system.
	Navigation	Display diagnosis		On NAVI C/U mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
		Vehicle signals		On NAVI C/U mode, analyzes the following vehicle signals: Vehicle speed signal, light signal, ignition switch signal, and reverse signal.
		History of Errors		Diagnosis results previously stored in the memory (before turning ignition switch ON) are displayed in this mode. Time and location when/where the errors occurred are also displayed.
		Navigation	Display Longitude & Latitude	Display the map. Use the joystick to adjust position. Longitude and latitude will be displayed.
			Speed Calibration	Under ordinary conditions, the navigation system distance measuring function will automatically compensate for minute decreases in wheel and tire diameter caused by tire wear or low -pressure. Speed calibration immediately restores system accuracy in cases such as when distance calibration is needed because of the use of tire chains in inclement weather.
			Angle adjustment	Corrects difference between actual turning angle of a vehicle and turning angle of the car mark on the display.
			Initialize Location	This mode is for initializing the current location. Use when the vehicle is transported a long distance on a trailer, etc.
CAN DIAG SUPPOPT MONITOR				Display status of CAN communication.

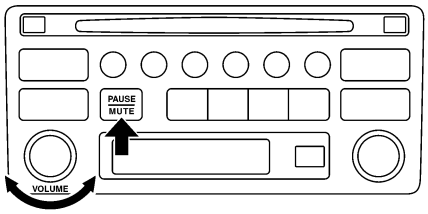
NOTE:
Make the status that is set by D/N function be shown.

Self-Diagnosis Mode (DCU)

AKS004RE

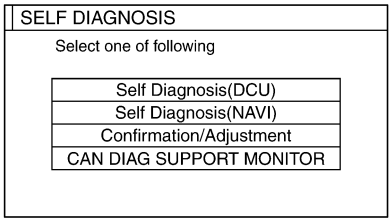
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pushing the “PAUSE/MUTE” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pushing “PREV” button.



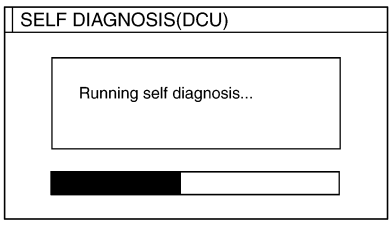
SKIA4206E

4. The initial trouble diagnosis screen will be shown, and items “Self-Diagnosis (DCU)”, “Self-Diagnosis (NAVI)”, “Confirmation/ Adjustment” and “CAN DIAG SUPPORT MONITOR” will become selective.



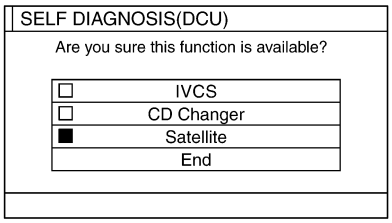
SKIA4207E

5. Perform self-diagnosis by selecting the “Self-diagnosis (DCU)”.
   - Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
   - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



SKIA4208E

6. When the self-diagnosis completes, optional part confirmation screen will be shown.
   - When connection of an optional part is judged error, a screen to check if the optional part is actually fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and push “End”. Then the “SELF DIAGNOSIS” screen will be shown.
   - When the optional part is connected normally, the switch for the part will not appear on the screen.



SKIA4209E

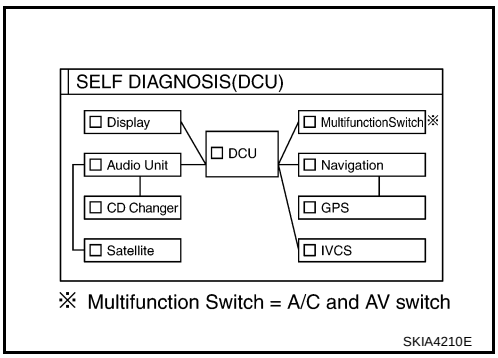
7. On the “SELF DIAGNOSIS” screen, each unit name will be colored according to the diagnosis result, as follows.

   Green : No malfunctioning.

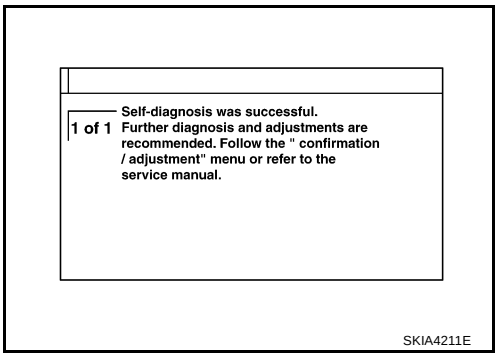
   Gray : Cannot be judged by self-diagnosis results.

   Red : Unit is malfunctioning.

   - If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.



8. Select a switch on the “SELF DIAGNOSIS” screen and comments for the diagnosis results will be shown.
   - When the switch is green, the following comment will be shown. “Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the “confirmation/ adjustments” menu or refer to the service manual.”.
   - When the switch is gray, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details”.
   - When the switch is red, the following comment will be shown. “DCU is abnormal”.



SELF-DIAGNOSIS RESULT

Quick Reference Table

1. Select a malfunctioning diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to AV-130, "Wiring Diagram — COMM —" .
3. Turn the ignition switch OFF and perform self-diagnosis again.

Screen switch						Diagnosis No.
Switch color	DCU*	DISPLAY	Audio unit	Navigation	GPS antenna	
Red	×					1
Gray	×	×				2
	×		×			3
	×			×	×	4

*: DCU = Display control unit

CAUTION:

- **When A/C and AV switch has a malfunction, you cannot start. Refer to AV-187, "Unable to Operate All of A/C and AV Switches (Unable to Start Self-Diagnosis)" .**
- **When display has a malfunction, you cannot start. Refer to AV-183, "Screen is Not Shown" .**

Self-Diagnosis Codes

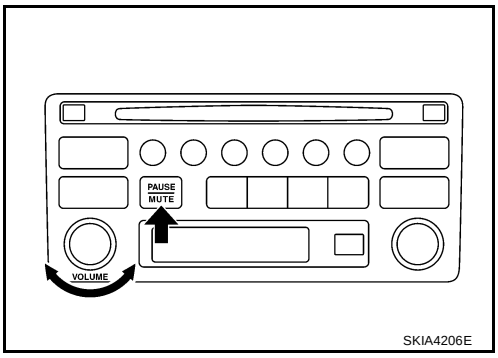
Diagnosis No.	Check item	Reference page
1	Display control unit malfunction	Refer to AV-203
2	Display communication line between display control unit and display	Refer to AV-173
3	Audio unit power supply circuit Audio communication line between display control unit and audio unit	Refer to AV-171
4	NAVI control unit power supply and ground circuit AV communication line between display control unit and NAVI control unit	Refer to AV-170

Self-Diagnosis Mode (NAVI)

AKS005R4

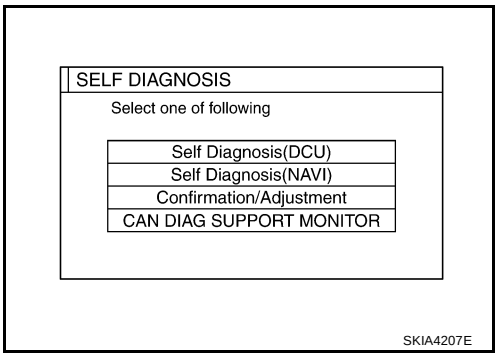
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pushing the “PAUSE/MUTE” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pushing “PREV” button.



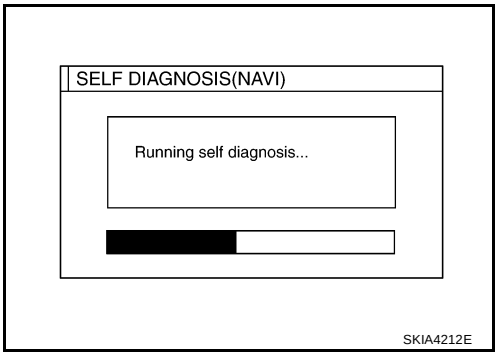
SKIA4206E

4. The initial trouble diagnosis screen will be shown, and items “Self-Diagnosis (DCU)”, “Self-Diagnosis (NAVI)”, “Confirmation/ Adjustment” and “CAN DIAG SUPPORT MONITOR” will become selective.



SKIA4207E

5. Perform self-diagnosis by selecting the “Self-diagnosis (NAVI)”.
   - Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
   - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.

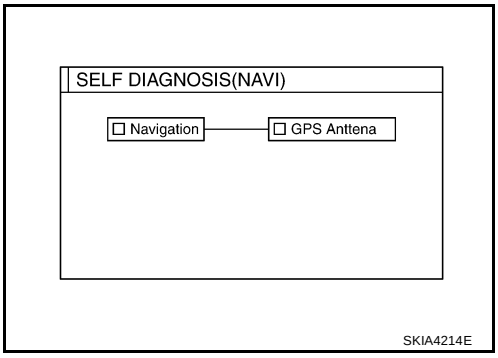


SKIA4212E

6. On the “SELF DIAGNOSIS (NAVI)” screen, each unit name will be colored according to the diagnosis result, as follows.

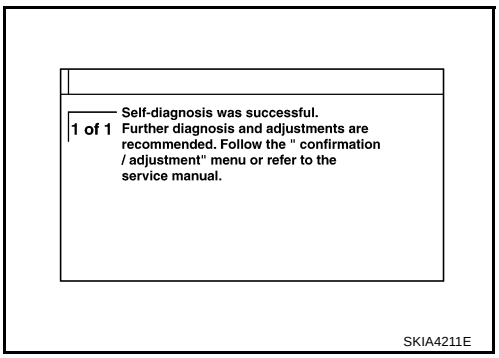
   Green : No malfunctioning.
   Yellow : Cannot be judged by self-diagnosis results.
   Red : Unit is malfunctioning.
   Gray : Diagnosis has not been done.

   - If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.



SKIA4214E

7. Select a switch on the “SELF DIAGNOSIS” screen and comments for the diagnosis results will be shown.
   - When the switch is green, the following comment will be shown. “Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the “confirmation and adjustments” menu or refer to the service manual.”.
   - When the switch is yellow, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details”.
   - When the switch is red, the following comment will be shown. “Center Control Unit is abnormal”.



   - When the switch is gray, the following comment will be shown. “Self-diagnosis for DVD-ROM DRIVER of NAVI was not conducted because no DVD-ROM was available.”.

SELF-DIAGNOSIS RESULT

Quick Reference Table

1. Select a malfunctioning diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to AV-130, "Wiring Diagram — COMM —" .
3. Turn the ignition switch OFF and perform self-diagnosis again.

Screen switch			Diagnosis No.
Switch color	Navigation*	GPS antenna	
Red	×		1
Gray	×		2
Yellow	×		3
	×		4
	×	×	5

*: Navigation = NAVI control unit

CAUTION:

- **When A/C and AV switch has a malfunction, you cannot start. Refer to AV-187, "Unable to Operate All of A/C and AV Switches (Unable to Start Self-Diagnosis)" .**
- **When display has a malfunction, you cannot start. Refer to AV-183, "Screen is Not Shown" .**

Self-diagnosis Codes

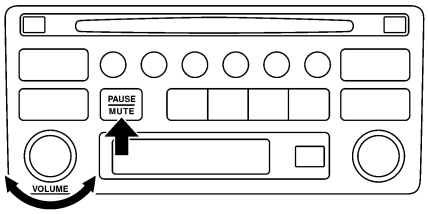
Diagnosis No.	Possible cause	Reference page
1	NAVI control unit malfunction	Refer to AV-200
2	No map DVD-ROM is inserted in the NAVI control unit.	Refer to AV-176
3	When “DVD-ROM error. Please check disc.” is shown. 1. Eject map DVD-ROM and check if it is compatible with the system. 2. Check ejected DVD-ROM for dirt, damage, and warpage. 3. If no error is found, insert a known good map DVD-ROM of the same type and perform self-diagnosis again. If same result is shown, the NAVI control unit is malfunctioning. If result is normal, the map DVD-ROM is malfunctioning.	Refer to AV-176
4	If “Error found in DVD-ROM or DVD-ROM driver in control unit. Please perform diagnosis in accordance with service manual” is shown, carry out same inspection as diagnosis No. 3.	Refer to AV-176
5	GPS antenna system 1. Visually check for a broken wire in the GPS antenna coaxial cable. 2. Disconnect GPS antenna connector, and make sure approximately 5V is supplied from the NAVI control unit. If not, the NAVI control unit is malfunctioning. If 5V is supplied, replace the GPS antenna. If the connection is still malfunction after the replacement of the GPS antenna, the NAVI control unit is malfunctioning.	Refer to AV-176

CONFIRMATION/ADJUSTMENT Mode

AKS005R5

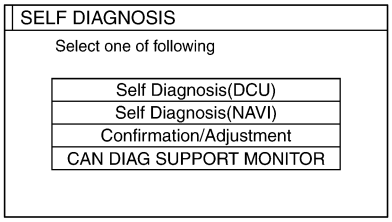
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pushing the “PAUSE/MUTE” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pushing “PREV” button.



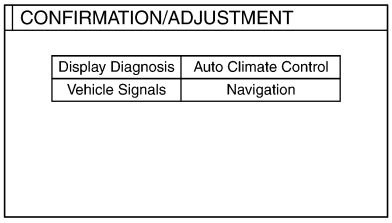
SKIA4206E

4. The initial trouble diagnosis screen will be shown, and items “Self-Diagnosis (DCU)”, “Self-Diagnosis (NAVI)”, “Confirmation/ Adjustment” and “CAN DIAG SUPPORT MONITOR” will become selective.



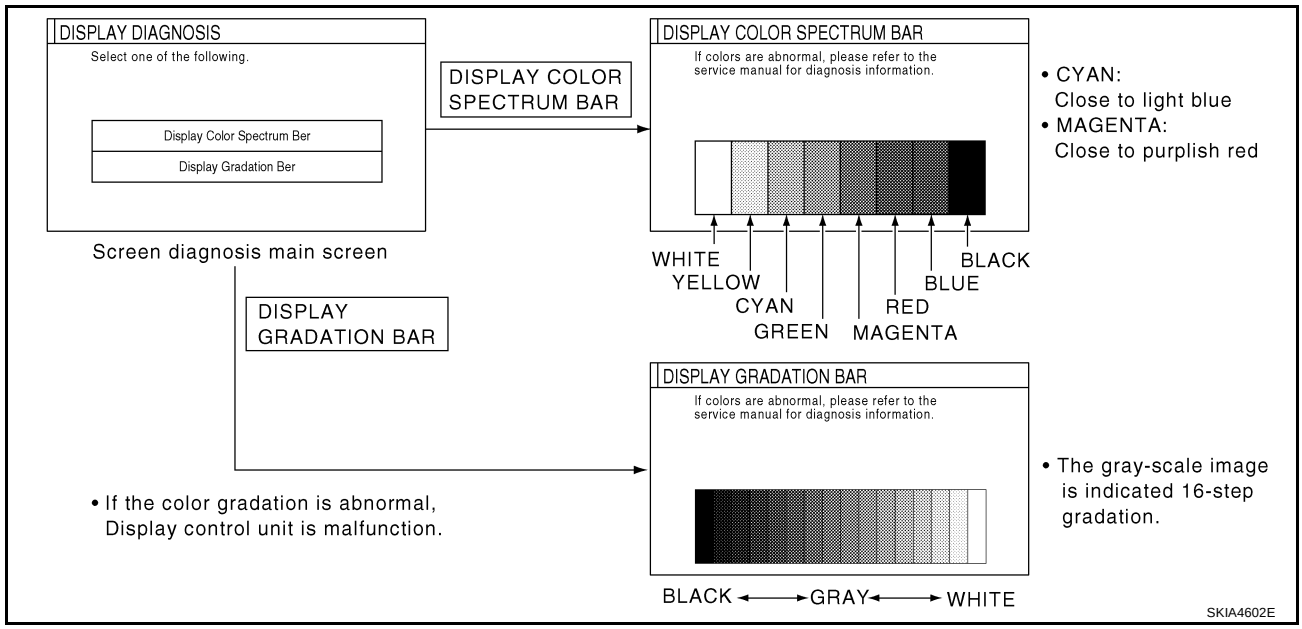
SKIA4207E

5. When “Confirmation/Adjustment” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
6. The initial trouble diagnosis screen will be shown, and items “Display Diagnosis”, “Vehicle Signals”, “Auto Climate Control” and “Navigation” will become selective.
7. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.



SKIA4220E

DISPLAY DIAGNOSIS



- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.

  R (red) signal error : Screen looks bluish
  G (green) signal error : Screen looks reddish
  B (blue) signal error : Screen looks yellowish

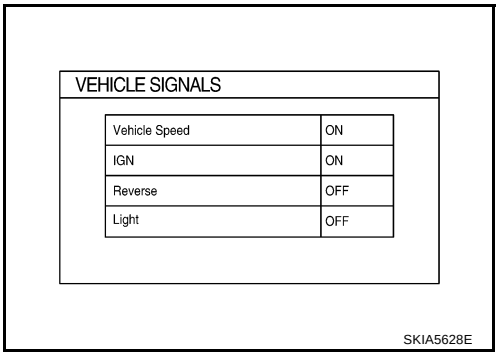
- When the color of the screen looks unusual, refer to AV-177, "Color of RGB Image is Not Proper" .

VEHICLE SIGNALS

- A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

  CAUTION:
  In case of confirming light signal, set D/N mode to ON/OFF of lighting switch (normal setting).
  - **OFF: D (Day mode)**
  - **ON: N (Night mode)**

  Unless above setting, light signal (ON/OFF) may not be accurately displayed.



Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
	–	Ignition switch in ACC position	
Light	ON	Lighting switch ON	–
	OFF	Lighting switch OFF	
IGN	ON	Ignition switch ON	–
	OFF	Ignition switch ACC	
Reverse	ON	Selector lever in R position	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Selector lever except R position	
	–	Ignition switch in ACC position	

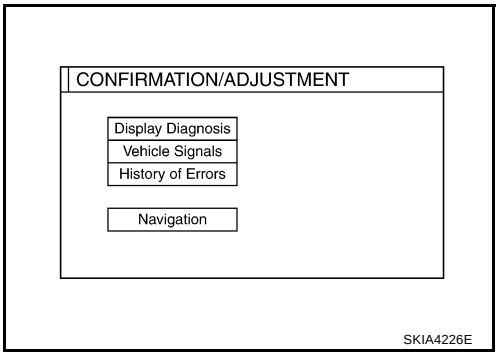
- If vehicle speed is NG, refer to AV-166, "Vehicle Speed Signal Check for Display Control Unit" .
- If light is NG, refer to AV-168, "Illumination Signal Check for Display Control Unit" .
- If IGN is NG, refer to AV-168, "Ignition Signal Check for Display Control Unit" .
- If reverse is NG, refer to AV-169, "Reverse Signal Check for Display Control Unit" .

AUTO CLIMATE CONTROL

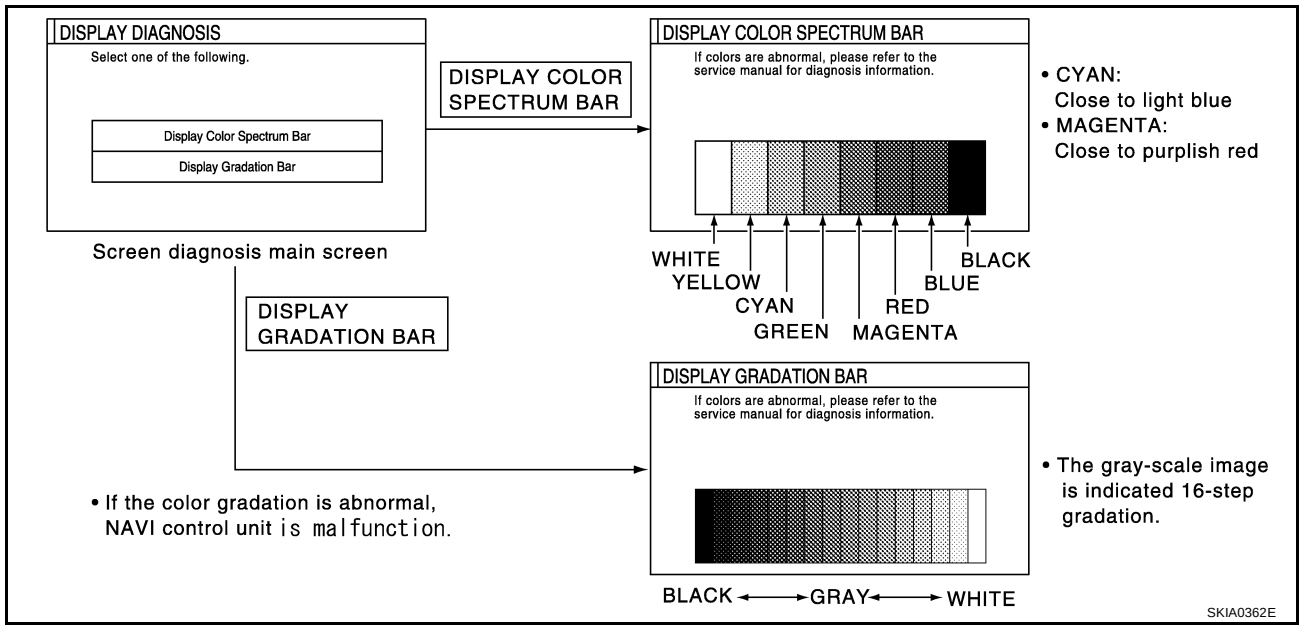
- Refer to ATC Automatic Air Conditioner ATC-47, "Self-Diagnosis Function" for details.

NAVIGATION

1. The initial trouble diagnosis screen will be shown, and items “Display Diagnosis”, “Vehicle Signals”, “History of Errors” and “Navigation” will become selective.
2. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.



DISPLAY DIAGNOSIS



- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.

  R (red) signal error : Screen looks bluish
  G (green) signal error : Screen looks reddish
  B (blue) signal error : Screen looks yellowish

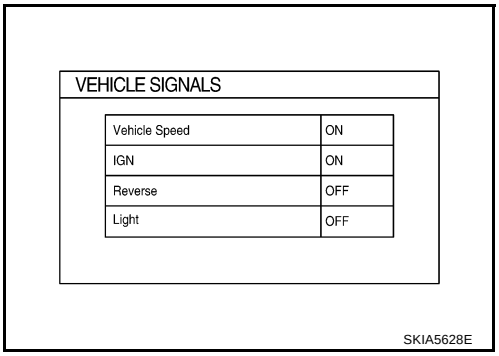
- When the color of the screen looks unusual, refer to AV-179, "Color of RGB Image is Not Proper (Only NAVI Screen)" .

VEHICLE SIGNALS

- A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

  CAUTION:
  In case of confirming light signal, set D/N mode to ON/OFF of light switch (normal setting).
  - **OFF: D (Day mode)**
  - **ON: N (Night mode)**

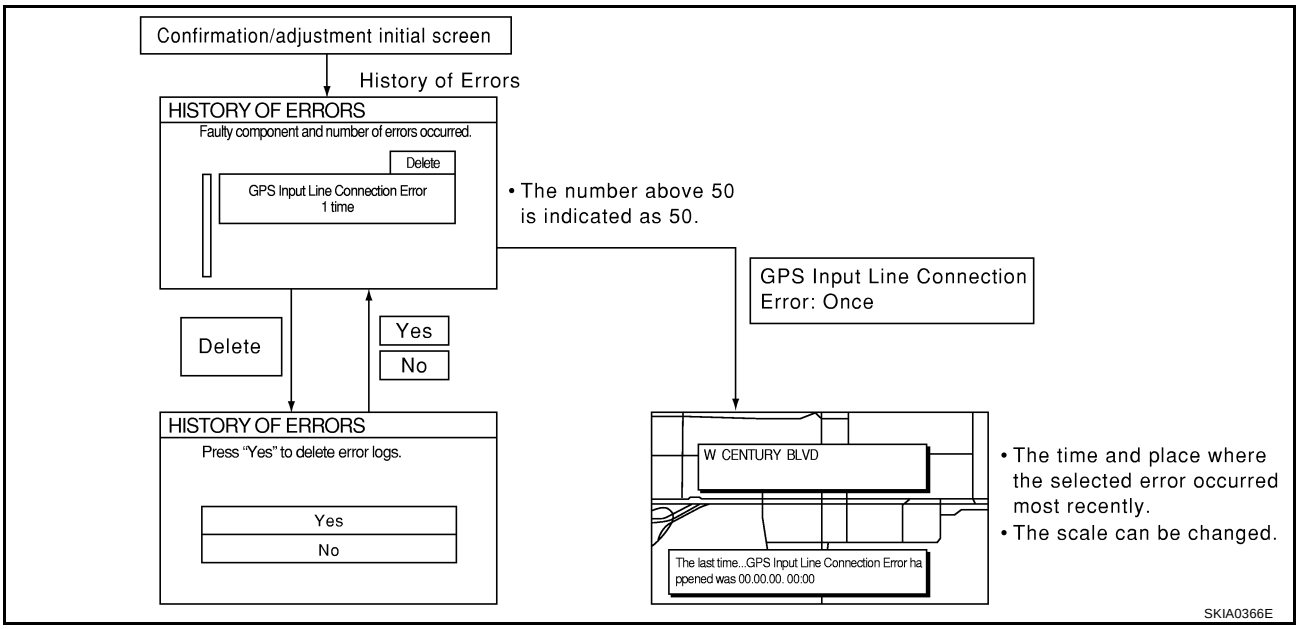
  Unless above setting, light signal (ON/OFF) may not be accurately displayed.



Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
	–	Ignition switch in ACC position	
Light	ON	Lighting switch ON	–
	OFF	Lighting switch OFF	
IGN	ON	Ignition switch ON	–
	OFF	Ignition switch ACC	
Reverse	ON	Selector lever in R position	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Selector lever in other than R position	
	–	Ignition switch in ACC position	

- If vehicle speed is NG, refer to AV-165, "Vehicle Speed Signal Check for NAVI Control Unit" .
- If light is NG, refer to AV-167, "Illumination Signal Check for NAVI Control Unit" .
- If IGN is NG, refer to AV-168, "Ignition Signal Check for NAVI Control Unit" .
- If reverse is NG, refer to AV-169, "Reverse Signal Check for NAVI Control Unit" .

HISTORY OF ERRORS



DIAGNOSIS BY HISTORY OF ERRORS

The “Self-diagnosis” results indicate whether an error occurred during the period from when the ignition switch is turned to ON until “Self-diagnosis” is completed.
If an error occurred before the ignition switch was turned to ON and does not occur again until the “Self-diagnosis” is completed, the diagnosis result will be judged normal. Therefore, those errors in the past, which cannot be found by the “Self-diagnosis”, must be found by diagnosing the “History of Errors”.
The History of Errors displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- Correct time of the error occurrence may not be displayed when the GPS antenna substrate within the NAVI control unit has malfunctioned.
- Place of the error occurrence is represented by the position of the current-location mark at the time when the error occurred. If the current-location mark has deviated from the correct position, then the place of the error occurrence max be located correctly.
- The maximum number of occurrences which can be stored is 50. For the 51st and later occurrences, the displayed number remains 50.

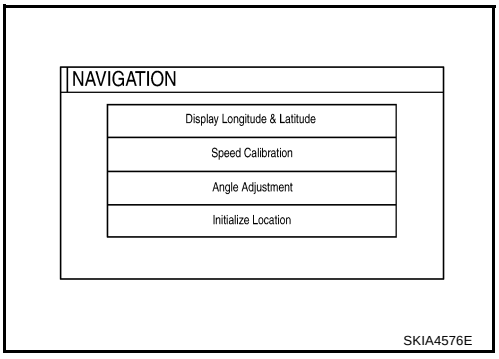
When a reproducible malfunction occurred but its cause cannot be identified because several errors are present, record the item, number and place (longitude/latitude) of error occurrence (or delete the History of Errors), then turn the ignition switch from OFF to ON to reproduce the malfunction. Check the History of Errors to find the items which show an increased number of occurrences, and diagnose the item.

Error item	Possible causes Action/symptom	Example of symptom
Gyro sensor disconnected	Communications malfunction between NAVI control unit and internal gyro ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)
GPS disconnected	Communication error between NAVI control unit and internal GPS substrate ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS transmission cable malfunction	Malfunctioning transmission wires to NAVI control unit and internal GPS substrate ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● During self-diagnosis, GPS diagnosis is not performed.
GPS input line connection error	Malfunctioning receiving wires to NAVI control unit and internal GPS substrate ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS TCX0 over GPS TCX0 under	Oscillating frequency of the GPS substrate frequency synchronizing oscillation circuit exceeded (or below) the specification ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference, or the control unit may have been subjected to excessively high or low temperatures.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.

Error item	Possible causes Action/symptom	Example of symptom
GPS ROM malfunction GPS RAM malfunction	Contents of ROM (or RAM) in GPS substrate are malfunctioning. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Location detection accuracy of the navigation system will deteriorate, depending on the error area in the memory, because GPS cannot make correct positioning. (Location correction using GPS is not performed.)
GPS RTC malfunction	Clock IC in GPS substrate is malfunctioning. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Correct time may not be displayed. ● After the power is turned on, the system always takes some time until GPS positioning becomes possible. (The GPS receiver starts positioning without re-collecting the whole satellite information when it judged the data stored in the receiver is correct.) ● Correct time of error occurrence may not be stored in the ″History of Errors″.
GPS antenna disconnected	Malfunctioning connection between GPS substrate in NAVI control unit and GPS antenna. ● Perform self-diagnosis. ● When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
Low voltage of GPS	The power voltage supplied to the GPS circuit board has decreased. ● Perform self-diagnosis. ● When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
DVD-ROM malfunction DVD-ROM read error DVD-ROM response Error	Malfunctioning NAVI control unit Dedicated map DVD-ROM is in the system, but the data cannot be read. ● Is map DVD-ROM damaged, warped, or dirty? – If damaged or warped, the map DVD-ROM is malfunctioning. – If dirty, wipe the DVD-ROM clean with a soft cloth. ● Perform self-diagnosis. ● When NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration.	- ● The map of a particular location cannot be displayed. ● Specific guidance information cannot be displayed. ● Map display is slow. ● Guidance information display is slow. ● System has been affected by vibration.

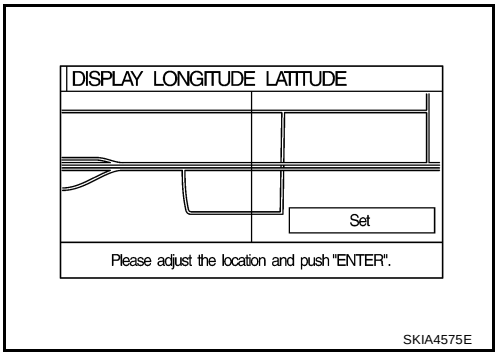
NAVIGATION

1. The initial trouble diagnosis screen will be shown, and items “Display Longitude & Latitude”, “Speed Calibration”, “Angle Adjustment” and “Initialize Location” will become selective.
2. Select each switch on “NAVIGATION” screen to display the relevant diagnosis screen.



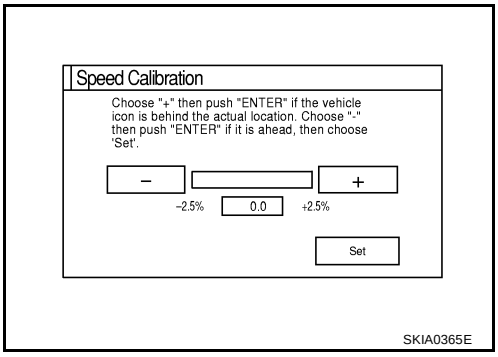
Display Longitude & Latitude

- Able to confirm/adjust longitude and latitude.



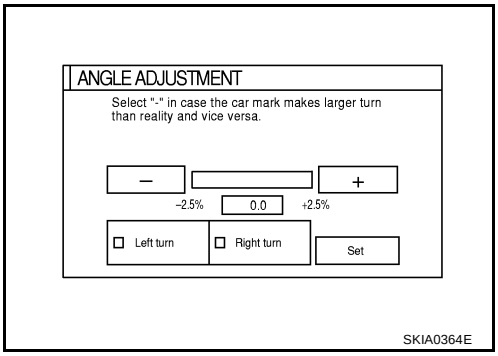
Speed Calibration

- During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



Angle Adjustment

- Adjusts turning angle output detected by the gyroscope.



Initialize Location

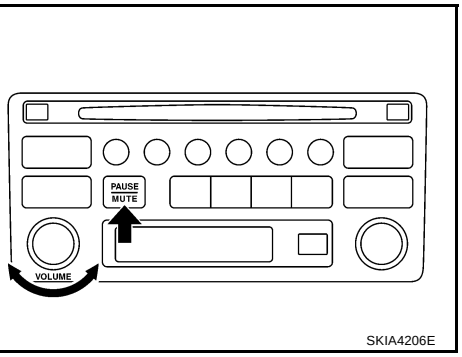
- This mode is for initializing the current location.

CAN DIAG SUPPORT MONITOR

AKS005R6

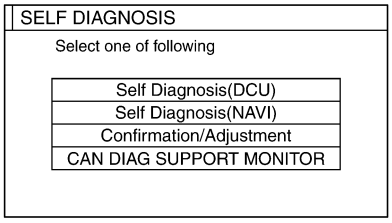
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pushing the “PAUSE/MUTE” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pushing “PREV” button.



SKIA4206E

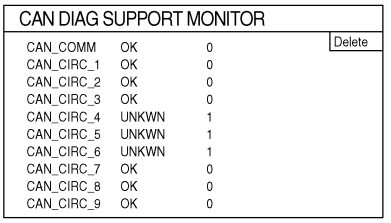
4. The initial trouble diagnosis screen will be shown, and items “Self-Diagnosis (DCU)”, “Self-Diagnosis (NAVI)”, “Confirmation/ Adjustment” and “CAN DIAG SUPPORT MONITOR” will become selective.
5. Select “CAN DIAG SUPPORT MONITOR”.



SKIA4207E

6. Display status of CAN communication.

Item	Content	Error counter (Reference value)
CANCOMM	OK/NG	0-50
CAN_CIRC_1	OK/UNKWN	0-50
CAN_CIRC_2	OK/UNKWN	0-50
CAN_CIRC_3	OK/UNKWN	0-50
CAN_CIRC_4	OK/UNKWN	0-50
CAN_CIRC_5	OK/UNKWN	0-50
CAN_CIRC_6	OK/UNKWN	0-50
CAN_CIRC_7	OK/UNKWN	0-50
CAN_CIRC_8	OK/UNKWN	0-50
CAN_CIRC_9	OK/UNKWN	0-50



SKIA4288E

NOTE:
Counter shows the status of CAN communication.

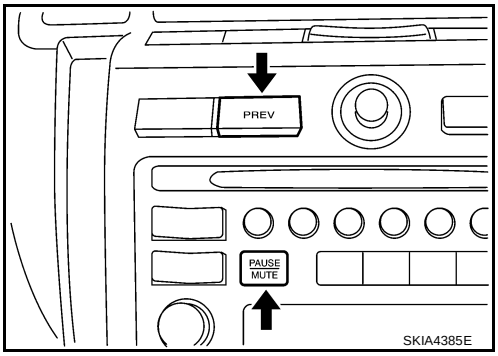
A/C and AV Switch Self-Diagnosis Function

AKS005R7

It can check ON/OFF operation of each switch in the A/C and AV Switch and diagnose the input signals to the steering switch (audio).

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds push and hold the witches “PAUSE/MUTE” and “PREV” simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

- All the indicators (LED) in the A/C and AV switch.
- Continuity of the switches by sounding the buzzer when the A/C and AV switch is pushed.
- Continuity of harness between A/C and AV switch and audio steering wheel switch.

NOTE:

- Indicators (LED) of REC/FRE switch change to “FRE”→“REC”→“FRE” every time the REC/FRE switch is pushed. (These two do not turn on at a time.)
- Impossible to check rear window defogger switch operation (No beep sound even under normal status).

EXITING THE SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

Power Supply and Ground Circuit Check for NAVI Control Unit

AKS004RH

1. CHECK FUSE

Make sure that the following fuses of the NAVI control unit are not blown.

Unit	Signal	Fuse No.
NAVI control unit	Battery power supply	38
	ACC power supply	6

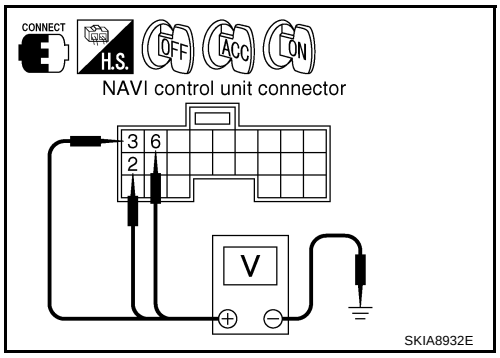
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate case of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between NAVI control unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal (Wire color)				
M62	2 (Y), 3 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	6 (P/B)		0V	Battery voltage	Battery voltage



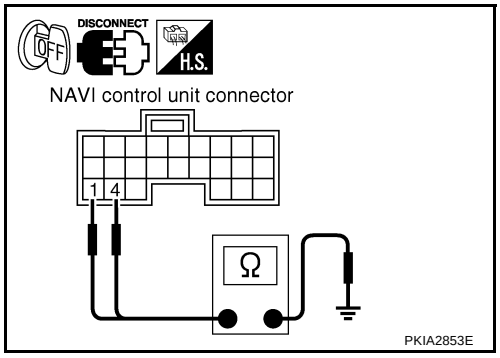
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector.
3. Check continuity between NAVI control unit harness connector M62 terminals 1 (B), 4 (B) and ground.

1, 4 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Power Supply and Ground Circuit Check for Display Control Unit

AKS005G3

1. CHECK FUSE

Make sure that the following fuses of the display control unit are not blown.

Unit	Signal	Fuse No.
Display control unit	Battery power supply	38
	ACC power supply	6

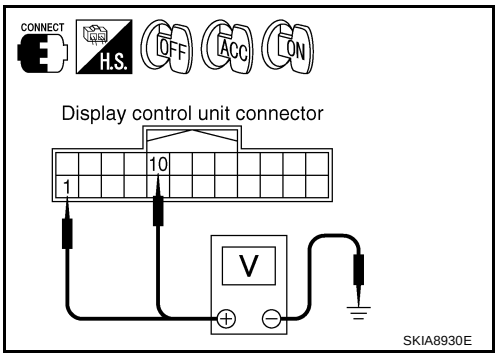
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate case of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between display control unit harness connector terminals and ground.

Terminals (+) Connector	Terminals (+) Terminal (Wire color)	Terminals (–)	OFF	ACC	ON
M42	1 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	10 (P/B)		0V	Battery voltage	Battery voltage



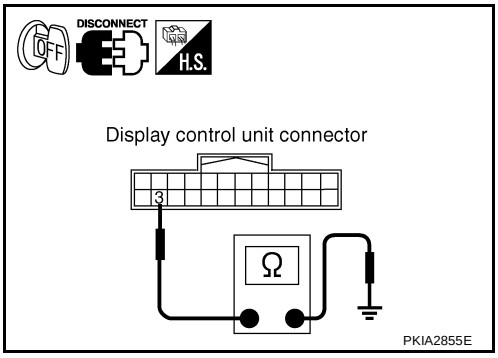
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit connector.
3. Check continuity between display control unit harness connector M42 terminal 3 (B) and ground.

3 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Power Supply and Ground Circuit Check for Display

AKS005G4

1. CHECK DISPLAY CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display control unit power supply and ground circuit. Refer to AV-161, "Power Supply and Ground Circuit Check for Display Control Unit" .

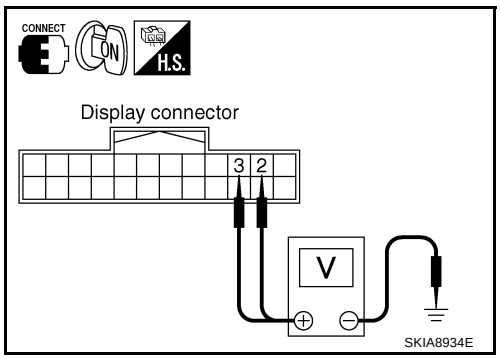
OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between display harness connector M38 terminals 2 (L/W), 3 (L/Y) and ground.

2, 3 – Ground : Approx. 9 V



OK or NG

OK >> GO TO 4.
NG >> GO TO 3.

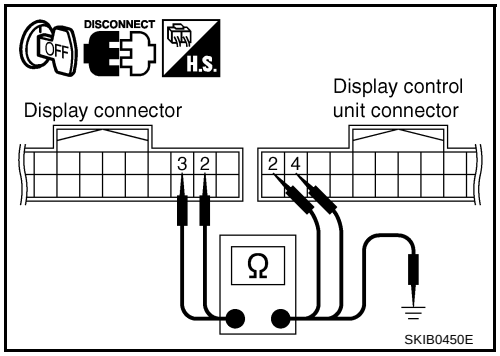
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display and display control unit connectors.
3. Check continuity between display harness connector M38 terminals 2(L/W), 3(L/Y) and display control unit harness connector M42 terminals 2 (L/W), 4 (L/Y).

2 – 2 : Continuity should exist.
3 – 4 : Continuity should exist.

4. Check continuity between display harness connector M38 terminals 2 (L/W), 3 (L/Y) and ground.

2, 3 – Ground : Continuity should not exist.



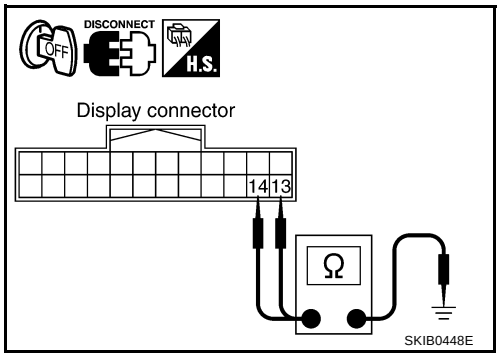
OK or NG

OK >> Replace display control unit.
NG >> Repair harness or connector.

4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display connector.
3. Check continuity between display harness connector M38 terminals 13 (P), 14 (P/L) and ground.

13, 14 – Ground : Continuity should exist.



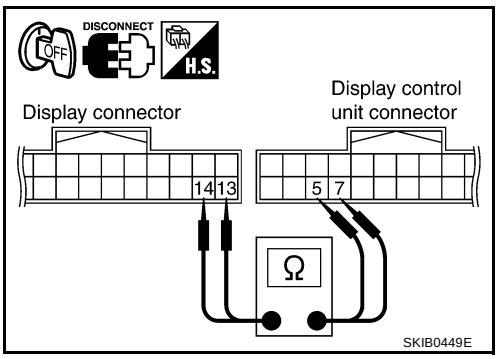
OK or NG

OK >> GO TO 6.
NG >> GO TO 5.

5. CHECK HARNESS

1. Disconnect display control unit connector.
2. Check continuity between display harness connector M38 terminals 13 (P), 14 (P/L) and display control unit harness connector M42 terminals 5 (P), 7(P/L).

13 – 5 : Continuity should exist.
14 – 7 : Continuity should exist.



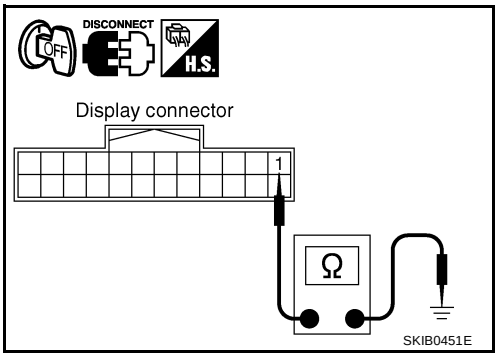
OK or NG

OK >> Replace display control unit.
NG >> Repair harness or connector.

6. CHECK GROUND CIRCUIT

Check continuity between display harness connector M38 terminal 1 (B) and ground.

1 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Power Supply and Ground Circuit Check for A/C and AV Switch

AKS005LU

1. CHECK FUSE

Make sure that the following fuses of the A/C and AV switch are not blown.

Unit	Signal	Fuse No.
A/C and AV switch	Battery power supply	38
	ACC power supply	6

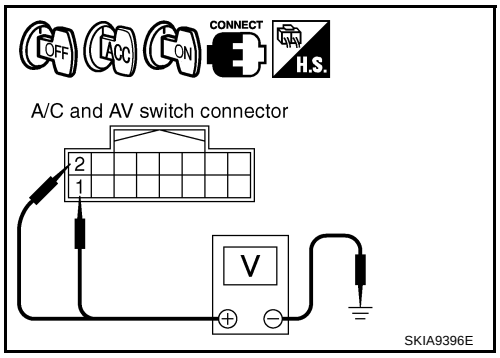
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate case of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between A/C and AV switch harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal (Wire color)				
M48	1 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	2 (P/B)		0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

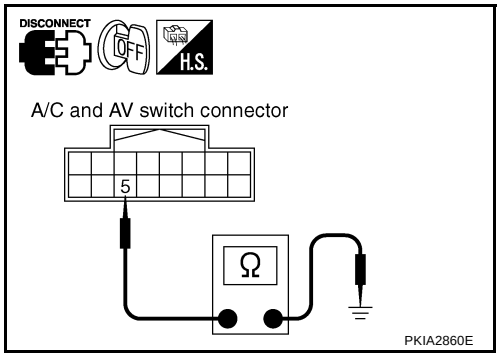
3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect A/C and AV switch connector.
3. Check continuity between A/C and AV switch harness connector M48 terminal 5 (B) and ground.

5 – Ground : Continuity should exist.

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.



Vehicle Speed Signal Check for NAVI Control Unit

AKS004RI

1. CHECK SPEEDOMETER FUNCTION

Does speedometer is operated normally?

YES or NO

YES >> GO TO 2.
NO >> Check combination meter trouble diagnosis. Refer to DI-19, "Vehicle Speed Signal Inspection" .

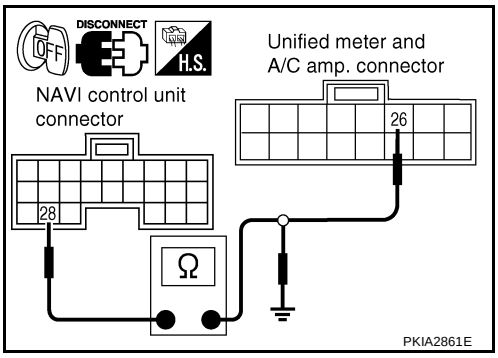
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit, unified meter and A/C amp., combination meter, display control unit, audio unit and shift lock control unit connectors.
3. Check continuity between NAVI control unit harness connector M63 terminal 28 (V/W) and unified meter and A/C amp. harness connector M50 terminal 26 (V/W).

   28 – 26 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector M63 terminal 28 (V/W) and ground.

   28 – Ground : Continuity should not exist.



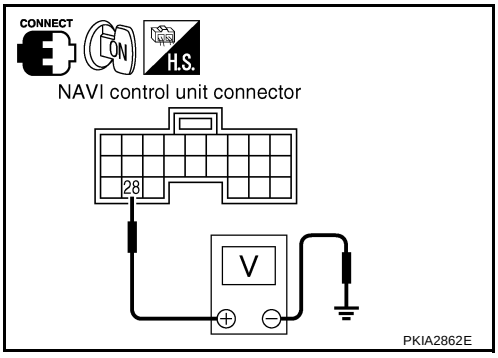
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK NAVI CONTROL UNIT

1. Connect NAVI control unit connector.
2. Turn ignition switch ON.
3. Check voltage between NAVI control unit harness connector M63 terminal 28 (V/W) and ground.

   28 – Ground : Approx. 5V



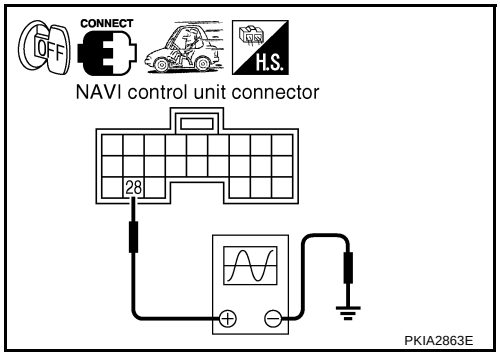
OK or NG

OK >> GO TO 4.
NG >> Replace NAVI control unit.

4. CHECK VEHICLE SPEED SIGNAL

1. Turn ignition switch OFF.
2. Connect unified meter and A/C amp., combination meter, display control unit, audio unit and shift lock control unit connectors.
3. Drive vehicle at a constant speed.
4. Check voltage waveform between NAVI control unit harness connector M63 terminal 28 (V/W) and ground using CONSULT-II or oscilloscope.

28 – Ground **: Refer to AV-133, "Terminals and Reference Value for NAVI Control Unit" .**



OK or NG

OK >> INSPECTION END

NG >> Replace unified meter and A/C amp. Refer to DI-38, "Removal and Installation of Unified Meter and A/C Amp." .

Vehicle Speed Signal Check for Display Control Unit

AKS005G5

1. CHECK SPEEDOMETER FUNCTION

Does speedometer is operated normally?

YES or NO

YES >> GO TO 2.

NO >> Check combination meter trouble diagnosis. Refer to DI-19, "Vehicle Speed Signal Inspection" .

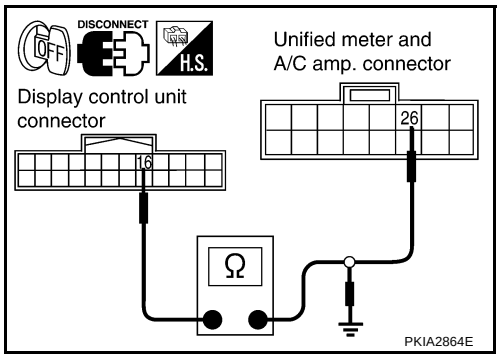
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit, unified meter and A/C amp., NAVI control unit, combination meter, audio unit and shift lock control unit connectors.
3. Check continuity between display control unit harness connector M42 terminal 16 (V/W) and unified meter and A/C amp. harness connector M50 terminal 26 (V/W).

16 – 26 **: Continuity should exist.**

4. Check continuity between display control unit harness connector M42 terminal 16 (V/W) and ground.

16 – Ground **: Continuity should not exist.**



OK or NG

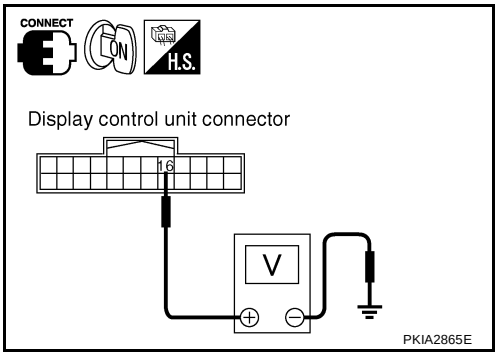
OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK DISPLAY CONTROL UNIT

1. Connect display control unit connector.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M42 terminal 16 (V/W) and ground.

16 – Ground : Approx. 5V



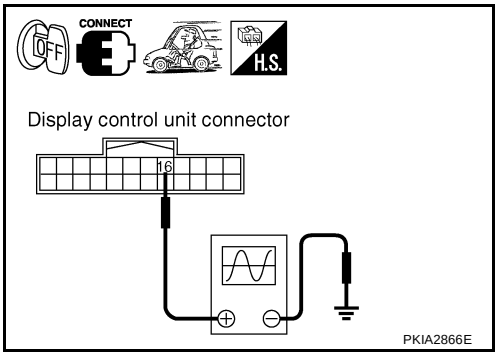
OK or NG

OK >> GO TO 4.
NG >> Replace display control unit.

4. CHECK VEHICLE SPEED SIGNAL

1. Turn ignition switch OFF.
2. Connect unified meter and A/C amp., NAVI control unit, combination meter, audio unit and shift lock control unit connectors.
3. Drive vehicle at a constant speed.
4. Check voltage waveform between display control unit harness connector M42 terminal 16 (V/W) and ground using CONSULT-II or oscilloscope.

16 – Ground : Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .



OK or NG

OK >> INSPECTION END
NG >> Replace unified meter and A/C amp. Refer to DI-38, "Removal and Installation of Unified Meter and A/C Amp." .

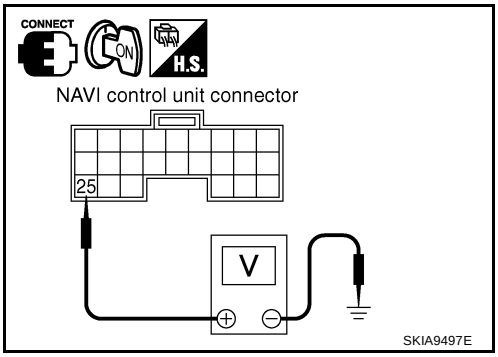
Illumination Signal Check for NAVI Control Unit

AKS004RJ

1. CHECK ILLUMINATION SIGNAL

Check voltage between NAVI control unit harness connector terminals and ground.

Terminals			Lighting switch position	
(+)		(–)		
Connector	Terminal (Wire color)		ON	OFF
M63	25 (R/L)	Ground	Approx. 12V	Approx. 0V



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

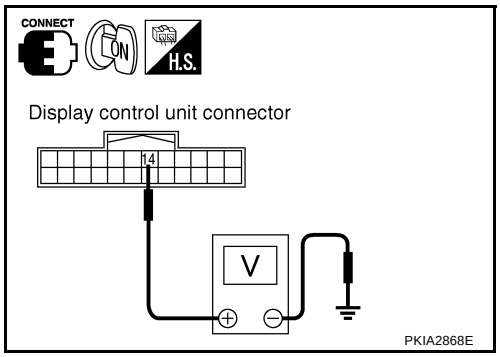
Illumination Signal Check for Display Control Unit

AKS005G6

1. CHECK ILLUMINATION SIGNAL

Check voltage between display control unit harness connector terminals and ground.

Terminals			Lighting switch position	
(+)		(–)		
Connector	Terminal (Wire color)		ON	OFF
M42	14 (R/L)	Ground	Approx. 12V	Approx. 0V



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

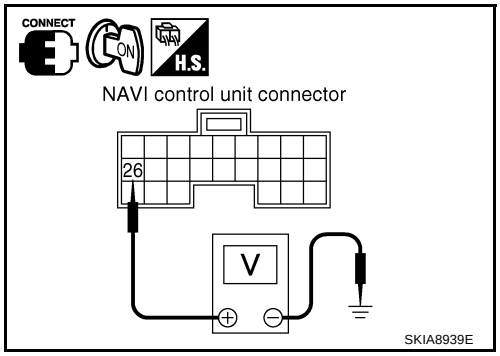
Ignition Signal Check for NAVI Control Unit

AKS004RK

1. CHECK IGNITION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between NAVI control unit harness connector M63 terminal 26 (G) and ground.

26 – Ground : Battery voltage



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

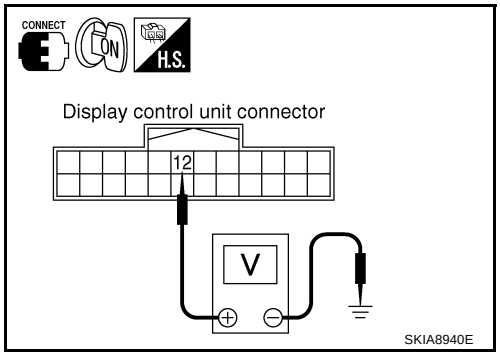
Ignition Signal Check for Display Control Unit

AKS005G7

1. CHECK IGNITION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between display control unit harness connector M42 terminal 12 (G) and ground.

12 – Ground : Battery voltage



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Reverse Signal Check for NAVI Control Unit

AKS005G8

1. CHECK REVERSE LAMP

1. Turn ignition switch ON.
2. Selector lever into R-position. Does “R” in the shift position indicator come on?

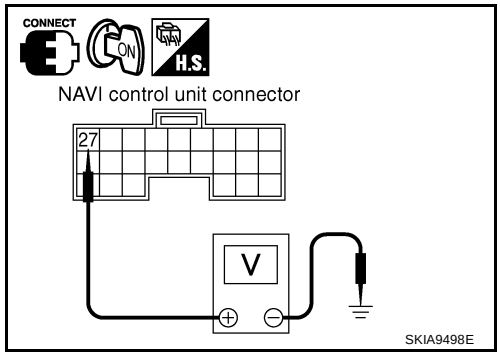
YES or NO

YES >> GO TO 2.
NO >> Check back-up lamp system. Refer to LT-146, "BACK-UP LAMP" .

2. CHECK REVERSE SIGNAL

Check voltage between NAVI control unit harness connector terminals and ground.

Terminals			Selector lever position	
(+)		(–)		
Connector	Terminal (Wire color)		R-position	Except R-position
M63	27 (G/W)	Ground	Approx. 12V	Approx. 0V



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

Reverse Signal Check for Display Control Unit

AKS004RL

1. CHECK REVERSE LAMP

1. Turn ignition switch ON.
2. Selector lever into R-position. Does “R” in the shift position indicator come on?

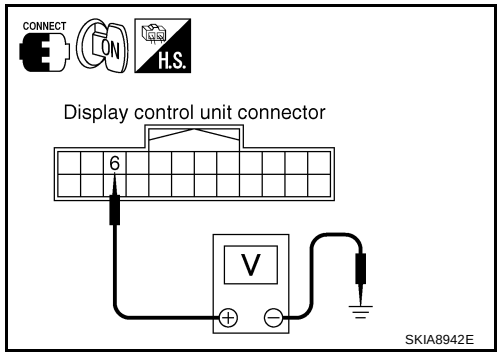
YES or NO

YES >> GO TO 2.
NO >> Check back-up lump system. Refer to LT-146, "BACK-UP LAMP" .

2. CHECK REVERSE SIGNAL

Check voltage between display control unit harness connector terminals and ground.

Terminals			Selector lever position	
(+)		(–)		
Connector	Terminal (Wire color)		R-position	Except R-position
M42	6 (G/W)	Ground	Approx. 12V	Approx. 0V



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

When Malfunctioning Connection Between Display Control Unit and NAVI Control Unit

AKS005R8

1. CHECK NAVI CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check NAVI control unit power supply and ground circuit. Refer to AV-160, "Power Supply and Ground Circuit Check for NAVI Control Unit" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

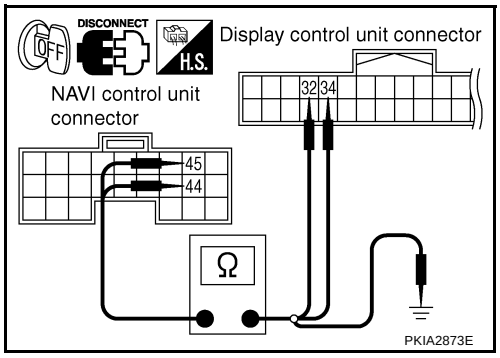
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display control unit connectors.
3. Check continuity between NAVI control unit harness connector M63 terminals 44 (O), 45 (B/P) and display control unit harness connector M43 terminals 32 (O), 34 (B/P).

44 – 32 : Continuity should exist.
45 – 34 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector M63 terminals 44 (O), 45 (B/P) and ground.

44, 45 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. SELF-DIAGNOSIS OF DCU

1. Replace NAVI control unit.
2. Connect NAVI control unit connector and display control unit connector.
3. Turn ignition switch ON.
4. Start self-diagnosis of DCU, and check the self-diagnosis result.

OK or NG

OK >> INSPECTION END
NG >> Replace display control unit.

When Malfunctioning Connection Between Display Control Unit and Audio Unit

AKS005R9

1. CHECK AUDIO UNIT POWER SUPPLY CIRCUIT

Check audio unit power supply circuit. Refer to AV-47, "Power Supply Circuit Inspection" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

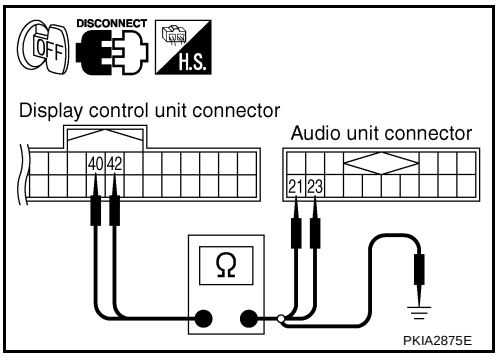
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and display control unit connectors.
3. Check continuity between display control unit harness connector M43 terminals 40 (R/G), 42 (R/Y) and audio unit harness connector M46 terminals 23 (R/G), 21 (R/Y).

40 – 23 : Continuity should exist.
42 – 21 : Continuity should exist.

4. Check continuity between display control unit harness connector M43 terminals 40 (R/G), 42 (R/Y) and ground.

40, 42 – Ground : Continuity should not exist.



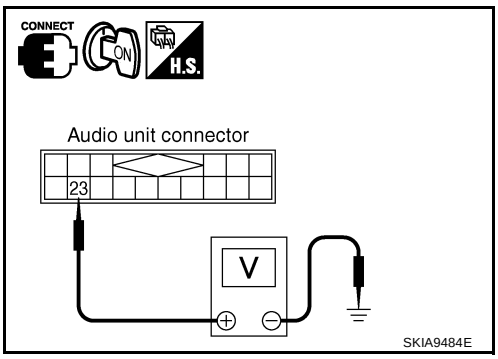
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK AUDIO UNIT

1. Connect audio unit connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector M46 terminal 23 (R/G) and ground.

23 – Ground : Approx. 4V



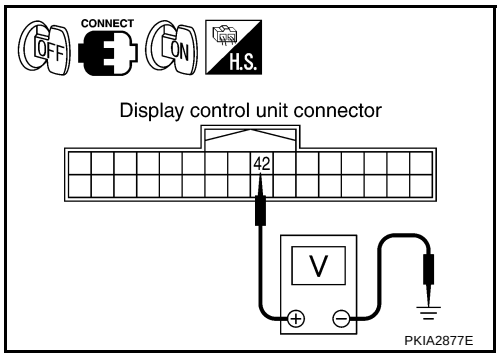
OK or NG

OK >> GO TO 4.
NG >> Replace audio unit.

4. CHECK DISPLAY CONTROL UNIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector, and connect display control unit connector.
3. Turn ignition switch ON.
4. Check voltage between display control unit harness connector M43 terminal 42 (R/Y) and ground.

42 – Ground : Approx. 4V



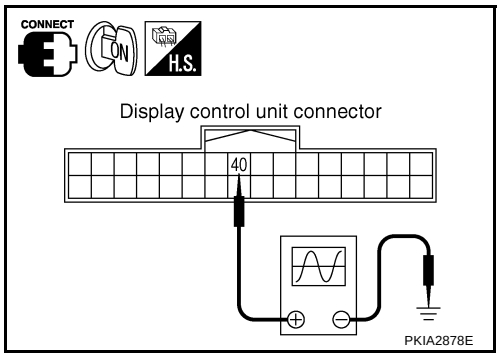
OK or NG

OK >> GO TO 5.
NG >> Replace display control unit.

5. CHECK AUDIO TX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Connect audio unit connector.
3. Turn ignition switch ON.
4. Check voltage waveform between display control unit harness connector M43 terminal 40 (R/G) and ground using CONSULT-II or oscilloscope.

40 – Ground : Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .



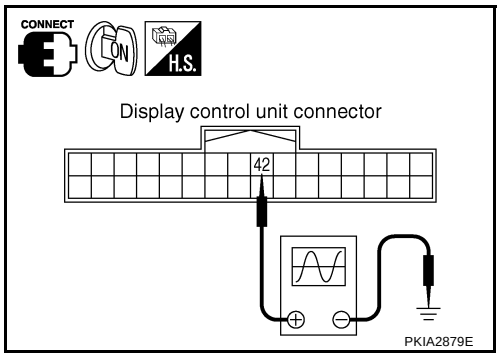
OK or NG

OK >> GO TO 6.
NG >> Replace display control unit.

6. CHECK AUDIO RX COMMUNICATION SIGNAL

Check voltage waveform between display control unit harness connector M43 terminal 42 (R/Y) and ground using CONSULT-II or oscilloscope.

42 – Ground : Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .



OK or NG

OK >> Replace display control unit.
NG >> Replace audio unit.

When Malfunctioning Connection Between Display Control Unit and Display

AKS005RA

1. CHECK HARNESS

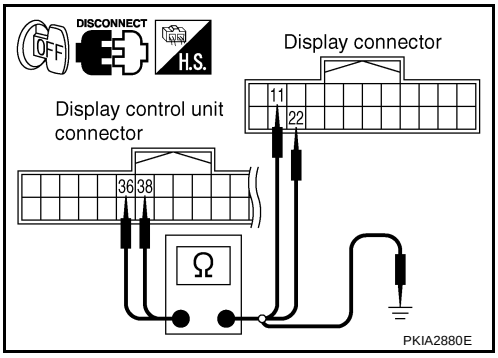
1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector M43 terminals 36 (O/L), 38 (W/L) and display harness connector M38 terminals 11 (O/L), 22 (W/L).

   36 – 11 : Continuity should exist.

   38 – 22 : Continuity should exist.

4. Check continuity between display control unit harness connector M43 terminals 36 (O/L), 38 (W/L) and ground.

   36, 38 – Ground : Continuity should not exist.



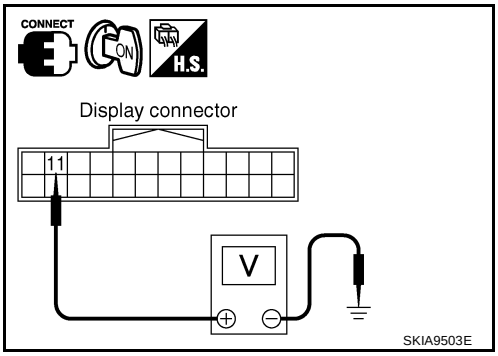
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK DISPLAY UNIT

1. Connect display connector.
2. Turn ignition switch ON.
3. Check voltage between display harness connector M38 terminal 11 (O/L) and ground.

   11 – Ground : Approx. 4V



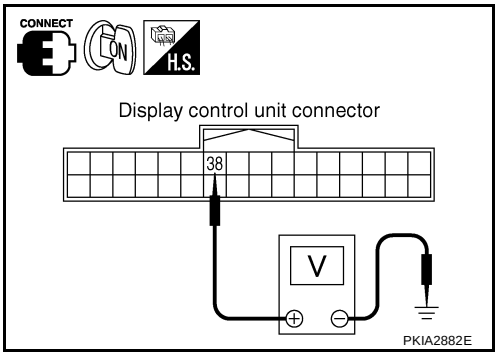
OK or NG

OK >> GO TO 3.
NG >> Replace display.

3. CHECK DISPLAY CONTROL UNIT

1. Turn ignition switch OFF.
2. Disconnect display connector, and connect display control unit connector.
3. Turn ignition switch ON.
4. Check voltage between display control unit harness connector M43 terminal 38 (W/L) and ground.

   38 – Ground : Approx. 4V

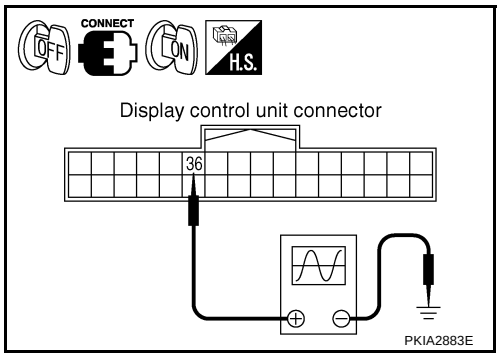


OK or NG

OK >> GO TO 4.
NG >> Replace display control unit.

4. CHECK COMMUNICATION SIGNAL (DCU–DSP)

1. Turn ignition switch OFF.
2. Connect display connector.
3. Turn ignition switch ON.
4. Check voltage waveform between display control unit harness connector M43 terminal 36 (O/L) and ground using CONSULT-II or oscilloscope.



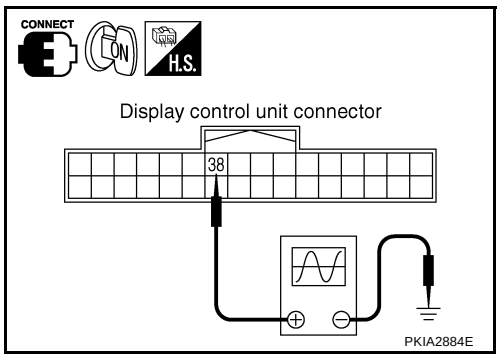
36 – Ground	**: Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .**

OK or NG

OK >> GO TO 5.
NG >> Replace display control unit.

5. CHECK COMMUNICATION SIGNAL (DSP–DCU)

Check voltage waveform between display control unit harness connector M43 terminal 38 (W/L) and ground using CONSULT-II or oscilloscope.



38 – Ground	**: Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .**

OK or NG

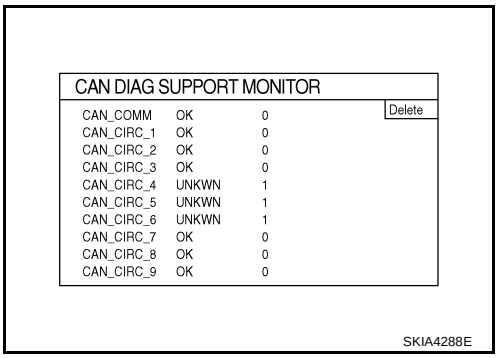
OK >> Replace display control unit.
NG >> Replace display.

CAN Communication Line Check

AKS005RC

1. CHECK MONITOR DESCRIPTION

1. Start display control unit self-diagnosis. Refer to AV-144, "Self-Diagnosis Mode (DCU)" .
2. Select “CAN DIAG SUPPORT MONITOR”. Refer to AV-158, "CAN DIAG SUPPORT MONITOR" .



Item	content		Error counter (Reference value)
	Normal condition	Error (Example)	
CANCOMM	OK	NG	0-50
CAN_CIRC_1	OK	UNKWN	0-50
CAN_CIRC_2	OK	UNKWN	0-50
CAN_CIRC_3	OK	UNKWN	0-50
CAN_CIRC_4	OK	UNKWN	0-50
CAN_CIRC_5	OK	UNKWN	0-50
CAN_CIRC_6	OK	UNKWN	0-50
CAN_CIRC_7	OK	UNKWN	0-50
CAN_CIRC_8	OK	UNKWN	0-50
CAN_CIRC_9	UNKWN	UNKWN	0-50

3. Record each item display description (OK/NG/UNKWN) displayed on the following CAN DIAG SUPPORT MONITOR Check Sheet.

CAN DIAG SUPPORT MONITOR Check Sheet

Diagnosis item	Screen display		Diagnosis item	Screen display	
CANCOMM	OK	NG	CAN_CIRC_5	OK	UNKWN
CAN_CIRC_1	OK	UNKWN	CAN_CIRC_6	OK	UNKWN
CAN_CIRC_2	OK	UNKWN	CAN_CIRC_7	OK	UNKWN
CAN_CIRC_3	OK	UNKWN	CAN_CIRC_8	OK	UNKWN
CAN_CIRC_4	OK	UNKWN	CAN_CIRC_9	OK	UNKWN

>> After filling in CAN DIAG SUPPORT MONITOR Check Sheet, GO TO LAN-6, "Precautions When Using CONSULT-II" .

If NAVI Control Unit Detects That DVD-ROM Map Is Not Inserted

AKS005RD

1. CHECK DVD-ROM

Make sure identified DVD-ROM map is inserted.

OK or NG

OK >> Replace NAVI control unit.
NG >> Insert identified DVD-ROM map.

If NAVI Control Unit Detects That Inserted DVD-ROM Map Malfunctioning or If It Is Impossible to Load Data From DVD-ROM Map

AKS005RE

1. CHECK 1: DVD-ROM

Remove inserted DVD-ROM map to check that it is identified.

OK or NG

OK >> GO TO 2.
NG >> Replace identified DVD-ROM map.

2. CHECK 2: DVD-ROM

Check removed DVD-ROM that there are dirt, scratch and warp.

OK or NG

OK >> GO TO 3.
NG >> Replace DVD-ROM map.

3. CHECK 3: DVD-ROM

Insert same DVD-ROM to make sure same diagnosis result is found as last self-diagnosis.

OK or NG

OK >> Replace NAVI control unit.
NG >> Replace DVD-ROM map.

If Connection Between NAVI Control Unit and GPS Antenna is Malfunctioning

AKS005RF

1. CHECK GPS ANTENNA

Check cable for GPS antenna by watching out to see that cable is malfunctioning.

OK or NG

OK >> GO TO 2.
NG >> Replace GPS antenna.

2. CHECK BY REPLACEMENT OF GPS ANTENNA

Replace other functional GPS antenna to try self-diagnosis again.

Result of self-diagnosis; Found same result?

YES >> Replace NAVI control unit.
NO >> Replace GPS antenna.

Color of RGB Image is Not Proper

AKS005SR

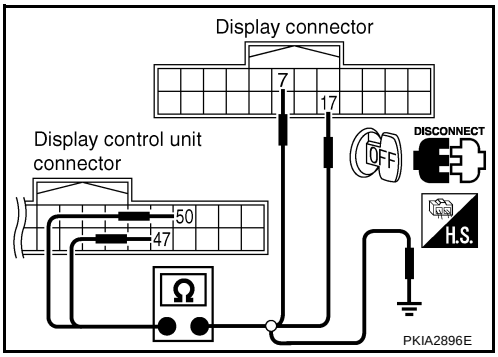
1. CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity as following.

- **When the screen looks bluish**

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M43	50 (G/Y)	M38	17 (G/Y)	Yes
	47		7	

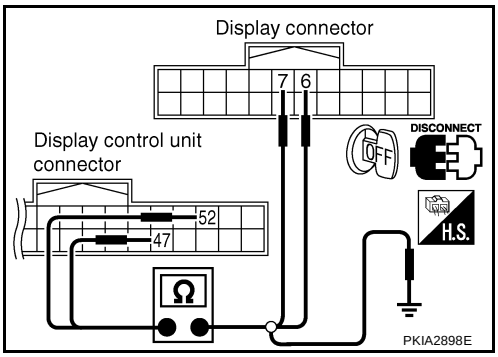
Terminals			
Display control unit		Ground	Continuity
Connector	Terminal (Wire color)		
M43	50 (G/Y)		No
	47		



- **When the screen looks reddish**

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M43	52 (G/R)	M38	6 (G/R)	Yes
	47		7	

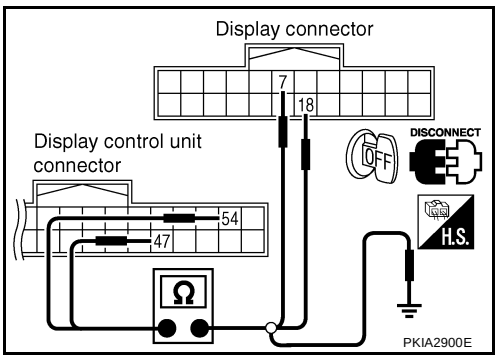
Terminals			
Display control unit		Ground	Continuity
Connector	Terminal (Wire color)		
M43	52 (G/R)		No
	47		



- **When the screen looks yellowish**

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M43	54 (G/O)	M38	18 (G/O)	Yes
	47		7	

Terminals			
Display control unit		Ground	Continuity
Connector	Terminal (Wire color)		
M43	54 (G/O)		No
	47		



OK or NG

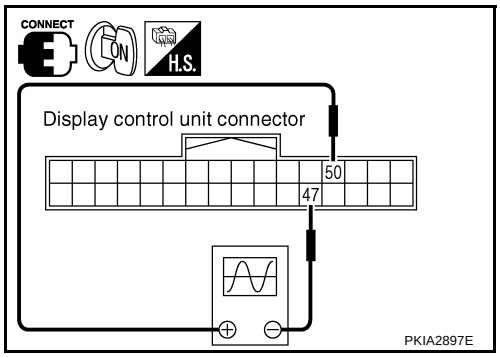
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following using CONSULT-II or oscilloscope.

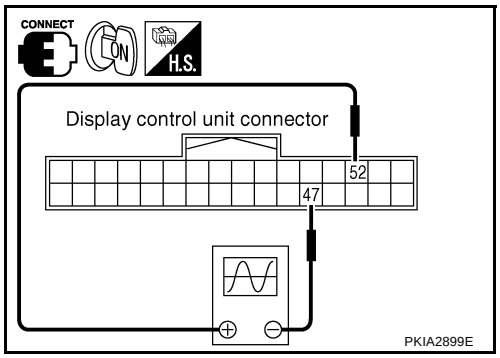
- **When the screen looks bluish.**
  Check voltage waveform between display control unit connector M43 terminal 50 (G/Y) and 47.

  50 – 47 : **Refer to** AV-135, "Terminals and Reference Value for Display Control Unit" .



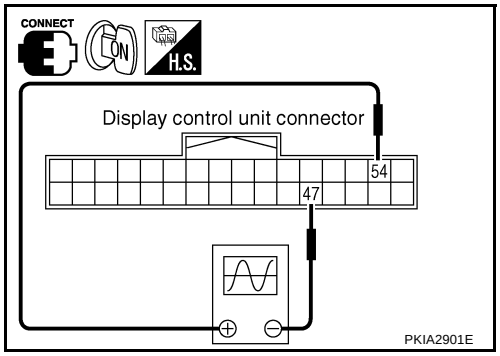
- **When the screen looks reddish.**
  Check voltage waveform between display control unit connector M43 terminal 52 (G/R) and 47.

  52 – 47 : **Refer to** AV-135, "Terminals and Reference Value for Display Control Unit" .



- **When the screen looks yellowish.**
  Check voltage waveform between display control unit connector M43 terminal 54 (G/O) and 47.

  54 – 47 : **Refer to** AV-135, "Terminals and Reference Value for Display Control Unit" .



OK or NG

OK >> Replace display.
NG >> Replace display control unit.

Color of RGB Image is Not Proper (Only NAVI Screen)

AKS005SO

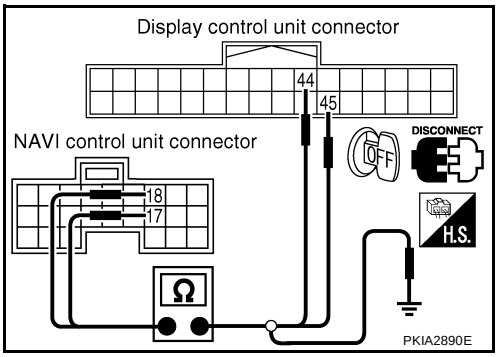
1. CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display control unit connectors.
3. Check continuity as following.

- **When the screen looks bluish**

Terminals				Continuity
NAVI control unit		Display control unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M62	18 (BR/Y)	M43	44 (BR/Y)	Yes
	17		45	

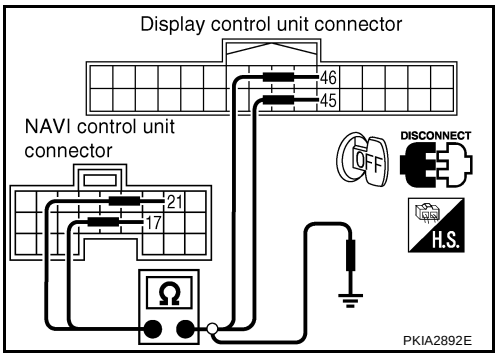
Terminals			Continuity
NAVI control unit		Ground	
Connector	Terminal (Wire color)		
M62	18 (BR/Y)		No
	17		



- **When the screen looks reddish**.

Terminals				Continuity
NAVI control unit		Display control unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M62	21 (BR/W)	M43	46 (BR/W)	Yes
	17		45	

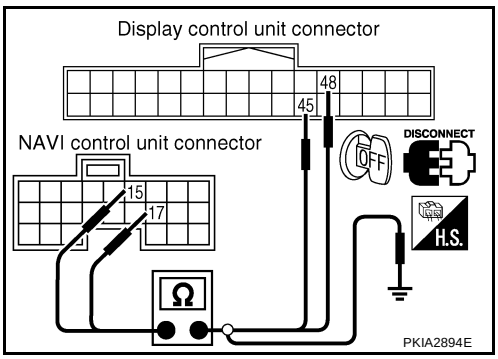
Terminals			Continuity
NAVI control unit		Ground	
Connector	Terminal (Wire color)		
M62	21 (BR/W)		No
	17		



- **When the screen looks yellowish**.

Terminals				Continuity
NAVI control unit		Display control unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M62	15 (BR)	M43	48 (BR)	Yes
	17		45	

Terminals			Continuity
NAVI control unit		Ground	
Connector	Terminal (Wire color)		
M62	15 (BR)		No
	17		



OK or NG

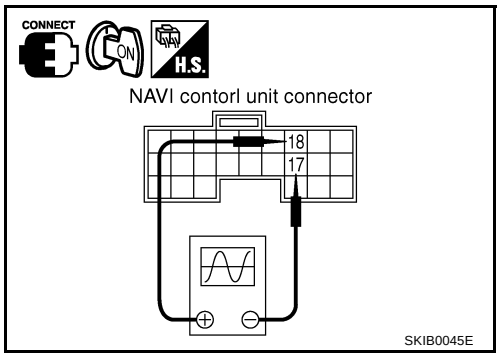
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

1. Connect NAVI control unit and display control unit connectors.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following using CONSULT−II or oscilloscope.

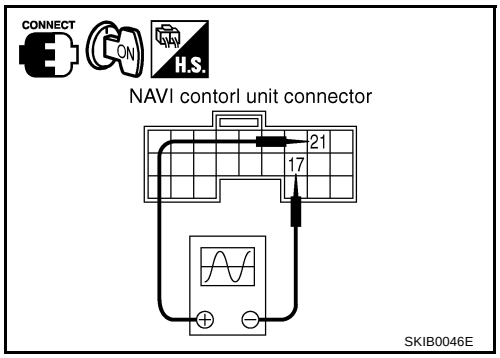
- **When the screen looks bluish.**
  Check voltage waveform between NAVI control unit connector M62 terminal 18 (BR/Y) and 17.

  18 – 17 : **Refer to** **AV-133, "Terminals and Reference Value for NAVI Control Unit"** .



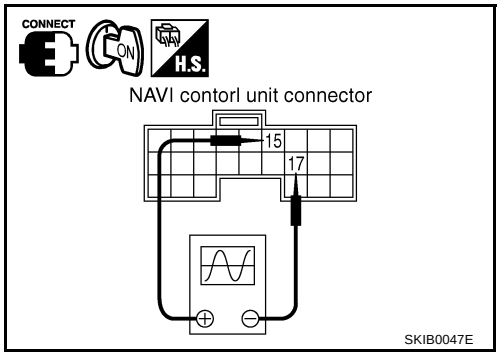
- **When the screen looks reddish.**
  Check voltage waveform between NAVI control unit connector M62 terminal 21 (BR/W) and 17.

  21 – 17 : **Refer to** **AV-133, "Terminals and Reference Value for NAVI Control Unit"** .



- **When the screen looks yellowish.**
  Check voltage waveform between NAVI control unit connector M62 terminal 15 (BR) and 17.

  15 – 17 : **Refer to** **AV-133, "Terminals and Reference Value for NAVI Control Unit"** .



OK or NG

OK >> Replace display control unit.
NG >> Replace NAVI control unit.

NAVI Screen is Rolling

AKS005RH

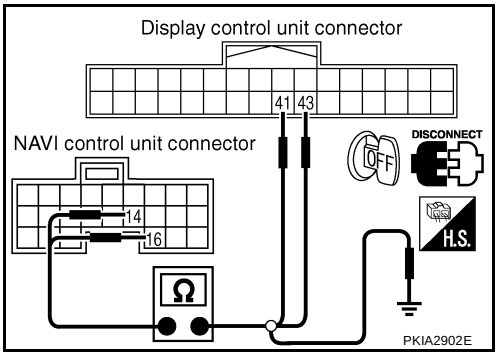
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display control unit connectors.
3. Check continuity between NAVI control unit harness connector M62 terminals 16 (P/L), 14 and display control unit harness connector M43 terminals 43 (P/L), 41.

   16 – 43 : **Continuity should exist.**
   14 – 41 : **Continuity should exist.**

4. Check continuity between NAVI control unit harness connector M62 terminals 16 (P/L), 14 and ground.

   16, 14 – Ground : **Continuity should not exist.**



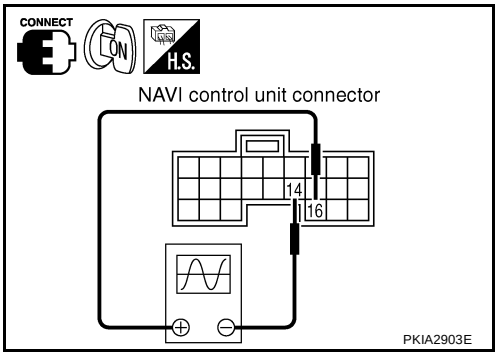
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect NAVI control unit and display control unit connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between NAVI control unit harness connector M43 terminals 16 (P/L) and 14 using CONSULT-II or oscilloscope.

   16 – 14 : **Refer to AV-133, "Terminals and Reference Value for NAVI Control Unit" .**



OK or NG

OK >> GO TO 3.
NG >> Replace NAVI control unit.

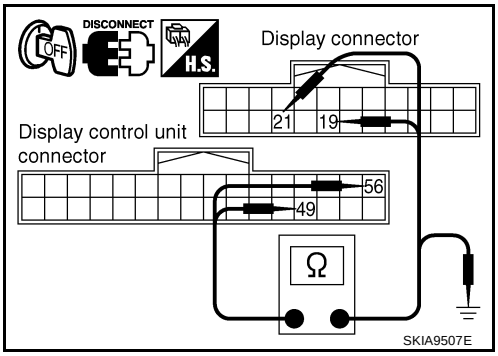
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector M43 terminals 56 (G), 49 and display harness connector M38 terminals 19 (G), 21.

   56 – 19 : **Continuity should exist.**
   49 – 21 : **Continuity should exist.**

4. Check continuity between display control unit harness connector M43 terminals 56 (G), 49 and ground.

   56, 49 – Ground : **Continuity should not exist.**



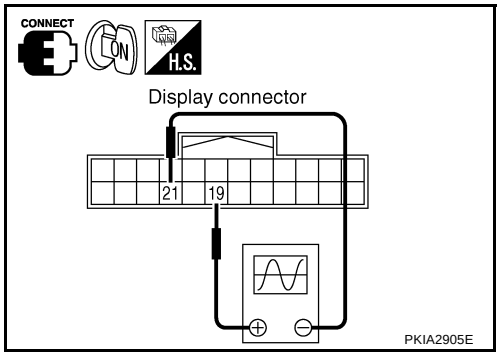
OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

4. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between display connector M38 terminals 19 (G) and 21 using CONSULT-II or oscilloscope.

19 – 21	**: Refer to AV-139, "Terminals and Reference Value for Display" .**



OK or NG

OK >> Replace display.
NG >> Replace display control unit.

Guide Sound is Not Heard

AKS004RP

1. CHECK VOICE GUIDE SETTING

- While driving in the dark pink route, voice guide does not operate. (note)
- Is volume setting not switched ON?

NOTE:
Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.

YES or NO

YES >> GO TO 2.
NO >> Switch the setting ON and turn the volume up.

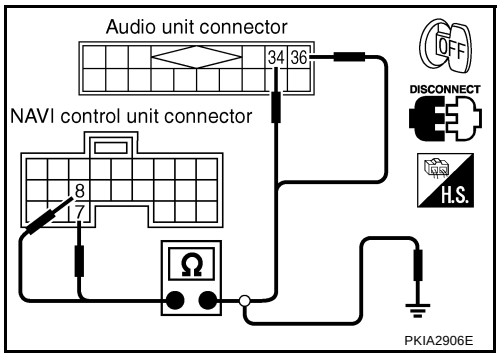
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and audio unit connectors.
3. Check continuity between NAVI control unit harness connector M62 terminals 7 (V), 8 (LG) and audio unit harness connector M46 terminals 36 (V), 34 (LG).

7 – 36	**: Continuity should exist.**
8 – 34	**: Continuity should exist.**

4. Check continuity between NAVI control unit harness connector M62 terminals 7 (V), 8 (LG) and ground.

7, 8 – Ground	**: Continuity should not exist.**



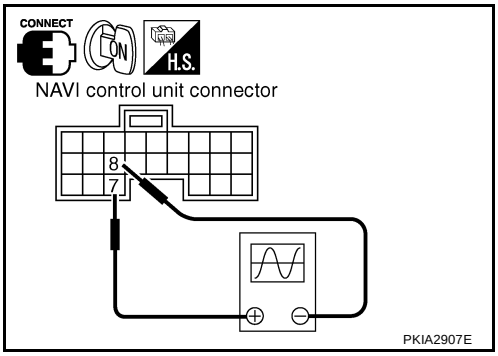
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK VOICE GUIDE

1. Connect NAVI control unit and audio unit connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between NAVI control unit harness connector M62 terminals 7 (V) and 8 (LG) using CONSULT-II or oscilloscope.

7 – 8 **: Refer to AV-133, "Terminals and Reference Value for NAVI Control Unit" .**



OK or NG

OK >> Replace audio unit.
NG >> Replace NAVI control unit.

Screen is Not Shown

AKS005P9

1. CHECK DISPLAY POWER SUPPLY AND GROUND CIRCUIT

Check display power supply and ground circuit. Refer to AV-162, "Power Supply and Ground Circuit Check for Display" .

OK or NG

OK >> Replace display.
NG >> Repair malfunctioning parts.

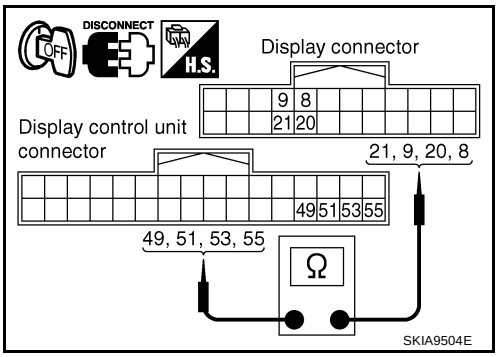
Operating Screen for Audio and A/C is Not Displayed When Showing NAVI Screen

AKS004RM

1. CHECK HARNESS

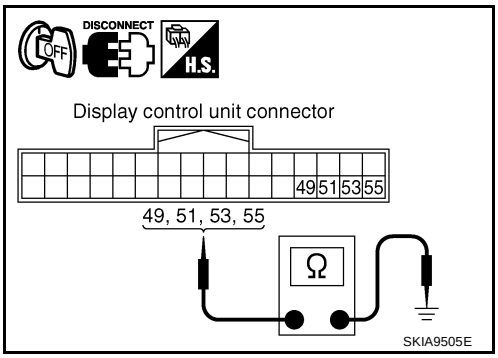
1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector terminals and display harness connector terminals.

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M43	49	M38	21	Yes
	51 (B)		9 (B)	
	53 (W)		20 (W)	
	55 (R)		8 (R)	



4. Check continuity between display control unit harness connector M43 terminals 49, 51 (B), 53 (W), 55 (R) and ground.

49, 51, 53, 55 – Ground : Continuity should not exist.



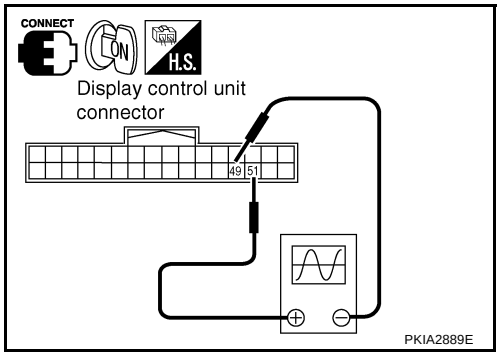
OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB AREA SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between display control unit harness connector M43 terminals 51 (B) and 49 using CONSULT-II or oscilloscope.

51 – 49	**: Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .**



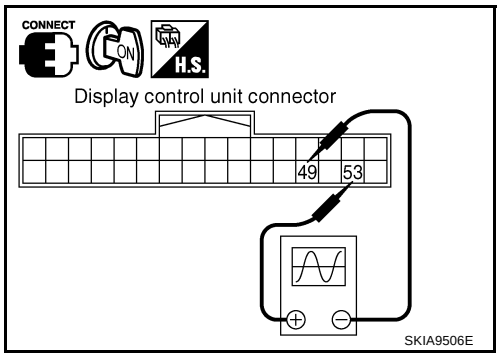
OK or NG

OK >> GO TO 3.
NG >> Replace display control unit.

3. CHECK VERTICAL SYNCHRONIZING SIGNAL

Check voltage waveform between display control unit harness connector M43 terminals 53 (W) and 49 using CONSULT-II or oscilloscope.

53 – 49	**: Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .**



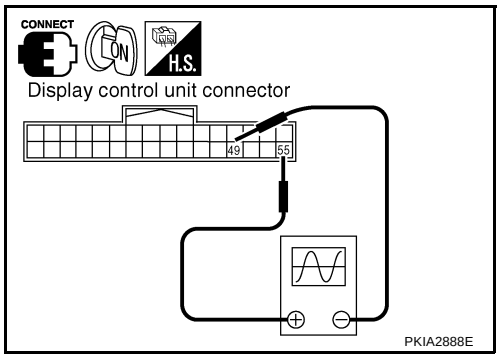
OK or NG

OK >> GO TO 4.
NG >> Replace display.

4. CHECK HORIZONTAL SYNCHRONIZING SIGNAL

Check voltage waveform between display control unit harness connector M43 terminals 55 (R) and 49 using CONSULT-II or oscilloscope.

55 – 49	**: Refer to AV-135, "Terminals and Reference Value for Display Control Unit" .**



OK or NG

OK >> Replace display control unit.
NG >> Replace display.

FUEL ECONOMY Screen is Not Shown

AKS005QX

1. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to AV-168, "Ignition Signal Check for Display Control Unit" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-175, "CAN Communication Line Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN SUPPORT MONITOR check sheet, GO TO LAN-6, "Precautions When Using CONSULT-II" .

Average Fuel Economy is Not Shown

AKS005L9

1. CHECK VEHICLE SPEED SIGNAL FOR DISPLAY CONTROL UNIT

Check vehicle speed signal for display control unit. Refer to AV-166, "Vehicle Speed Signal Check for Display Control Unit" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-175, "CAN Communication Line Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-6, "Precautions When Using CONSULT-II" .

Distance to Empty is Not Shown

AKS005PB

1. CHECK SPEED METER

Confirm that speed meter is functioning.

Is speed meter functioning?

YES >> GO TO 2.
NO >> Refer to DI-15, "Diagnosis Flow" .

2. CHECK FUEL METER

Confirm that fuel meter is functioning.

Is fuel meter functioning?

YES >> GO TO 3.
NO >> Refer to DI-15, "Diagnosis Flow" .

3. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-175, "CAN Communication Line Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-6, "Precautions When Using CONSULT-II" .

Driving Distance or Average Speed is Not Shown

AKS005P4

1. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to AV-168, "Ignition Signal Check for Display Control Unit" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. CHECK VEHICLE SPEED SIGNAL FOR DISPLAY CONTROL UNIT

Check vehicle speed signal for display control unit. Refer to AV-166, "Vehicle Speed Signal Check for Display Control Unit" .

OK or NG

OK >> Replace display control unit.
NG >> Repair malfunctioning parts.

WARNING DOOR OPEN Screen is Not Shown

AKS005P6

1. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to AV-168, "Ignition Signal Check for Display Control Unit" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. CHECK VEHICLE SPEED SIGNAL FOR DISPLAY CONTROL UNIT

Check vehicle speed signal for display control unit. Refer to AV-166, "Vehicle Speed Signal Check for Display Control Unit" .

OK or NG

OK >> GO TO 3.
NG >> Repair malfunctioning parts.

3. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-175, "CAN Communication Line Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-6, "Precautions When Using CONSULT-II" .

TIRE PRESSURE Screen is Not Shown

AKS004RR

1. CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT

Check low tire pressure warning control unit. Refer to WT-17, "Self-Diagnosis" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to AV-168, "Ignition Signal Check for Display Control Unit" .

OK or NG

OK >> GO TO 3.
NG >> Repair malfunctioning parts.

3. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-175, "CAN Communication Line Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-6, "Precautions When Using CONSULT-II" .

Unable to Operate All of A/C and AV Switches (Unable to Start Self-Diagnosis)

AKS005P7

1. A/C AND AV SWITCH SELF-DIAGNOSIS

Start A/C and AV switch self-diagnosis. Refer to AV-159, "A/C and AV Switch Self-Diagnosis Function" .

OK or NG

OK >> GO TO 3.
NG >> GO TO 2.

2. CHECK A/C AND AV SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check A/C and AV switch power supply and ground circuit. Refer to AV-164, "Power Supply and Ground Circuit Check for A/C and AV Switch" .

OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair malfunctioning parts.

3. CHECK DISPLAY CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display control unit power supply and ground circuit. Refer to AV-161, "Power Supply and Ground Circuit Check for Display Control Unit" .

OK or NG

OK >> GO TO 4.
NG >> Repair malfunctioning parts.

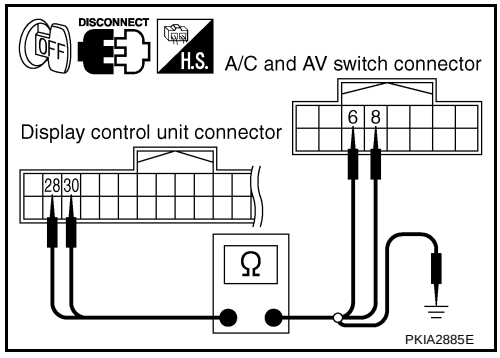
4. CHECK A/C AND AV SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit and A/C and AV switch connectors.
3. Check continuity between display control unit harness connector M43 terminals 28 (L/G), 30 (L/R) and A/C and AV switch harness connector M48 terminals 6 (L/G), 8 (L/R).

   28 – 6 : Continuity should exist.
   30 – 8 : Continuity should exist.

4. Check continuity between display control unit harness connector M43 terminals 28 (L/G), 30 (L/R) and ground.

   28, 30 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

5. SELF-DIAGNOSIS OF DCU

1. Replace A/C and AV switch.
2. Connect display control unit connector and A/C and AV switch connector.
3. Turn ignition switch ON.
4. Start self-diagnosis of DCU, and check the self-diagnosis result.

OK or NG

OK >> INSPECTION END
NG >> Replace display control unit.

A/C Operation is Not Possible

AKS00BHC

1. A/C AND AV SWITCH SELF-DIAGNOSIS

Start A/C and AV switch self-diagnosis. Refer to AV-159, "A/C and AV Switch Self-Diagnosis Function" .

OK or NG

OK >> GO TO 3.
NG >> GO TO 2.

2. CHECK A/C AND AV SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check A/C and AV switch power supply and ground circuit. Refer to AV-164, "Power Supply and Ground Circuit Check for A/C and AV Switch" .

OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair malfunctioning parts.

3. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to AV-168, "Ignition Signal Check for Display Control Unit" .

OK or NG

OK >> GO TO 4.
NG >> Repair malfunctioning parts.

4. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-175, "CAN Communication Line Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-6, "Precautions When Using CONSULT-II" .

Position of Current–Location Mark is Not Correct

AKS004RV

1. SELF-DIAGNOSIS

"Self-diagnosis mode" of the self-diagnosis function. Refer to AV-147, "Self-Diagnosis Mode (NAVI)" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. HISTORY OF ERRORS DIAGNOSIS

Was any error stored in AV-154, "HISTORY OF ERRORS" of the CONFIRMATION/ADJUSTMENT mode?

YES or NO

YES >> AV-155, "DIAGNOSIS BY HISTORY OF ERRORS".
NO >> AV-189, "Driving Test".

Radio Wave From GPS Satellite is Not Received

AKS004RW

1. CHECK ENVIRONMENT

Check if any metal object that intercepts radio waves or an object that emits radio waves (such as a portable phone) is located near the GPS antenna. Check if the vehicle is shielded by a building.

OK or NG

OK >> ● System is not malfunction.
The GPS antenna may not be able to receive radio waves from the GPS satellite if it is shielded by metal object or an object emitting radio waves is placed near it.
NG >> GO TO 2.

2. SELF-DIAGNOSIS

"Self-diagnosis mode" of the self-diagnosis function. Refer to AV-147, "Self-Diagnosis Mode (NAVI)" .

OK or NG

OK >> Replace GPS antenna.
NG >> Repair malfunctioning parts.

Driving Test

AKS004RX

1. DRIVING TEST 1

1. Scroll the map screen to display the area to make correction. Push "ENTER" and select "CURRENT LOCATION CORRECTION".
2. Correct direction of the vehicle mark.
3. Perform the distance correction of the CONFIRMATION/ADJUSTMENT mode.
   Note: Normally, adjustment is not necessary because this system has automatic distance correction function. However, when a tire chain is fitted, adjustment in accordance with the tire diameter ratio must be made.
4. Are symptoms malfunctioning to the AV-191, "Example of Symptoms Judged Not Malfunction" present after driving the vehicle?

YES or NO

YES >> Limit of the location detection capacity of the navigation system.
NO >> GO TO 2.

2. DRIVING TEST 2

- Did any malfunction occur when the proper test in the following test patterns is performed?
- Test pattern
  Driving test finds the difference between the symptoms monitored with and without each sensor.
  - Test pattern 1: Test method with no GPS location correction
    Disconnect GPS antenna connector (GT5) connected to the NAVI control unit. Accurately adjust the current location and the direction, then drive the vehicle.
  - Test pattern 2: Test method with no map-matching
    Accurately adjust the current location and the direction. Eject the map DVD-ROM from the NAVI control unit with ignition switch turned to OFF, then drive the vehicle. After driving, insert the map DVD-ROM back in the unit, display the track of the vehicle on the map screen and compare it with the actual road configuration.
- Sample tests
  - <To determine if the current-location mark skips at the same position, if so, whether it is caused by map-matching or by GPS>
    Perform test pattern 1.
  - <To determine if the pattern of streets displayed is correct or not>
    Perform test pattern 1 & 2.
    Compare the track of the vehicle on the map screen and the actual road configuration. For fairly accurate tracking, plotting shall be made every several hundred meters.
  - <When the distance is adjusted accurately>
    Perform test pattern 1 & 2.
    Drive on a road of which distance is accurately known (by utilizing distance posts on a highway). Calculate the rate of change (increased/decreased) of the distance by comparing with the actual distance.
    Correction = A/B
    A: Distance shown on the screen
    B: Actual distance

YES or NO

YES >>
- If adjustment is insufficient, perform adjustment again.
- If any error is found in the map, please let us know.
- Replace NAVI control unit.

NO >> Limit of the location detection capacity of the navigation system.

Example of Symptoms Judged Not Malfunction

AKS004RY

BASIC OPERATION

Symptom	Cause	Remedy
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.
No guide sound is heard. Audio guide volume is too low or too high.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunction.
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display.	System is not malfunction.

VEHICLE MARK

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunction.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the “SWITCH SCREENS” when the last time the screen dimming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.	Perform screen dimming and select the nighttime screen by “SWITCH SCREENS”.
Map screen will not scroll in accordance with the vehicle travel.	Current location is not displayed.	Push “MAP” button to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Push “MAP” button to display the current location.
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS satellite signal cannot be received because an obstacle is placed on top of the display.	Do not place anything in the center on top of the display.
	GPS satellites are located badly.	Wait until the location becomes better.
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD-ROM will be released once a year.

DESTINATION, PASSING POINTS, AND MENU ITEMS CANNOT BE SELECTED/SET

Symptom	Cause	Remedy
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn route guide ON.
	Route information is not available on the dark pink route.	System is not malfunction.
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.)	Drive on the recommended route.
Automatic route searching is not possible.	Vehicle is driving on a highway (gray route), or no recommended route is available.	Drive on a road to be searched. Or re–search the route manually. In this case, however, the whole route will be searched.
Performed automatic detour search (or detour search). However, the result is the same as that of the previous search.	Performed search with every conditions considered. However, the result is the same as that of the previous search.	System is not malfunction.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunction.
Some menu items cannot be selected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

VOICE GUIDE

Symptom	Cause	Remedy
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunction.
	The vehicle is not on the recommended route.	Return to the recommended route or re-search the route.
	Voice guide is turned OFF.	Turn voice guide ON.
	Route guide is turned OFF.	Turn route guide ON.
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.

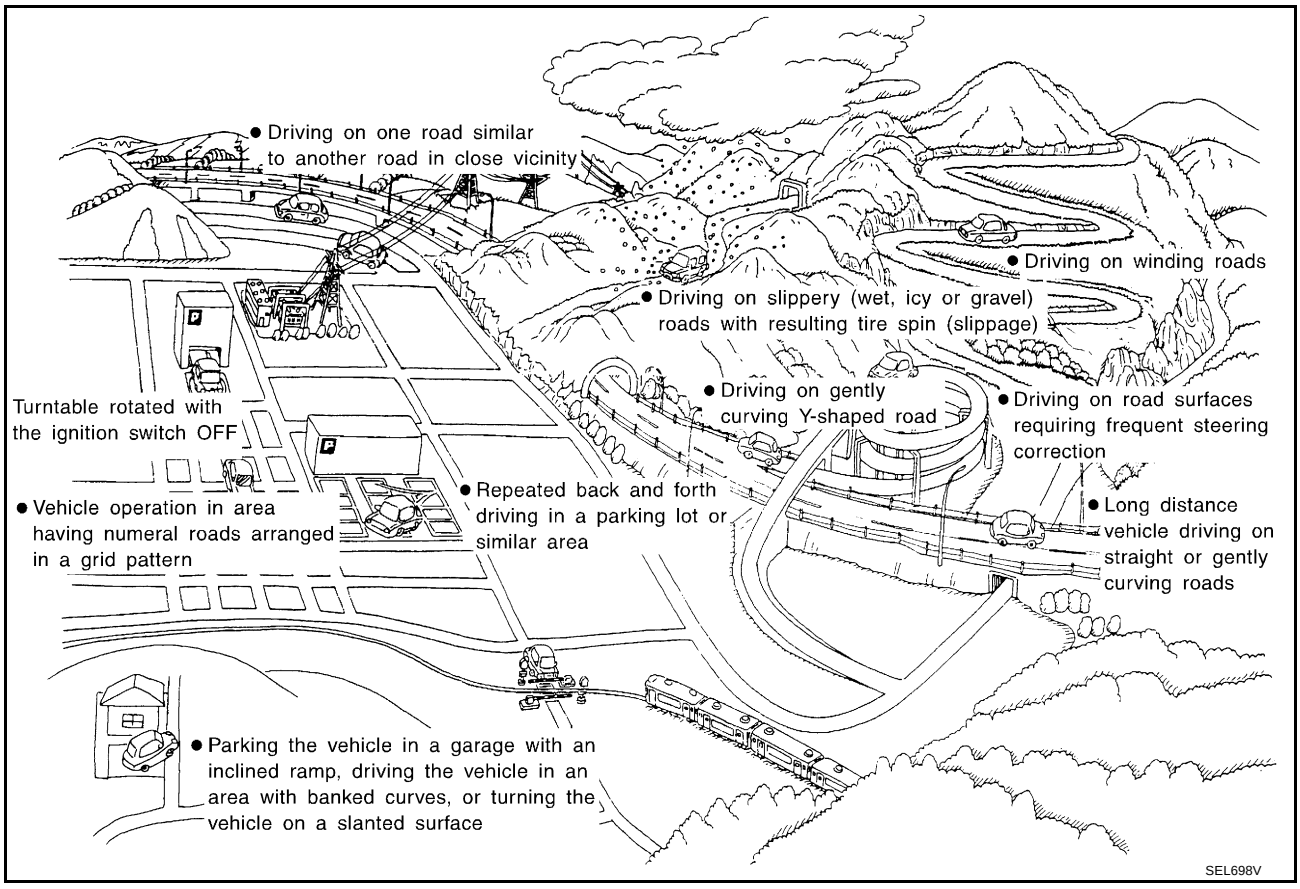
ROUTE SEARCH

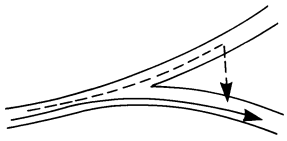
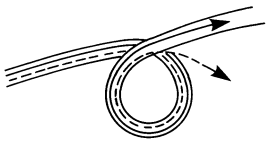
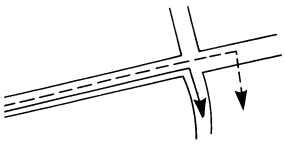
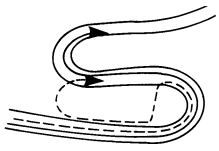
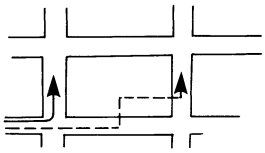
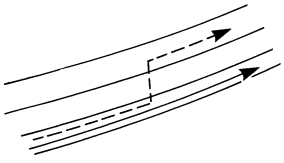
Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.
	Starting point and the destination are too close.	Set the destination at more distant point.
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current location or the destination.	Turn the time-regulating search conditions OFF. Turn “Avoid regulation time” in the search conditions OFF.
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search(Note) . Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunction.
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunction.
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search(Note) . Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destination, or set the passing point on the route of your choice.
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunction.
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.

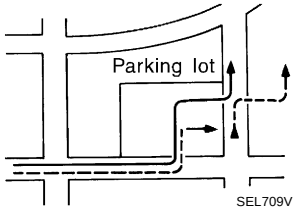
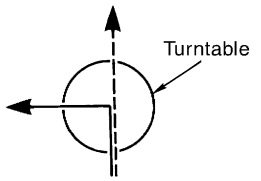
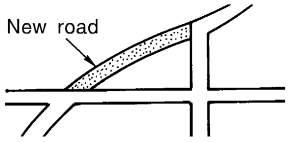
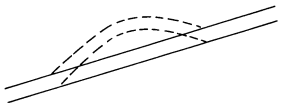
NOTE:
Except for the ordinance-designated cities and the prefectural capitals (Malfunctioning areas may be changed in the updated map disc.)

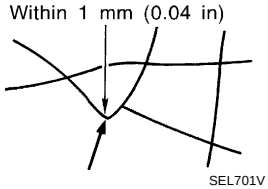
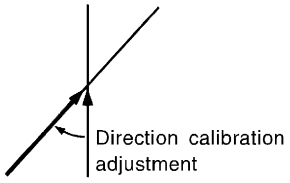
EXAMPLES OF CURRENT-LOCATION MARK DISPLACEMENT

Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.



Cause (condition)		Driving condition	Remarks (correction, etc.)
Road configuration	Y–intersections  ELK0192D	At a Y intersection or similar gradual division of roads, error the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction, and if necessary, direction correction.
	Spiral roads  ELK0193D	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
	Straight roads  ELK0194D	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle turned at a corner.	
	Zigzag roads  ELK0195D	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	
	Roads laid out in a grid pattern  ELK0196D	When driving at where roads are laid out in a grid pattern, where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
	Parallel roads  ELK0197D	When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	

Cause (condition)		Driving condition	Remarks (correction, etc.)
Place	In a parking lot  SEL709V	When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location. When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.	If after travelling about 10km (6miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Turntable  SEL710V	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turn table with the ignition OFF.	
	Slippery roads	On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.	
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	
Map data	Road not displayed on the map screen  SEL699V	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.	
	Different road pattern (Changed due to repair)  ELK0201D	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly and matches the location to a nearby road. The vehicle mark may deviate from the correct road.	
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance is still deviated, adjust it by using the distance adjustment function. (If the tire chain is removed, recover the original value.)

Cause (condition)		Driving condition	Remarks (correction, etc.)
Precautions for driving	Just after the engine is started	If the vehicle is driven off just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location.	Wait for a short while before driving after starting the engine.
	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road.	Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
How to correct location	Position correction accuracy  SEL701V	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads.	Enter in the road displayed on the screen with an accuracy of approx. 1mm. Caution: Whenever possible, use detailed map for the correction.
	Direction when location is corrected  SEL702V	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards.	Perform direction correction.

CURRENT LOCATION MARK SHOWS A POSITION WHICH IS COMPLETELY WRONG

In the following cases, the current-location mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction.

- When location correction has not been done
  - If the receiving conditions of the GPS satellite signal is poor, if the current-location mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed
  - Because calculation of the current location cannot be done when travelling with the ignition OFF, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location can be detected with GPS, the location will be corrected.

CURRENT-LOCATION MARK JUMPS

In the following cases, the current-location mark may appear to jump as a result of automatic correction of the current location.

- When map matching has been done
  - If the current location and the current-location mark are different when map matching is done, the current-location mark may seem to jump. At this time, the location may be “corrected” to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
  - If the current location and the current-location mark are different when the location is corrected using GPS measurements, the current-location mark may seem to jump. At this time, the location may be “corrected” to a location which is not on a road.

CURRENT LOCATION MARK IS IN A RIVER OR SEA

The navigation system moves the current-location mark with no distinction between land and rivers or sea. If the location mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

WHEN DRIVING ON SAME ROAD, SOMETIMES CURRENT-LOCATION MARK IS IN RIGHT PLACE AND SOMETIMES IT IS WRONG PLACE

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

LOCATION CORRECTION BY MAP-MATCHING IS SLOW

- The map matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

ALTHOUGH GPS RECEIVING DISPLAY IS GREEN, VEHICLE MARK DOES NOT RETURN TO CORRECT LOCATION

- The GPS accuracy has an error of approximately 10 m (30 ft). In some cases the current-location mark may not be on the correct street, even when GPS location-correction is done.
- The navigation system compares the results of GPS location detection with the results from map-matching location detection. The one which is determined to have higher accuracy is used.
- GPS location correction may not be performed when the vehicle is stopped.

NAME OF CURRENT PLACE IS NOT DISPLAYED

The current place name may not be displayed if there are no place names displayed on the map screen.

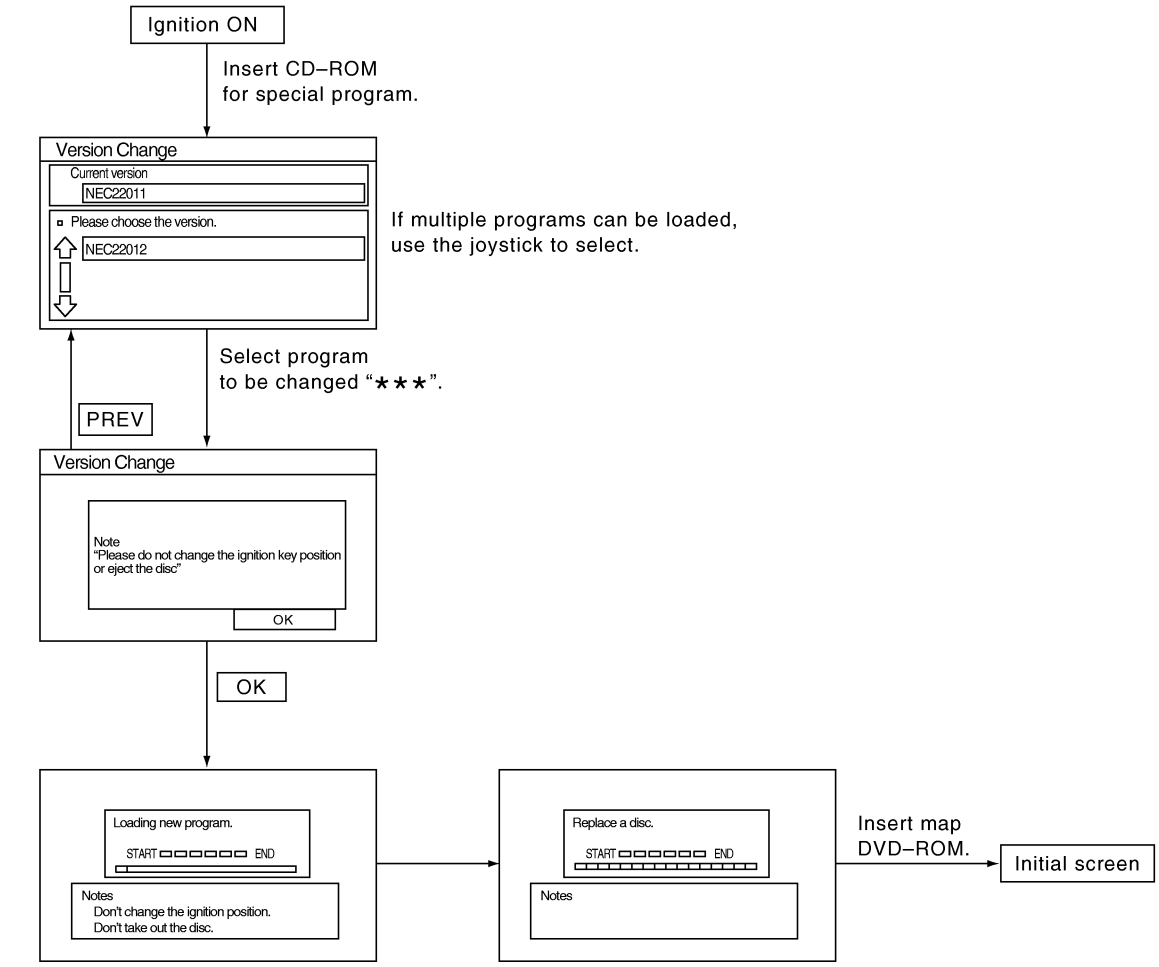
CONTENTS OF DISPLAY DIFFER FOR BIRDVIEW™ AND THE (FLAT) MAP SCREEN

Difference of the BIRDVIEW™ Screen From the Flat Map Screen Are As Follows

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

Program Loading of NAVI Control Unit

AKS004RZ



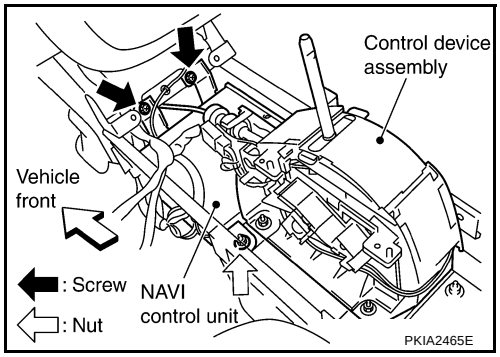
NOTE: Always load a program with the engine running.

Removal and Installation of NAVI Control Unit

AKS00684

REMOVAL

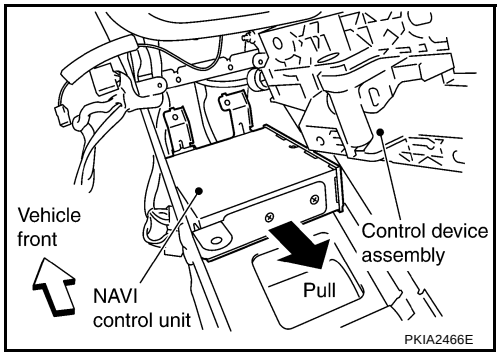
1. Remove center console. Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
2. Remove console cover (LH and RH). Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
3. Remove control device assembly and remove NAVI control unit screws (2) and nut.
4. Disconnect NAVI control unit connector.



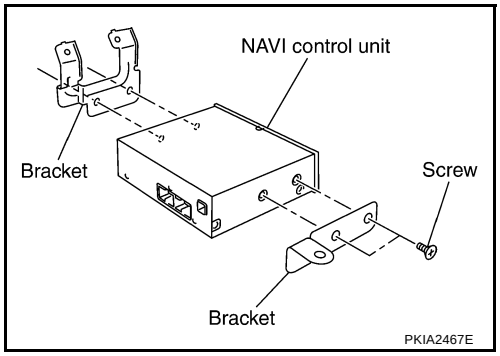
5. Pull NAVI control unit to a cock, then your side.

CAUTION:

Cover unit with cloth avoid contact with console box bracket that may cause scratches or damages.



6. Remove screws (4) and remove bracket.



INSTALLATION

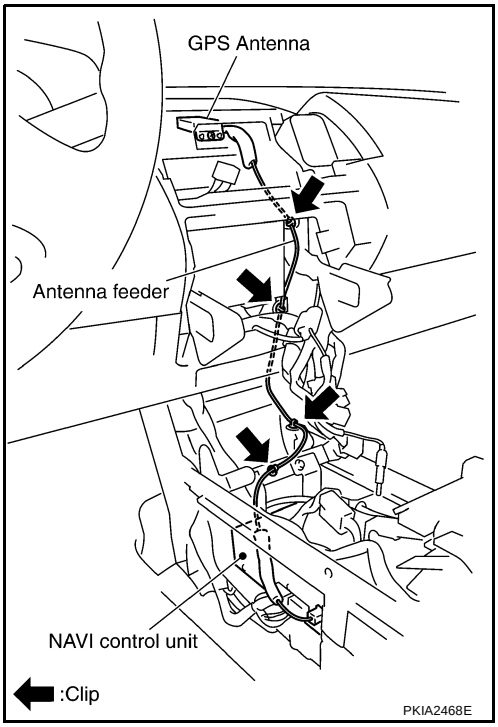
Installation is the reverse order of removal.

Removal and Installation of GPS Antenna

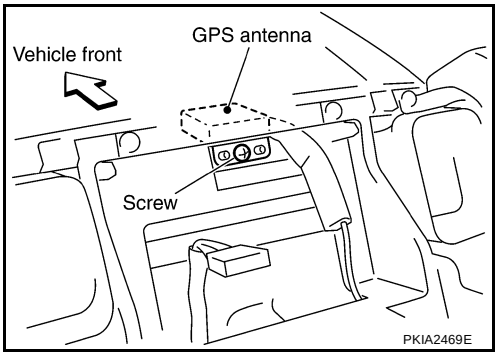
AKS00685

REMOVAL

1. Remove cluster lid C. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove center console. Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
3. Remove console cover (LH). Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
4. Remove display. Refer to AV-202, "Removal and Installation of Display" .
5. Disengaged the clips (4) to separate antenna feeder.



6. Remove screw and remove GPS antenna.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Audio Steering Wheel Switch

AKS00686

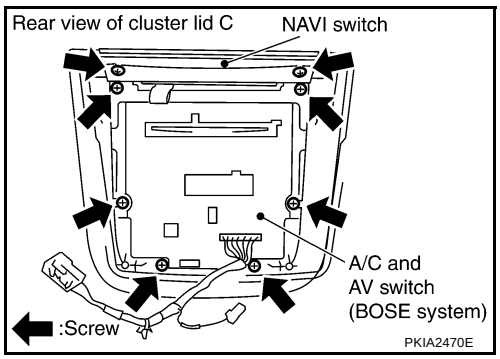
Refer to AV-69, "Removal and Installation of Audio Steering Wheel Switch" .

Removal and Installation of NAVI Switch

AKS00687

REMOVAL

1. Remove audio unit from cluster lid C. Refer to AV-66, "Removal and Installation of Audio Unit" .
2. Remove screws (8) and remove NAVI switch with A/C and audio controller.



INSTALLATION

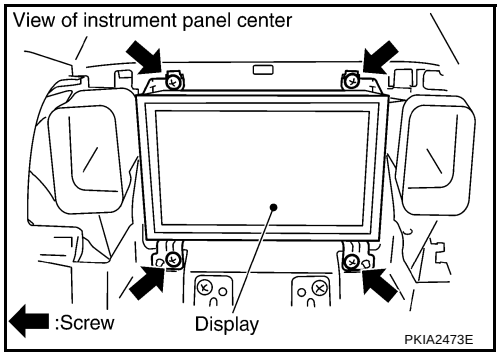
Installation is the reverse order of removal.

Removal and Installation of Display

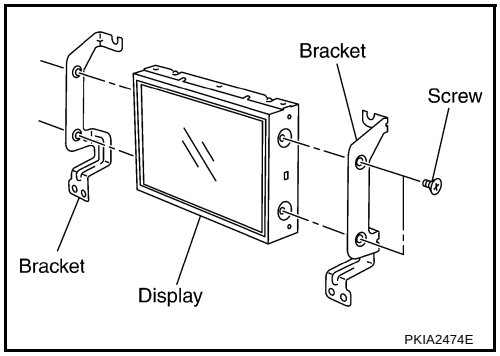
AKS00688

REMOVAL

1. Remove center ventilator. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4) and remove display.



3. Remove screws (4) and remove bracket.



INSTALLATION

Installation is the reverse order of removal.

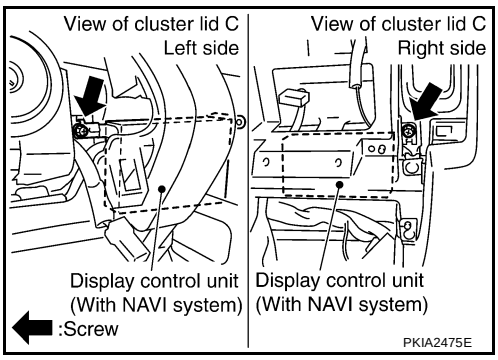
Removal and Installation of Display Control Unit

AKS00689

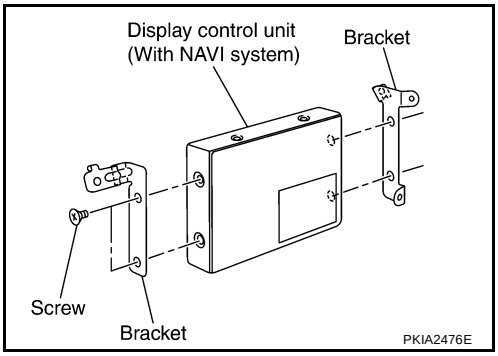
REMOVAL

1. Remove cluster lid C. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove steering lock escutcheon. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove screws (2) and remove display control unit.

   CAUTION:
   See the illustration attached, when install or remove screws for display control unit.



4. Remove screws (4) and remove bracket.



INSTALLATION

Installation is the reverse order of removal.