SECTION AV

AUDIO, VISUAL, NAVIGATION & TELEPHONE SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

BKS00201

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SRS 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 that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see 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.**

AUDIO (WITH INTEGRATED DISPLAY SYSTEM)

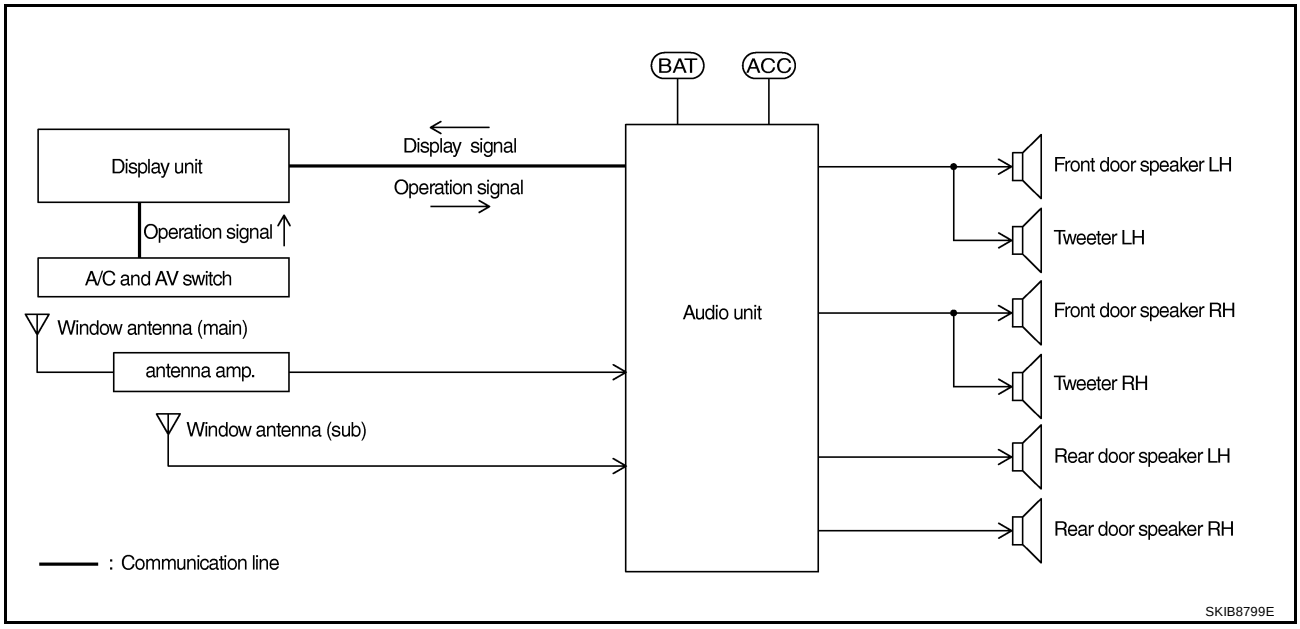
PFP:28185

System Description

BKS0020H

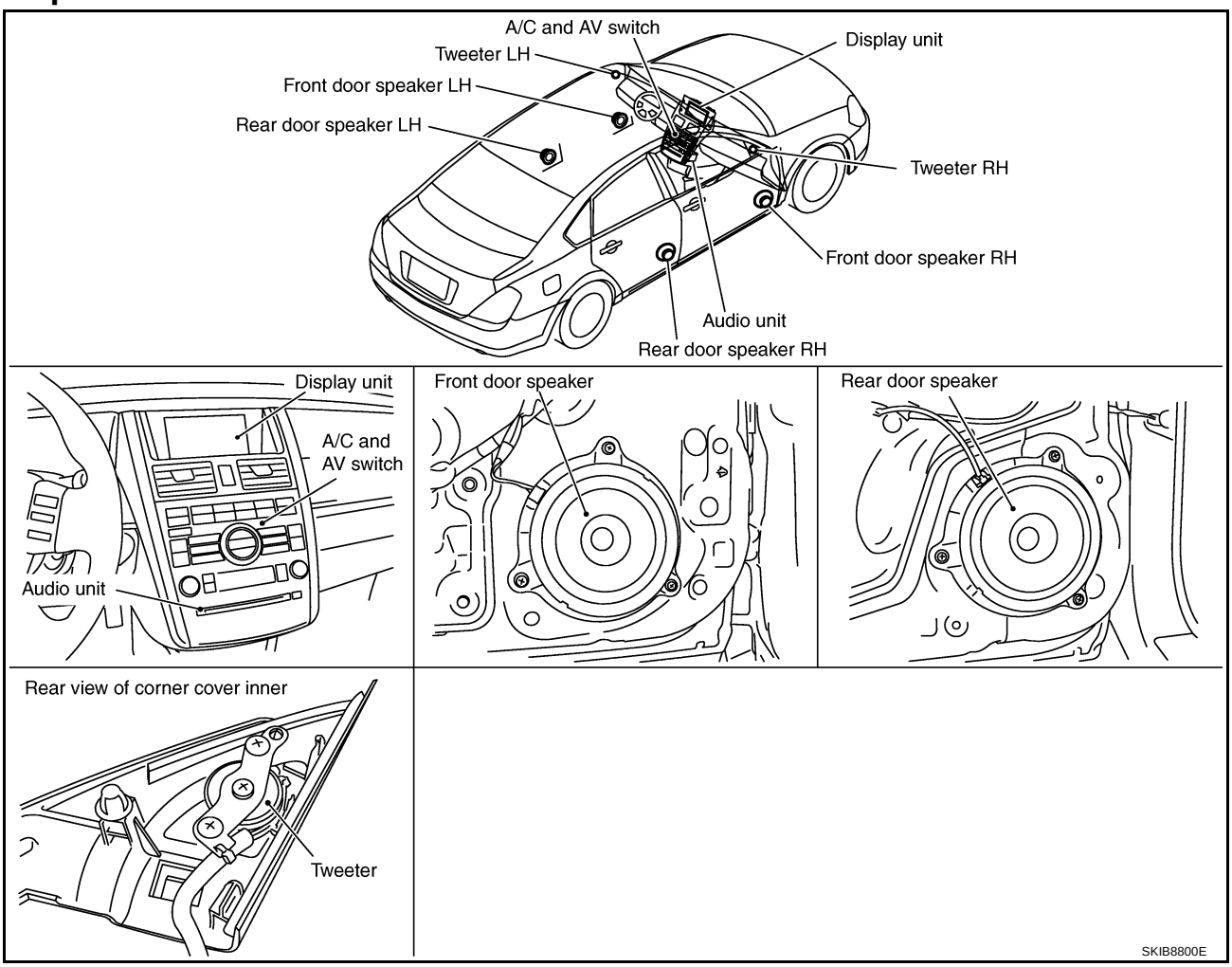
AUDIO SYSTEM

- The audio system with the A/C and AV switch (operation panel switch) and the audio unit are designed separately has been adopted.
- Operation signal from A/C and AV switch is transmitted to audio unit through display unit with the communication line, and it controls the audio system.
- Display signal from audio unit is transmitted to display unit through the communication line, and then the operating state of the audio system is displayed in the screen.
- A/C and AV switch can perform the operation check of each switch by starting the self-diagnosis. For details, refer to AV-13, "A/C and AV Switch Self-Diagnosis Function" .
- For Audio System operation information, refer to Owner's Manual.



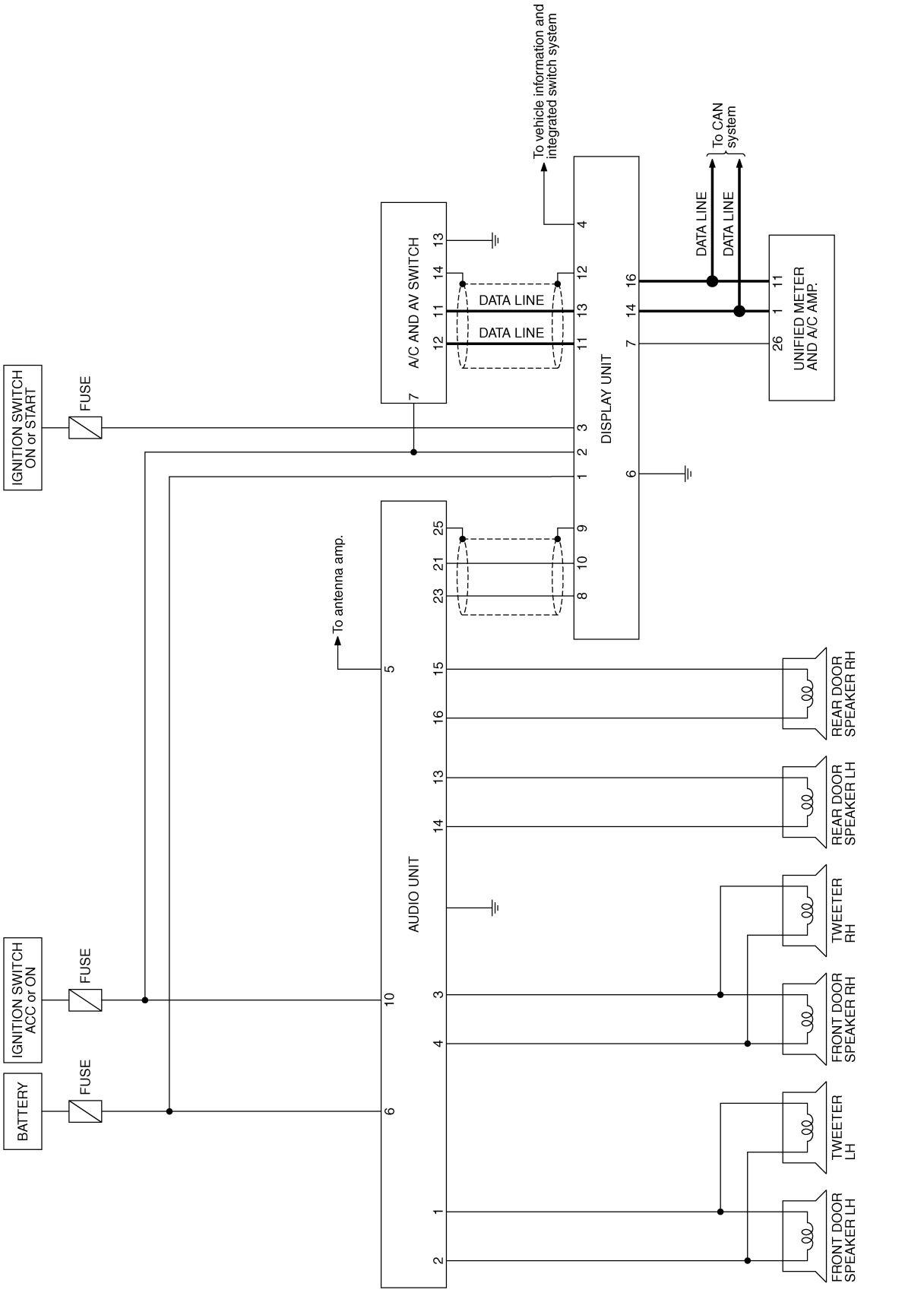
Component Parts Location

BKS0020I



Schematic

BKS0020J



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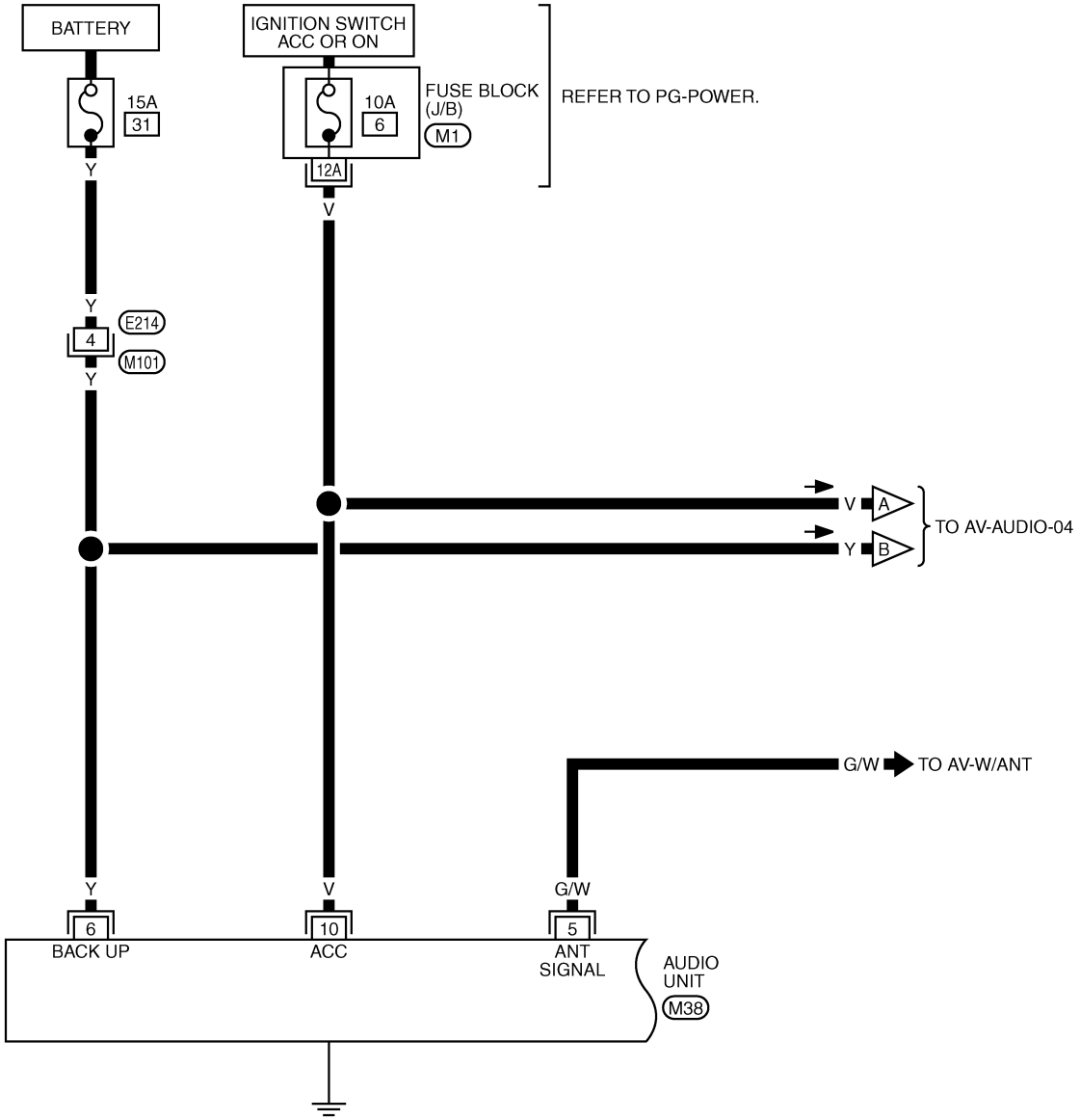
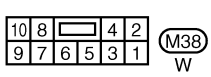
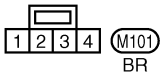
Wiring Diagram — AUDIO —

BKS0020K

AV-AUDIO-01







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

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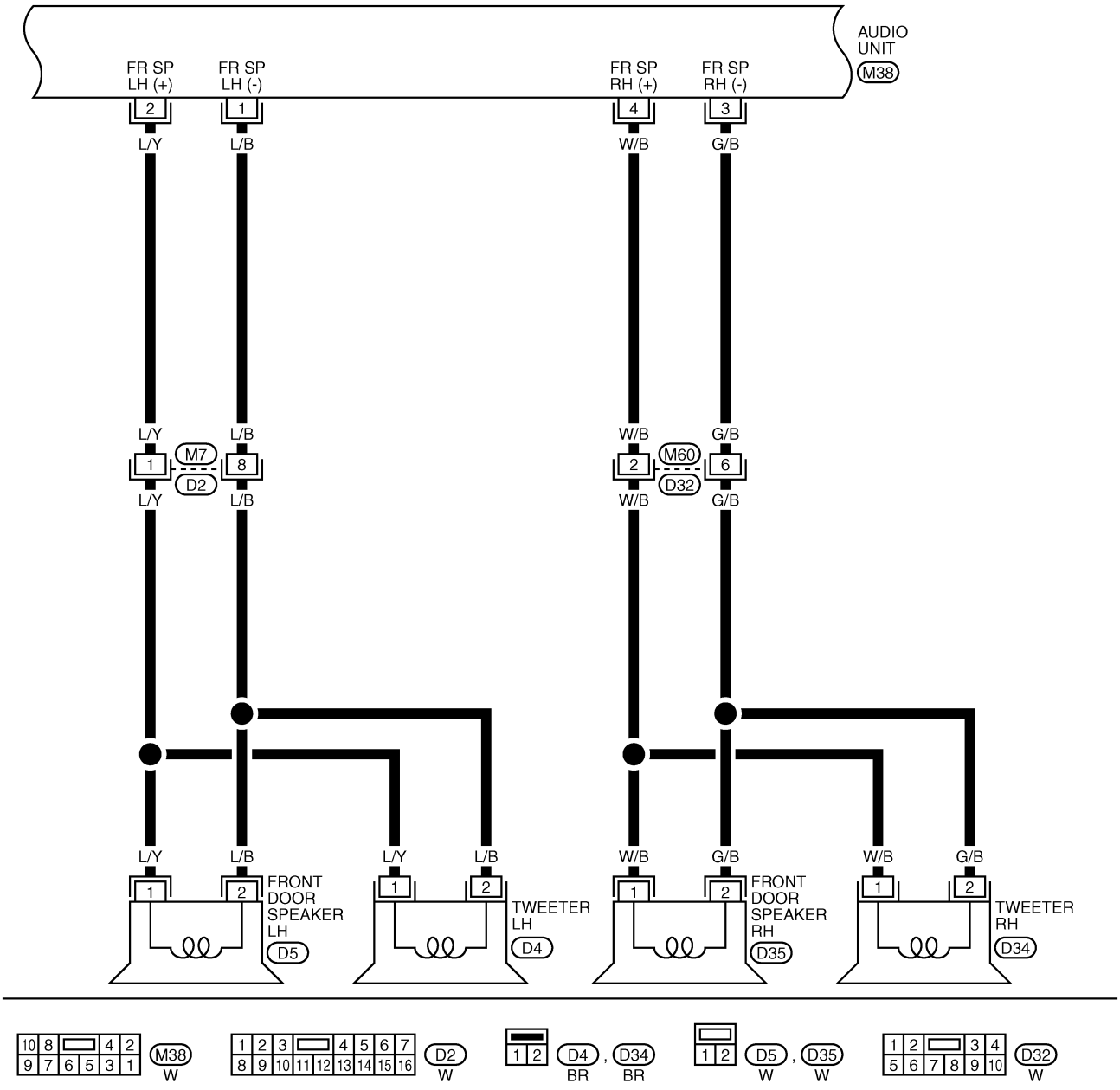
AV-AUDIO-02



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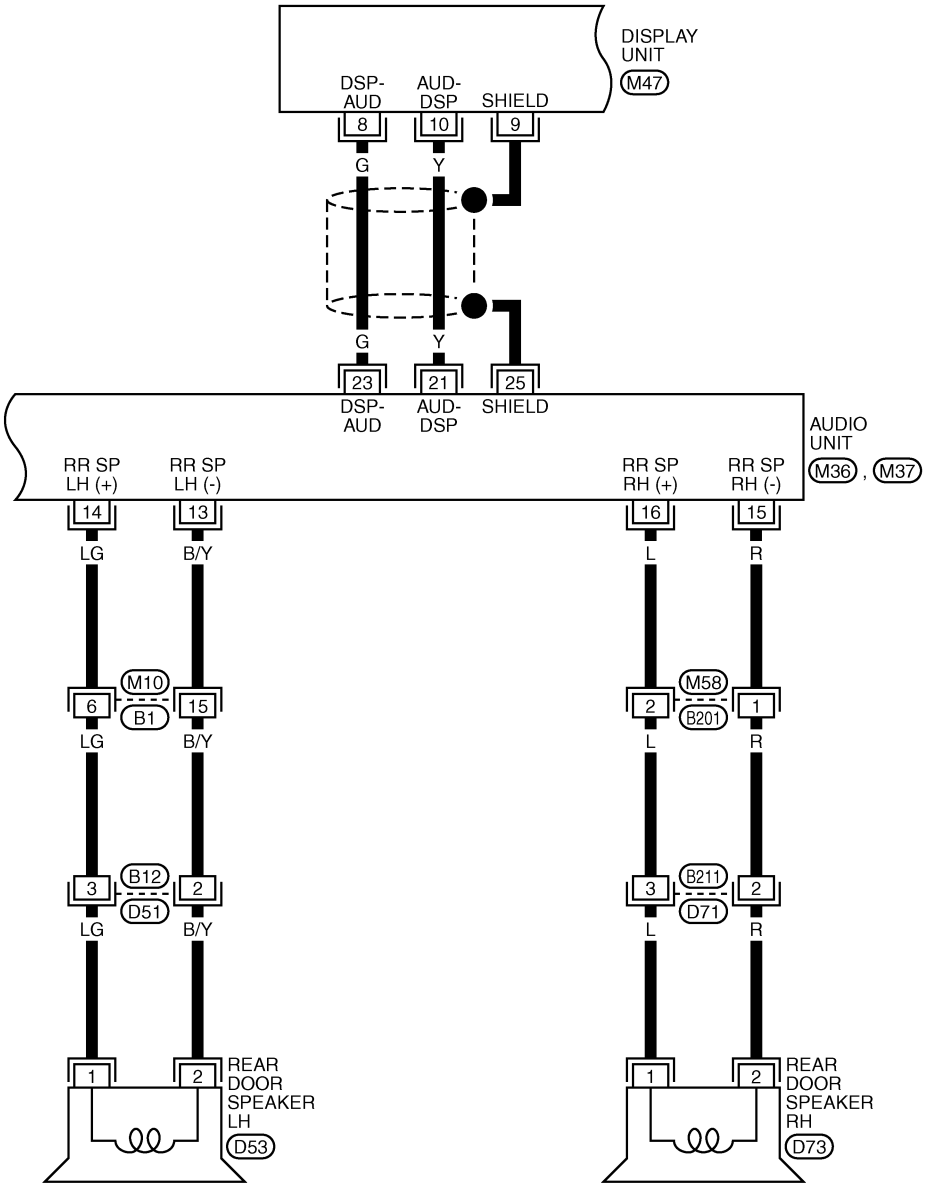
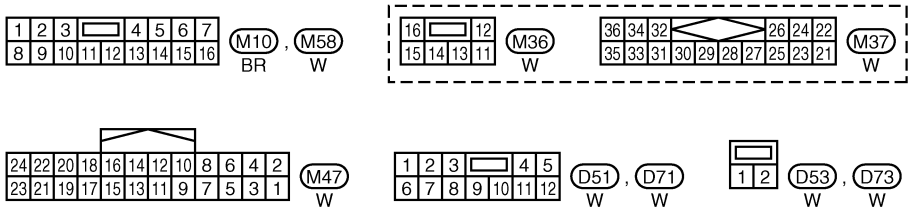
AV-AUDIO-03





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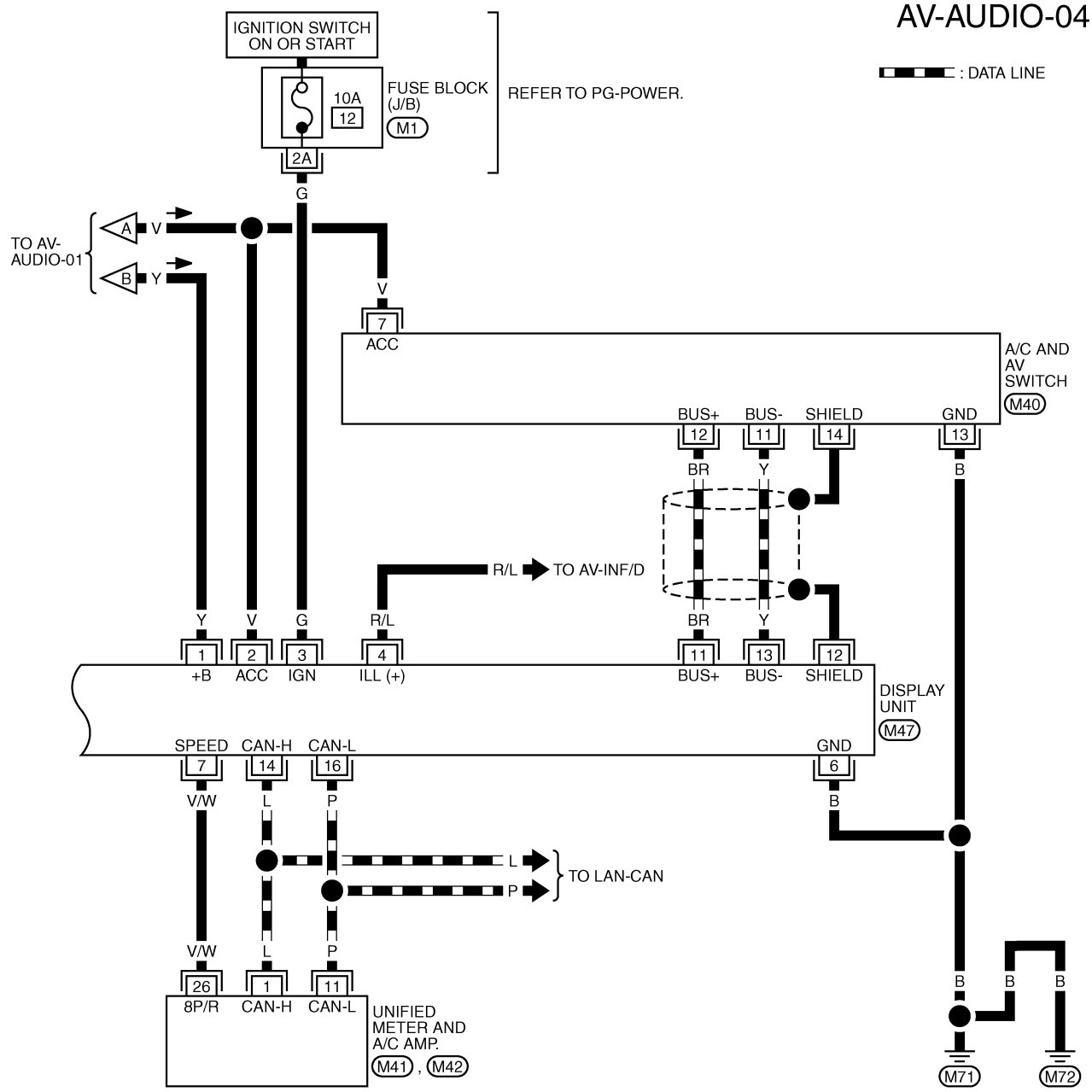
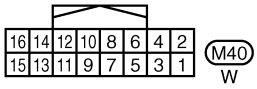
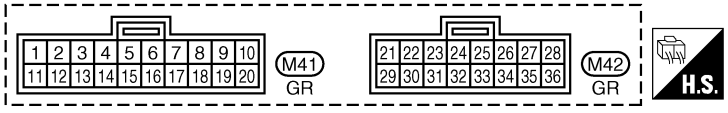
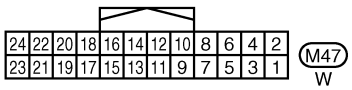
AV-AUDIO-04









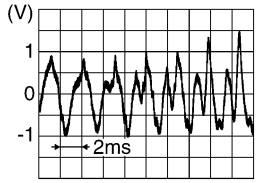
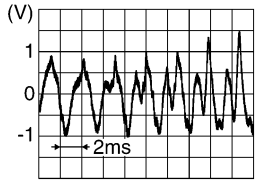
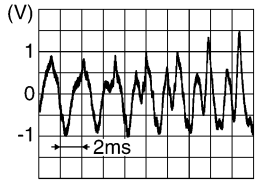
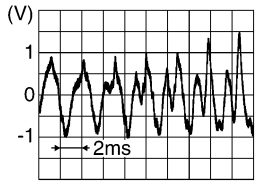
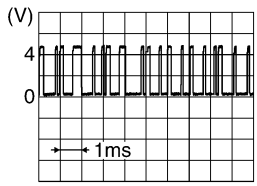
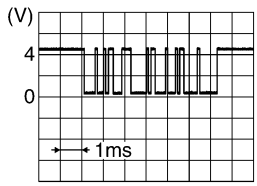
REFER TO THE FOLLOWING.

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

TKWM4658E

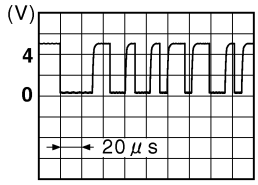
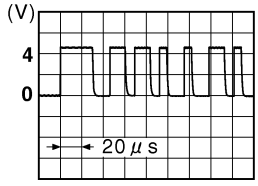
Terminals and Reference Value for Audio Unit

BKS0020L

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
2 (L/Y)	1 (L/B)	Audio signal front door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
4 (W/B)	3 (G/B)	Audio signal front door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
5 (G/W)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V
6 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
10 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
14 (LG)	13 (B/Y)	Audio signal rear door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
16 (L)	15 (R)	Audio signal rear door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
21 (Y)	Ground	Communication signal (AUD-DSP)	Output	ON	Operate audio volume switch	 SKIB3606E
23 (G)	Ground	Communication signal (DSP-AUD)	Input	ON	Operate audio volume switch	 SKIB3607E
25	—	Shield	—	—	—	—

Terminals and Reference Value for A/C and AV Switch

BKS0020N

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
7 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
11 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (BR)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
13 (B)	Ground	Ground	—	ON	—	Approx. 0 V
14	—	Shield	—	—	—	—

Terminals and Reference Value for Display Unit

BKS0020O

Refer to AV-52, "Terminals and Reference Value for Display Unit" .

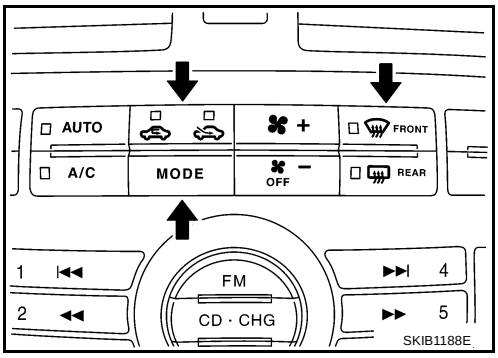
A/C and AV Switch Self-Diagnosis Function

BKS0020P

Performing self-diagnosis makes it possible to check operation of A/C and AV switch indicator (LED) and other switches.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch OFF.
2. With three switches (DEF, REC/FRE and MODE) pressed simultaneously, turn the ignition switch to ACC.



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 pressing the A/C and AV switch.

NOTE:

- Indicators (LED) of REC/FRE switch change to “FRE” → “REC” → “FRE” every time the REC/FRE switch is pressed. (These two do not turn on at the same 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.

Symptom Chart

BKS0020Q

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. 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 then determine the cause.
- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.
- 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-58, "Unable to Operate System with A/C and AV Switch" .

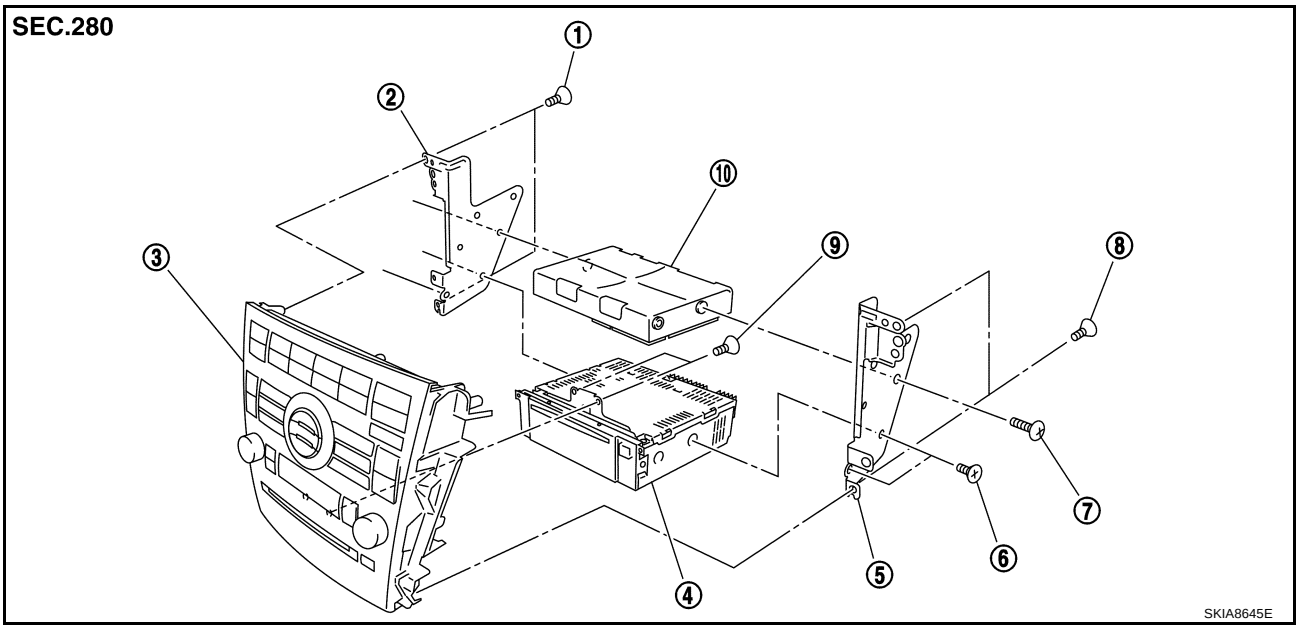
Symptom	Possible malfunction location
Audio system does not work properly.	● Audio unit power supply circuit ● Communication signal circuit between audio unit and display unit ● A/C and AV switch ● Audio unit
No sound can be heard from all speakers.	Audio unit
No sound can be heard from one or several speakers.	● Audio signal circuit between audio unit and speaker ● Speaker ● Tweeter ● Audio unit
No sound can be heard from radio or noise is caught.	● Antenna amp. ON signal circuit ● Antenna feeder ● Rear window antenna ● Antenna amp. ● Audio unit

NOTE:
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 a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

Removal and Installation of Audio Unit

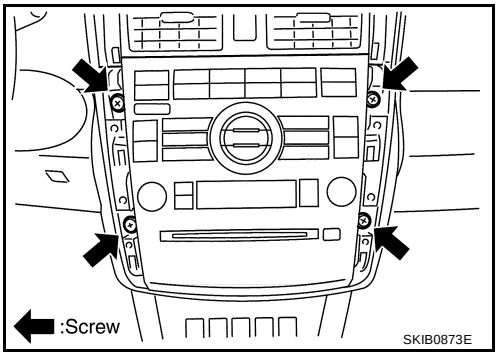
BKS0020Z



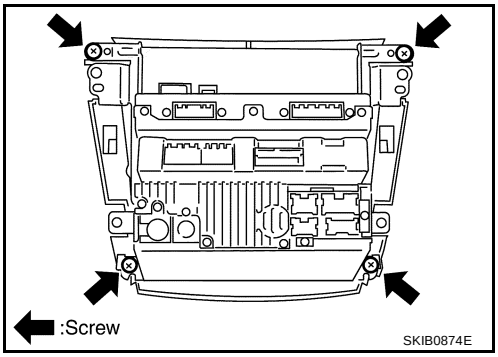
1. Screw
2. Bracket (LH)
3. A/C and AV switch
4. Audio unit
5. Bracket (RH)
6. Screw
7. Screw
8. Screws
9. Screw
10. Unified meter and A/C amp.

REMOVAL

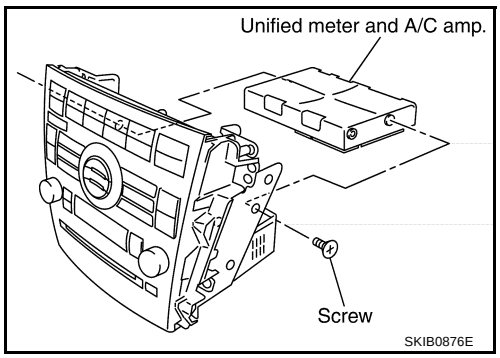
1. Remove instrument panel finishers (C, D). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4) and remove audio unit integral with A/C and AV switch.



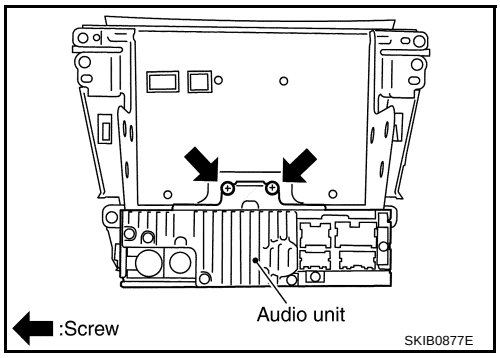
3. Remove screws (4).



4. Remove screws (2) and remove unified meter and A/C amp. from bracket.

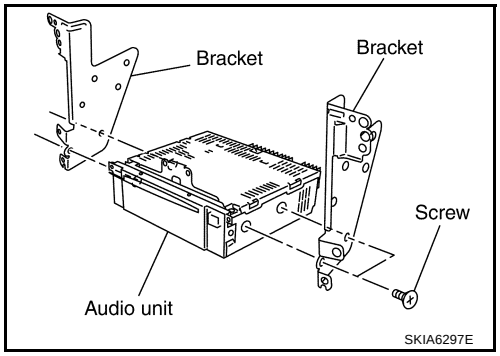


5. Remove screws (2) and remove audio unit with bracket.



6. Remove screws (4) and remove bracket.

CAUTION:
Be careful not to allow foreign material to enter from CD slot.



INSTALLATION

Note the following, and installation is the reverse order of removal.

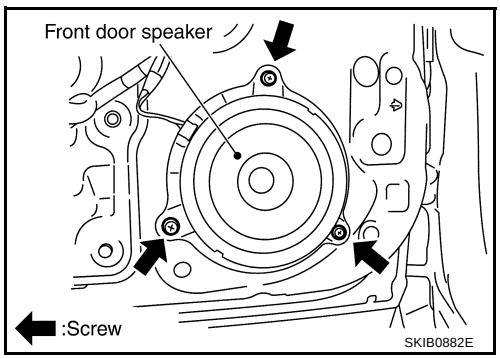
CAUTION:
Unified meter and A/C amp. screws (2) are different from other securing screws. Never confuse them when installing.

Removal and Installation of Front Door Speaker

BKS00211

REMOVAL

1. Remove front door finisher. Refer to EI-35, "DOOR FINISHER" .
2. Remove screws (3) and remove front door speaker.



INSTALLATION

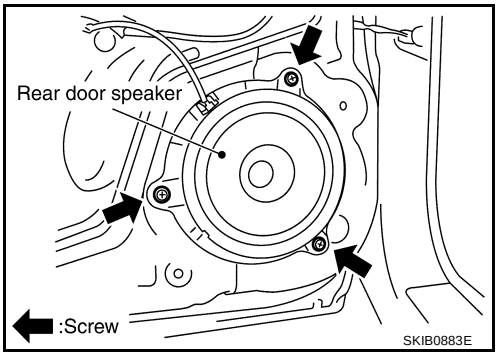
Installation is the reverse order of removal.

Removal and Installation of Rear Door Speaker

BKS00212

REMOVAL

1. Remove rear door finisher. Refer to EI-35, "DOOR FINISHER" .
2. Remove screws (3) and remove rear door speaker.



INSTALLATION

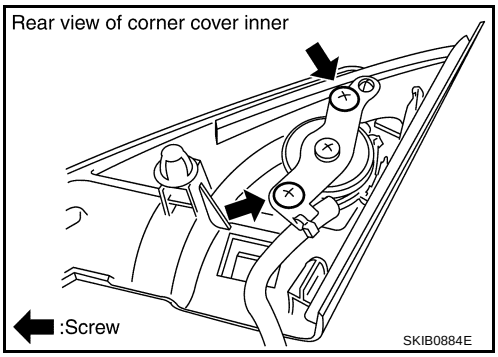
Installation is the reverse order of removal.

Removal and Installation of Tweeter

BKS00213

REMOVAL

1. Remove corner cover inner.
2. Remove screws (2) and remove tweeter.



INSTALLATION

Installation is the reverse order of removal.

AUDIO (WITH INTEGRATED COLOR DISPLAY SYSTEM)

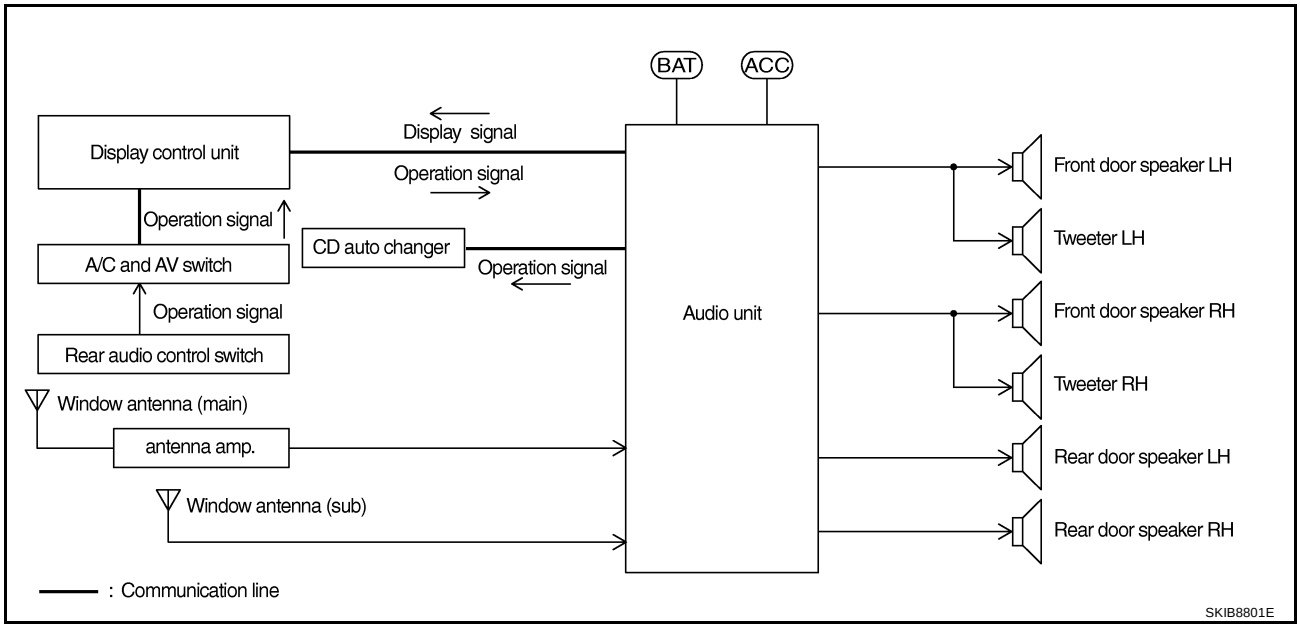
PFP:28185

System Description

BKS0028N

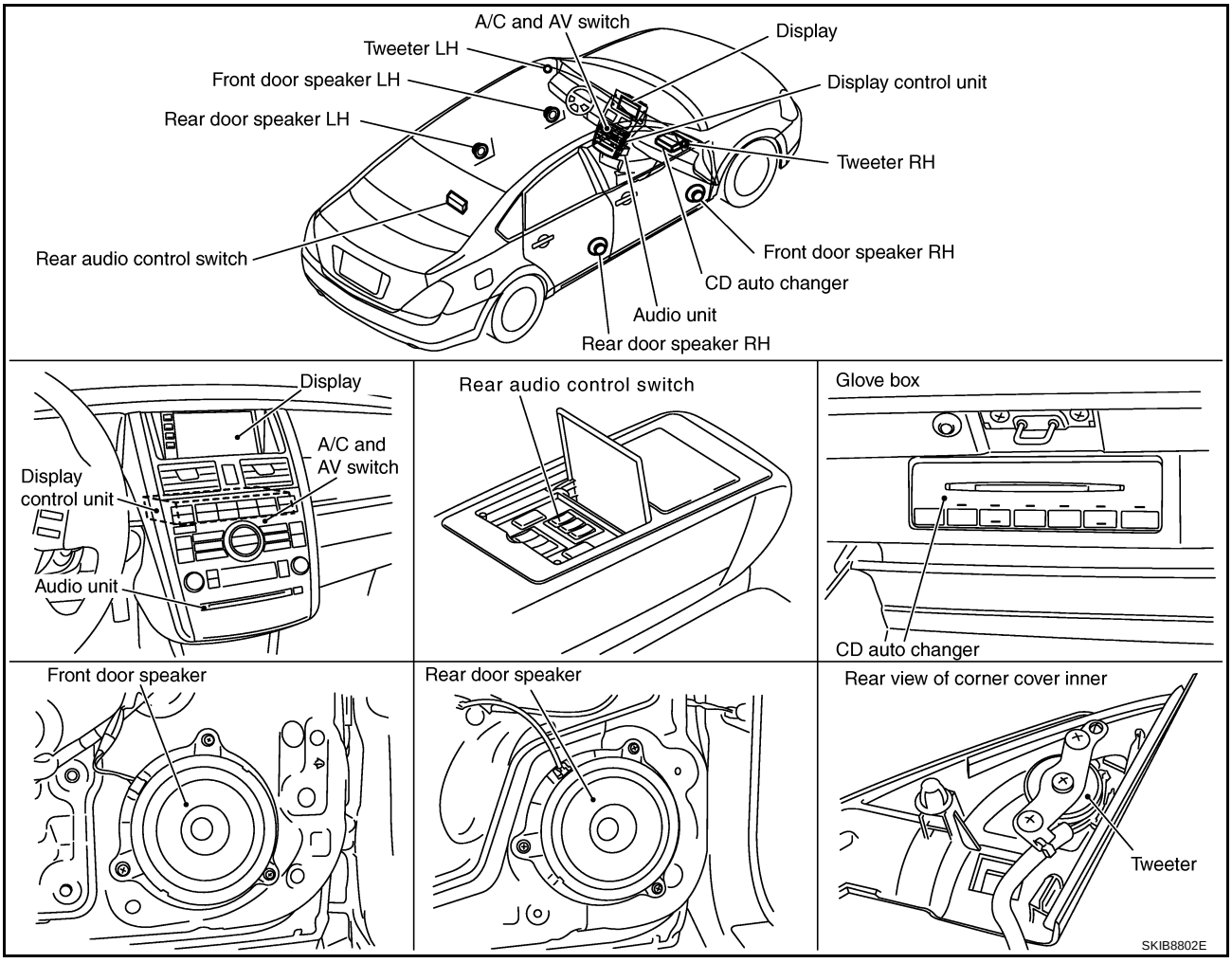
AUDIO SYSTEM

- The audio system with the A/C and AV switch (operation panel switch) and the audio unit are designed separately has been adopted.
- Operation signal from A/C and AV switch is transmitted to audio unit through display control unit with the communication line, and it controls the audio system.
- Operation signal from rear audio control switch is transmitted to audio unit through A/C and AV switch and display control unit, and it controls the audio system.
- Display signal from audio unit is transmitted to display control unit through the communication line, and then the operating state of the audio system is displayed in the screen.
- 6-CD auto changer was installed in the glove box.
- CD auto changer is connected with audio unit through the communication line, and the operation signal from A/C and AV switch is transmitted to CD auto changer through audio unit.
- A/C and AV switch can perform the operation check of each switch by starting the self-diagnosis. For details, refer to AV-32, "A/C and AV Switch Self-Diagnosis Function" .
- For Audio System operation information, refer to Owner's Manual.



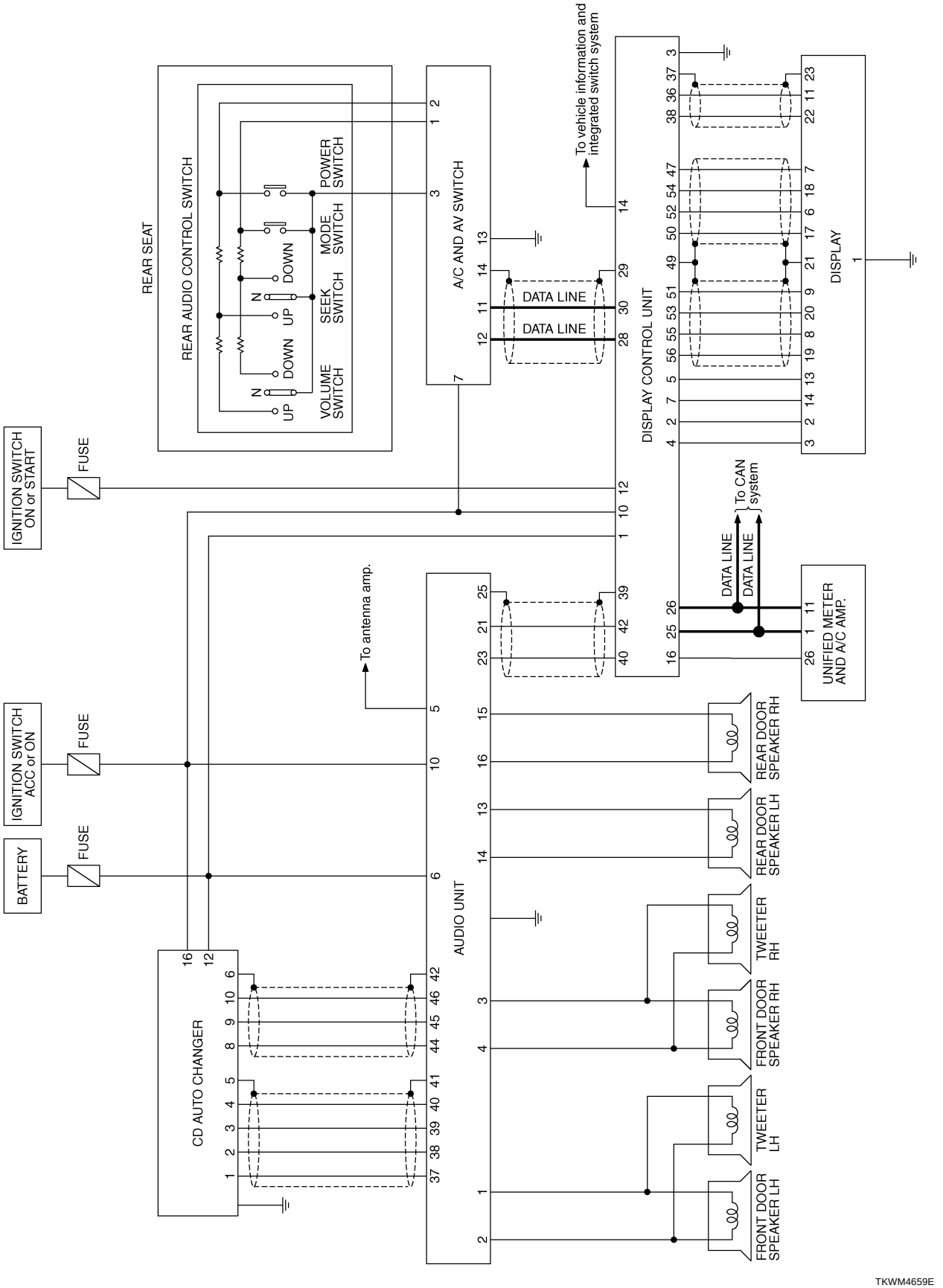
Component Parts Location

BKS0028O



Schematic

BKS0028P



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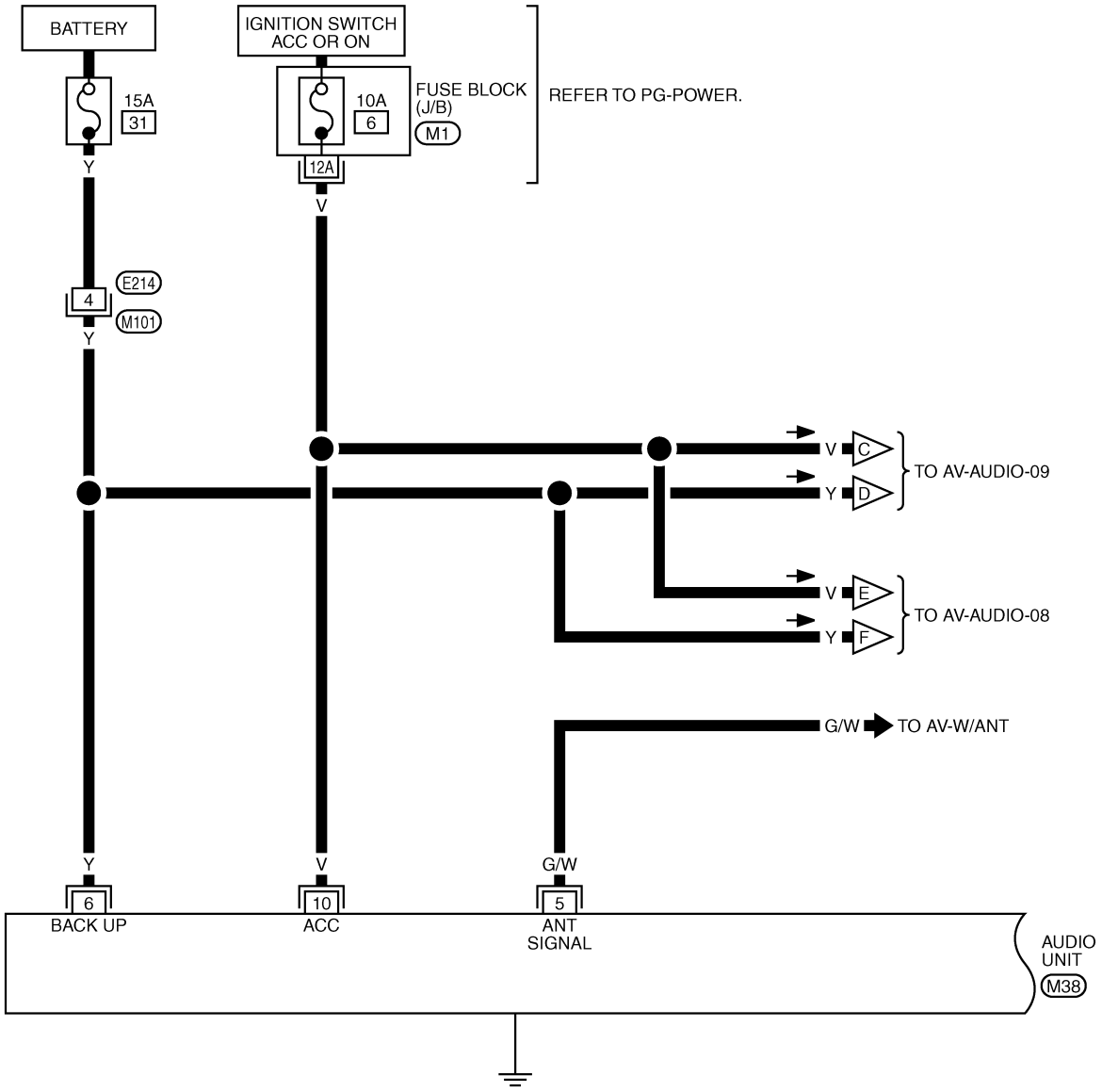
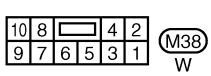
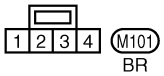
Wiring Diagram — AUDIO —

BKS0028Q

AV-AUDIO-05



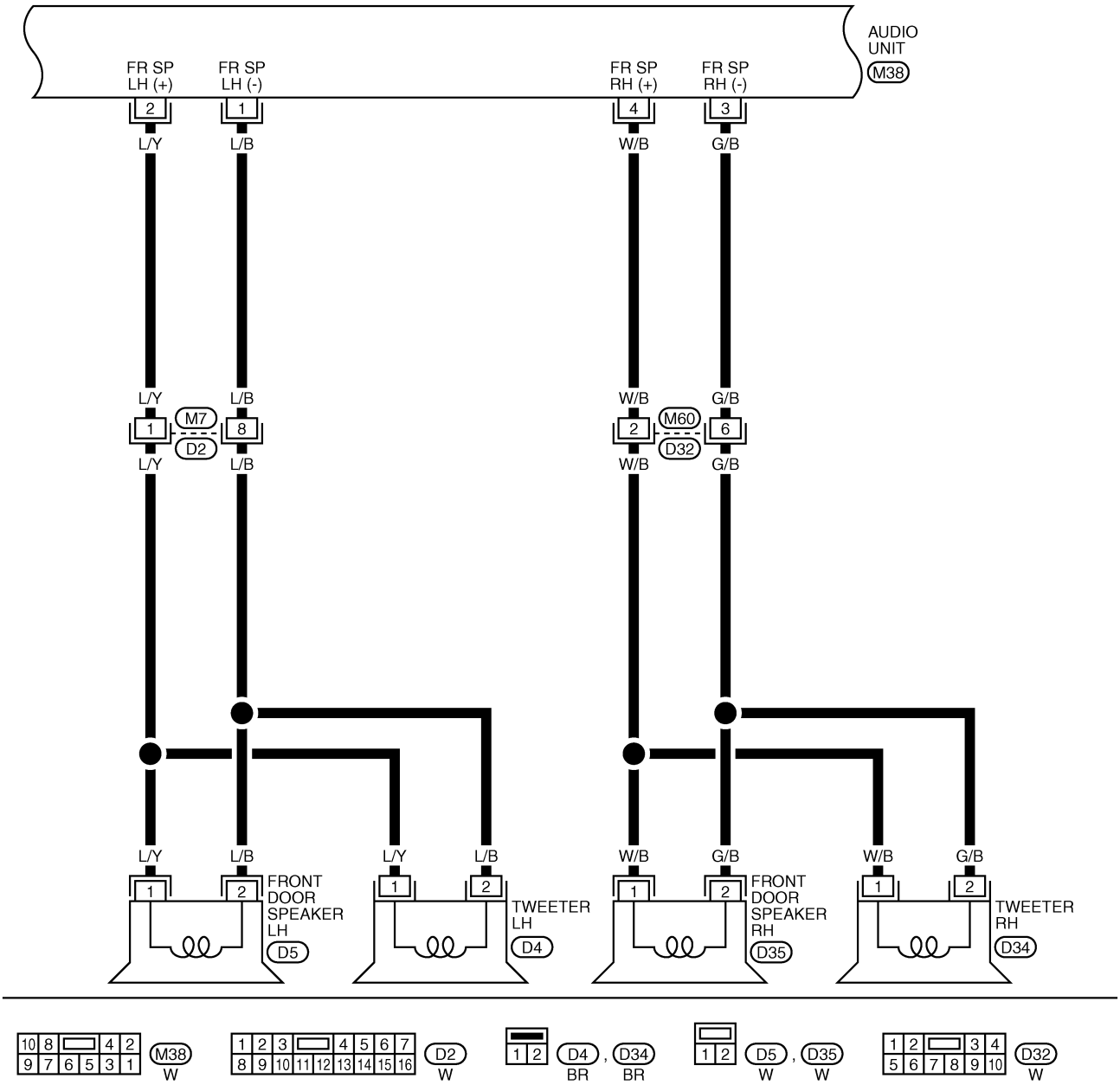




REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM4660E

AV-AUDIO-06



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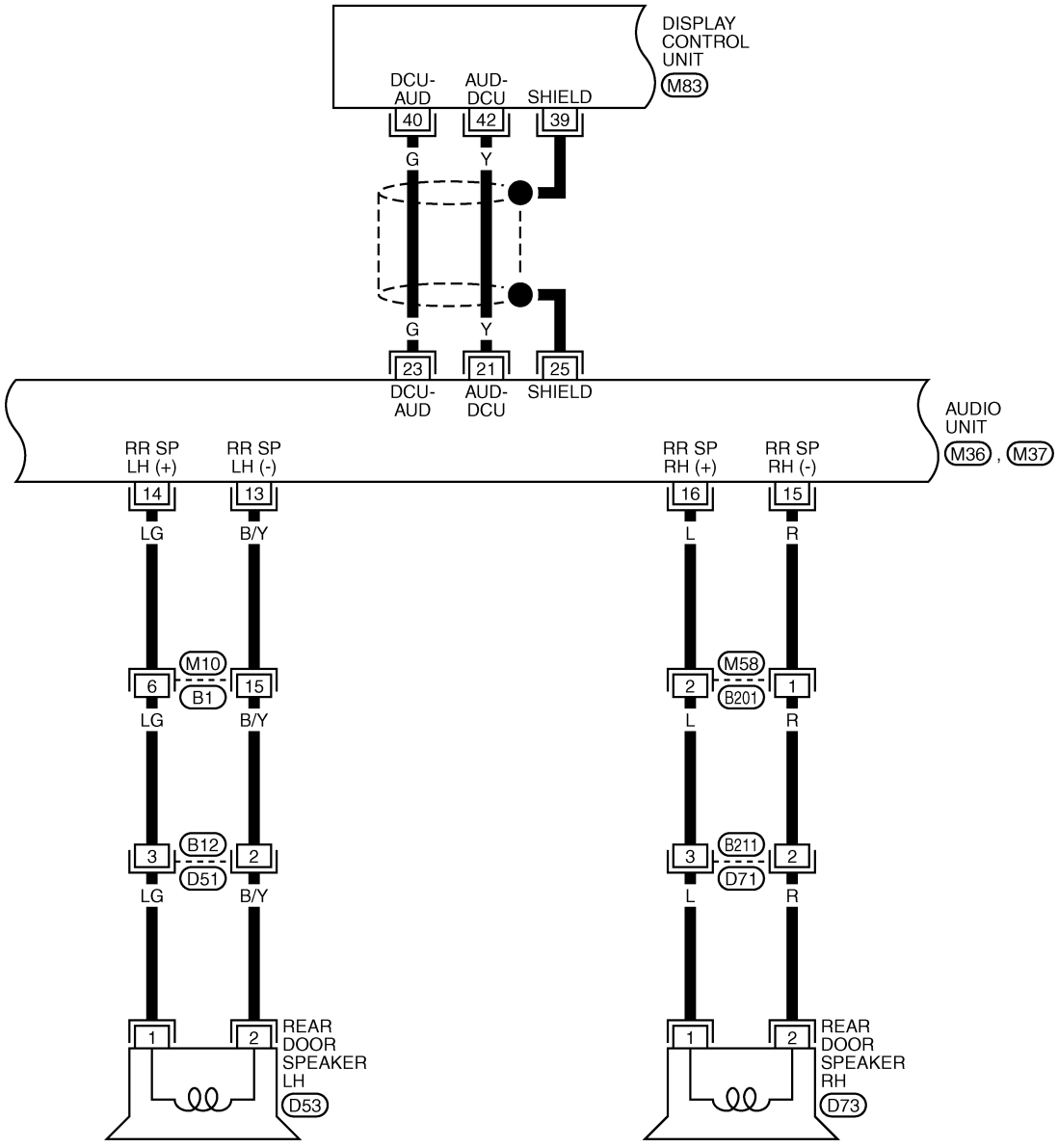
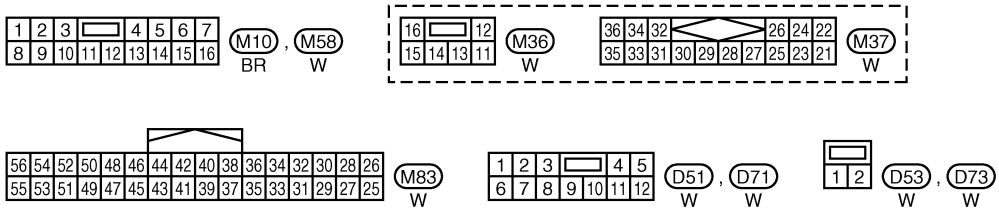
AV-AUDIO-07





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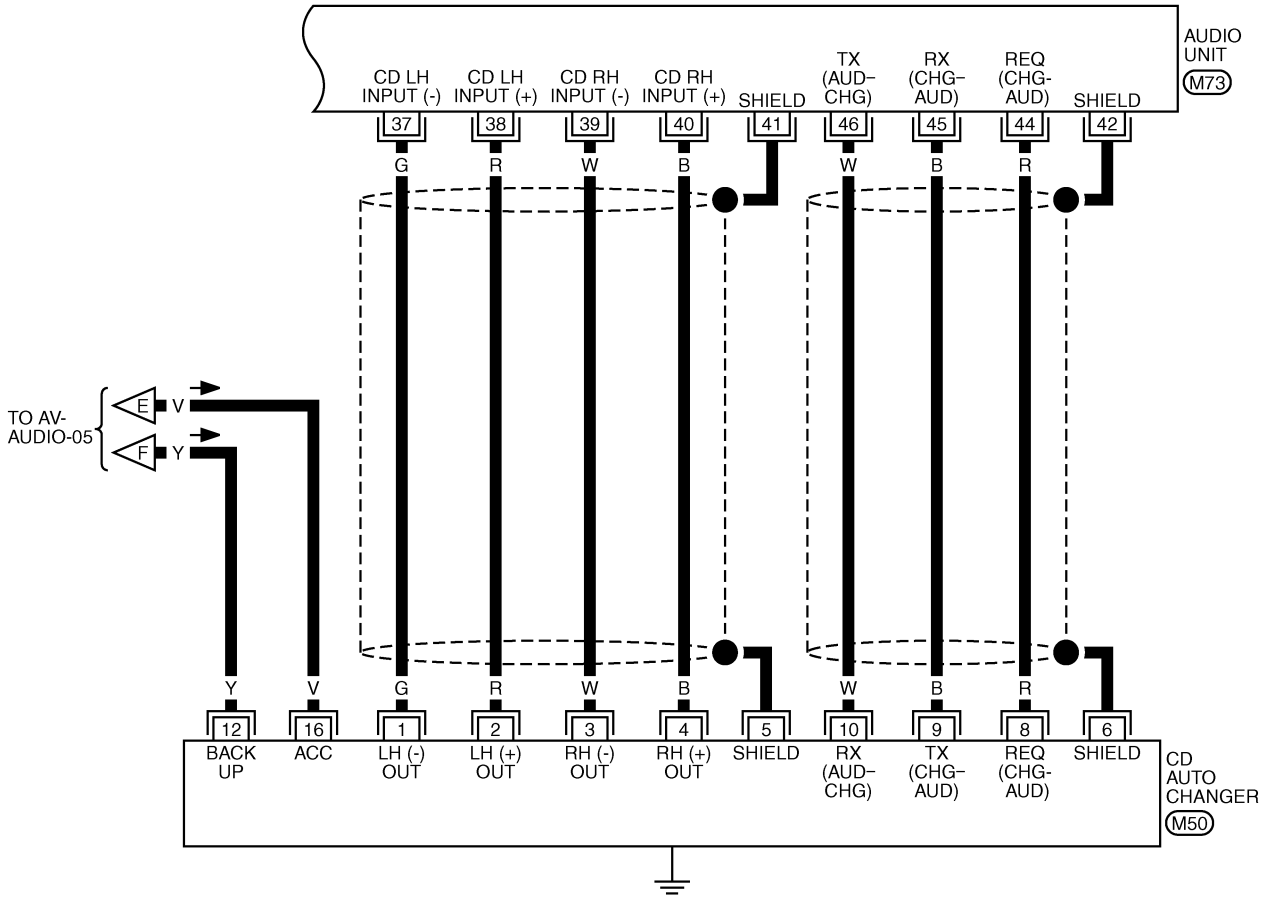
AV-AUDIO-08



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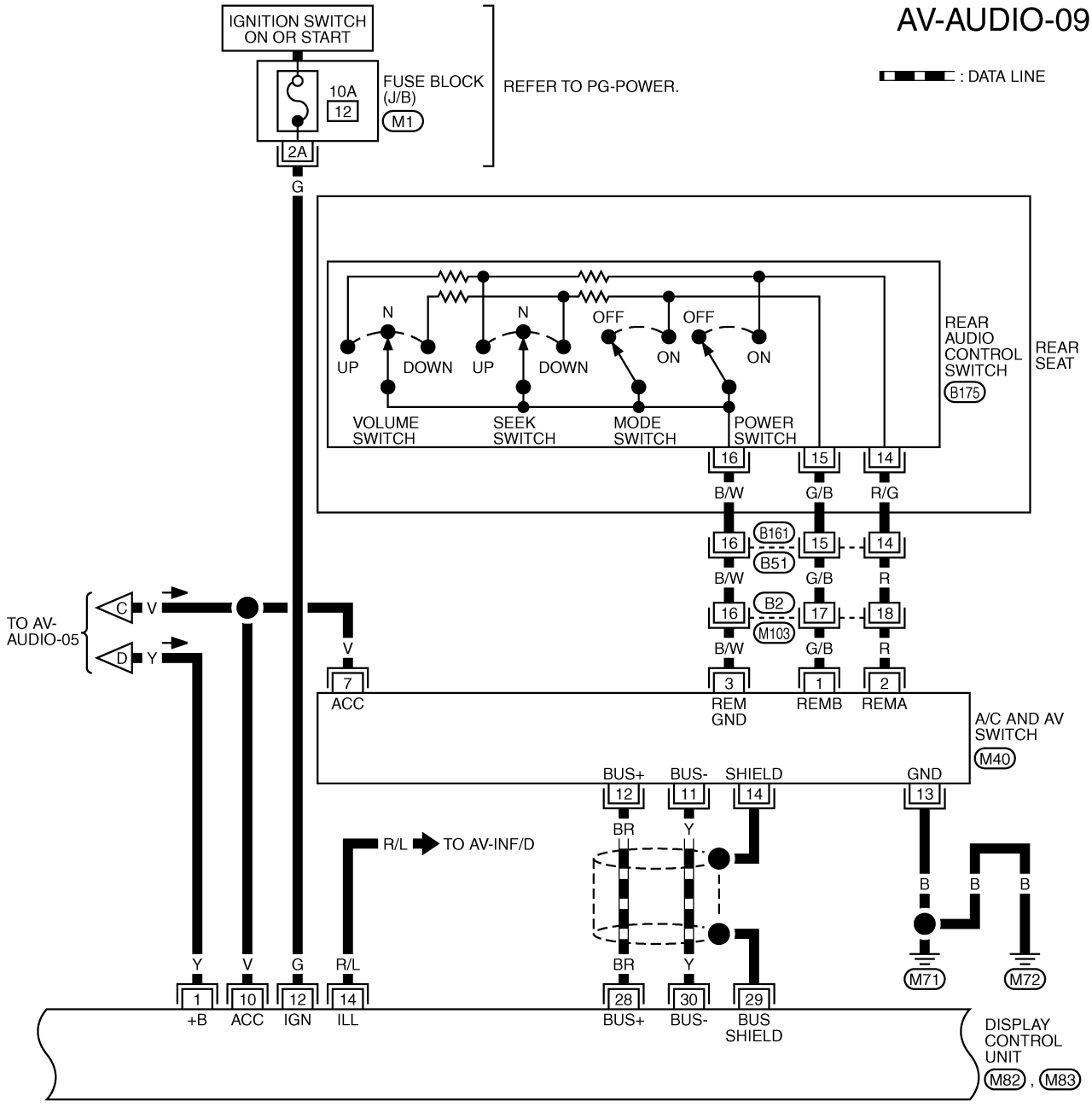
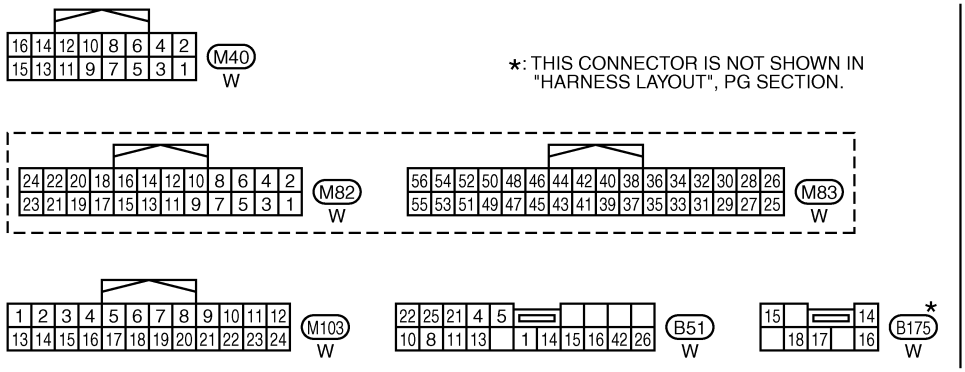
AV-AUDIO-09





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

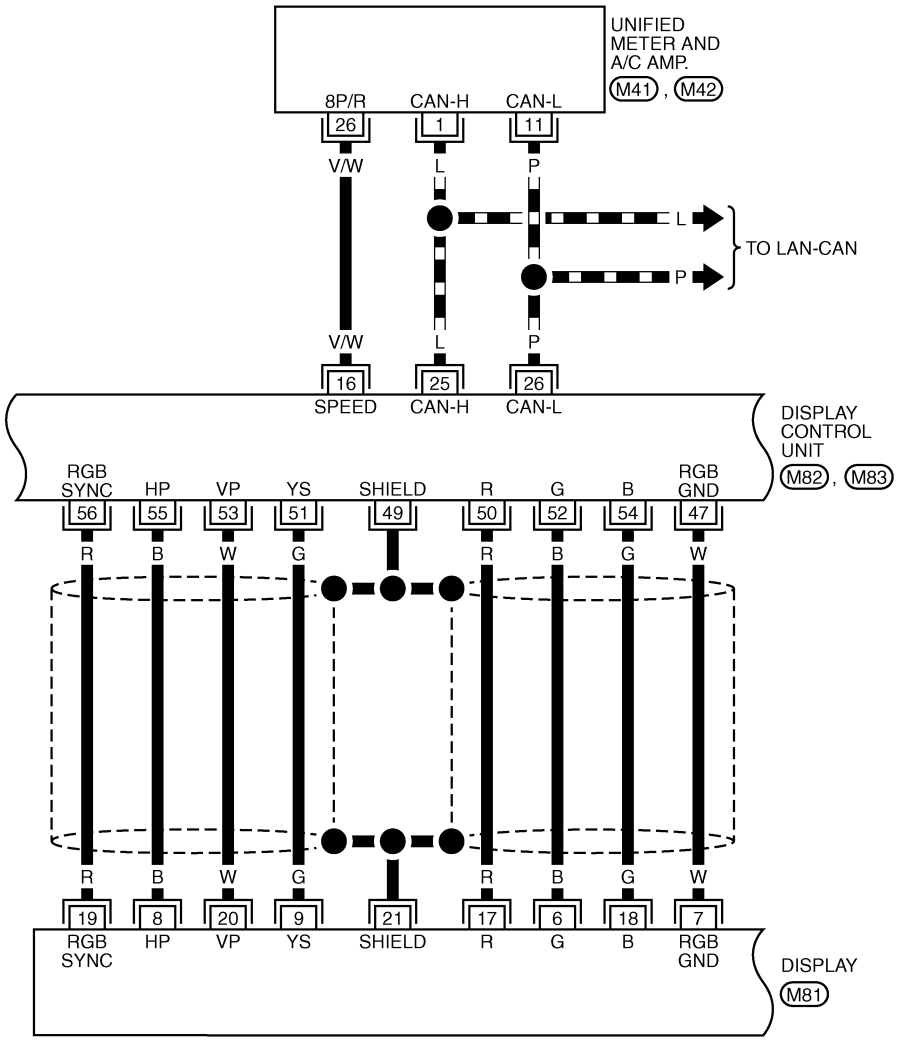
REFER TO THE FOLLOWING.

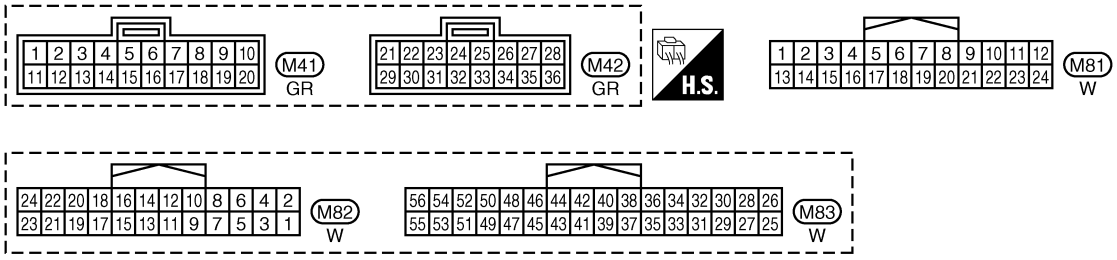
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM4664E

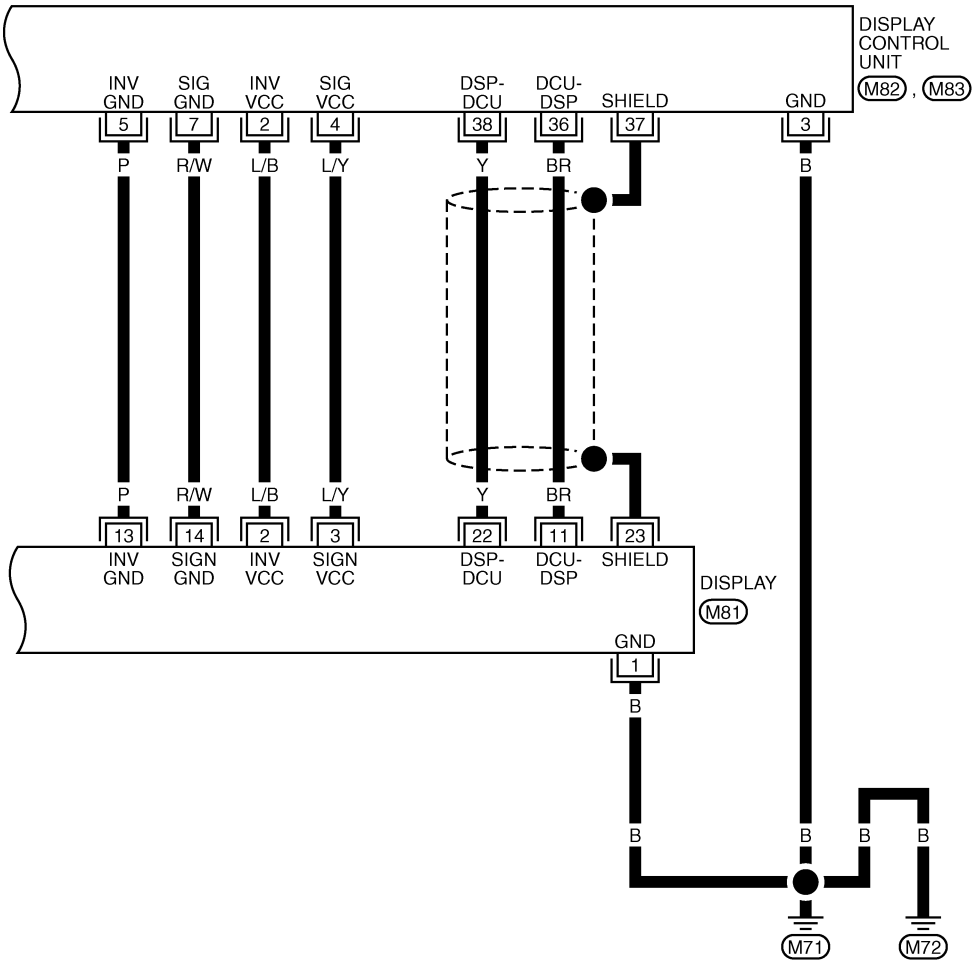
AV-AUDIO-10

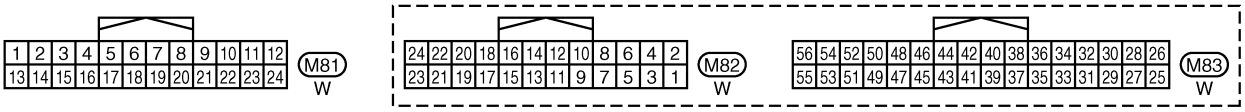
: DATA LINE





TKWM4665E

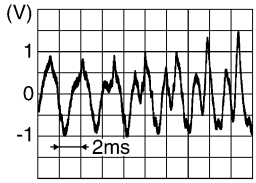
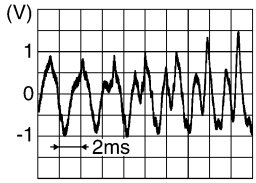
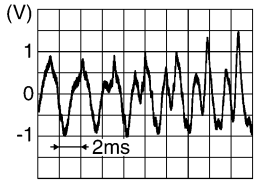
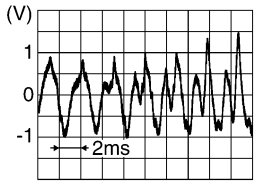
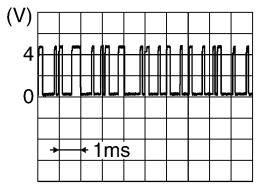
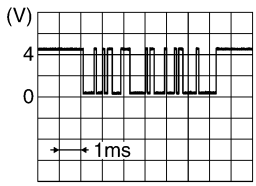

DISPLAY CONTROL UNIT
M82 , M83
INV GND 5
SIG GND 7
INV VCC 2
SIG VCC 4
DSP-DCU 38
DCU-DSP 36
SHIELD 37
GND 3
P
R/W
L/B
L/Y
Y
BR
B
P
R/W
L/B
L/Y
Y
BR
13
14
2
3
22
11
23
INV GND
SIGN GND
INV VCC
SIGN VCC
DSP-DCU
DCU-DSP
SHIELD
DISPLAY
M81
GND
1
B
B
B
B
B
M71
M72

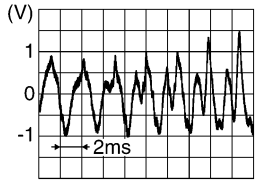
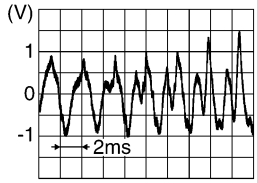
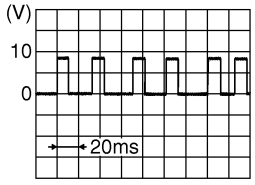
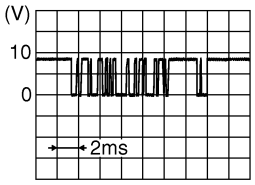
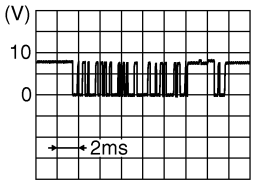

1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23 24
M81
W
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M82
W
56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26
55 53 51 49 47 45 43 41 39 37 35 33 31 29 27 25
M83
W

TKWM4666E

Terminals and Reference Value for Audio Unit

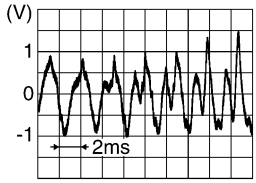
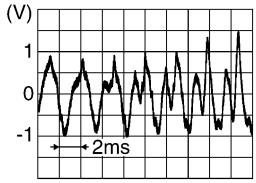
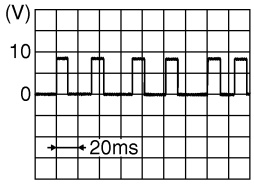
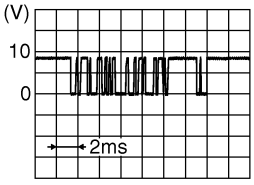
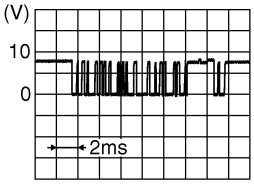
BKS0028R

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
2 (L/Y)	1 (L/B)	Audio signal front door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
4 (W/B)	3 (G/B)	Audio signal front door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
5 (G/W)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V
6 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
10 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
14 (LG)	13 (B/Y)	Audio signal rear door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
16 (L)	15 (R)	Audio signal rear door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
21 (Y)	Ground	Communication signal (AUD-DCU)	Output	ON	Operate audio volume switch	 SKIB3606E
23 (G)	Ground	Communication signal (DCU-AUD)	Input	ON	Operate audio volume switch	 SKIB3607E
25	—	Shield	—	—	—	—

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
38 (R)	37 (G)	Audio signal LH	Input	ON	Play back CD on CD auto changer	 SKIB3609E
40 (B)	39 (W)	Audio signal RH	Input	ON	Play back CD on CD auto changer	 SKIB3609E
41	—	Shield	—	—	—	—
42	—	Shield	—	—	—	—
44 (R)	Ground	Communication signal REQ (CHG-AUD)	Input	ON	When setting to CD auto changer mode	 SKIB7338E
45 (B)	Ground	Communication signal RX (CHG-AUD)	Input	ON	When setting to CD auto changer mode	 SKIB7337E
46 (W)	Ground	Communication signal TX (AUD-CHG)	Output	ON	When setting to CD auto changer mode	 SKIB7336E

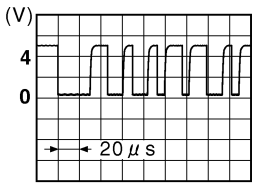
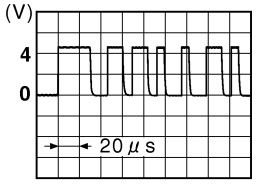
Terminals and Reference Value for CD Auto Changer

BKS00291

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
2 (R)	1 (G)	Audio signal LH	Output	ON	Play back CD on CD auto changer	 SKIB3609E
4 (B)	3 (W)	Audio signal RH	Output	ON	Play back CD on CD auto changer	 SKIB3609E
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (R)	Ground	Communication signal REQ (CHG-AUD)	Output	ON	When setting to CD auto changer mode	 SKIB7338E
9 (B)	Ground	Communication signal TX (CHG-AUD)	Output	ON	When setting to CD auto changer mode	 SKIB7337E
10 (W)	Ground	Communication signal RX (AUD-CHG)	Input	ON	When setting to CD auto changer mode	 SKIB7336E
12 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
16 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage

Terminals and Reference Value for A/C and AV Switch

BKS0028S

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (G/B)	3 (B/W)	Remote control signal A	Input	ON	Press and hold MODE switch	Approx. 0 V
					Press and hold SEEK DOWN switch	Approx. 1.7 V
					Press and hold VOL DOWN switch	Approx. 3.3 V
					Except for above	Approx. 5 V
2 (R)	3 (B/W)	Remote control signal B	Input	ON	Press and hold POWER switch	Approx. 0 V
					Press and hold SEEK UP switch	Approx. 1.7 V
					Press and hold VOL UP switch	Approx. 3.3 V
					Except for above	Approx. 5 V
3 (B/W)	Ground	Remote control ground	—	ON	—	Approx. 0 V
7 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
11 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (BR)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
13 (B)	Ground	Ground	—	ON	—	Approx. 0 V
14	—	Shield	—	—	—	—

Terminals and Reference Value for Display Control Unit

BKS0028T

Refer to AV-77, "Terminals and Reference Value for Display Control Unit" .

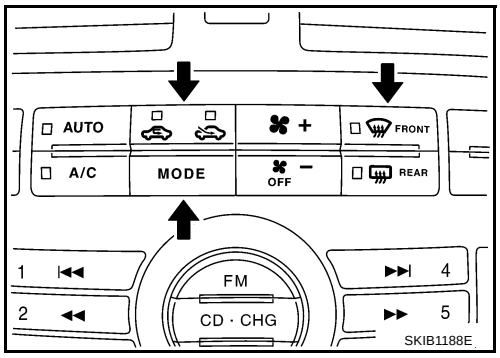
A/C and AV Switch Self-Diagnosis Function

BKS0028U

Performing self-diagnosis makes it possible to check operation of A/C and AV switch indicator (LED) and other switches.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch OFF.
2. With three switches (DEF, REC/FRE and MODE) pressed simultaneously, turn the ignition switch to ACC.



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 pressing the A/C and AV switch.
- Continuity of the switches by sounding the buzzer when pressing the rear audio control switch.

NOTE:

- Indicators (LED) of REC/FRE switch change to “FRE” → “REC” → “FRE” every time the REC/FRE switch is pressed. (These two do not turn on at the same 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.

Symptom Chart

BKS0028V

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. 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 then determine the cause.
- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.
- 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-97, "Unable to Operate System with A/C and AV Switch" .

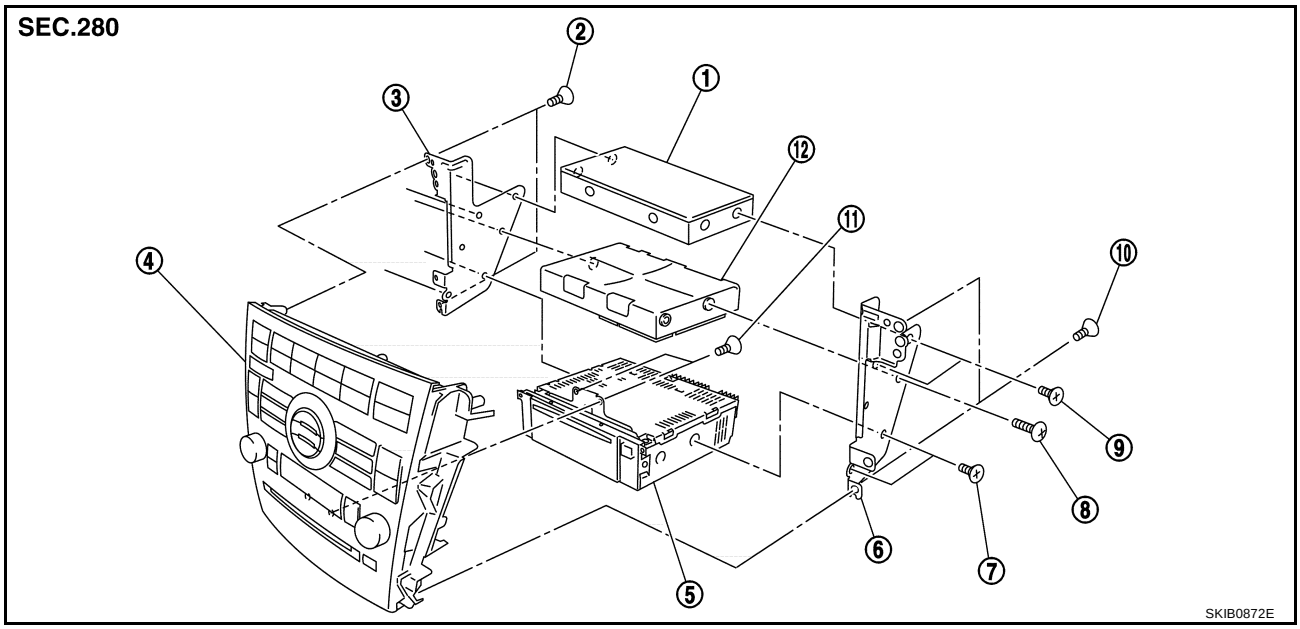
Symptom	Possible malfunction location
Audio system does not work properly.	● Audio unit power supply circuit ● Communication signal circuit between audio unit and display unit ● A/C and AV switch ● Audio unit
CD auto changer does not work properly.	● CD auto changer power supply circuit ● Communication signal circuit between audio unit and CD auto changer ● CD auto changer ● Audio unit
No sound can be heard from all speakers.	Audio unit
No sound can be heard from one or several speakers.	● Audio signal circuit between audio unit and speaker ● Speaker ● Tweeter ● Audio unit
No sound can be heard from radio or noise is caught.	● Antenna amp. ON signal circuit ● Antenna feeder ● Rear window antenna ● Antenna amp. ● Audio unit
Unable to operate audio system with rear audio control switch.	● Remote control signal circuit between rear audio control switch and A/C and AV switch ● Rear audio control switch ● A/C and AV switch

NOTE:
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 a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

Removal and Installation of Audio Unit

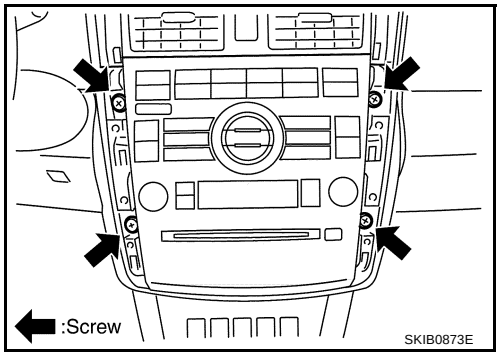
BKS0028W



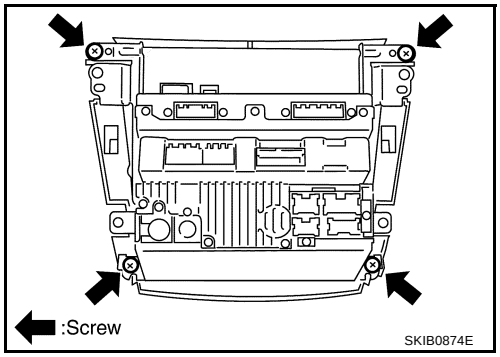
1. Display control unit
2. Screws
3. Bracket (LH)
4. A/C and AV switch
5. Audio unit
6. Bracket (RH)
7. Screws
8. Screws
9. Screws
10. Screws
11. Screws
12. Unified meter and A/C amp.

REMOVAL

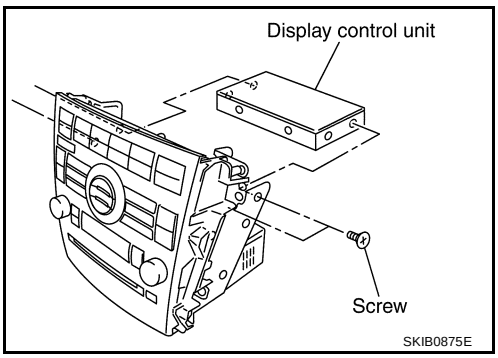
1. Remove instrument panel finishers (C, D). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4) and remove audio unit integral with A/C and AV switch.



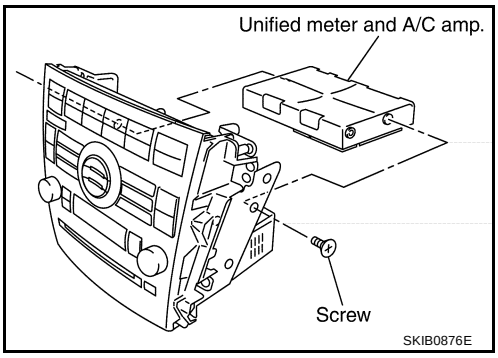
3. Remove screws (4).



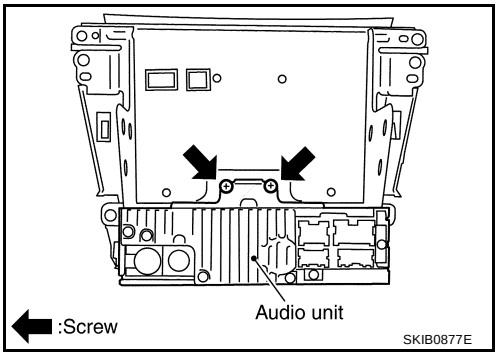
4. Remove screws (4) and remove display control unit from bracket.



5. Remove screws (2) and remove unified meter and A/C amp. from bracket.



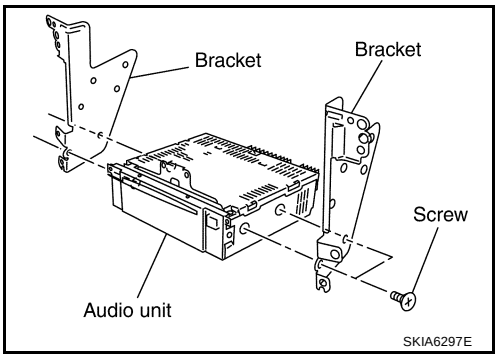
6. Remove screws (2) and remove audio unit with bracket.



7. Remove screws (4) and remove bracket.

CAUTION:

Be careful not to allow foreign material to enter from CD slot.



INSTALLATION

Note the following, and installation is the reverse order of removal.

CAUTION:

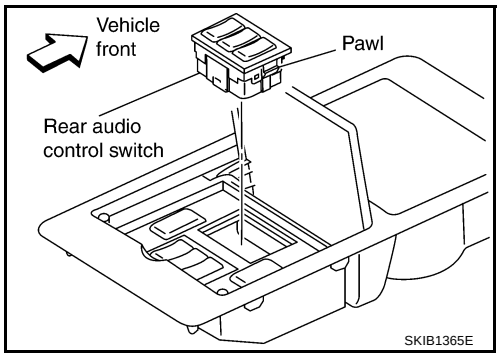
Unified meter and A/C amp. screws (2) are different from other securing screws. Never confuse them when installing.

Removal and Installation of Rear Audio Control Switch

BKS002CZ

REMOVAL

1. Remove tray box from the center armrest. Refer to SE-117, "Removal and Installation of Seatback" .
2. Disconnect connector.
3. Push pawl on reverse side and remove the rear audio control switch.



INSTALLATION

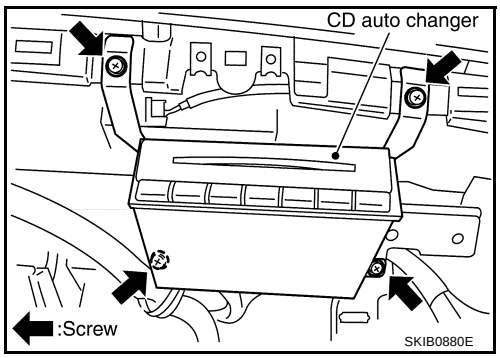
Installation is the reverse order of removal.

Removal and Installation of CD Auto Changer

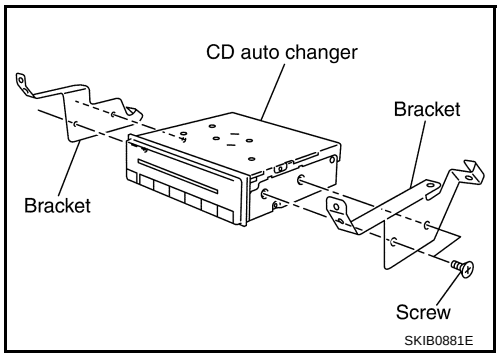
BKS0028X

REMOVAL

1. Remove passenger instrument panel (lower). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4) and disconnect connector, and remove CD auto changer.



3. Remove screws (4) and remove bracket.



INSTALLATION

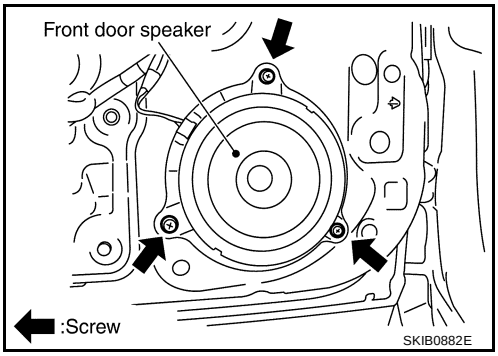
Installation is the reverse order of removal.

Removal and Installation of Front Door Speaker

BKS0028Y

REMOVAL

1. Remove front door finisher. Refer to EI-35, "DOOR FINISHER" .
2. Remove screws (3) and remove front door speaker.



INSTALLATION

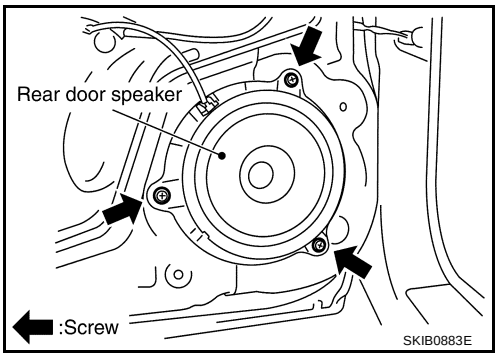
Installation is the reverse order of removal.

Removal and Installation of Rear Door Speaker

BKS0028Z

REMOVAL

1. Remove rear door finisher. Refer to EI-35, "DOOR FINISHER" .
2. Remove screws (3) and remove rear door speaker.



INSTALLATION

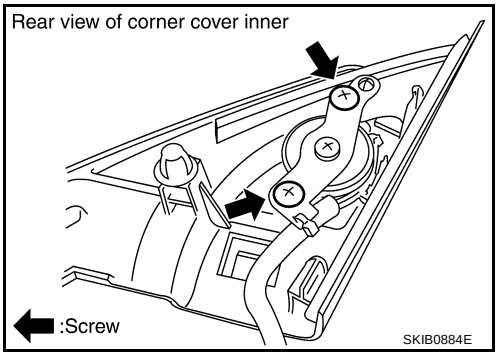
Installation is the reverse order of removal.

Removal and Installation of Tweeter

BKS00290

REMOVAL

1. Remove corner cover inner.
2. Remove screws (2) and remove tweeter.



INSTALLATION

Installation is the reverse order of removal.

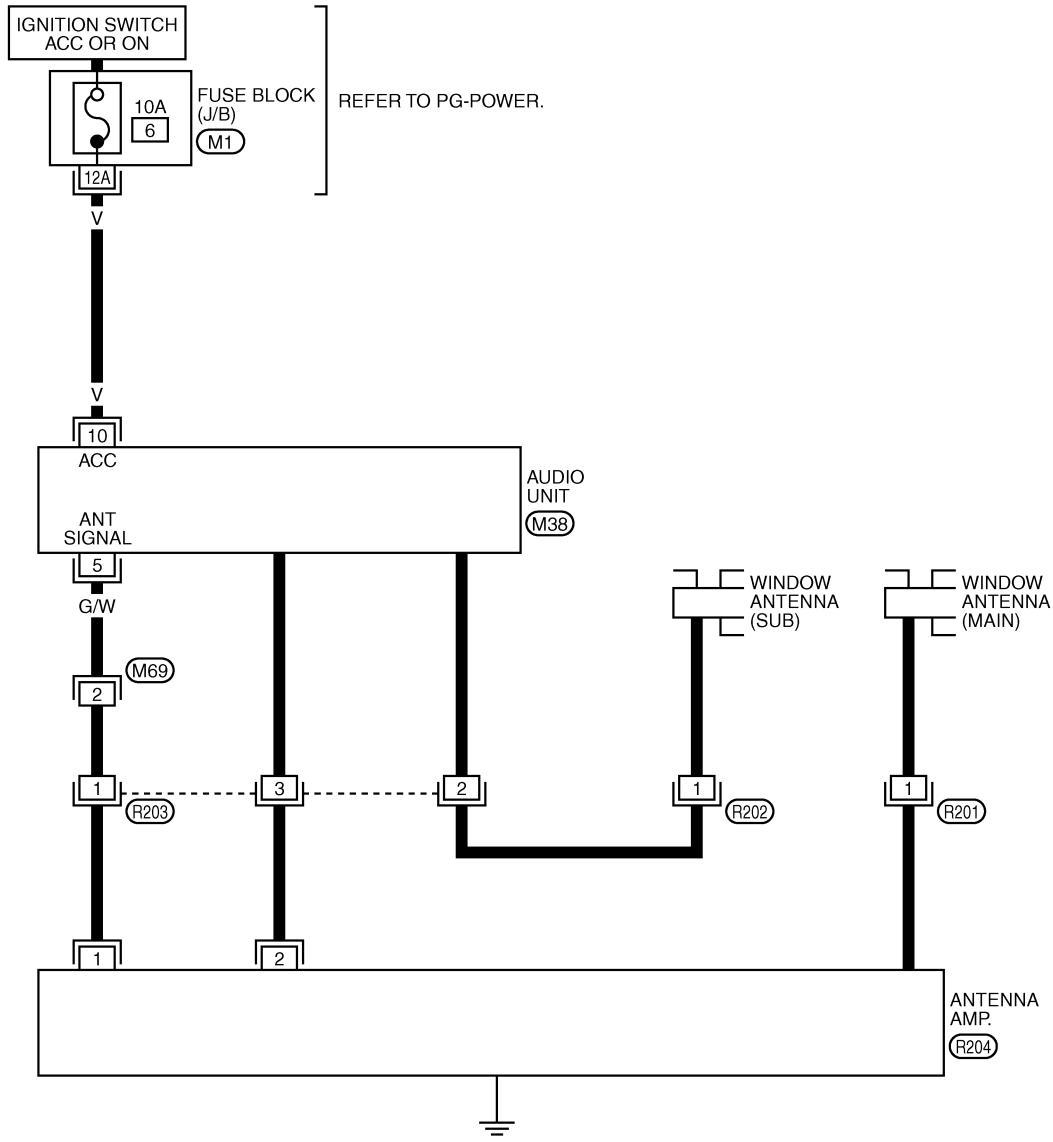
AUDIO ANTENNA

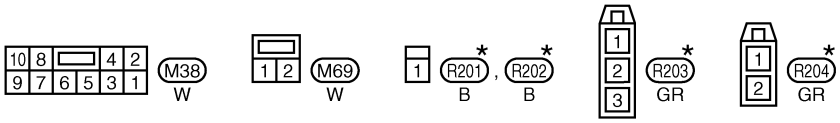
PFP:28200

Wiring Diagram — W/ANT —

BKS0021U

AV-W/ANT-01





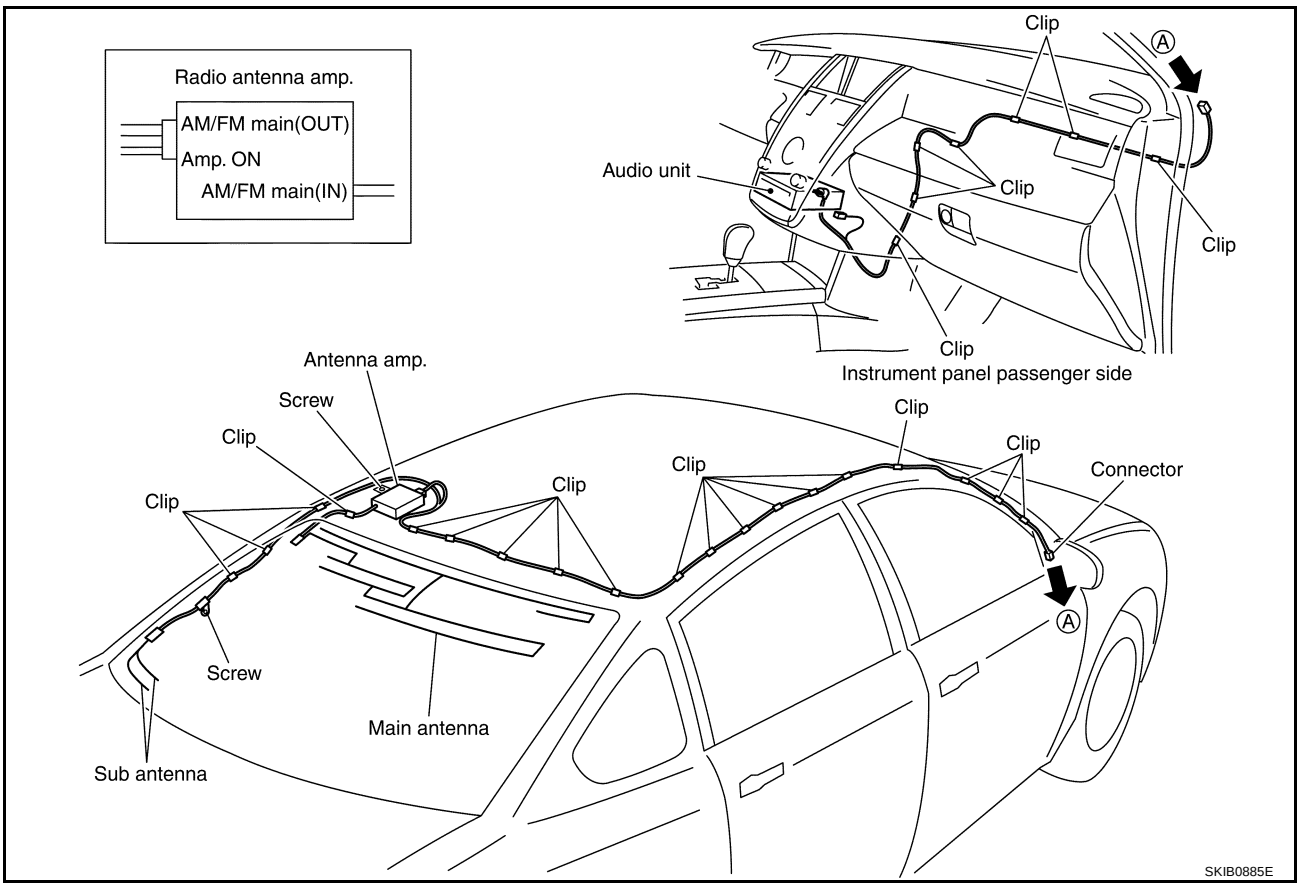
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWM1709E

Location of Antenna

BKS0021V

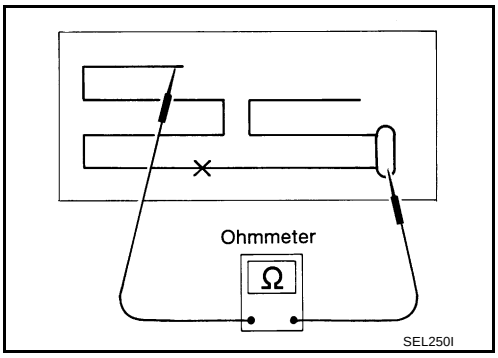


Window Antenna Repair

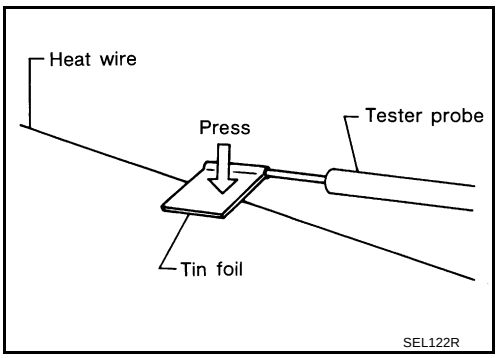
BKS0021W

CHECK ELEMENT

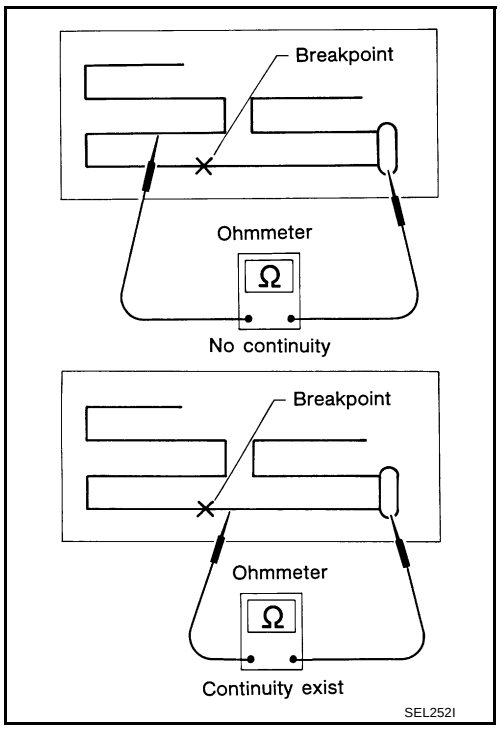
1. Attach probe circuit tester (ohm setting) to antenna terminal on each side.



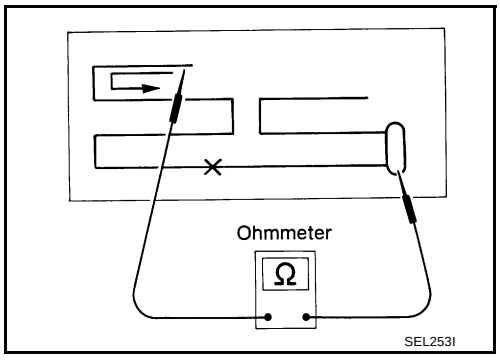
- When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



2. If an element is broken, no continuity will exist.



3. To locate a break, move probe along element. Tester needle will swing abruptly when probe passes the broken point.

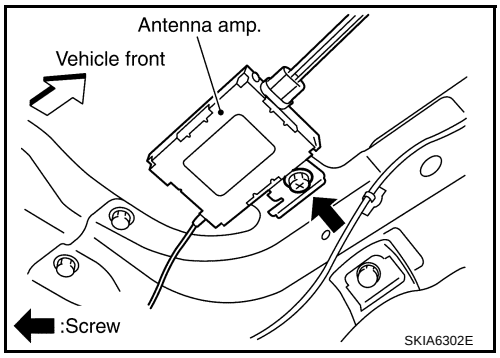


Removal and Installation of Antenna Amp.

BKS0021X

REMOVAL

1. Remove headlining. Refer to EI-54, "HEADLINING" .
2. Remove screw and disconnect antenna feeder clip and antenna connector, and then remove antenna amp.



INSTALLATION

Installation is the reverse order of removal.

INTEGRATED DISPLAY SYSTEM

PFP:28090

System Description

BKS0021Y

For system operation information, refer to Owner's Manual.

INTEGRATED DISPLAY SYSTEM

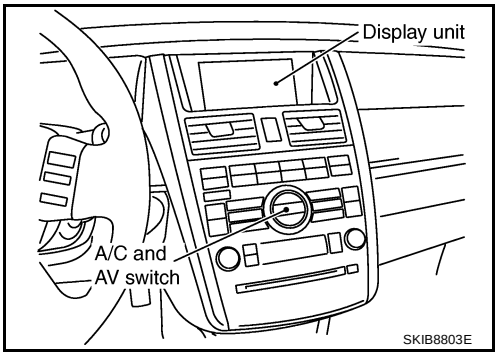
- The display unit transmits/receives data signals to/from each control unit with CAN communication. It performs an arithmetical operation on fuel information values by using data obtained from the control units, and then displays the calculated values on the screen.
- The display unit receives vehicle speed signals that are transmitted from the unified meter and A/C amp., performs an arithmetical operation on drive information values, and then displays the calculated values on the screen.

Component Description

BKS002D1

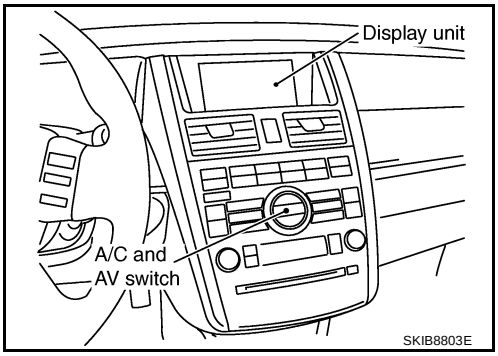
DISPLAY UNIT

- It receives operation signals of audio system and air conditioner system from A/C and AV switch, and transmits the operation signal of audio system to the audio unit through the communication line and transmits the operation signal of air conditioner system to the unified meter and A/C amp. through CAN communication.
- Display signal from audio unit is transmitted to display unit through the communication line, and then the operating state of the audio system is displayed in the screen.
- Display signal from unified meter and A/C amp. is transmitted to display unit through the CAN communication, and then the operating state of the air conditioner system is displayed in the screen.



A/C AND AV SWITCH

- A/C and AV switch, an integrated combination of audio system and air conditioner system switches, are adopted.
- Operation signal of audio system is transmitted to the audio unit through display unit with the communication line.
- Operation signal of air conditioner system is transmitted to unified meter and A/C amp. through display unit with CAN communication.



CAN Communication Unit

BKS00220

Refer to LAN-49, "CAN System Specification Chart" .

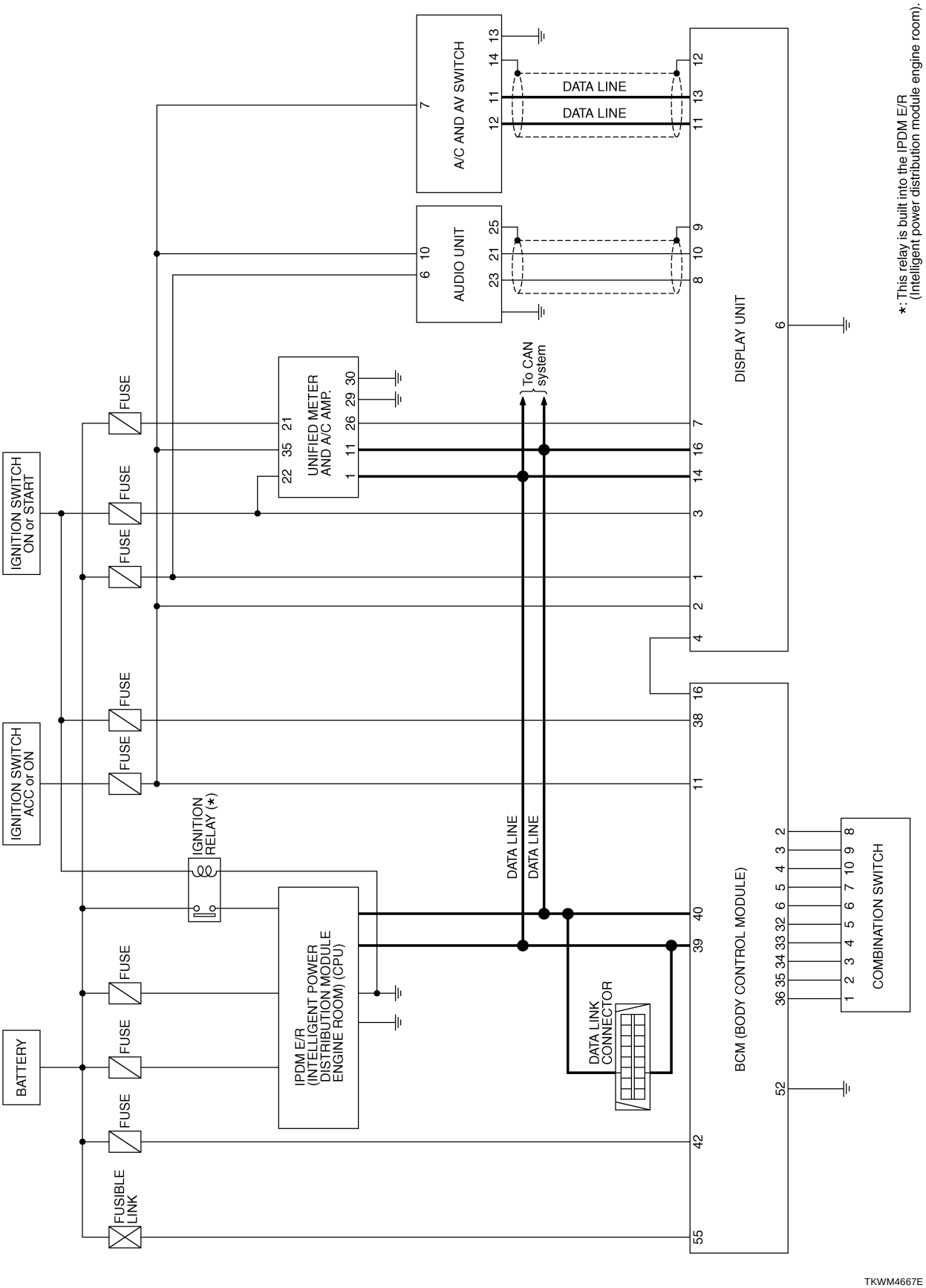
Component Parts Location

BKS00221

Refer to AV-5, "Component Parts Location" .

Schematic

BKS00222



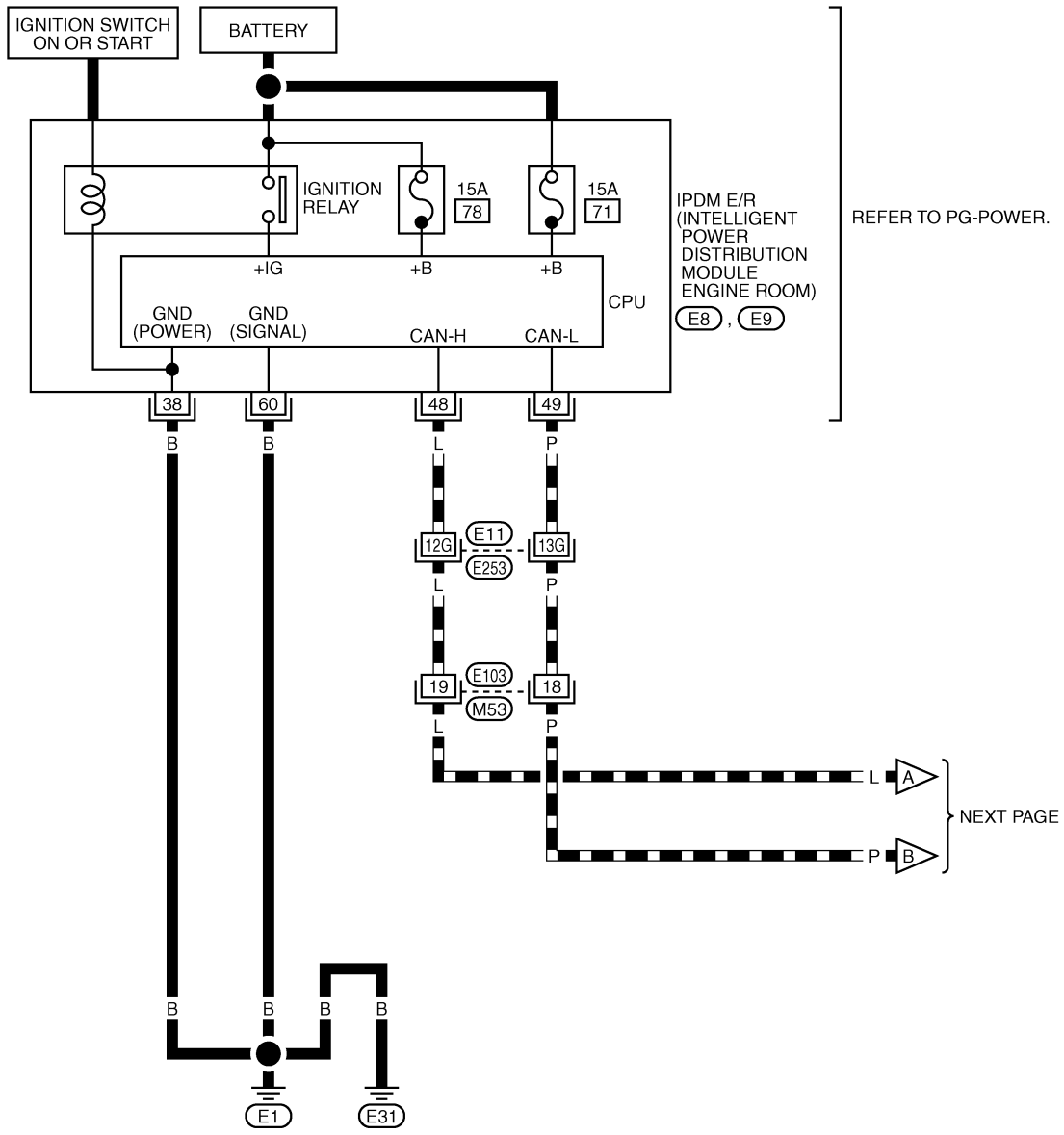
TKWM4667E

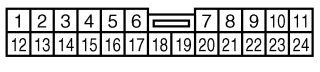
Wiring Diagram — INF/D —

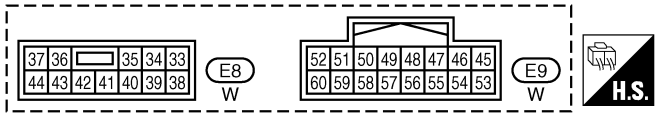
BKS00223

AV-INF/D-01

: DATA LINE



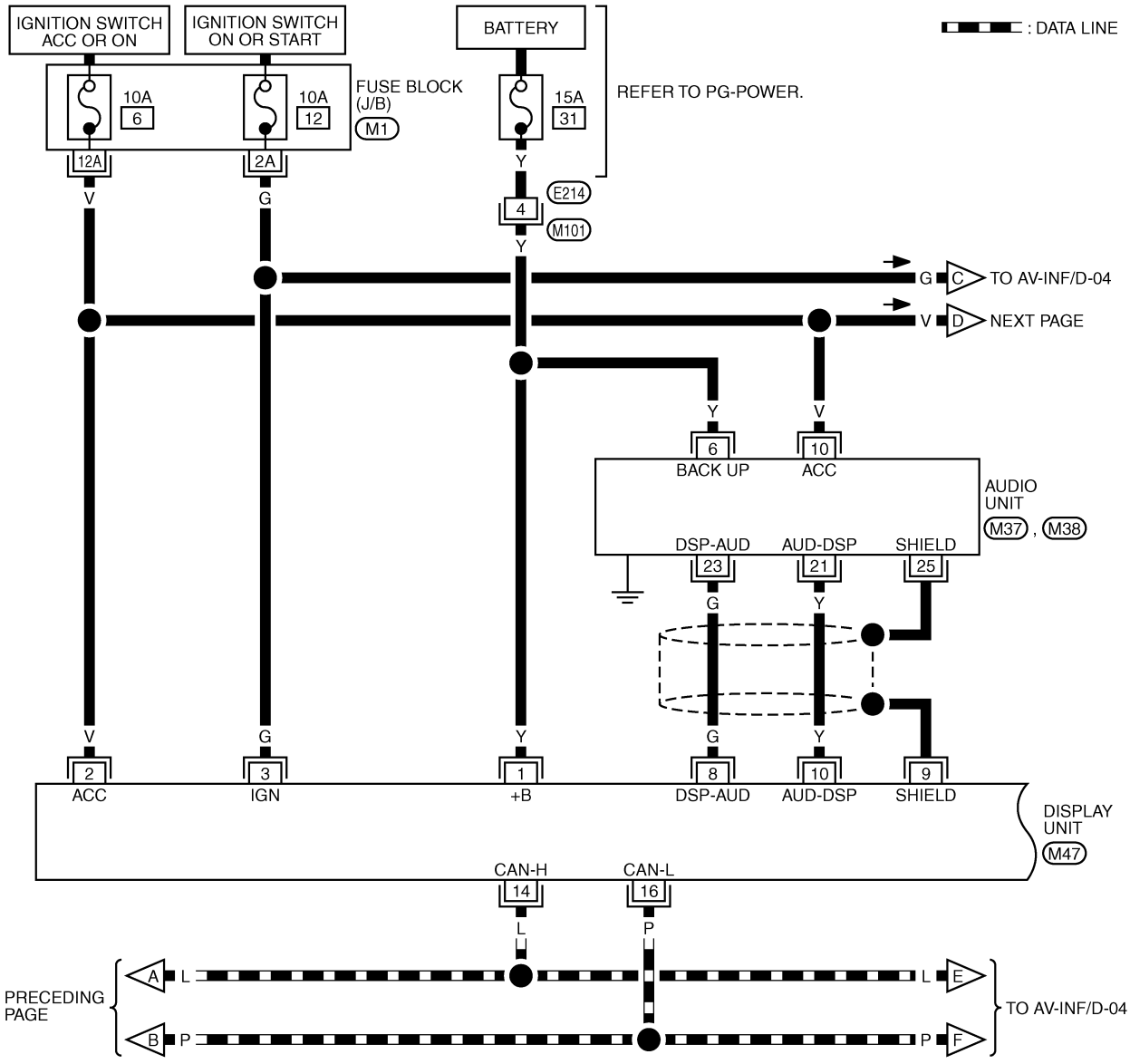


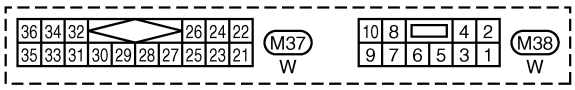


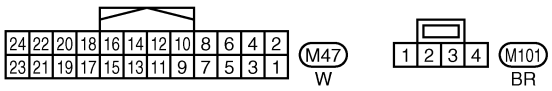
REFER TO THE FOLLOWING.
E253 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1664E

AV-INF/D-02





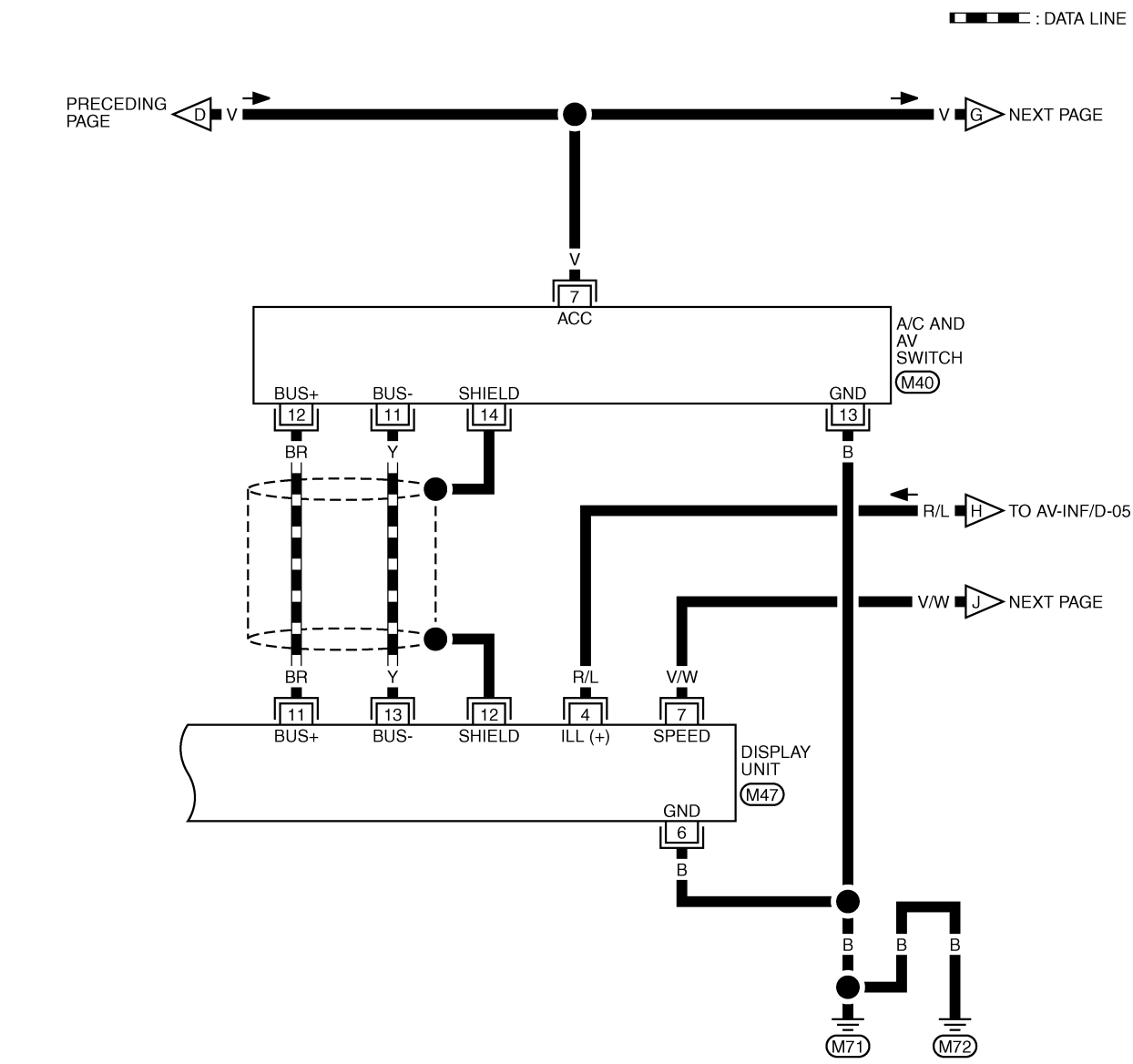


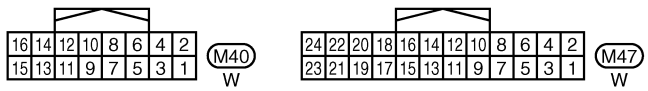
REFER TO THE FOLLOWING.

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

TKWM4668E

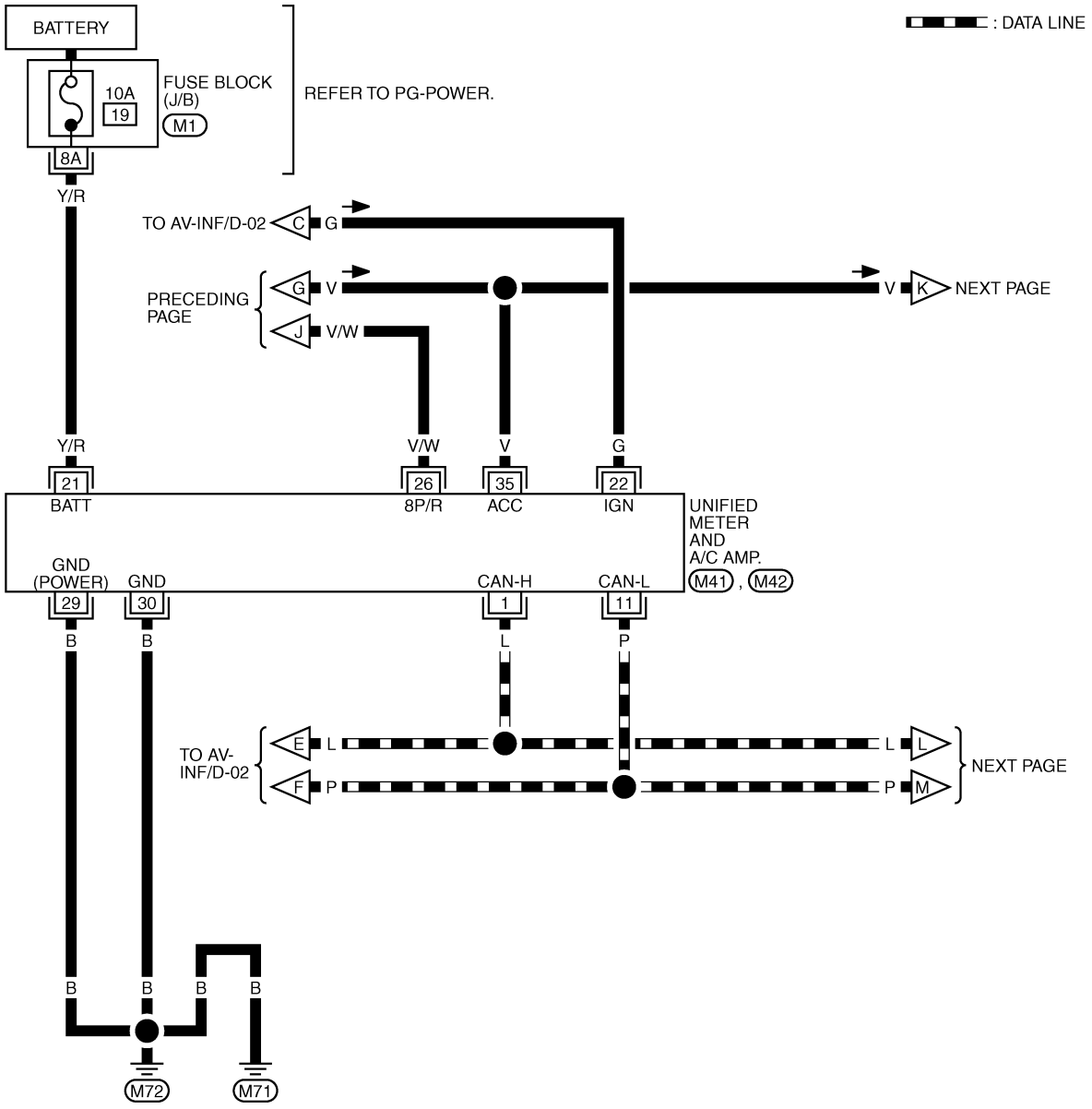
AV-INF/D-03

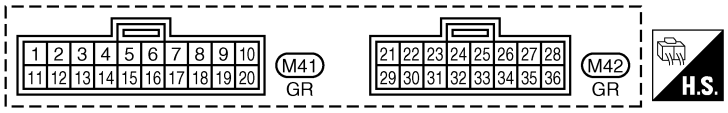




TKWM4669E

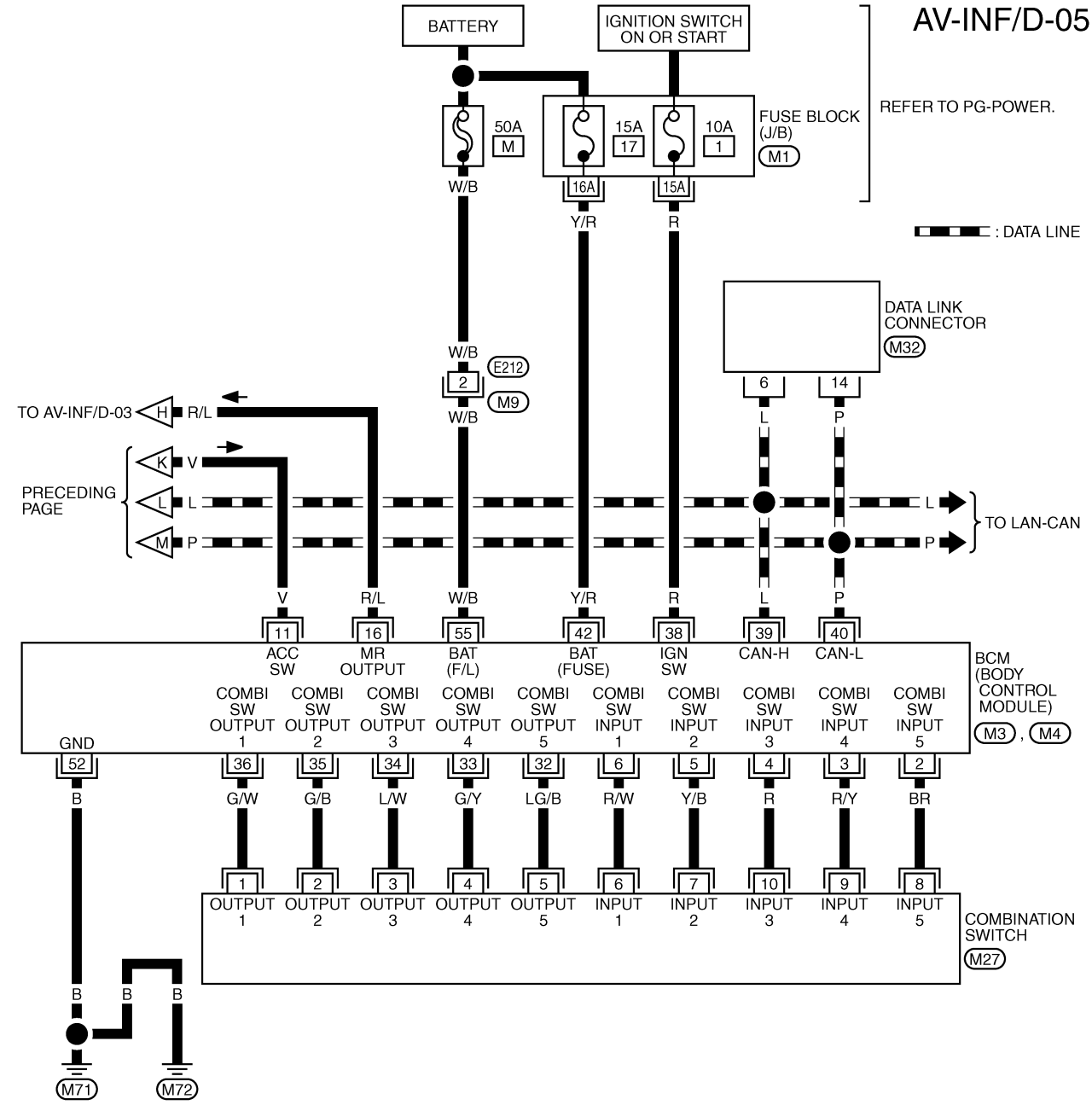
AV-INF/D-04





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

TKWM1667E



REFER TO THE FOLLOWING.

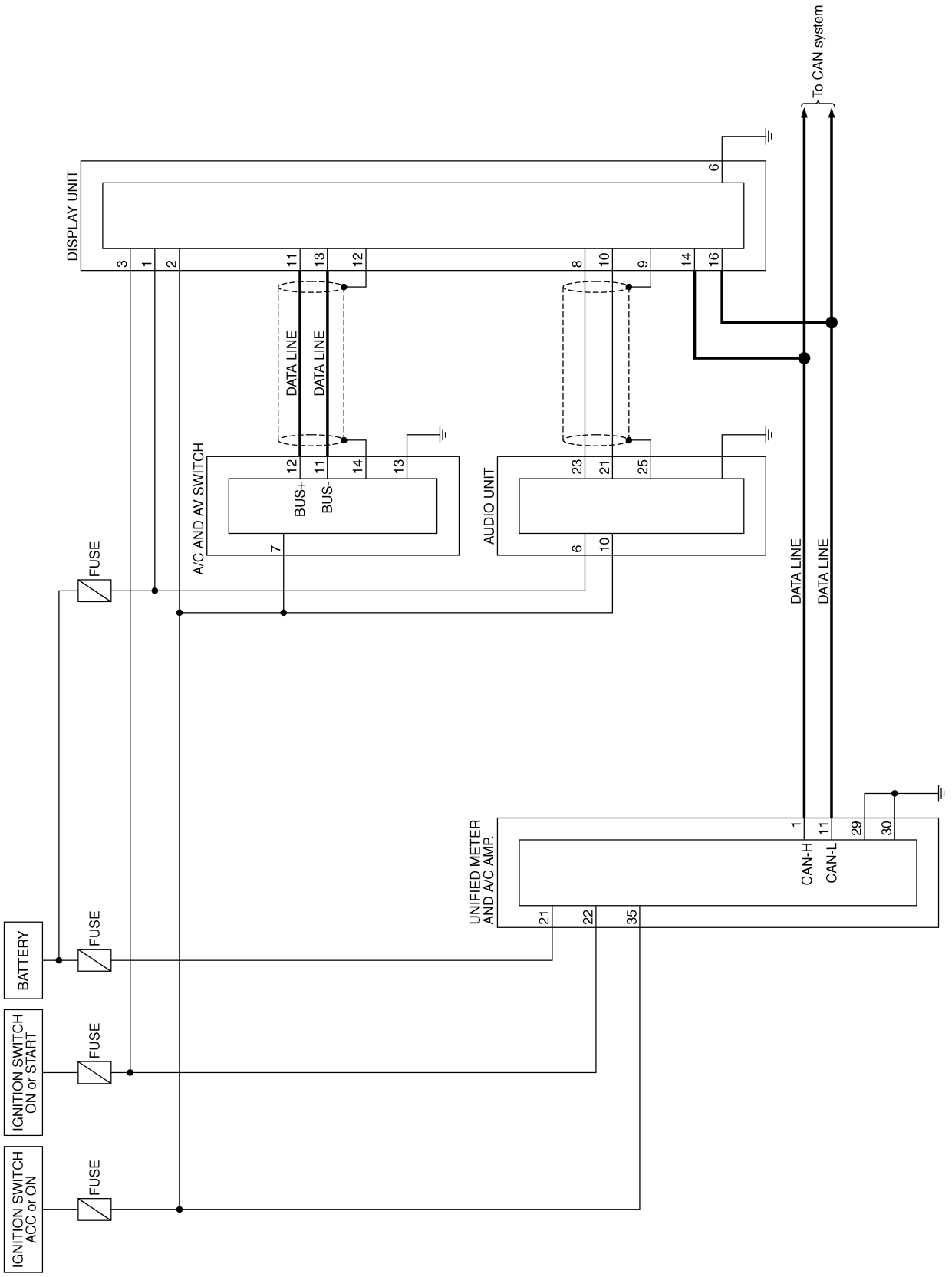
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM4670E

Schematic

BKS00224

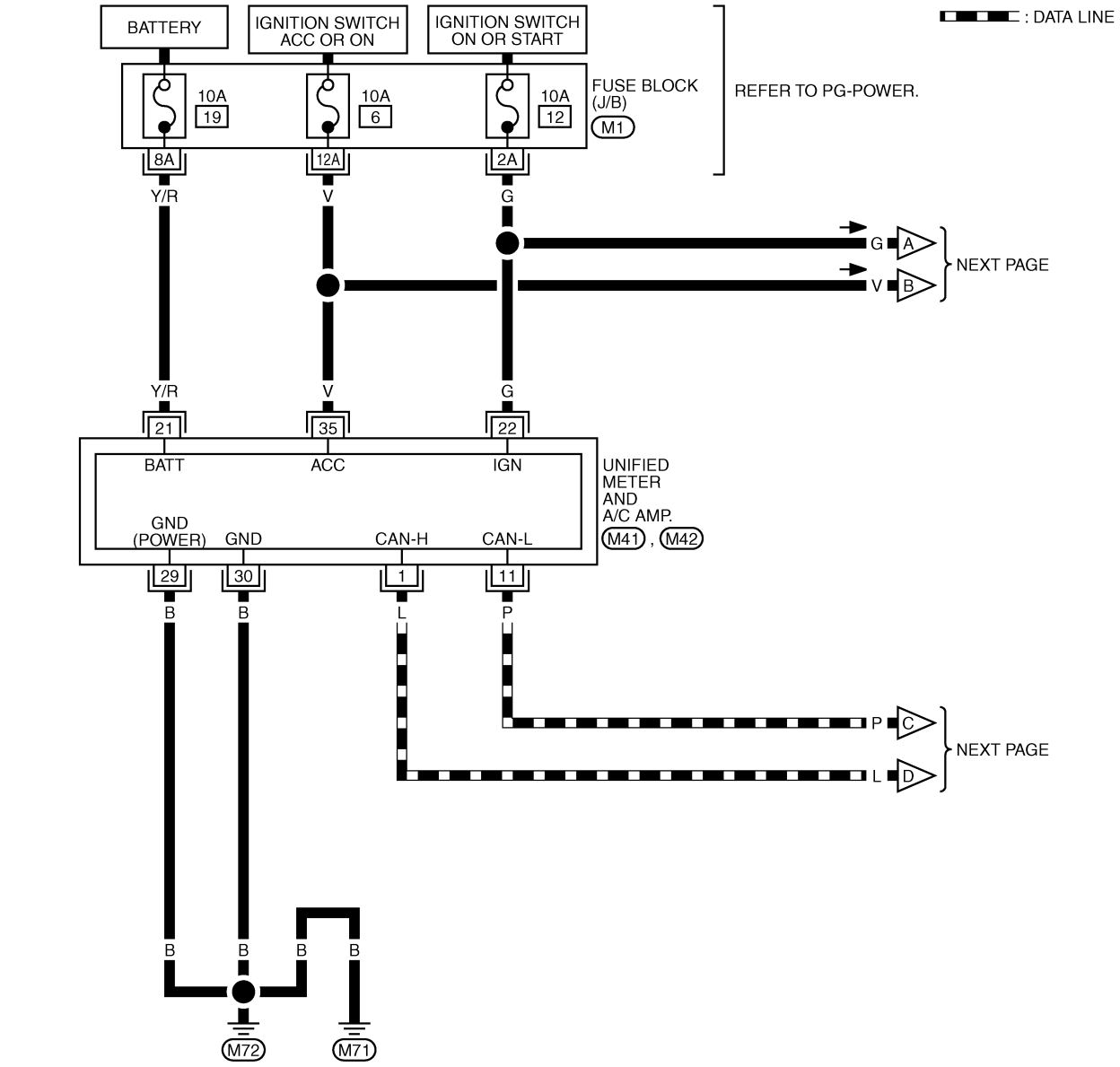


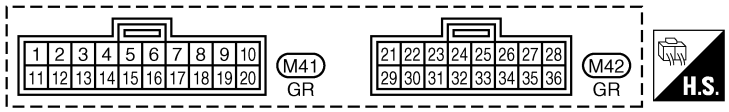
TKWH0379E

Wiring Diagram — COMM —

BKS00225

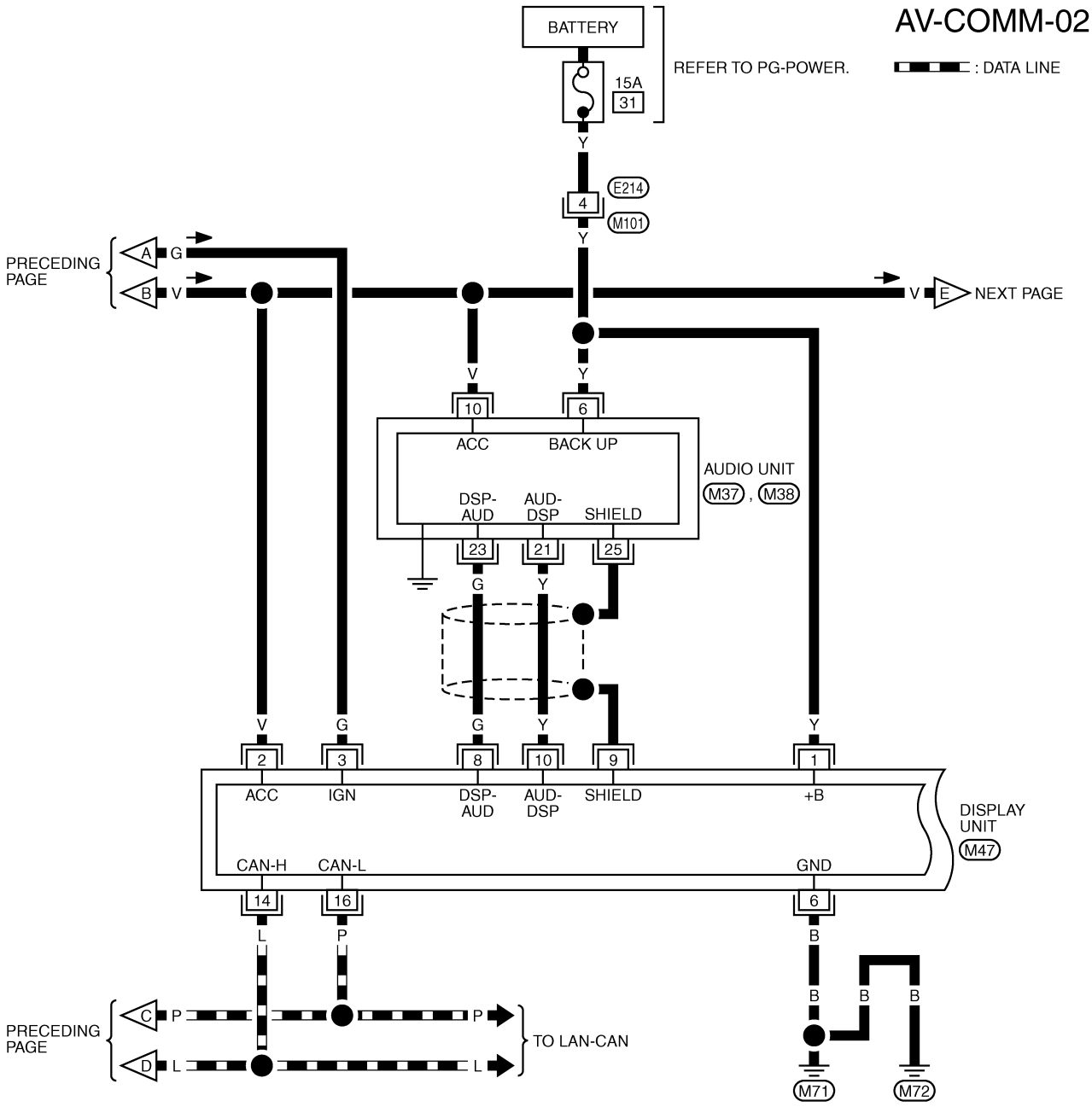
AV-COMM-01





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

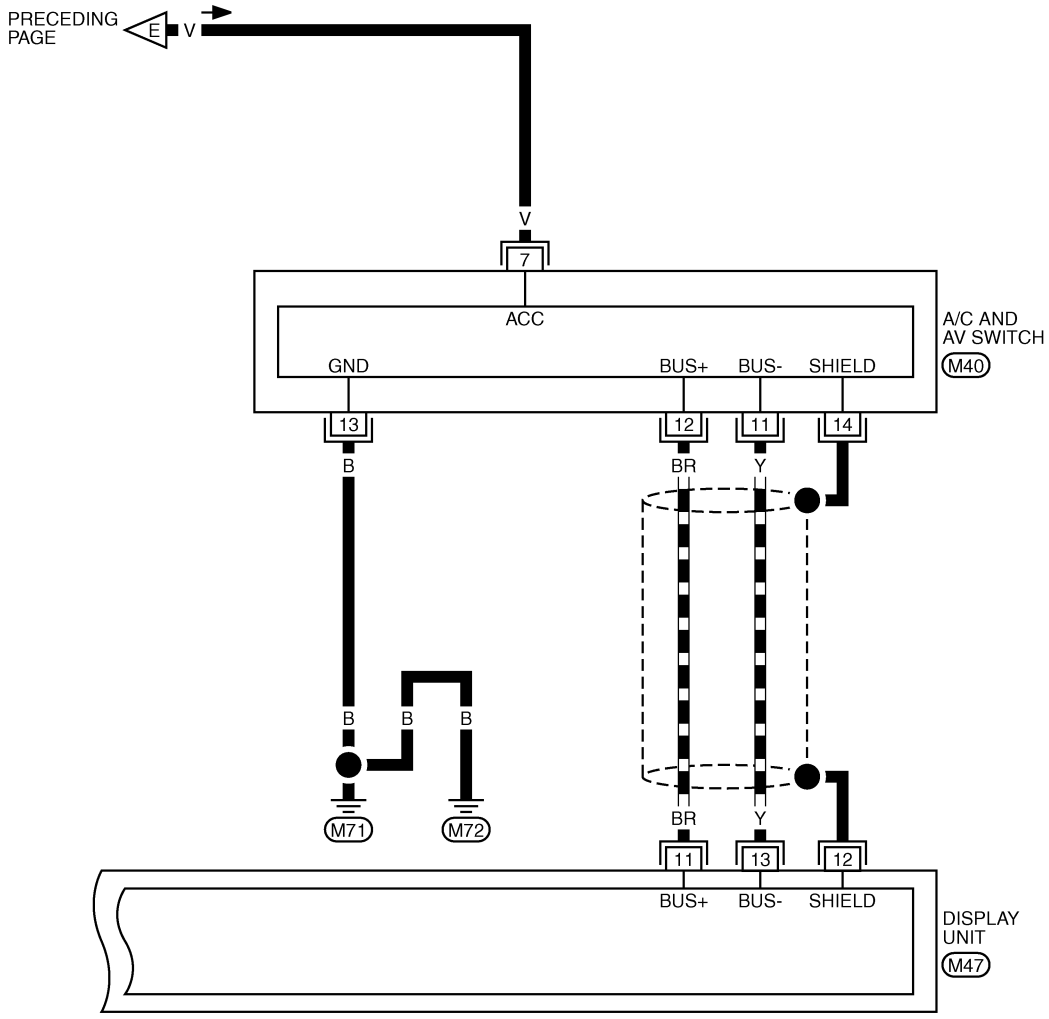
TKWM1669E

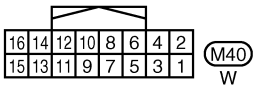

AV-COMM-02
BATTERY
15A
31
REFER TO PG-POWER.
: DATA LINE
Y
E214
4
M101
Y
PRECEDING PAGE
A
G
B
V
V
E
NEXT PAGE
V
Y
10
6
ACC
BACK UP
AUDIO UNIT
M37 , M38
DSP-AUD
AUD-DSP
SHIELD
23
21
25
G
Y
V
G
G
Y
Y
2
3
8
10
9
1
ACC
IGN
DSP-AUD
AUD-DSP
SHIELD
+B
DISPLAY UNIT
M47
CAN-H
CAN-L
GND
14
16
6
L
P
B
PRECEDING PAGE
C
P
D
L
TO LAN-CAN
M71
M72
M37
W
M38
W
M47
W
M101
BR

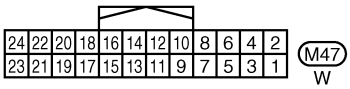
TKWM4679E

AV-COMM-03

: DATA LINE



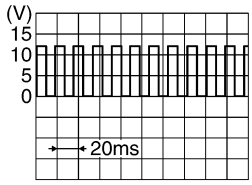
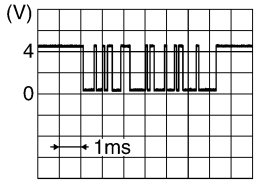
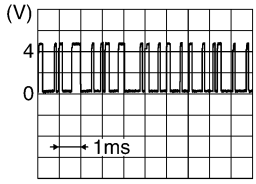
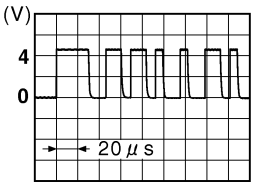
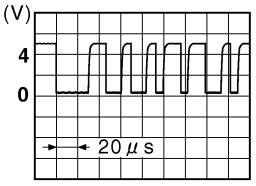




TKWM4680E

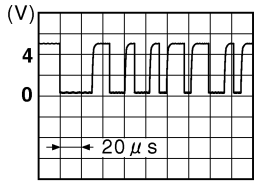
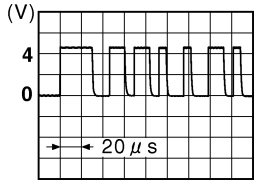
Terminals and Reference Value for Display Unit

BKS00226

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (G)	Ground	Ignition signal	Input	ON	—	Battery voltage
4 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
6 (B)	Ground	Ground	—	ON	—	Approx. 0 V
7 (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
8 (G)	Ground	Communication signal (DSP-AUD)	Output	ON	Operate audio volume switch	 SKIB3607E
9	—	Shield	—	—	—	—
10 (Y)	Ground	Communication signal (AUD-DSP)	Input	ON	Operate audio volume switch	 SKIB3606E
11 (BR)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
12	—	Shield	—	—	—	—
13 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
14 (L)	—	CAN-H	—	—	—	—
16 (P)	—	CAN-L	—	—	—	—

Terminals and Reference Value for A/C and AV Switch

BKS00227

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
7 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
11 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (BR)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
13 (B)	Ground	Ground	—	ON	—	Approx. 0 V
14	—	Shield	—	—	—	—

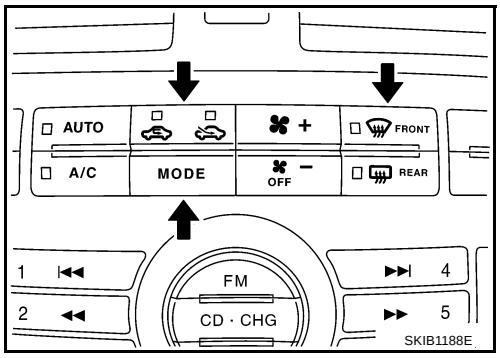
A/C and AV Switch Self-Diagnosis Function

BKS0022A

Performing self-diagnosis makes it possible to check operation of A/C and AV switch indicator (LED) and other switches.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch OFF.
2. With three switches (DEF, REC/FRE and MODE) pressed simultaneously, turn the ignition switch to ACC.



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 pressing the A/C and AV switch.

NOTE:

- Indicators (LED) of REC/FRE switch change to “FRE” → “REC” → “FRE” every time the REC/FRE switch is pressed. (These two do not turn on at the same 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.

On Board Self-Diagnosis Function

BKS00228

DESCRIPTION

When performing self-diagnosis mode, the following menu is displayed.

DIAGNOSIS ITEM

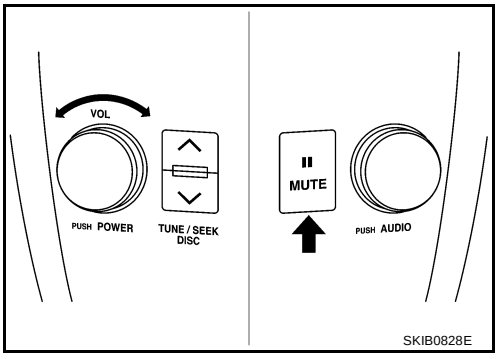
Diagnosis item	Function switch	Description
FULL BLINK	1	All display unit segments turn ON.
HVAC DIAG	2	Self-diagnosis of air conditioner system is performed.
VERSION	3	Software version of each unit is displayed.
DIAG END	4	Exit from self-diagnosis mode and return to normal screen.

Self-Diagnosis Mode

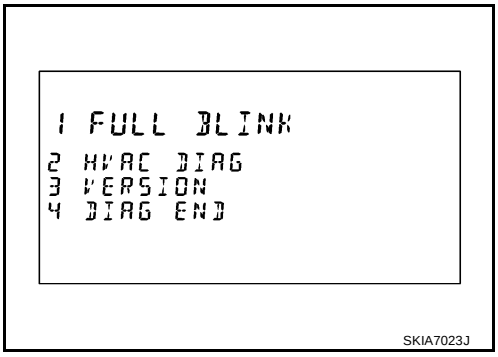
BKS00229

OPERATION PROCEDURES

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “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.)

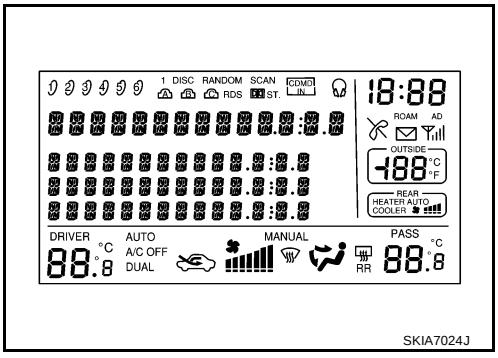


4. Initial diagnosis screen is displayed.
   - Perform diagnosis according to the audio preset No. “1, 2, 3, 4”.



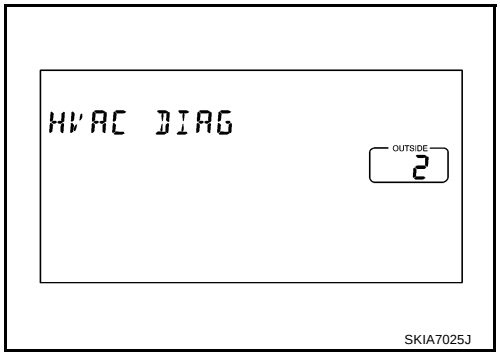
FULL BLINK

All display unit segments turn ON.



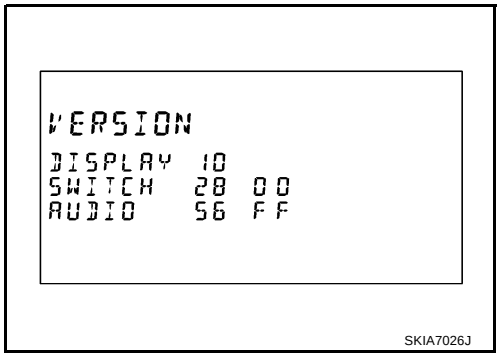
HVAC DIAG

Self-diagnosis of air conditioner system is performed. Refer to ATC-46, "Self-diagnosis Function" .



VERSION

Software version of display unit, A/C and AV switch, and audio unit are displayed.



DIAG END

Exit from self-diagnosis mode and return to normal screen.

EXITING THE SELF-DIAGNOSIS MODE

Turn ignition switch OFF or press audio preset No. “4”.

Symptom Chart

BKS0022B

Symptom	Check item
All images are not displayed.	● Display unit power supply and ground circuit ● Display unit
Screen does not switch to nighttime mode after the lighting switch is turned ON.	● Display unit Illumination signal circuit ● Display unit
TRIP and FUEL ECON screen do not appear.	● Display unit ignition signal circuit ● Display unit
● Trip odometer (DIST) indication is malfunctioning. ● Average vehicle speed (AVG) indication is malfunctioning.	● Vehicle speed signal circuit between unified meter and A/C amp. and display unit ● Display unit ● Unified meter and A/C amp.
Average fuel consumption (AVG) indication is malfunctioning.	● Vehicle speed signal circuit between unified meter and A/C amp. and display unit ● CAN communication signal circuit **NOTE:** Diagnosis Procedure Connect CONSULT-II. Select “METER A/C AMP”, and then, select “SELF-DIAG RESULTS”. Check that “CAN COMM CIRC [U1000]” is indicated as the diagnosis result. The communication with the unified meter and A/C amp. is normal if not indicated. Repair the root cause if indicated. Refer to DI-32, "DTC [U1000] CAN Communication Circuit" . ● Display unit ● Unified meter and A/C amp.
Distance to empty (DTE) indication is malfunctioning.	● CAN communication signal circuit **NOTE:** Diagnosis Procedure Connect CONSULT-II. Select “METER A/C AMP”, and then, select “SELF-DIAG RESULTS”. Check that “CAN COMM CIRC [U1000]” is indicated as the diagnosis result. The communication with the unified meter and A/C amp. is normal if not indicated. Repair the root cause if indicated. Refer to DI-32, "DTC [U1000] CAN Communication Circuit" . ● Display unit ● Unified meter and A/C amp.
Unable to operate system with A/C and AV switch.	Refer to AV-58, "Unable to Operate System with A/C and AV Switch"

Unable to Operate System with A/C and AV Switch

BKS0022J

1. CHECK CONDITION

1. Turn ignition switch ON.
2. Check if an image is displayed on the screen.

Is an image displayed on the screen?

YES >> GO TO 2.
NO >> Repair malfunctioning part. Refer to AV-57, "Symptom Chart" .

2. SELF-DIAGNOSIS OF A/C AND AV SWITCH

Start self-diagnosis of A/C and AV switch, and check the self-diagnosis result. Refer to AV-54, "A/C and AV Switch Self-Diagnosis Function" .

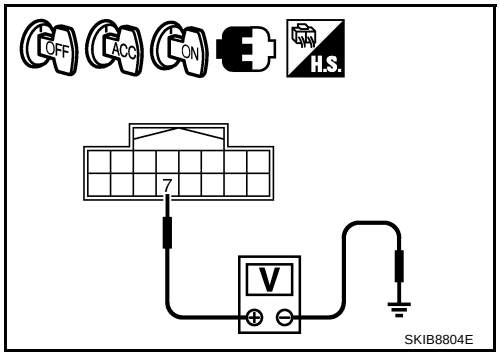
OK or NG

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

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

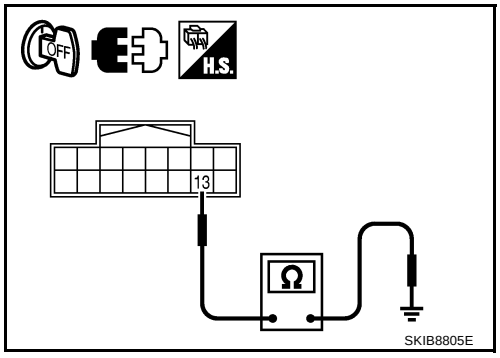
1. Check voltage between A/C and AV switch harness connector terminal and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M40	7	Ground	0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect A/C and AV switch connector.
4. Check continuity between A/C and AV switch harness connector M40 terminal 13 and ground.

13 – Ground : Continuity should exist.



OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair harness or connector.

4. CHECK HARNESS

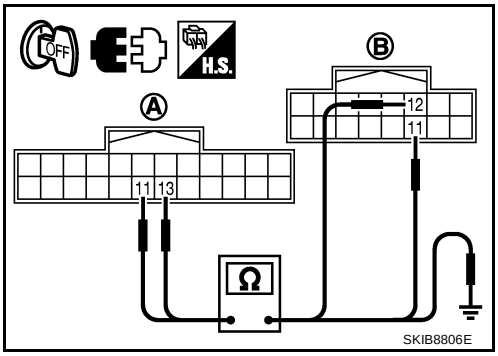
1. Turn ignition switch OFF.
2. Disconnect display unit and A/C and AV switch connectors.
3. Check continuity between display unit harness connector (A) M47 terminals 11, 13 and A/C and AV switch harness connector (B) M40 terminals 12, 11.

   11 – 12 : Continuity should exist.

   13 – 11 : Continuity should exist.

4. Check continuity between display unit harness connector (A) M47 terminals 11, 13 and ground.

   11, 13 – Ground : Continuity should not exist.



OK or NG

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

5. CHECK A/C AND AV SWITCH AND DISPLAY UNIT

1. Replace A/C and AV switch or display unit.
2. Make sure system can be operated by A/C and AV switch.

OK or NG

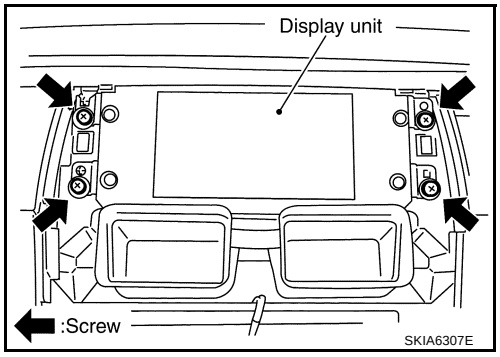
OK >> INSPECTION END
NG >> Replace the other unit.

Removal and Installation of Display Unit

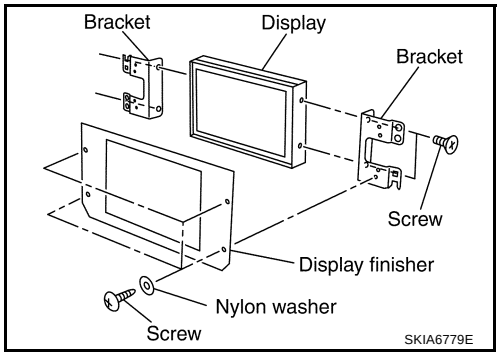
BKS0022K

REMOVAL

1. Remove cluster lid D. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4), and remove display unit.



3. Remove screws (4) and nylon washers (4), and then remove display finisher.
4. Remove screws (4), and remove bracket.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of A/C and AV Switch

BKS0022L

REMOVAL

Remove A/C and AV switch integral with audio unit. Refer to AV-15, "Removal and Installation of Audio Unit" .

INSTALLATION

Installation is the reverse order of removal.

INTEGRATED COLOR DISPLAY SYSTEM

PFP:28090

System Description

BKS0027J

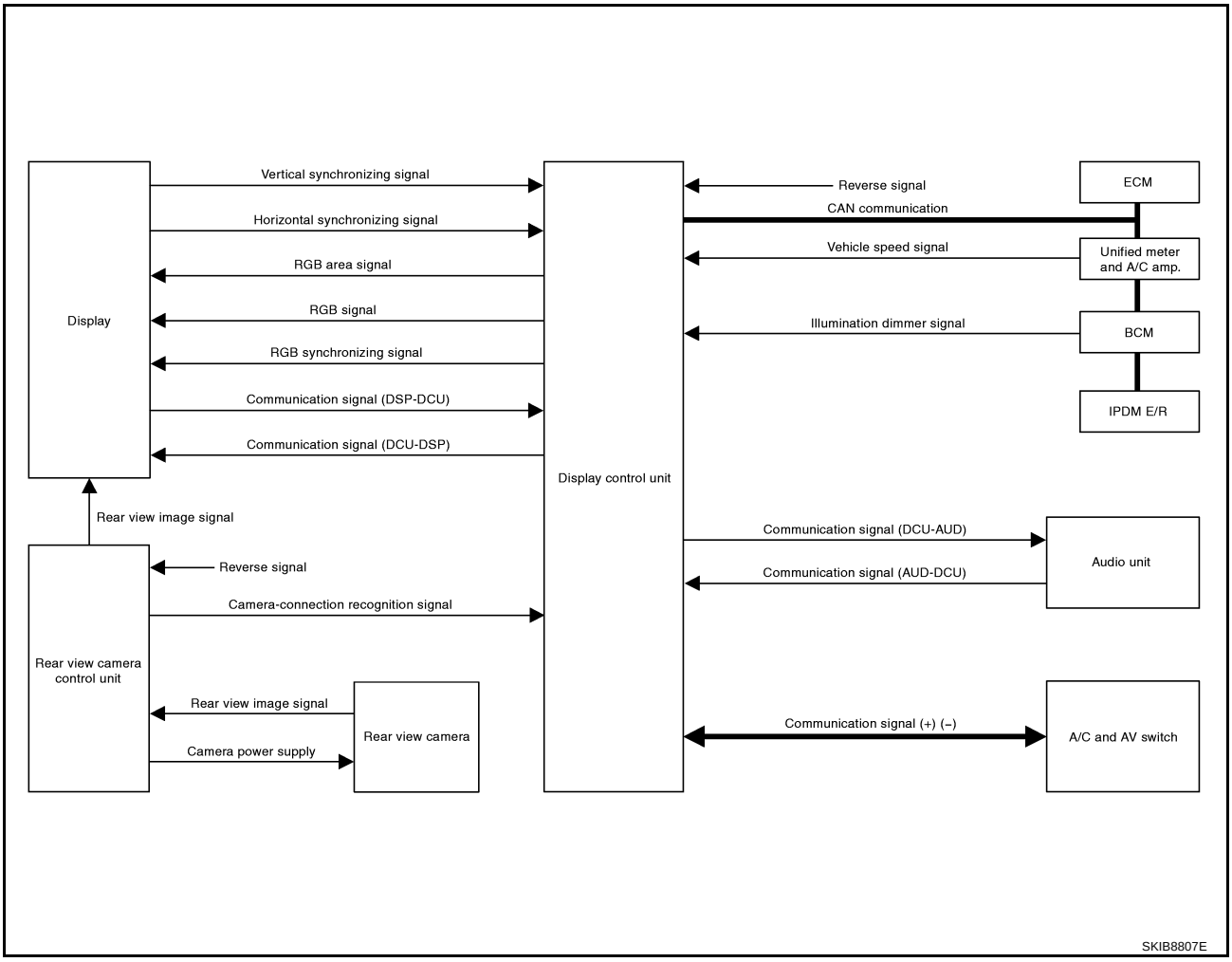
For system operation information, refer to Owner's Manual.

INTEGRATED COLOR DISPLAY SYSTEM

- Each control unit that comprises the system is connected with a communication circuit. It transmits/receives data signals including request signals and response signals, and controls the system.
- The display control unit transmits/receives data signals to/from each control unit with CAN communication. It performs an arithmetical operation on fuel information values by using data obtained from the control units, and then displays the calculated values on the screen.
- The display control unit receives vehicle speed signals that are transmitted from the unified meter and A/C amp., performs an arithmetical operation on drive information values, and then displays the calculated values on the screen.
- The images displayed on the monitor screen contain display control unit-generated RGB images, and rear view images transmitted from the rear view camera control unit.
- The display control unit controls image switching and image quality adjustments by communications with the display.

REAR VIEW MONITOR

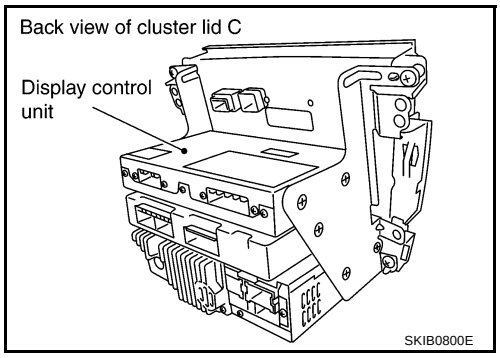
- A rear view monitor was set to vehicle, which can check rearward on screen when backing up the vehicle.
- For easier recognition of the vehicle width and the distance to the objects, the guide lines of distances and rear are combined with the rear view image.
- Image quality of the rear view image and of the RGB image can be adjusted separately.



Component Description

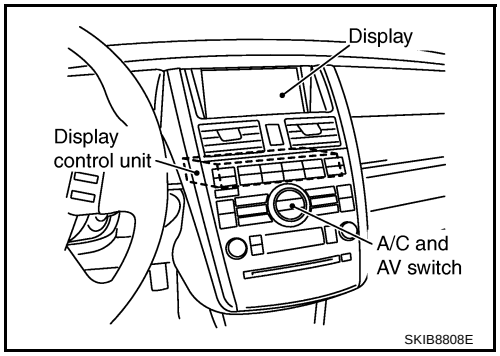
BKS0027K

DISPLAY CONTROL UNIT



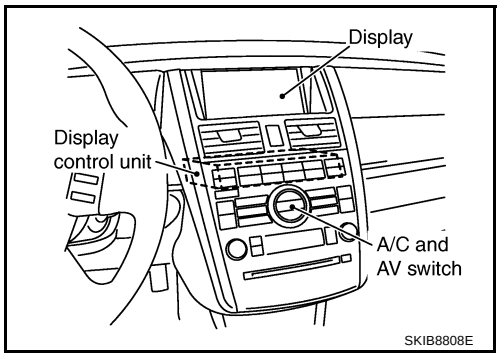
- Display control unit draws a status of the audio system and air conditioner system, a TRIP screen, a FUEL ECONOMY screen, etc., and transmits the image signals to the display screen.
- It receives operation signals of audio system and air conditioner system from A/C and AV switch, and transmits the operation signal of audio system to the audio unit through the communication line and transmits the operation signal of air conditioner system to the unified meter and A/C amp. through CAN communication.
- Display signal from audio unit is transmitted to display control unit through the communication line, and then the operating state of the audio system is displayed in the screen.
- Display signal from unified meter and A/C amp. is transmitted to display control unit through the CAN communication, and then the operating state of the air conditioner system is displayed in the screen.

DISPLAY



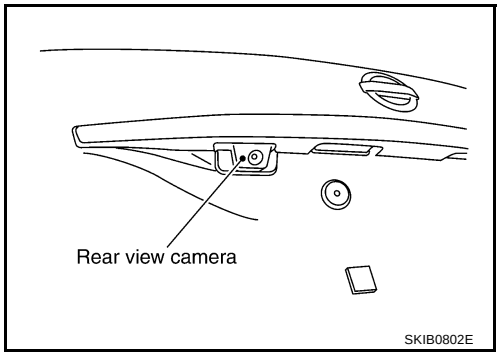
- Images on the display include RGB image and rear view image displayed when setting the select lever to R range.
- Display control unit controls images on the display.

A/C AND AV SWITCH



- A/C and AV switch, an integrated combination of audio system and air conditioner system switches, are adopted.
- Operation signal of audio system is transmitted to the audio unit through display control unit with the communication line.
- Operation signal of air conditioner system is transmitted to unified meter and A/C amp. through display control unit with CAN communication.

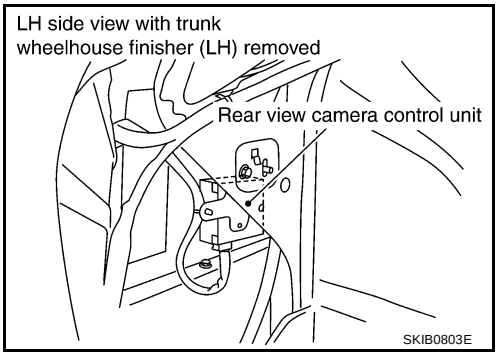
REAR VIEW CAMERA



- Rear view camera transmits rear view image signals to the display screen through the rear view camera control unit, when reverse signal is input.
- The rear view image is a mirror image reversed left and right that is the same as seeing rear side with a room mirror.

REAR VIEW CAMERA CONTROL UNIT

- Rear view camera control unit supplies power to the rear view camera, and then transmits the rear view image from the rear view camera to the display screen when reverse signal is input.
- Guiding lines of vehicle width and distance from rear end are composited and displayed on rear view image.



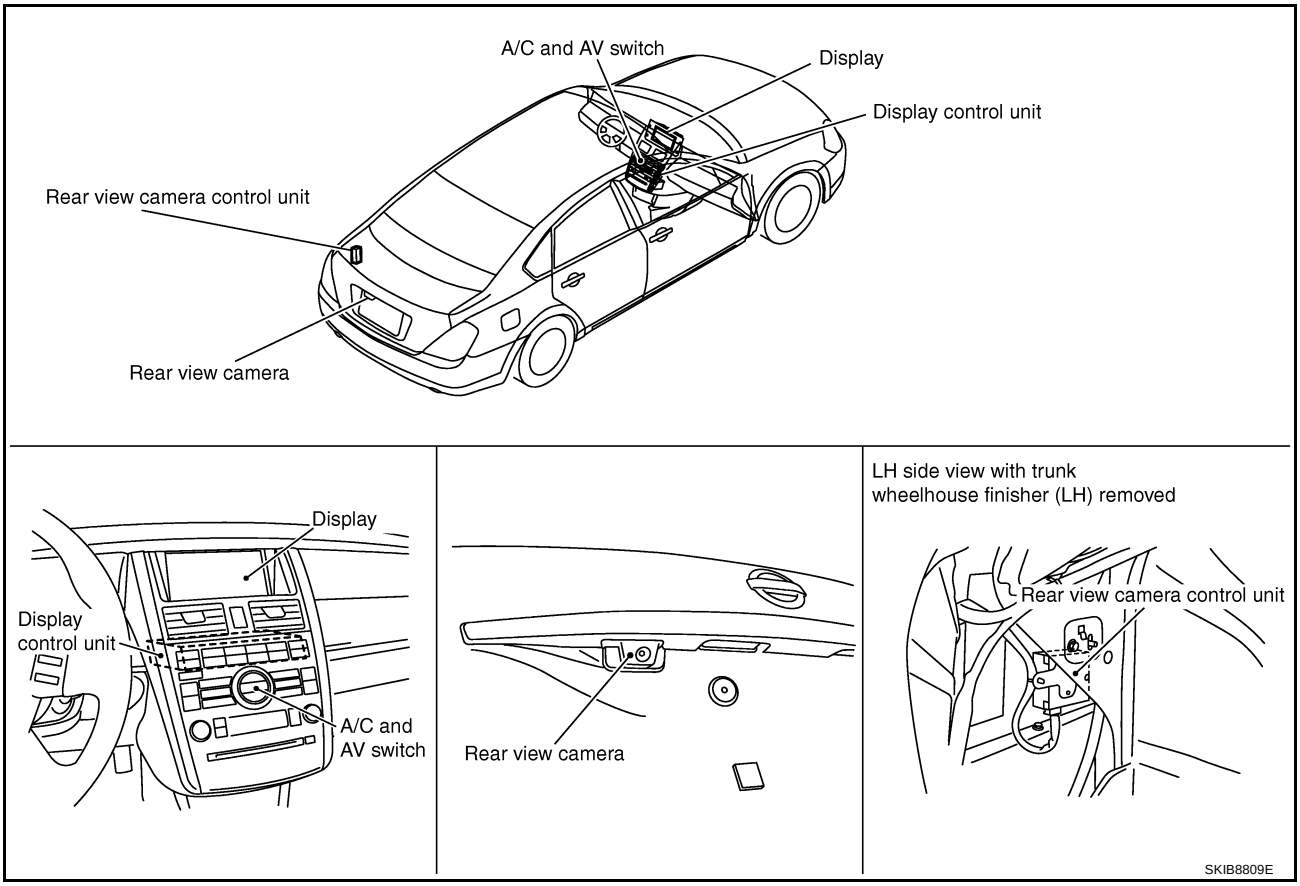
CAN Communication Unit

BKS0027L

Refer to LAN-49, "CAN System Specification Chart" .

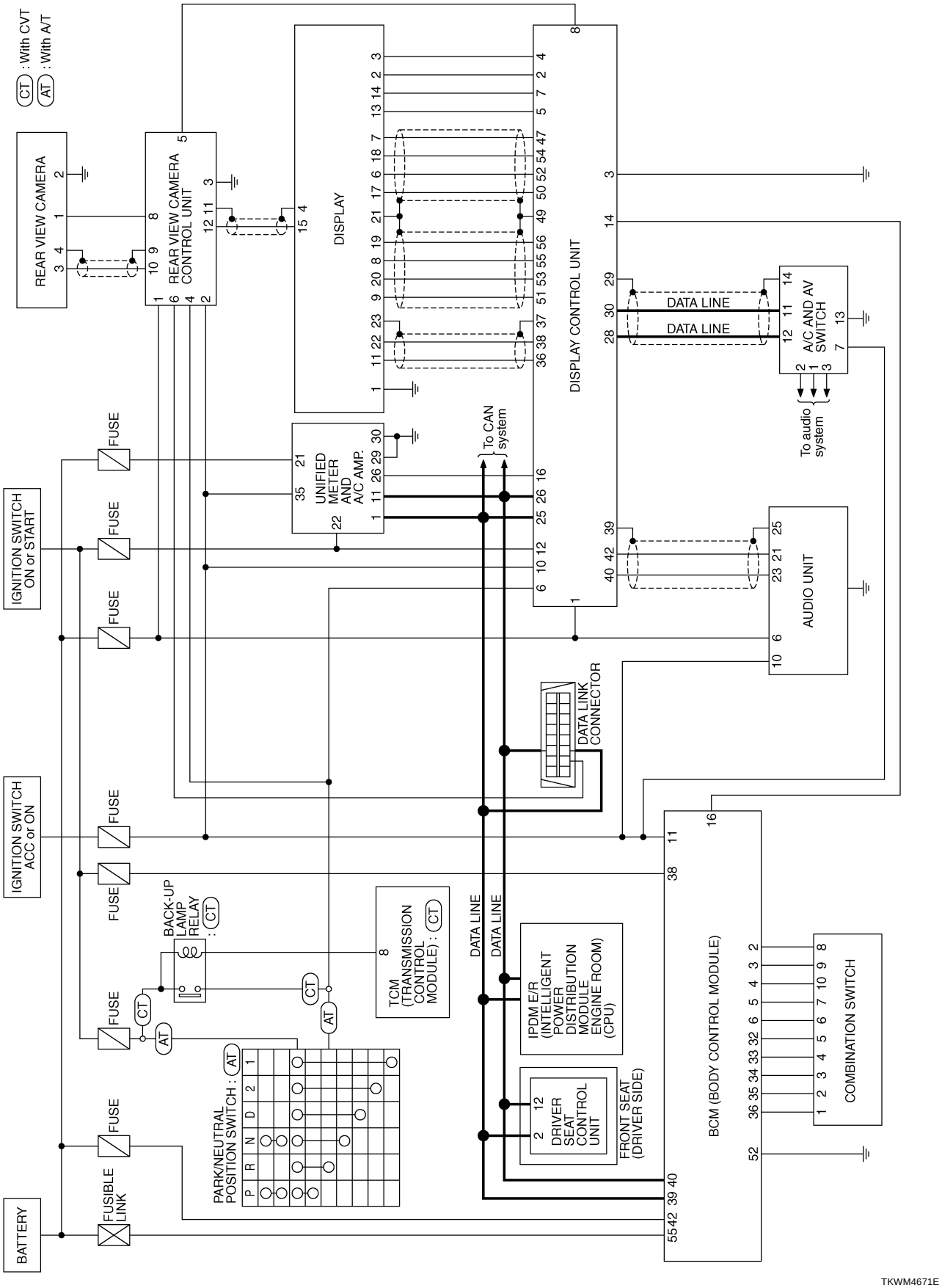
Component Parts Location

BKS0027M



Schematic — INF/D —

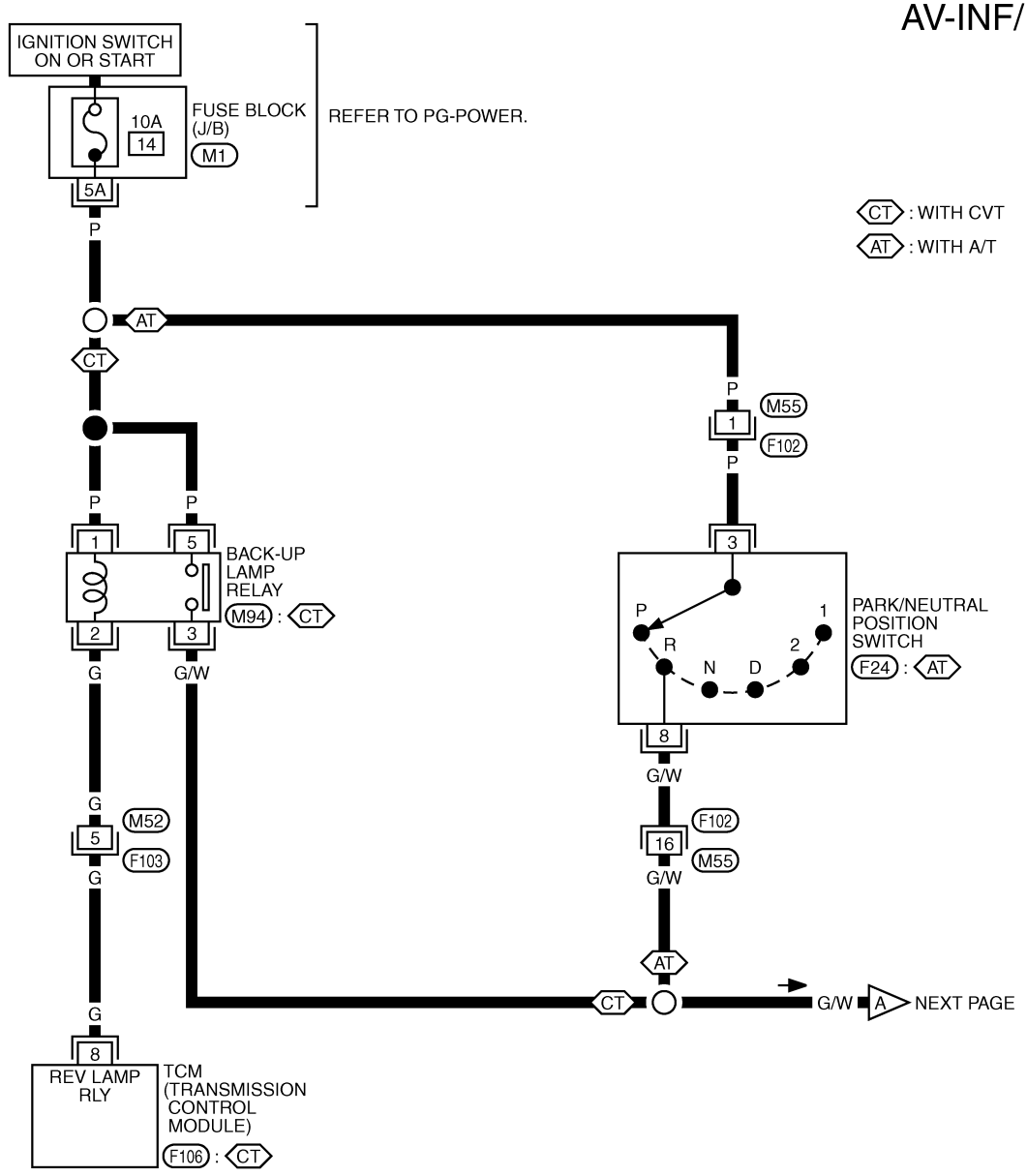
BKS0027N

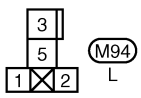


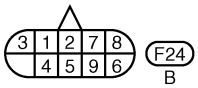
Wiring Diagram — INF/D —

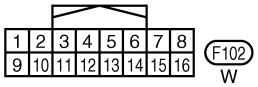
BKS0027O

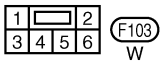
AV-INF/D-06





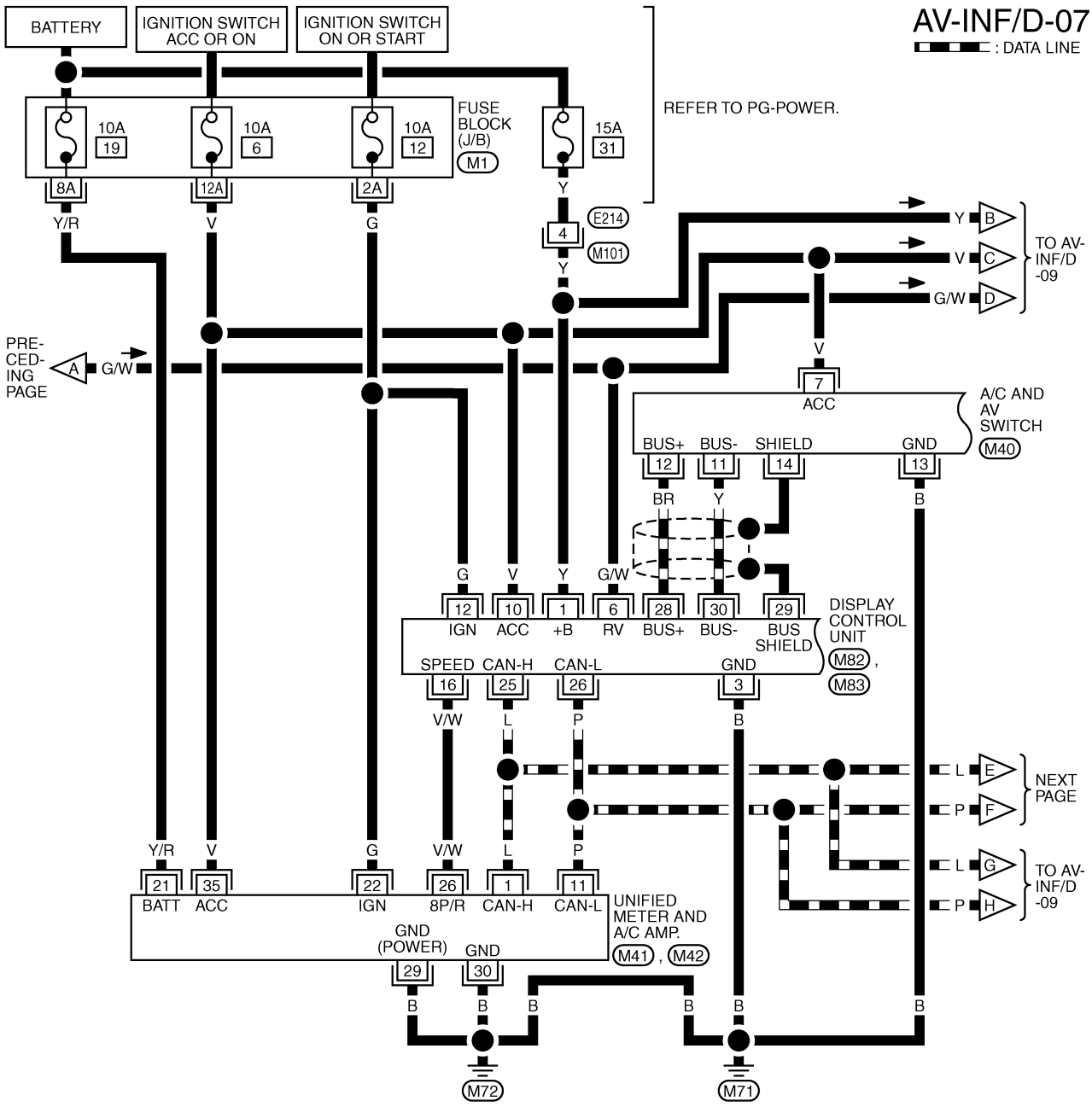


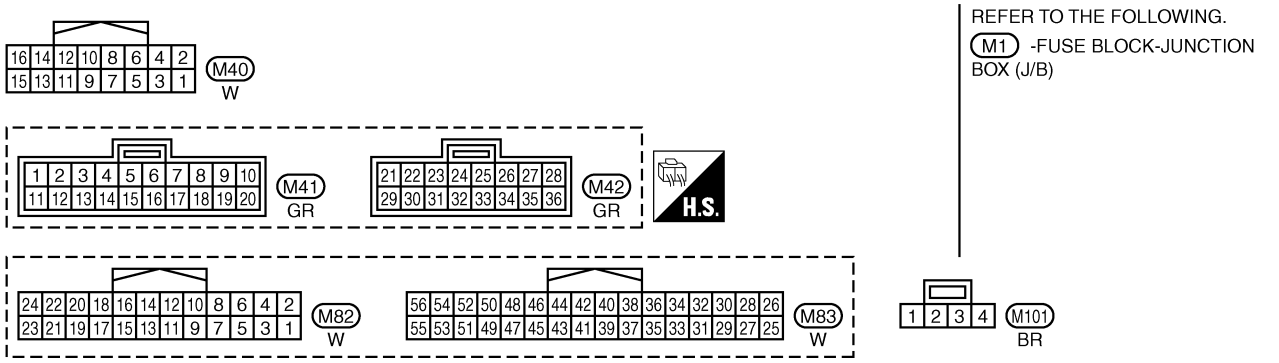




REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
F106 -ELECTRICAL UNITS

TKWM4672E

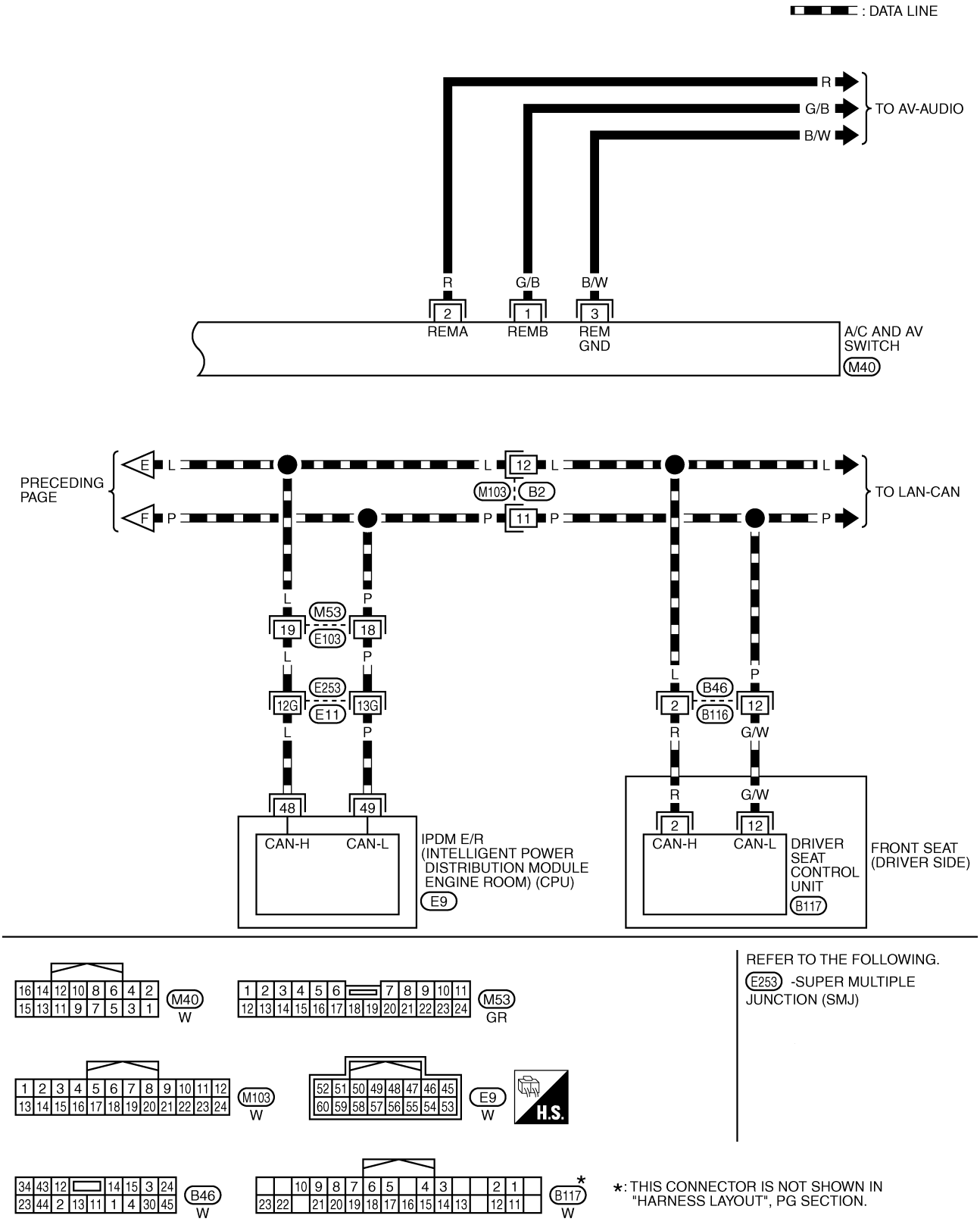




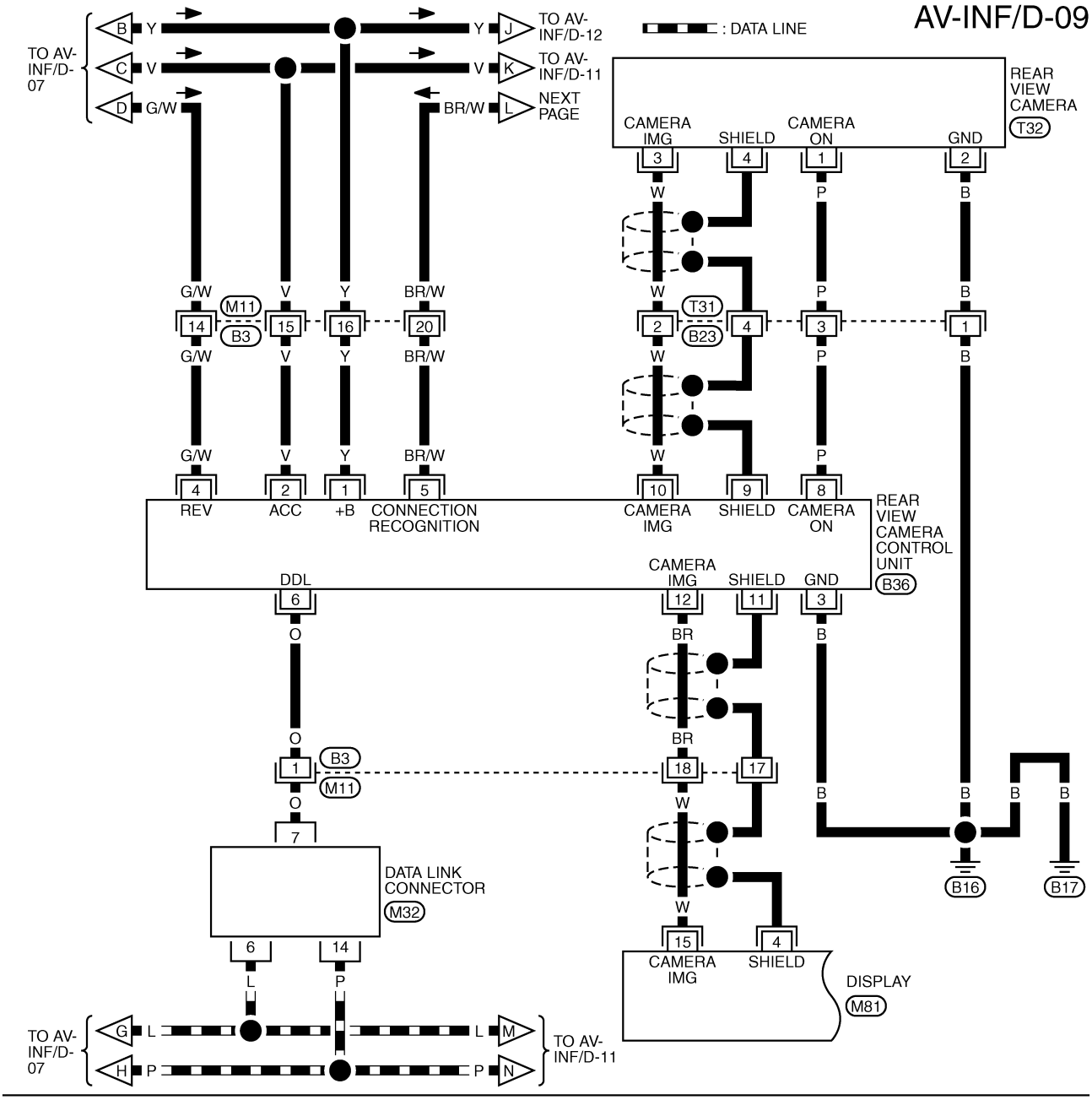
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

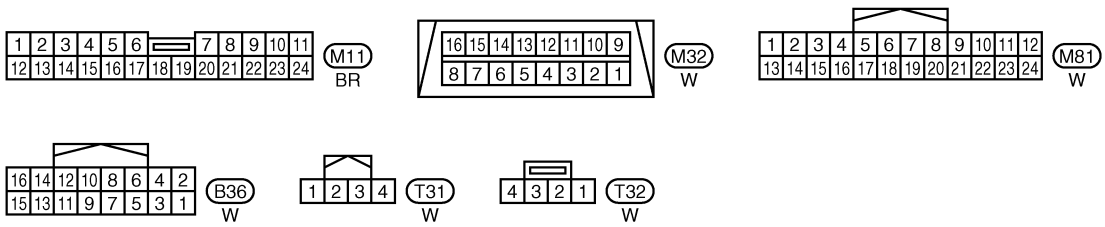
TKWM4673E

AV-INF/D-08

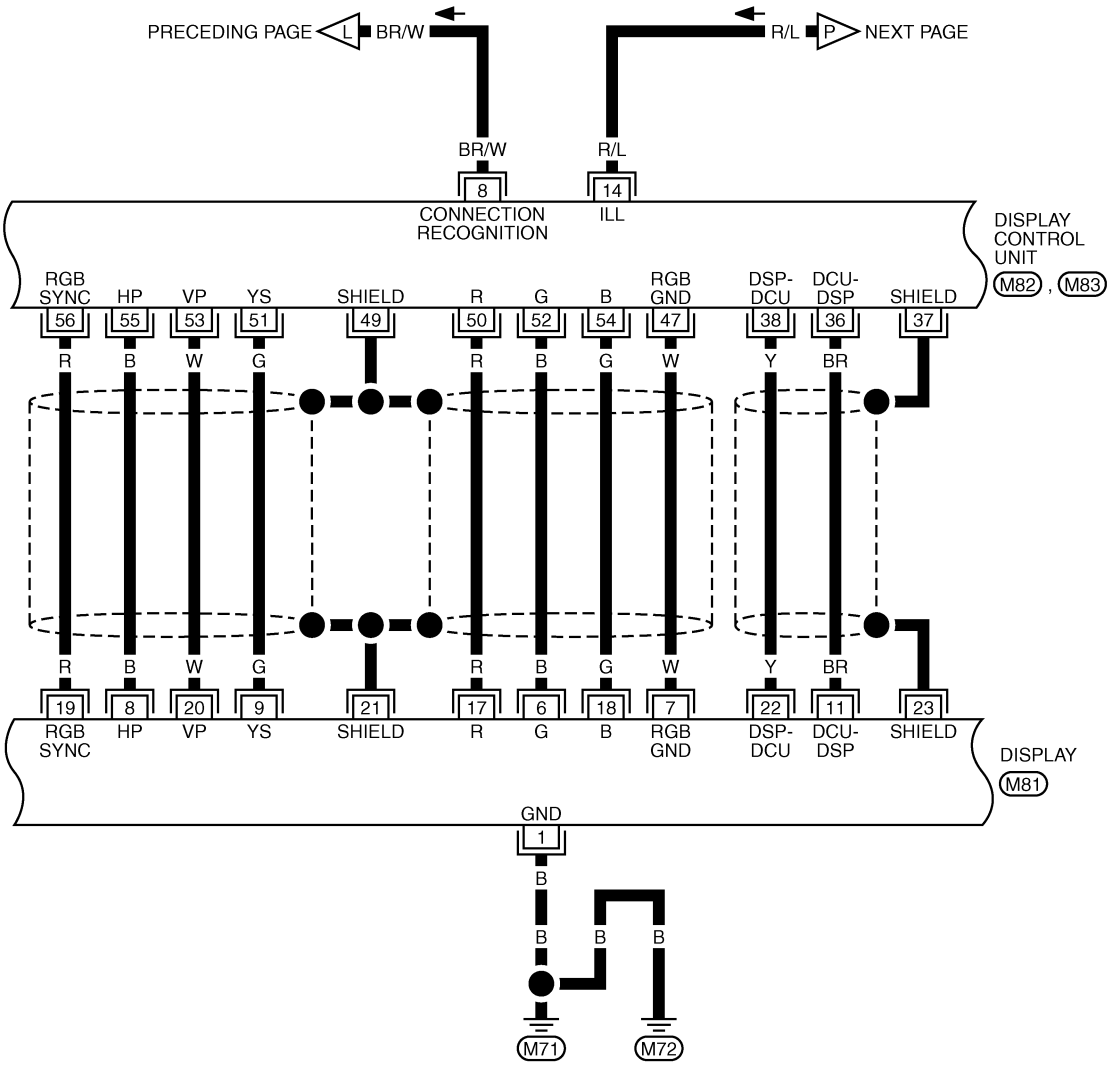


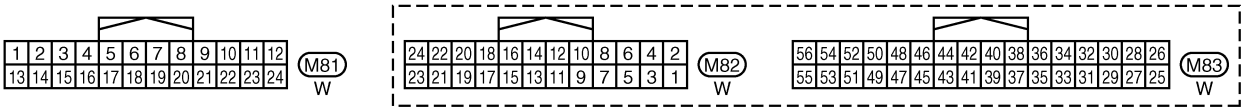
TKWM4674E


AV-INF/D-09
: DATA LINE
TO AV-INF/D-07
TO AV-INF/D-12
TO AV-INF/D-11
NEXT PAGE
REAR VIEW CAMERA
T32
CAMERA IMG
SHIELD
CAMERA ON
GND
M11
B3
T31
B23
REAR VIEW CAMERA CONTROL UNIT
B36
REV
ACC
+B
CONNECTION RECOGNITION
DDL
DATA LINK CONNECTOR
M32
DISPLAY
M81
B16
B17


M11
BR
M32
W
M81
W
B36
W
T31
W
T32
W

TKWM4675E

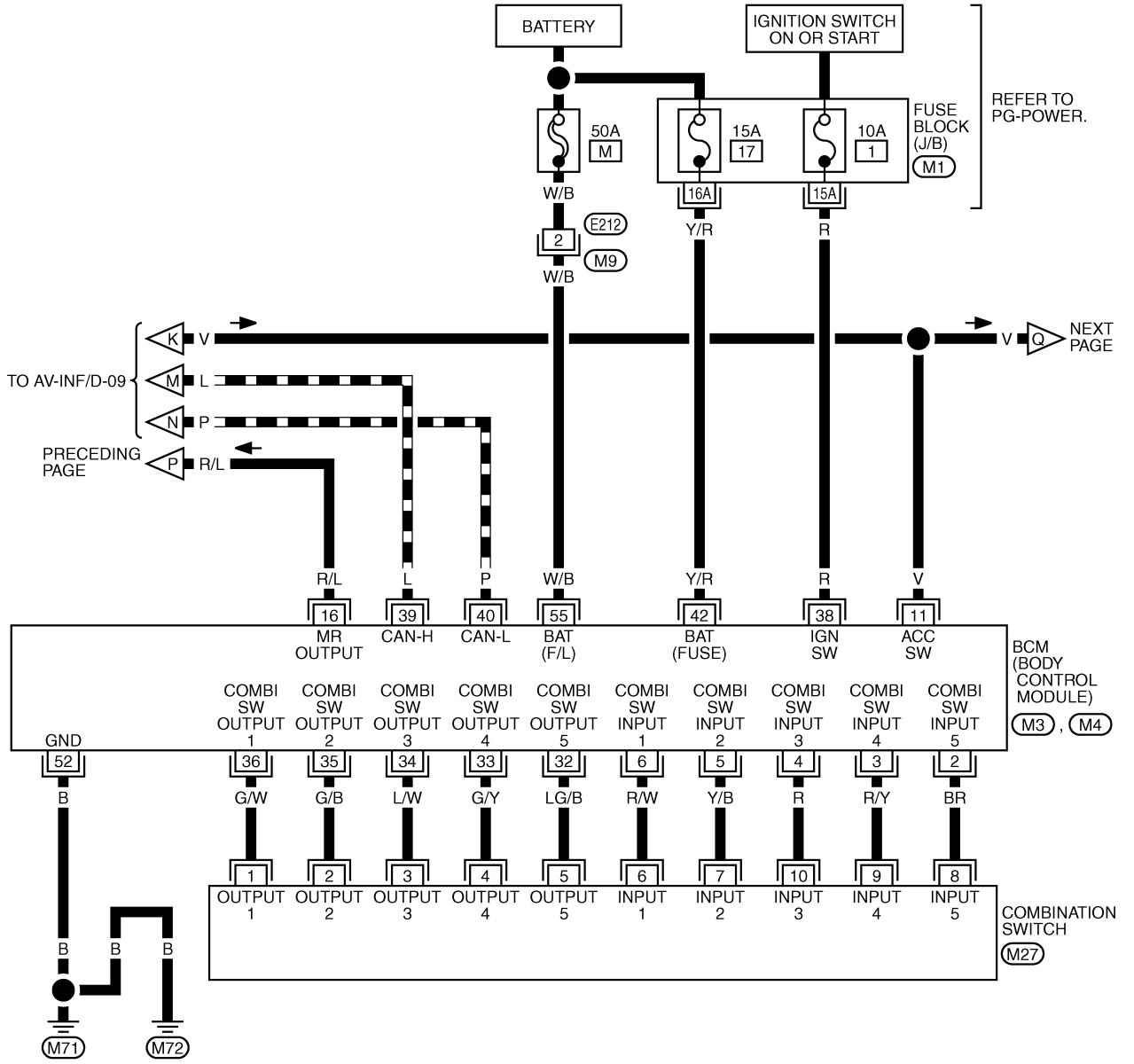

PRECEDING PAGE
L
BR/W
R/L
P
NEXT PAGE
BR/W
8
CONNECTION RECOGNITION
R/L
14
ILL
DISPLAY CONTROL UNIT
M82 , M83
RGB SYNC 56
HP 55
VP 53
YS 51
SHIELD 49
R 50
G 52
B 54
RGB GND 47
DSP-DCU 38
DCU-DSP 36
SHIELD 37
R B W G R B G W Y BR
R B W G R B G W Y BR
19 RGB SYNC
8 HP
20 VP
9 YS
21 SHIELD
17 R
6 G
18 B
7 RGB GND
22 DSP-DCU
11 DCU-DSP
23 SHIELD
DISPLAY
M81
GND
1
B
B B B
M71
M72

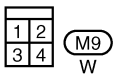

1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23 24
M81
W
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M82
W
56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26
55 53 51 49 47 45 43 41 39 37 35 33 31 29 27 25
M83
W

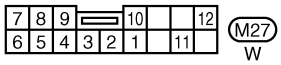
TKWM4676E

AV-INF/D-11

: DATA LINE







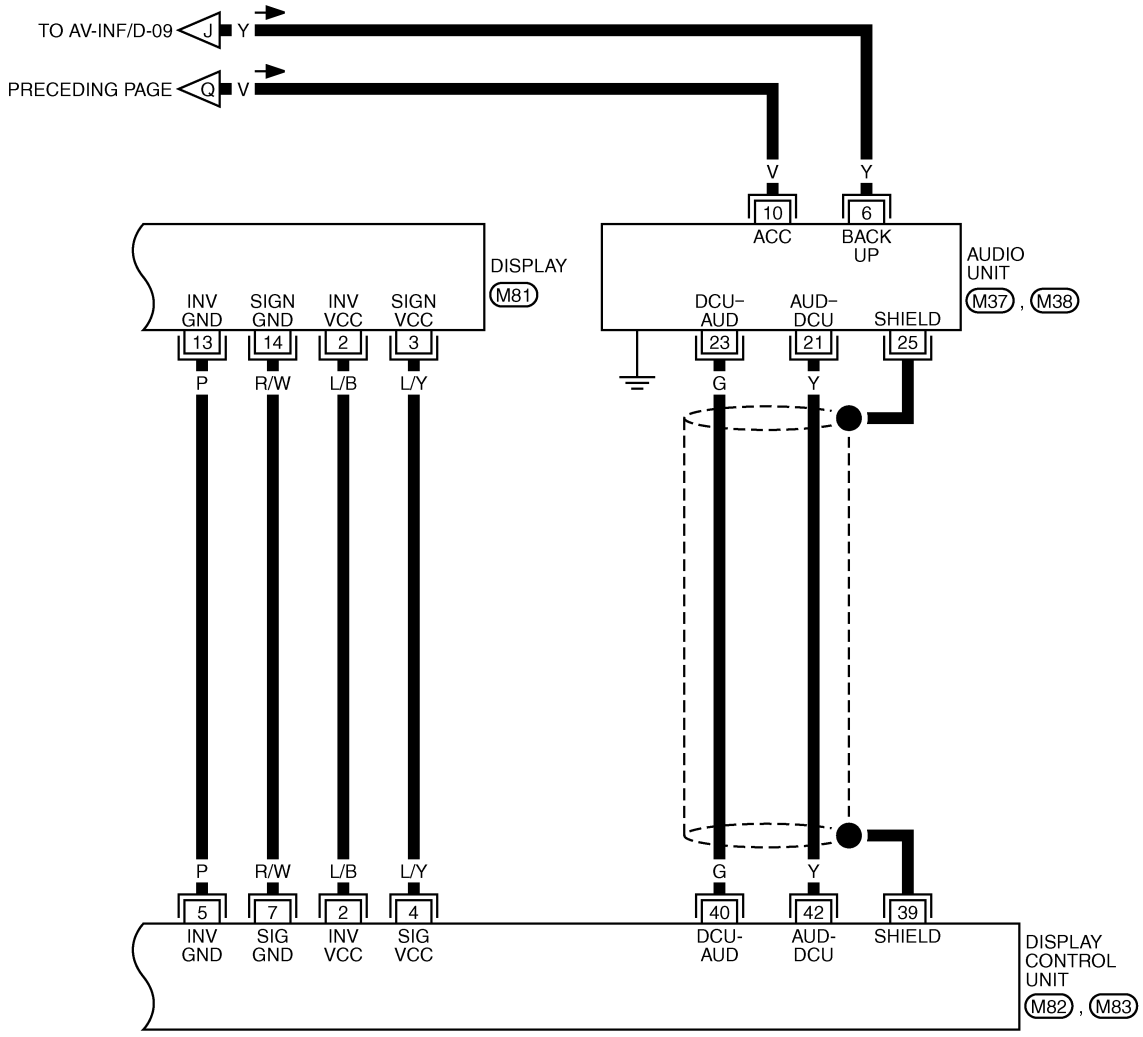
REFER TO THE FOLLOWING.

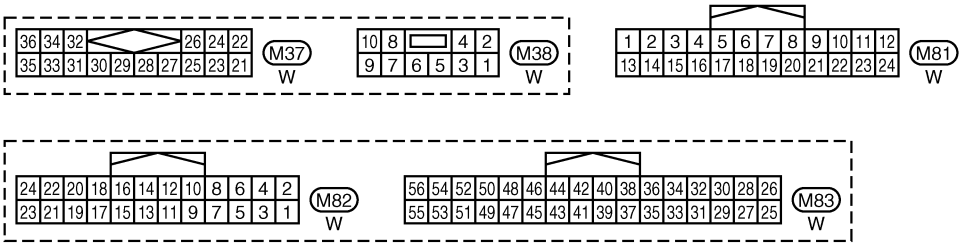
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

M3 , M4 -ELECTRICAL UNITS

TKWM4677E

AV-INF/D-12

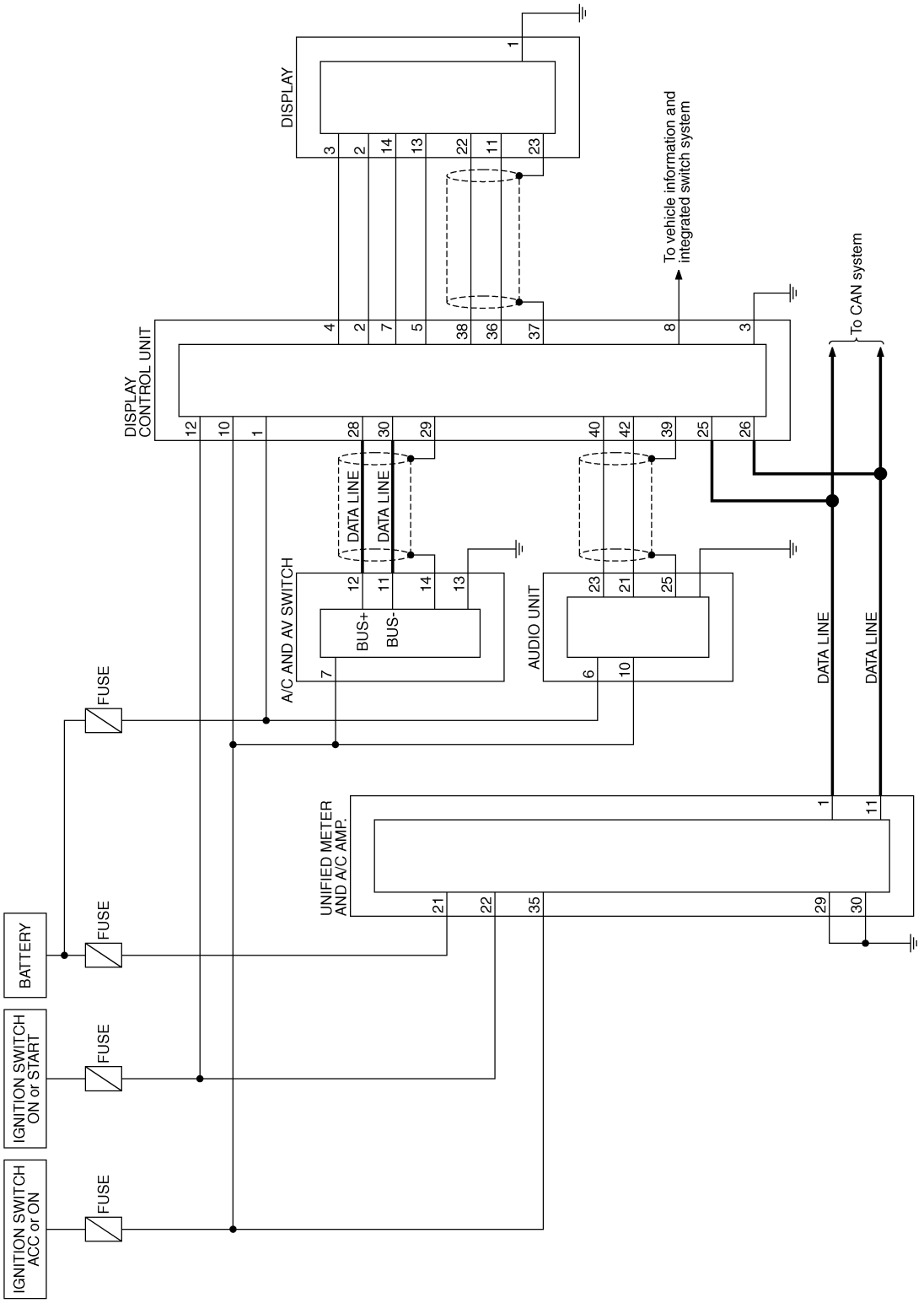




TKWM4678E

Schematic — COMM —

BKS0027P

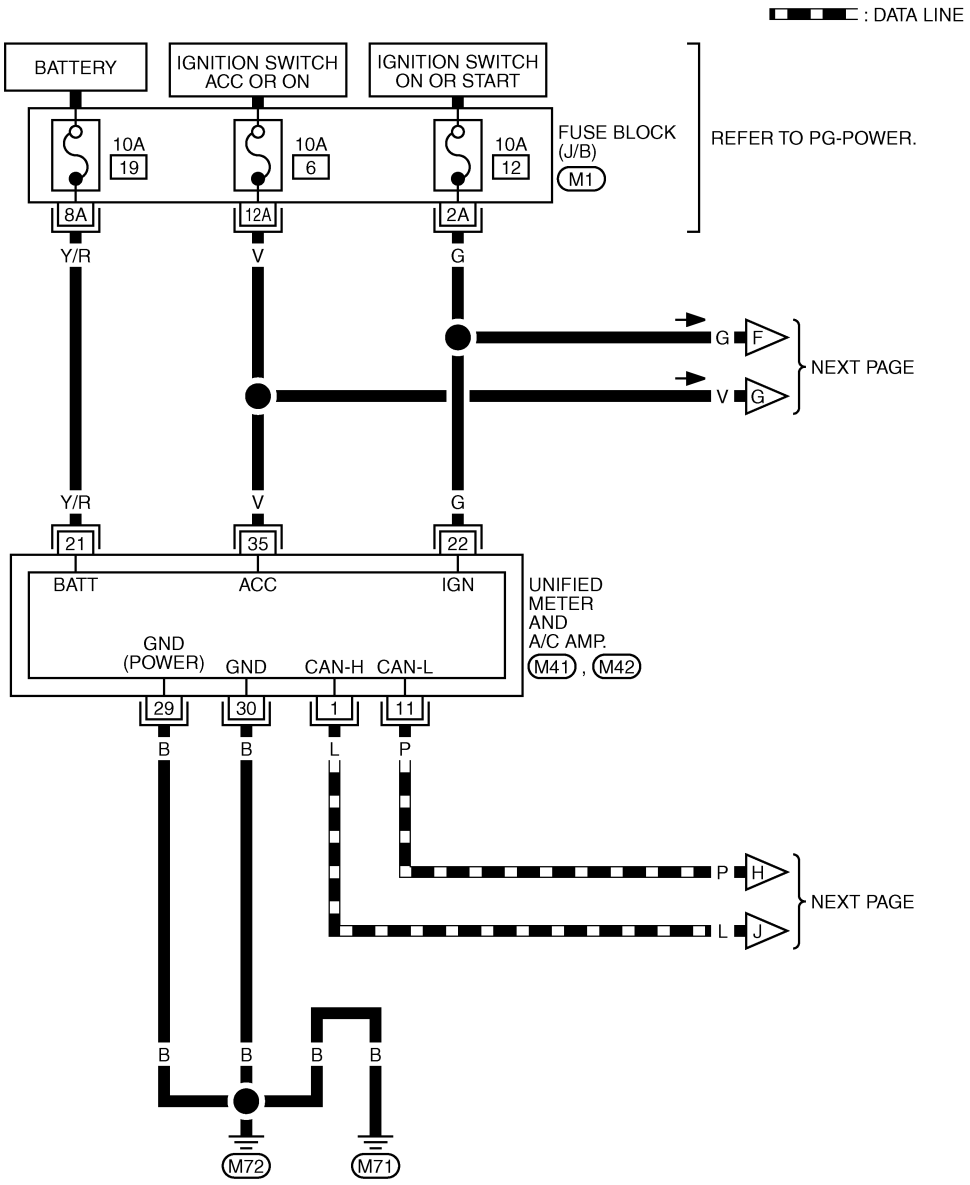


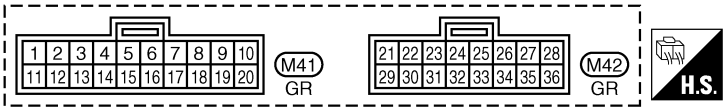
TKWM4681E

Wiring Diagram — COMM —

BKS0027Q

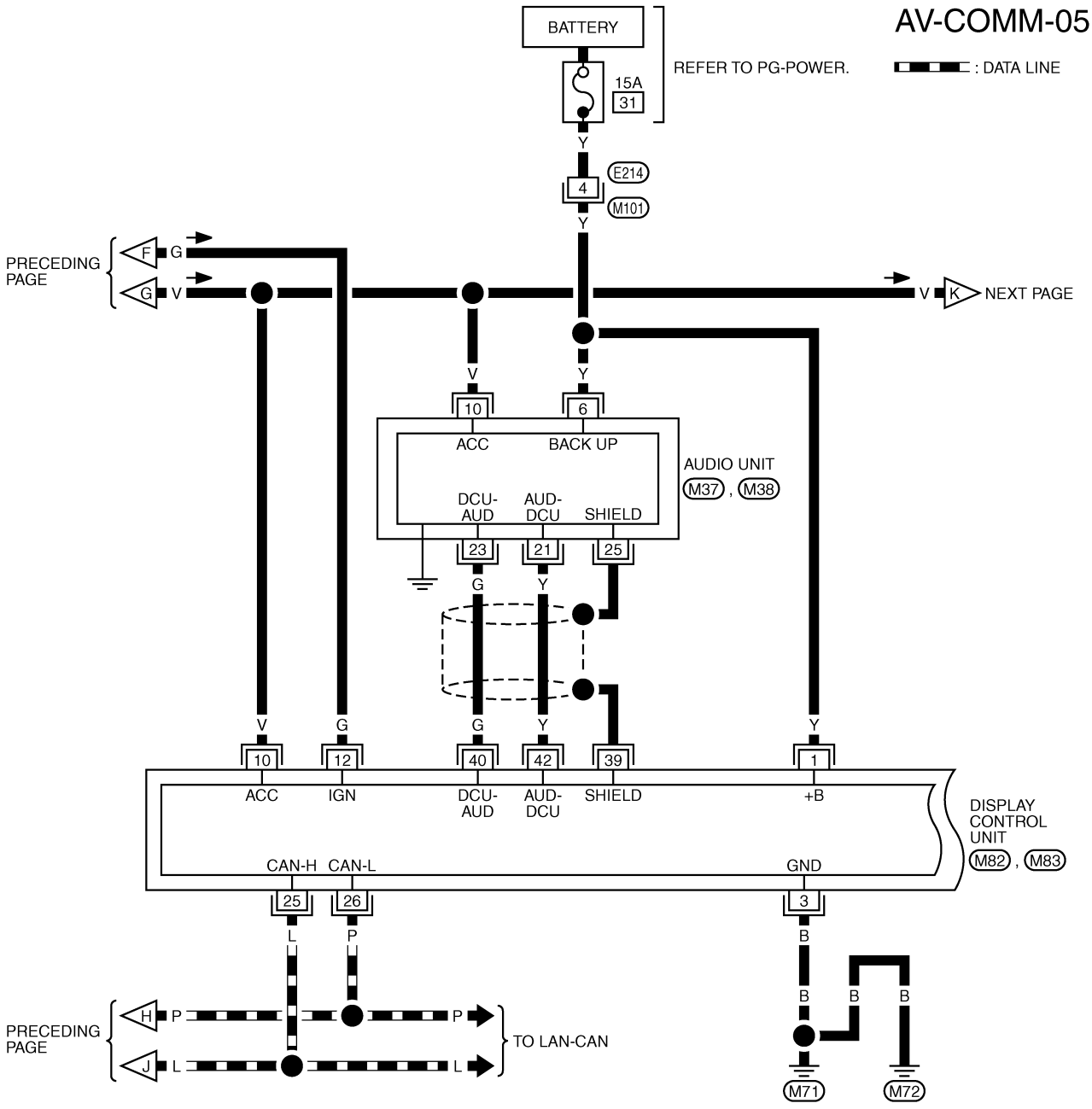
AV-COMM-04

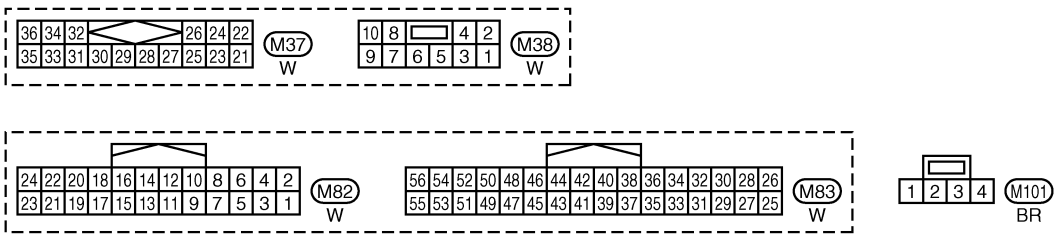




REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM1720E

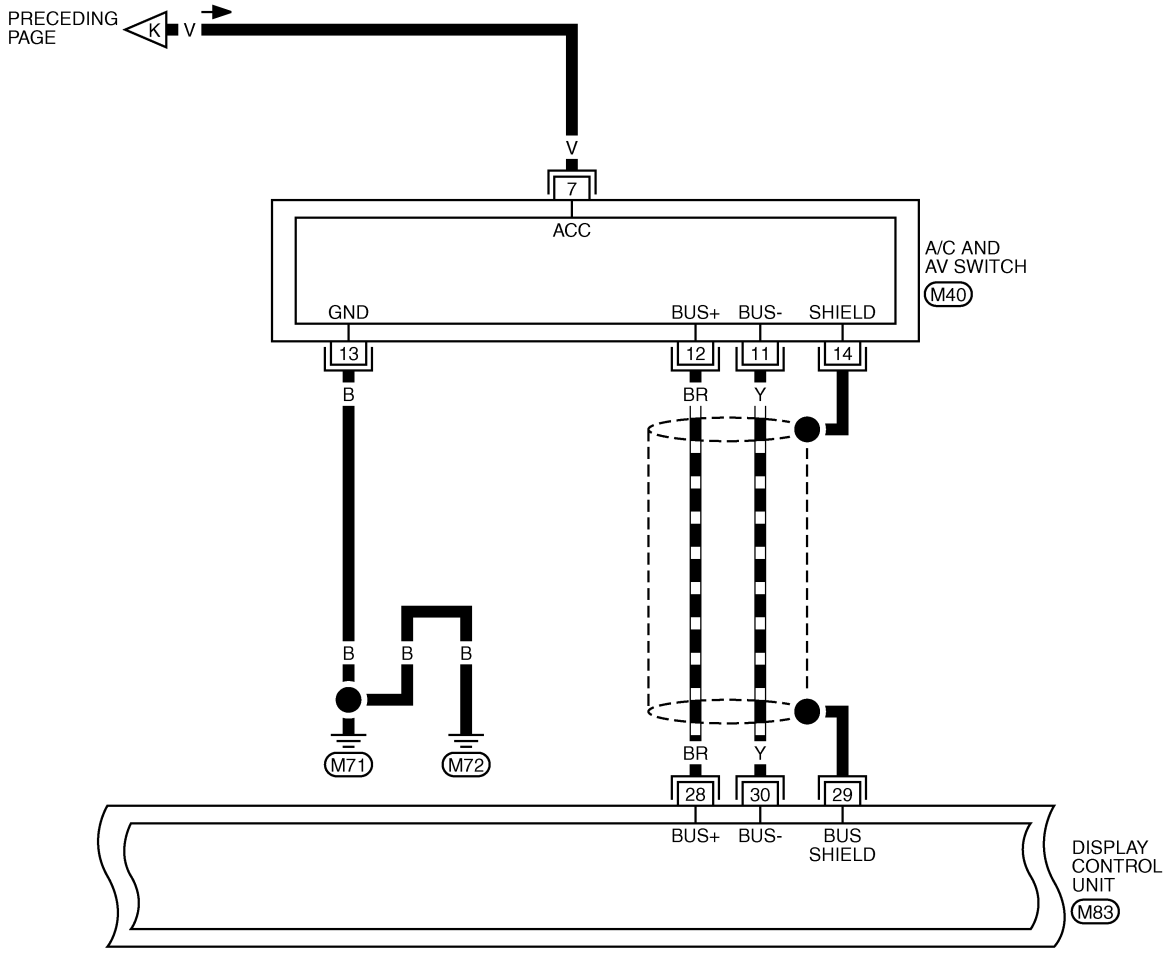

AV-COMM-05
BATTERY
15A
31
REFER TO PG-POWER.
: DATA LINE
E214
4
M101
PRECEDING PAGE
NEXT PAGE
ACC
BACK UP
AUDIO UNIT
M37 , M38
DCU-AUD
AUD-DCU
SHIELD
ACC
IGN
DCU-AUD
AUD-DCU
SHIELD
+B
DISPLAY CONTROL UNIT
M82 , M83
CAN-H
CAN-L
GND
TO LAN-CAN
M71
M72

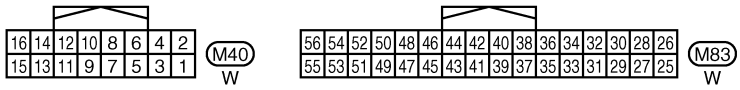

M37 W
M38 W
M82 W
M83 W
M101 BR

TKWM4682E

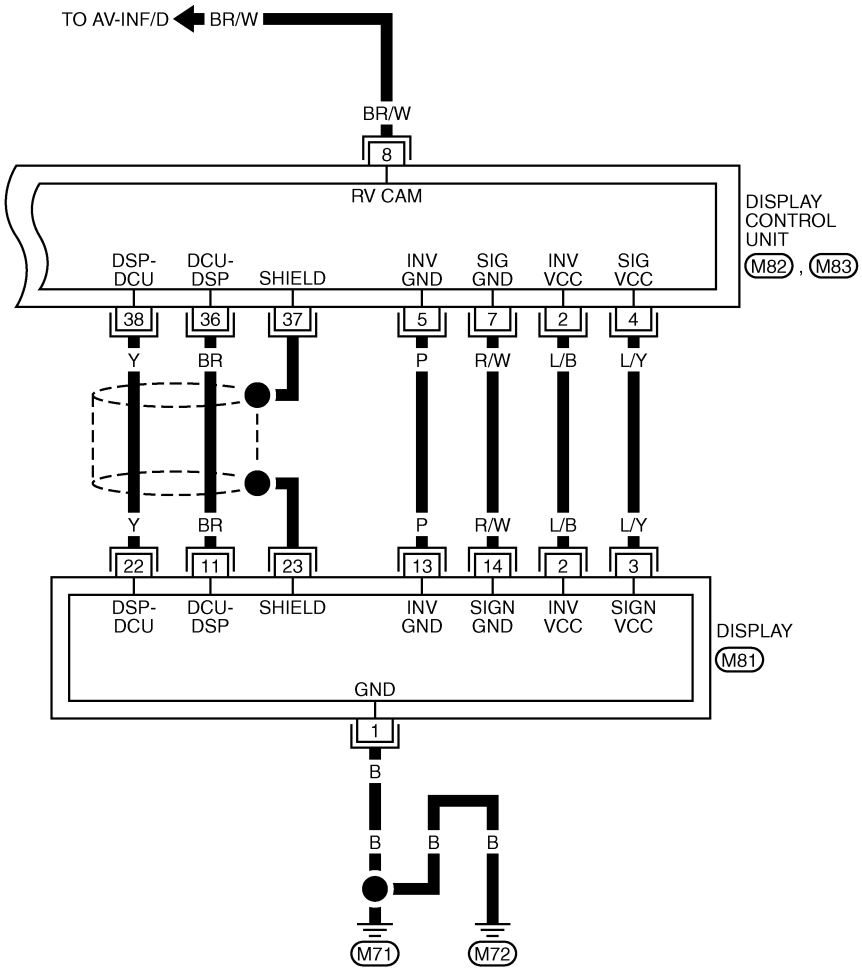
AV-COMM-06

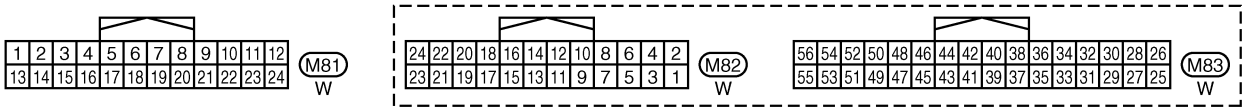
: DATA LINE





TKWM4683E

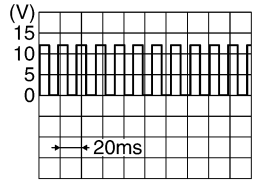
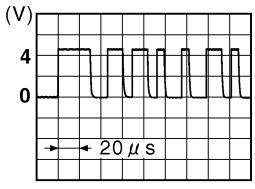
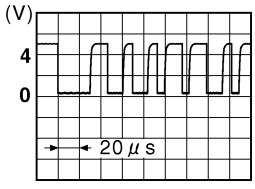

TO AV-INF/D
BR/W
BR/W
8
RV CAM
DISPLAY CONTROL UNIT
M82 , M83
DSP-DCU
DCU-DSP
SHIELD
INV GND
SIG GND
INV VCC
SIG VCC
38
36
37
5
7
2
4
Y
BR
P
R/W
L/B
L/Y
22
11
23
13
14
2
3
DISPLAY
M81
GND
1
B
M71
M72

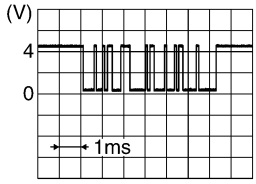
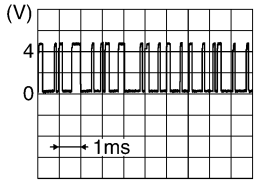
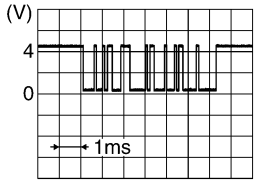
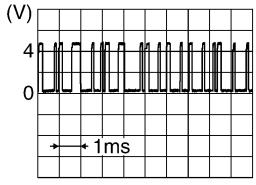
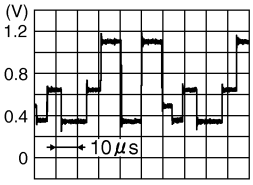
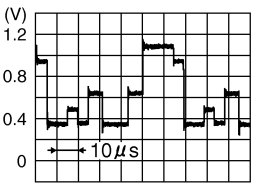

1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23 24
M81
W
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M82
W
56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26
55 53 51 49 47 45 43 41 39 37 35 33 31 29 27 25
M83
W

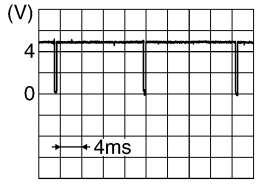
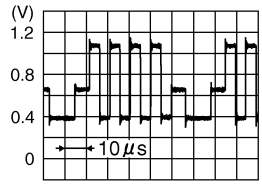
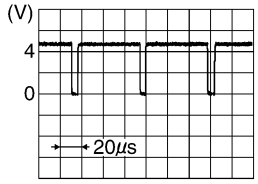
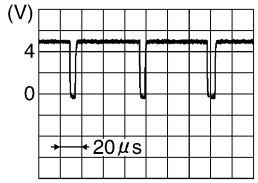
TKWM4684E

Terminals and Reference Value for Display Control Unit

BKS0027R

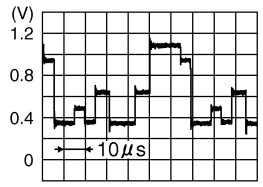
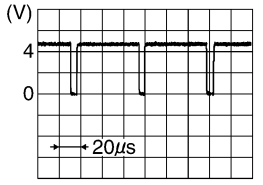
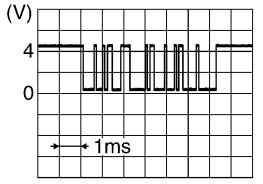
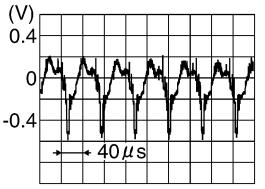
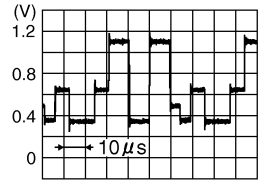
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (L/B)	Ground	Power supply (Inverter)	Output	ON	—	Approx. 9 V
3 (B)	Ground	Ground	—	ON	—	Approx. 0 V
4 (L/Y)	Ground	Power supply (Signal)	Output	ON	—	Approx. 9 V
5 (P)	Ground	Ground (Inverter)	—	ON	—	Approx. 0 V
6 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V
					Selector lever except in R position	Approx. 0 V
7 (R/W)	Ground	Ground (Signal)	—	ON	—	Approx. 0 V
8 (BR/W)	Ground	Camera-connection recognition signal	Input	ON	Connected to rear view camera control unit connector	Approx. 0 V
					Not connected to rear view camera control unit connector	Approx. 5 V
10 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
12 (G)	Ground	Ignition signal	Input	ON	—	Battery voltage
14 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
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
25 (L)	—	CAN-H	—	—	—	—
26 (P)	—	CAN-L	—	—	—	—
28 (BR)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
29	—	Shield	—	—	—	—
30 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E

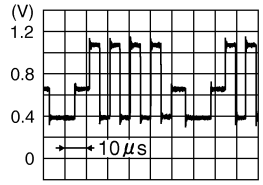
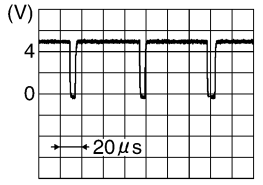
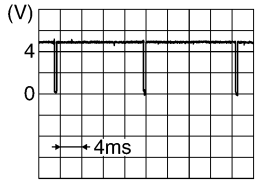
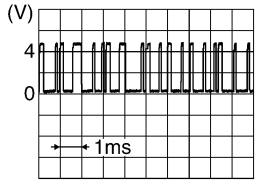
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
36 (BR)	Ground	Communication signal (DCU-DSP)	Output	ON	—	 SKIB3607E
37	—	Shield	—	—	—	—
38 (Y)	Ground	Communication signal (DSP-DCU)	Input	ON	—	 SKIB3606E
39	—	Shield	—	—	—	—
40 (G)	Ground	Communication signal (DCU-AUD)	Output	ON	Operate audio volume switch	 SKIB3607E
42 (Y)	Ground	Communication signal (AUD-DCU)	Input	ON	Operate audio volume switch	 SKIB3606E
47 (W)	Ground	Ground (RGB)	—	ON	—	Approx. 0 V
49	—	Shield	—	—	—	—
50 (R)	47 (W)	RGB signal (R: red)	Output	ON	Start DCU Confirmation mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7769E
51 (G)	Ground	RGB area (YS) signal	Output	ON	When displaying RGB image	Approx. 5 V
					When displaying rear view image	Approx. 0 V
52 (B)	47 (W)	RGB signal (G: green)	Output	ON	Start DCU Confirmation mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7770E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
53 (W)	Ground	Vertical synchronizing (VP) signal	Input	ON	—	 SKIB3598E
54 (G)	47 (W)	RGB signal (B: blue)	Output	ON	Start DCU Confirmation mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7771E
55 (B)	Ground	Horizontal synchronizing (HP) signal	Input	ON	—	 SKIB3601E
56 (R)	Ground	RGB synchronizing signal	Output	ON	When displaying RGB image	 SKIB3603E

Terminals and Reference Value for Display

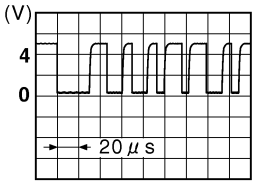
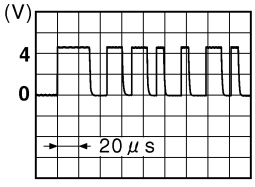
BKS0027S

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (B)	Ground	Ground	—	ON	—	Approx. 0 V
2 (L/B)	Ground	Power supply (Inverter)	Input	ON	—	Approx. 9 V
3 (L/Y)	Ground	Power supply (Signal)	Input	ON	—	Approx. 9 V
4	—	Shield	—	—	—	—
6 (B)	Ground	RGB signal (G: green)	Input	ON	Start DCU Confirmation mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7770E
7 (W)	Ground	Ground (RGB)	—	ON	—	Approx. 0 V
8 (B)	Ground	Horizontal synchronizing (HP) signal	Output	ON	—	 SKIB3601E
9 (G)	Ground	RGB area (YS) signal	Input	ON	When displaying RGB image	Approx. 5 V
					When displaying rear view image	Approx. 0 V
11 (BR)	Ground	Communication signal (DCU-DSP)	Input	ON	—	 SKIB3607E
13 (P)	Ground	Ground (Inverter)	—	ON	—	Approx. 0 V
14 (R/W)	Ground	Ground (Signal)	—	ON	—	Approx. 0 V
15 (W)	Ground	Rear view image signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E
17 (R)	Ground	RGB signal (R: red)	Input	ON	Start DCU Confirmation mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7769E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
18 (G)	Ground	RGB signal (B: blue)	Input	ON	Start DCU Confirmation mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7771E
19 (R)	Ground	RGB synchronizing signal	Input	ON	When displaying RGB image	 SKIB3603E
20 (W)	Ground	Vertical synchronizing (VP) signal	Output	ON	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (Y)	Ground	Communication signal (DSP-DCU)	Output	ON	—	 SKIB3606E
23	—	Shield	—	—	—	—

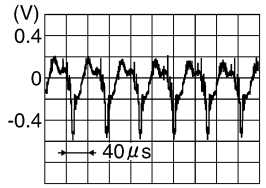
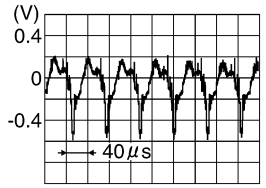
Terminals and Reference Value for A/C and AV Switch

BKS0027T

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (G/B)	3 (B/W)	Remote control signal A	Input	ON	Press and hold MODE switch	Approx. 0 V
					Press and hold SEEK DOWN switch	Approx. 1.7 V
					Press and hold VOL DOWN switch	Approx. 3.3 V
					Except for above	Approx. 5 V
2 (R)	3 (B/W)	Remote control signal B	Input	ON	Press and hold POWER switch	Approx. 0 V
					Press and hold SEEK UP switch	Approx. 1.7 V
					Press and hold VOL UP switch	Approx. 3.3 V
					Except for above	Approx. 5 V
3 (B/W)	Ground	Remote control ground	—	ON	—	Approx. 0 V
7 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
11 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (BR)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
13 (B)	Ground	Ground	—	ON	—	Approx. 0 V
14	—	Shield	—	—	—	—

Terminals and Reference Value for Rear View Camera Control Unit

BKS0027U

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (V)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (B)	Ground	Ground	—	ON	—	Approx. 0 V
4 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V
					Other than selector lever in R position	Approx. 0 V
5 (BR/W)	Ground	Camera-connection recognition signal	Output	ON	—	Approx. 0 V
6 (O)	—	Data transmit/receive signal	—	—	—	—
8 (P)	Ground	Camera power supply	Output	ON	Set the selector lever in R position, and then display the rear view image	Approx. 6 V
9	—	Shield	—	—	—	—
10 (W)	Ground	Rear view image signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E
11	—	Shield	—	—	—	—
12 (BR)	Ground	Rear view image signal	Output	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E

Special Note for Trouble Diagnosis

BKS0027V

Prior to performing trouble diagnosis, make sure there are no corresponding description in the “Example of Symptoms Possible No Malfunction”. Refer to AV-111, "Example of Symptoms Possible No Malfunction" .

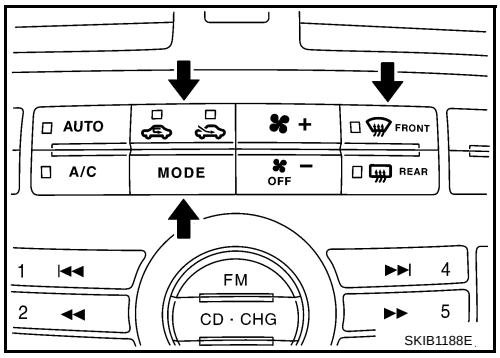
A/C and AV Switch Self-Diagnosis Function

BKS00280

Performing self-diagnosis makes it possible to check operation of A/C and AV switch indicator (LED) and other switches.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch OFF.
2. With three switches (DEF, REC/FRE and MODE) pressed simultaneously, turn the ignition switch to ACC.



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 pressing the A/C and AV switch.
- Continuity of the switches by sounding the buzzer when pressing the rear audio control switch.

NOTE:

- Indicators (LED) of REC/FRE switch change to “FRE” → “REC” → “FRE” every time the REC/FRE switch is pressed. (These two do not turn on at the same 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.

On Board Self-Diagnosis Function

BKS0027W

DESCRIPTION

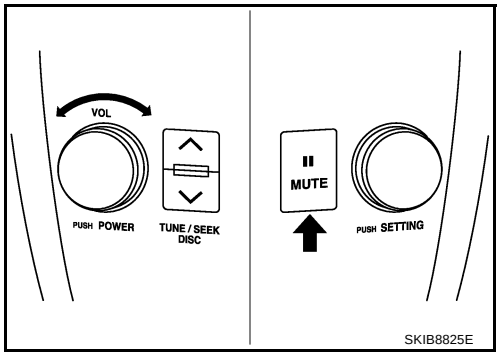
- Trouble diagnosis function of system has a self-diagnosis mode by automatic operation and a confirmation mode by manual operation.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the display.
- Confirmation mode displays trouble diagnosis that require an operation and a judgment by a human (auto-decision cannot be performed by the system), and an error history of system.

DIAGNOSIS ITEM

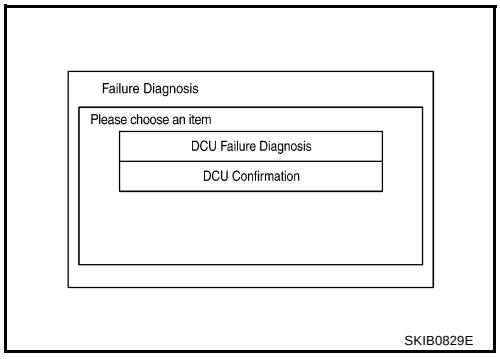
Mode			Description
DCU Failure Diagnosis			● Display control unit diagnosis ● Analyzes connection between the display control unit and each unit, and operation of each unit.
DCU Confirmation	DCU	Display Diagnosis	Color tone and shading of the display control unit-generated image can be checked by the display of a color bar and a gray scale.
		Vehicle Signal	Diagnosis of signals that are input to display control unit can be performed for speed signal, Light, IGN and Reverse.
		History of Error	Malfunctions that occurred in the past are displayed, along with the number of times each has occurred.
		Software Version	Software version of each unit is displayed.
	HVAC		Self-diagnosis of air conditioner system is performed.
	CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.

OPERATION PROCEDURE

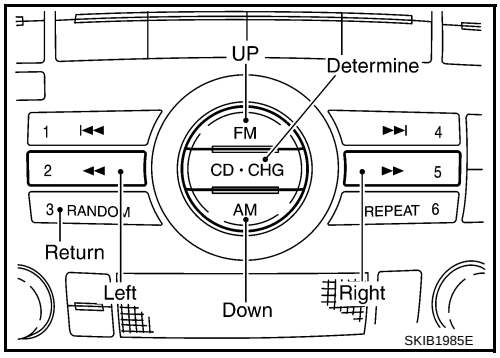
1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “MUTE” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)



4. The initial diagnosis screen is displayed.



5. The item of “DCU Failure Diagnosis” and “DCU Confirmation” can be selected.
   - Select each item with “FM” button and “AM” button of A/C and AV switch, and then determine by “CD·CHG” button.
   - When pressing “3 RANDOM” button of A/C and AV switch, return to the previous screen.

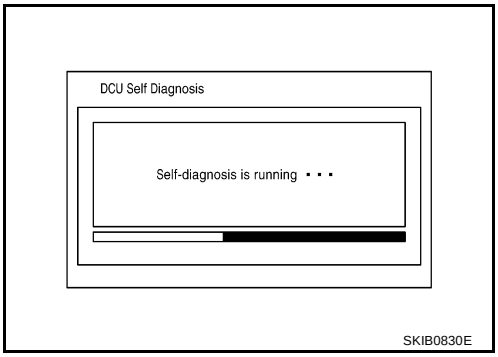


Self-Diagnosis Mode

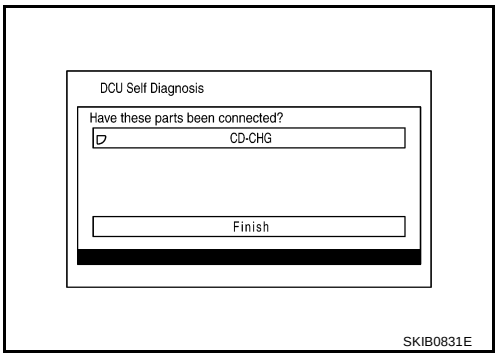
BKS0027X

DIAGNOSIS PROCEDURE

1. Select “DCU Failure Diagnosis”.
   - Self-diagnosis screen is displayed, and then self-diagnosis starts.
   - The bar graph visible below self-diagnosis screen displays progress of the diagnosis.

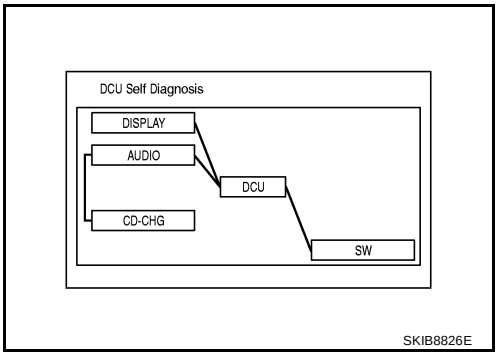


2. When exiting self-diagnosis, a confirmation screen for unit connection may be displayed.
   - When judging an optional device as an abnormal connection, a confirmation screen is displayed to check if the applicable device is actually equipped. When it is equipped, a screen for diagnosis results is displayed by selecting the device name and by selecting “Finish”. (Unequipped units can also be displayed by option.)
   - When optional device is connected normally, the switch of the device name is not displayed.



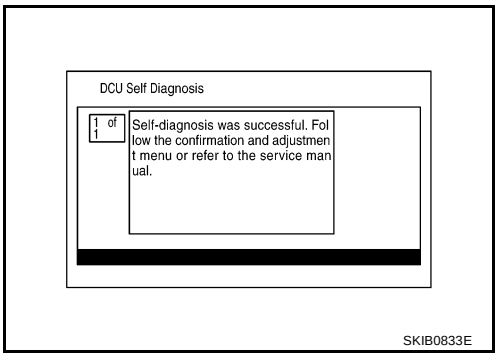
3. On the diagnosis results screen, each unit name and connection line will be colored according to the diagnosis result, as follows.

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



NOTE:
- DCU = Display control unit
- SW = A/C and AV switch
- If multiple malfunctions occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > yellow > gray.
- Screen when it is normal
  - Between DCU and SW is connected in a gray.
  - Between DCU and DISPLAY, DCU and AUDIO, AUDIO and CD-CHG are connected in green.

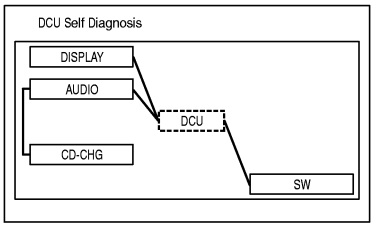
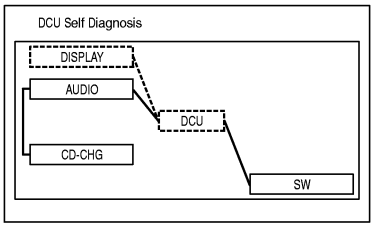
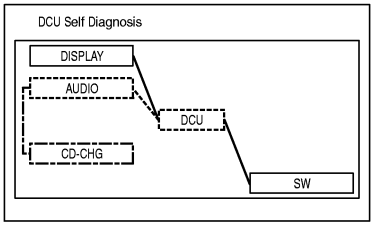
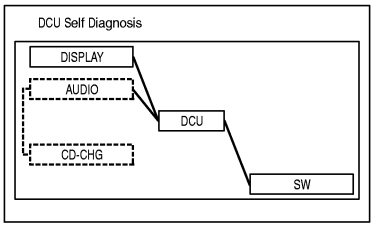
4. Select a switch on the diagnosis results screen, and comments for the diagnosis results will be shown.



SELF-DIAGNOSIS RESULT

Check the applicable display in the following table, and then repair the malfunctioning parts.

Quick Reference Table

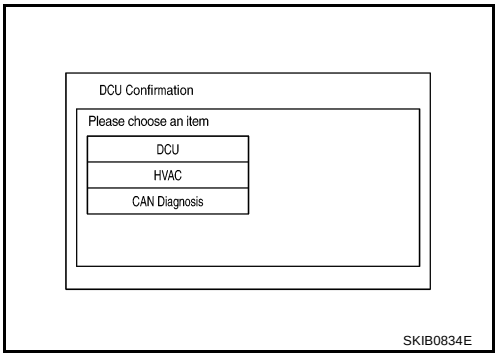
Self-diagnosis result screen	Possible cause	Action to take
 -------- : Red SKIB8827E	Display control unit malfunction is detected.	Replace display control unit.
 -------- : Yellow SKIB8828E	Malfunction is detected on communication signal between display control unit and display.	1. Check communication circuit between display control unit and display. 2. Check communication signal between display control unit and display. 3. If the results from the above checkup show no malfunction, replace either display control unit or display, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
 -------- : Yellow −·−·− : Gray SKIB8829E	● Audio unit power supply circuit malfunction is detected. ● Malfunction is detected on communication signal between display control unit and audio unit.	1. Check audio unit power supply circuit. 2. Check communication circuit between display control unit and audio unit. 3. Check communication signal between display control unit and audio unit. 4. If the results from the above checkup show no malfunction, replace either display control unit or audio unit, and then start self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace the other unit.
 -------- : Yellow SKIB8830E	● CD auto changer power supply circuit malfunction is detected. ● Malfunction is detected on communication signal between audio unit and CD auto changer.	1. Check CD auto changer power supply circuit. 2. Check communication circuit between audio unit and CD auto changer. 3. Check communication signal between audio unit and CD auto changer. 4. If the results from the above checkup show no malfunction, replace either audio unit or CD auto changer, and then start self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace the other unit.

Confirmation Mode

BKS0027Y

DIAGNOSIS PROCEDURE

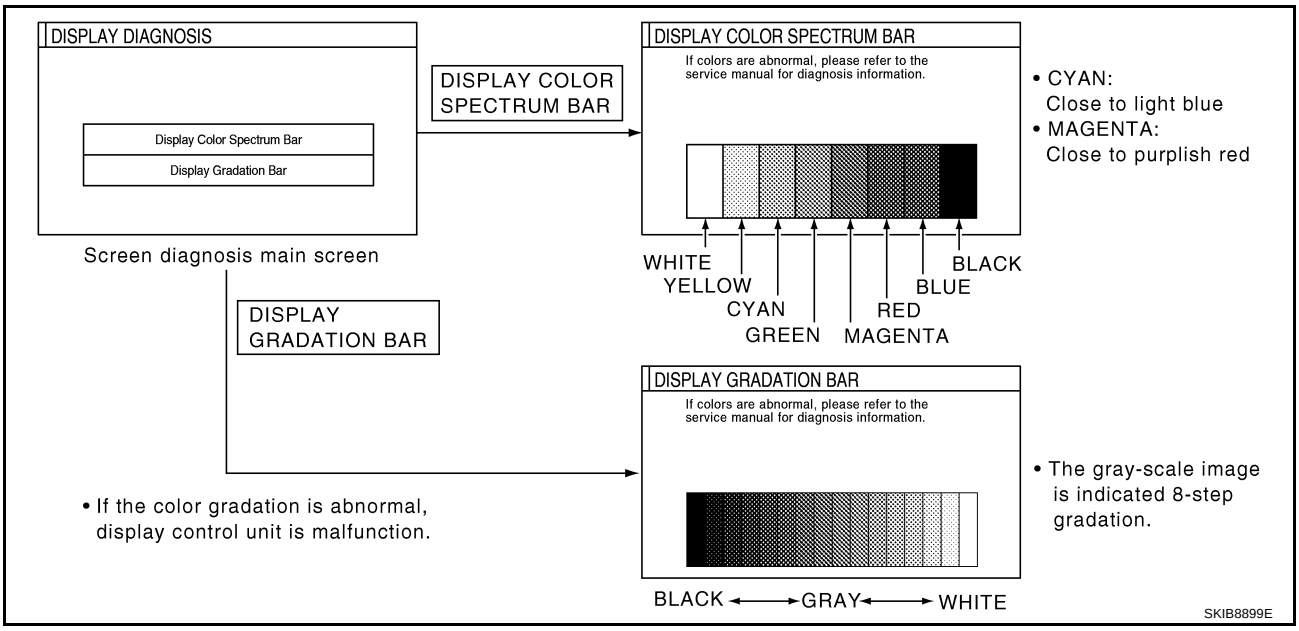
1. Select “DCU Confirmation”.
   - Each diagnosis is shown by selecting each screen switch on DCU Confirmation screen.



DCU

Display Diagnosis

Color tone and shading of the display control unit-generated image can be checked by the display of a color bar and a gray scale.

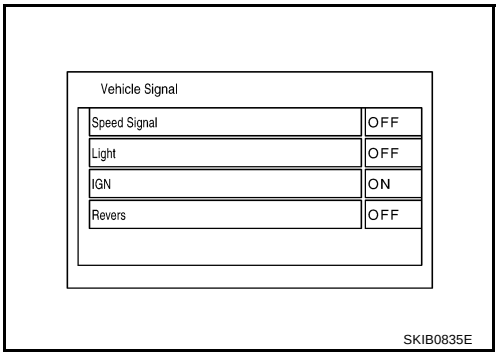


- If RGB signal is malfunctioning, the tint of the color bar display is as follows.

R (red) signal error : Light blue (Cyan) tint
G (green) signal error : Purple (Magenta) tint
B (blue) signal error : Yellow tint

Vehicle Signal

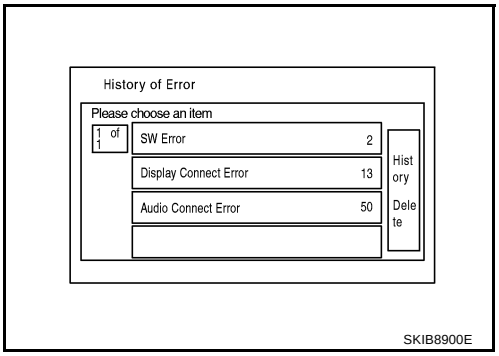
A comparison check can be made of each actual vehicle signal and the signals recognized by the display control unit.



Diagnosis item	Display	Condition	Remarks
Speed Signal	ON	When vehicle speed is more than 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 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 position	
Reverse	ON	Selector lever in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever in any position other than R position	
	—	Ignition switch in ACC position	

History of Error

Diagnosis results of self-diagnosis depend on if any error occurred during the time after selecting “DCU Failure Diagnosis” until self-diagnosis results is displayed.
Meanwhile, when an error occurs before selecting “DCU Failure Diagnosis”, and if an error does not occur until self-diagnosis results is displayed, a diagnosis result is judged as normal.
Consequently, a diagnosis needs to be performed with “History of Error” for the past error that is not available with self-diagnosis.
“History of Error” stores error occurrences up to 50, and errors after the 51st are displayed as the 50th.



Diagnosis by History of Error

When having a difficulty on the investigation of cause due to multiple errors with a reproducible malfunction, turn ON the ignition switch from OFF mode after making a memo of the item and number of time (or delete “History of Error”). Check “History of Error” again after the malfunction was reproduced, and then perform diagnosis focusing on the item of which number of time increased.

Error item	Possible cause	Action to take
DCU malfunction	Display control unit malfunction is detected.	Replace display control unit.
Display Connect Error	● Display power supply and ground circuit malfunction is detected. ● Malfunction is detected on communication signal between display control unit and display.	1. Delete the “History of Error”, and turn OFF ignition switch. 2. Turn ON ignition switch, and make sure of the “History of Error”. 3. If the error item listed left is displayed again, GO TO 4. If the error item is not displayed, end the diagnosis. (This is not a malfunction.) 4. Check display power supply and ground circuit. 5. Check communication circuit between display control unit and display. 6. Check communication signal between display control unit and display. 7. If the results from the above checkup show no malfunction, replace either display control unit or display, and then start self-diagnosis. 8. If self-diagnosis results still show any malfunction, replace the other unit.

Error item	Possible cause	Action to take
Audio Connect Error	● Audio unit power supply circuit malfunction is detected. ● Malfunction is detected on communication signal between display control unit and audio unit.	1. Start self-diagnosis, and make sure of the result. 2. If any error is found, GO TO 3. If any error is not found, delete the “History of Error” and end the diagnosis. (This is not a malfunction.) 3. Check audio unit power supply circuit. 4. Check communication circuit between display control unit and audio unit. 5. Check communication signal between display control unit and audio unit. 6. If the results from the above checkup show no malfunction, replace either display control unit or audio unit, and then start self-diagnosis. 7. If self-diagnosis results still show any malfunction, replace the other unit.
SW Error	● A/C and AV switch power supply and ground circuit malfunction is detected. ● Malfunction is detected on communication signal between display control unit and A/C and AV switch.	1. Delete the “History of Error”, and turn OFF ignition switch. 2. Turn ON ignition switch, and make sure of the “History of Error”. 3. If the error item listed left is displayed again, GO TO 4. If the error item is not displayed, end the diagnosis. (This is not a malfunction.) 4. Check A/C and AV switch power supply and ground circuit. 5. Check communication circuit between display control unit and A/C and AV switch. 6. If the results from the above checkup show no malfunction, replace either display control unit or A/C and AV switch, and then start self-diagnosis. 7. If self-diagnosis results still show any malfunction, replace the other unit.

Software Version

Software version of each unit is displayed.

HVAC

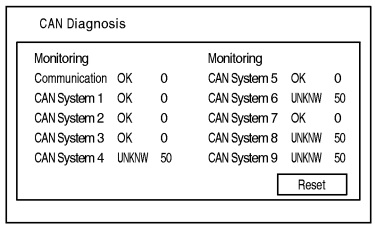
Self-diagnosis of air conditioner system is performed. Refer to ATC-46, "Self-diagnosis Function" .

CAN DIAGNOSIS

The transmitting/receiving of CAN communication can be monitored.

Item	Content	Error counter
Communication	OK / NG	0 - 50
CAN System 1	OK / UNKNW	0 - 50
CAN System 2	OK / UNKNW	0 - 50
CAN System 3	OK / UNKNW	0 - 50
CAN System 4	OK / UNKNW	0 - 50
CAN System 5	OK / UNKNW	0 - 50
CAN System 6	OK / UNKNW	0 - 50
CAN System 7	OK / UNKNW	0 - 50
CAN System 8	OK / UNKNW	0 - 50
CAN System 9	OK / UNKNW	0 - 50

(Example)



PKIC9893E

CONSULT-II Functions (REAR VIEW CAMERA)

BKS00281

CONSULT-II can display each diagnosis item using the diagnosis test modes shown following.

Diagnosis part	Check Item, Diagnosis Mode	Description
REAR VIEW CAMERA	WORK SUPPORT	It can adjust the vehicle width and distance guiding lines that overlap camera image.
	DATA MONITOR	Displays input data for rear view camera control unit in real-time.
	ECU PART NUMBER	Displays rear view camera control unit part number.

CONSULT-II BASIC OPERATION PROCEDURE

Refer to GI-34, "CONSULT-II Start Procedure" .

WORK SUPPORT

Operation Procedure

1. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
2. Touch “SELECT GUIDELINE PATTERN” or “ADJ GUIDELINE POSITION” on “SELECT WORK ITEM” screen.

Item	Description
SELECT GUIDELINE PATTERN	The opening of the vehicle width and distance guiding lines can be selected from 2 patterns.
ADJ GUIDELINE POSITION	Make fine adjustment to the vehicle width and distance guiding lines upper/lower/left/right

For details, refer to AV-95, "Vehicle Width and Distance Guiding Line Correction" .

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on “SELECT MONITOR ITEM” screen.

Item	Description
ALL SIGNALS	Monitors all the signal.
SELECTION FROM MENU	Selects and monitors individual items.

3. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
4. Touch “START”.
5. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Item	Description
R POSI SIG [ON/OFF]	“ON (Selector lever R position)/OFF (other than R position)” status as judged from the reverse signal is displayed.

Vehicle Width and Distance Guiding Line Correction

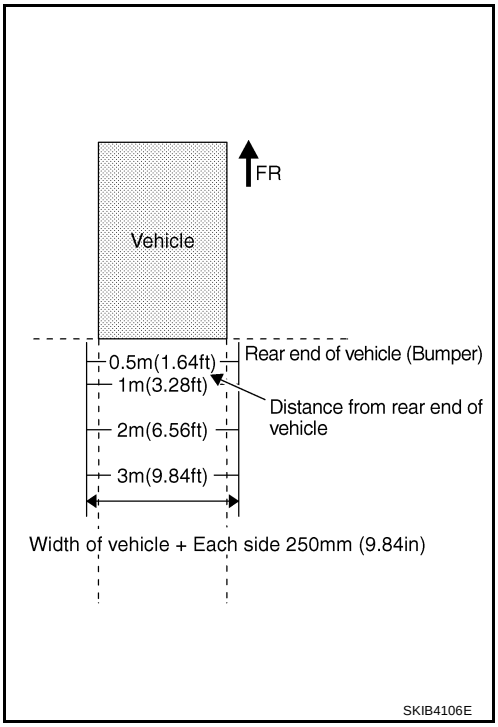
BKS00282

DESCRIPTION

CONSULT-II is used to modify the guiding lines of the width of vehicle and the distance from rear end of vehicle on the rear view monitor when these lines are derated from the actual width and/or distance, because of rear view camera replacement, etc.

VEHICLE WIDTH AND DISTANCE GUIDING LINE CORRECTION PROCEDURE

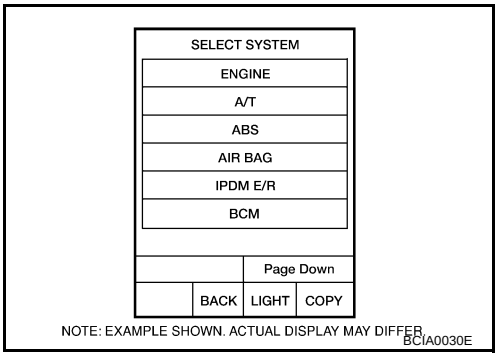
1. Create a correction line to modify the guiding lines inside monitors. Draw lines on the rearward area of the vehicle passing through the following points: 250 mm (9.84 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1 m (3.28 ft), 2 m (6.56 ft), and 3 m (9.84 ft) from the rear end of the bumper.



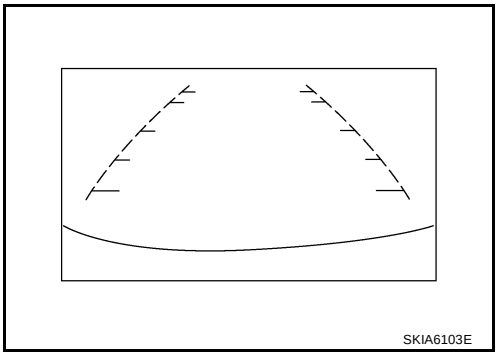
2. Connect CONSULT-II and CONSULT-II CONVERTER, and then touch “REARVIEW CAMERA” on “SELECT SYSTEM” screen.

WARNING:

Correct the guiding line with the engine stopped for safety.

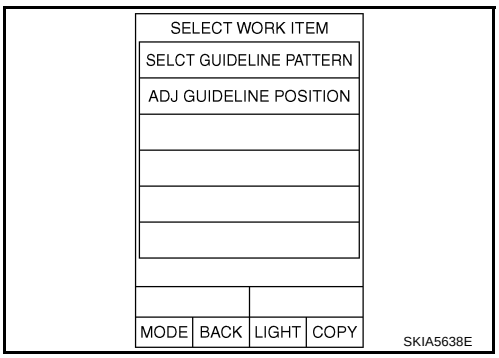


3. Shift selector lever to R position.



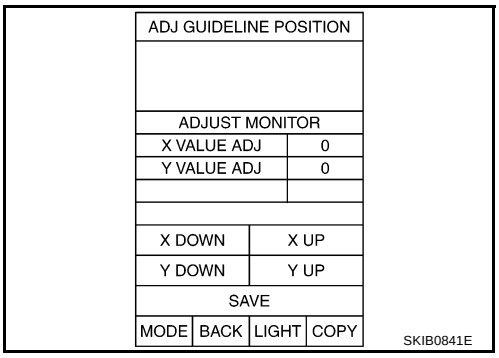
4. Touch “ADJ GUIDELINE POSITION” on “SELECT WORK ITEM” screen.

   NOTE:
   When starting “ADJ GUIDELINE POSITION” mode, vehicle width guiding lines may move horizontally. It is normal.



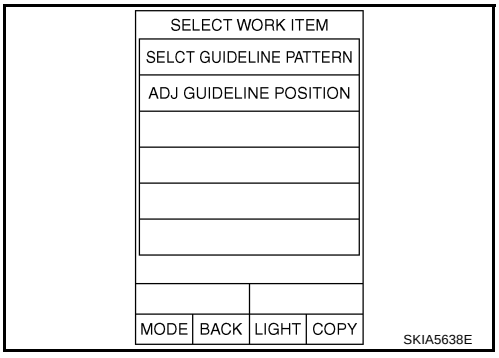
5. Touch “X UP”, “X DOWN”, “Y UP”, and “Y DOWN” so as to align with a correction line created, and then adjust the guiding lines.

Adjustment direction	ADJUST MONITOR	
LEFT/RIGHT	X VALUE ADJ	–8 - 8
UP/DOWN	Y VALUE ADJ	–8 - 8



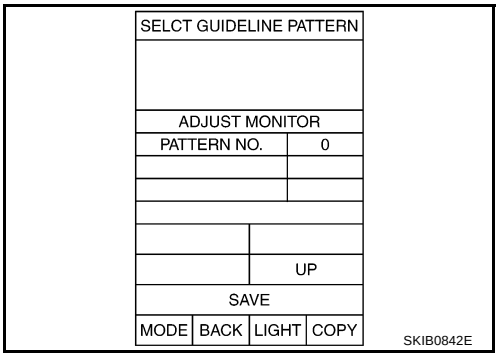
6. If the guiding lines align with the correction lines, touch “SAVE” so as to fix the lines, and then end the correction by touching “END”. GO TO 7 if the guiding lines do not align with the correction lines.

7. Touch “SELECT GUIDELINE PATTERN” on SELECT WORK ITEM screen.



8. Change the pattern of the guiding lines by touching “UP” or “DOWN”. [Select from among 2 patterns (“PATTERN NO. 0 or 1”) of the guiding lines.]
9. Fix the pattern of the guiding lines by touching “SAVE”.
10. End the correction by touching “END”.

    NOTE:
    If the setting value is changed on “SELECT GUIDELINE PATTERN” and “ADJ GUIDELINE POSITION”, the change is not reflected at the next starting if “SAVE” is not touched.



Unable to Operate System with A/C and AV Switch

BKS00284

Symptom: Unable to operate A/C system and audio system with A/C and AV switch. (Unable to start self-diagnosis.)

1. CHECK CONDITION

1. Turn ignition switch ON.
2. Check if an image is displayed on the screen.

Is an image displayed on the screen?

YES >> GO TO 2.
NO >> Repair malfunctioning part. Refer to AV-99, "All Images Are Not Displayed" .

2. SELF-DIAGNOSIS OF A/C AND AV SWITCH

Start self-diagnosis of A/C and AV switch, and check the self-diagnosis result. Refer to AV-84, "A/C and AV Switch Self-Diagnosis Function" .

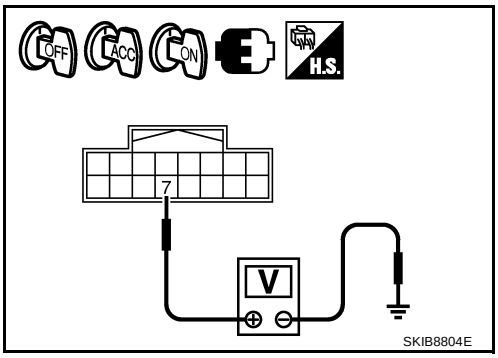
OK or NG

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

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

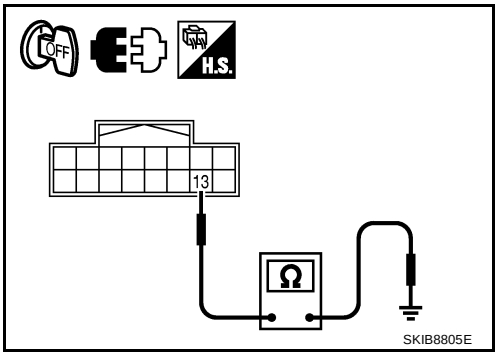
1. Check voltage between A/C and AV switch harness connector terminal and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M40	7	Ground	0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect A/C and AV switch connector.
4. Check continuity between A/C and AV switch harness connector M40 terminal 13 and ground.

13 – Ground : Continuity should exist.



OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair harness or connector.

4. CHECK HARNESS

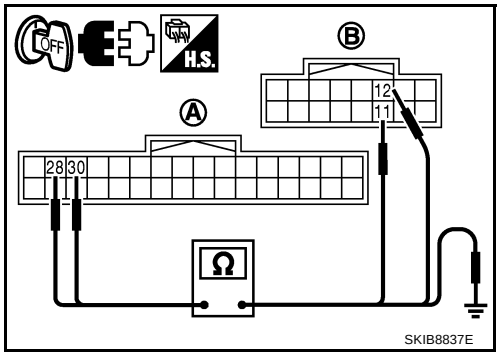
1. Turn ignition switch OFF.
2. Disconnect display control unit and A/C and AV switch connectors.
3. Check continuity between display control unit harness connector (A) M83 terminals 28, 30 and A/C and AV switch harness connector (B) M40 terminals 12, 11.

   28 – 12 : Continuity should exist.

   30 – 11 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M83 terminals 28, 30 and ground.

   28, 30 – Ground : Continuity should not exist.



OK or NG

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

5. CHECK A/C AND AV SWITCH AND DISPLAY CONTROL UNIT

1. Replace A/C and AV switch or display control unit.
2. Make sure that A/C system and audio system can be operated by A/C and AV switch.

OK or NG

OK >> INSPECTION END
NG >> Replace the other unit.

All Images Are Not Displayed

BKS00285

Symptom: RGB image and rear view image are not displayed.

1. CHECK CONDITION

When operating audio and air conditioner, make sure that they operate correctly.

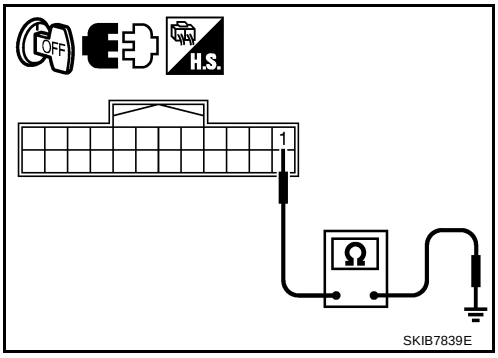
Do audio and air conditioner operate normally?

YES >> GO TO 2.
NO >> GO TO 5.

2. CHECK DISPLAY GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display connector.
3. Check continuity between display harness connector M81 terminal 1 and ground.

1 – Ground : Continuity should exist.



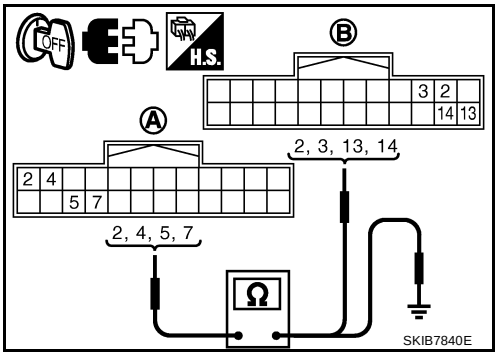
OK or NG

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

3. CHECK HARNESS

1. Disconnect display control unit connector.
2. Check continuity between display control unit harness connector (A) M82 terminals 2, 4, 5, 7 and display harness connector (B) M81 terminals 2, 3, 13, 14.

2 – 2 : Continuity should exist.
4 – 3 : Continuity should exist.
5 – 13 : Continuity should exist.
7 – 14 : Continuity should exist.



3. Check continuity between display control unit harness connector (A) M82 terminals 2, 4 and ground.

2, 4 – Ground : Continuity should not exist.

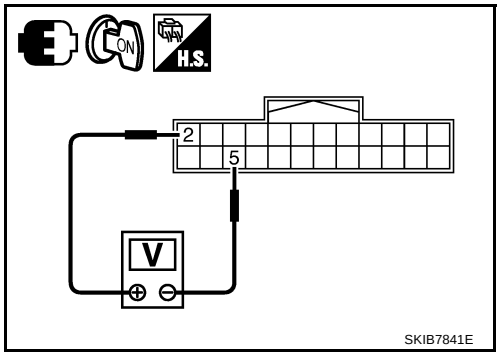
OK or NG

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

4. CHECK DISPLAY POWER SUPPLY AND GROUND CIRCUIT (INVERTER AND SIGNAL)

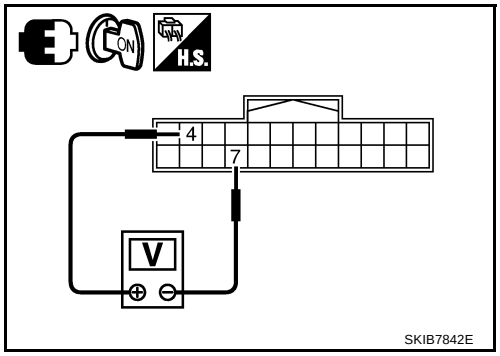
1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M82 terminals 2 and 5.

2 – 5 : Approx. 9 V



4. Check voltage between display control unit harness connector M82 terminals 4 and 7.

4 – 7 : Approx. 9 V



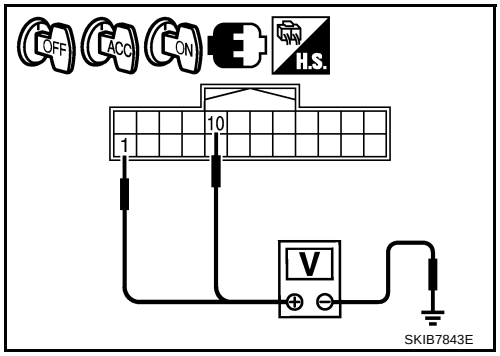
OK or NG

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

5. CHECK DISPLAY CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

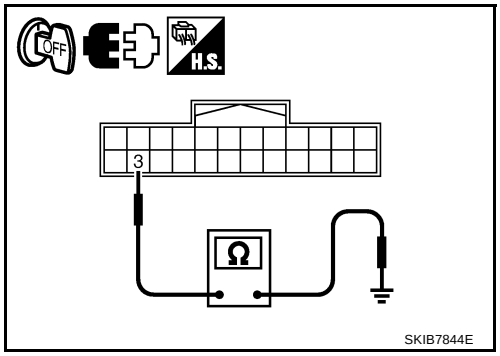
1. Check voltage between display control unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M82	1	Ground	Battery voltage	Battery voltage	Battery voltage
	10		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect display control unit connector.
4. Check continuity between display control unit harness connector M82 terminal 3 and ground.

3 – Ground : Continuity should exist.



OK or NG

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

Rear View Image Is Not Displayed (RGB Image Is Displayed)

BKS00286

Symptom: Rear view image is not displayed when selector lever is set in R position. (RGB image is displayed.)

1. CHECK CONDITION

1. Turn ignition switch ON.
2. When setting selector lever in R position, make sure that the screen does not change or changes into the screen where nothing is displayed.

Does the screen change into the screen where nothing is displayed?

YES >> GO TO 2.
NO >> GO TO 12.

2. CONSULT-II FUNCTIONS

1. Connect “CONSULT-II”. Refer to AV-94, "CONSULT-II BASIC OPERATION PROCEDURE" .
2. Check if “REARVIEW CAMERA” is shown on the SELECT SYSTEM screen.

Is “REARVIEW CAMERA” shown?

YES >> GO TO 3.
NO >> Check rear view camera control unit power supply and ground circuit, and repair malfunctioning part.

3. CONSULT-II FUNCTIONS

Check if reverse signals input to the rear view camera control unit are normal with DATA MONITOR. Refer to AV-94, "DATA MONITOR" .

OK or NG

OK >> GO TO 4.
NG >> Check rear view camera control unit reverse signal circuit, and repair malfunctioning part.

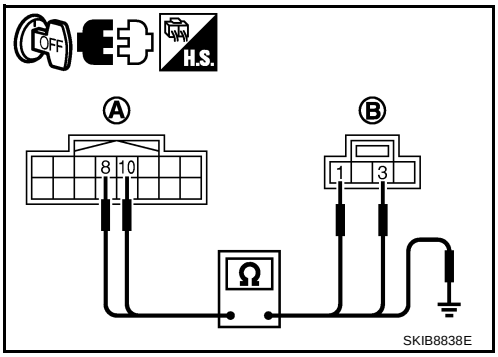
4. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit and rear view camera connectors.
3. Check continuity between rear view camera control unit harness connector (A) B36 terminals 8, 10 and rear view camera harness connector (B) T32 terminals 1, 3.

8 – 1 : Continuity should exist.
10 – 3 : Continuity should exist.

4. Check continuity between rear view camera control unit harness connector (A) B36 terminals 8, 10 and ground.

8, 10 – Ground : Continuity should not exist.



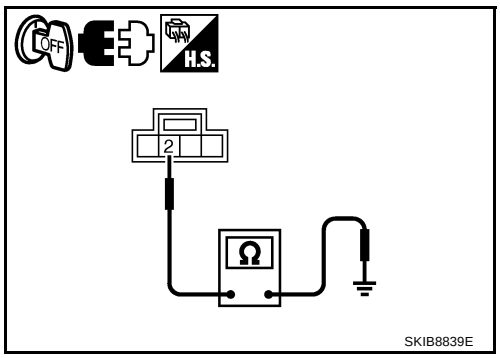
OK or NG

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

5. CHECK REAR VIEW CAMERA GROUND CIRCUIT

Check continuity between rear view camera harness connector T32 terminal 2 and ground.

2 – Ground : Continuity should exist.



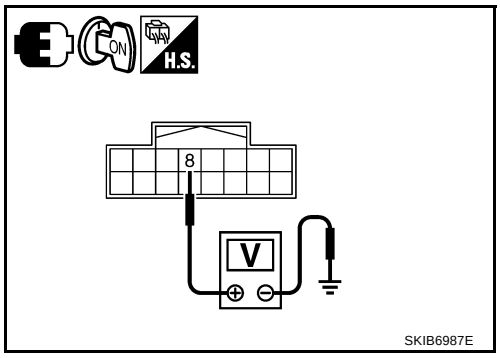
OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. CHECK REAR VIEW CAMERA POWER SUPPLY CIRCUIT

1. Connect rear view camera control unit and rear view camera connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage between rear view camera control unit harness connector B36 terminal 8 and ground.

8 – Ground : Approx. 6 V



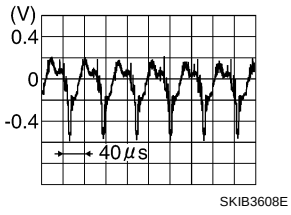
OK or NG

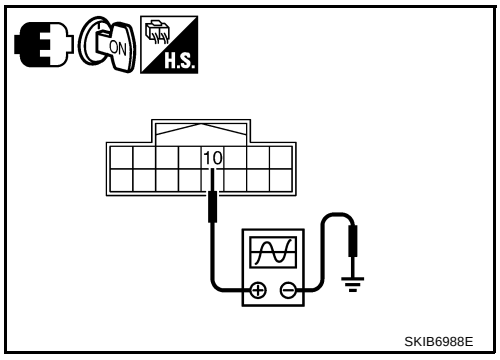
OK >> GO TO 7.
NG >> Replace rear view camera control unit.

7. CHECK REAR VIEW IMAGE SIGNAL

When displaying rear view image, check voltage waveform between rear view camera control unit harness connector B36 terminal 10 and ground with CONSULT-II or oscilloscope.

10 – Ground:





OK or NG

OK >> GO TO 8.
NG >> Replace rear view camera.

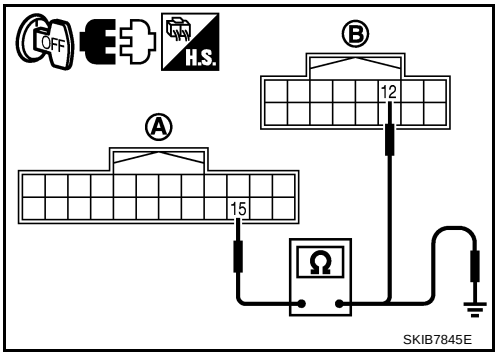
8. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display and rear view camera control unit connectors.
3. Check continuity between display harness connector (A) M81 terminal 15 and rear view camera control unit harness connector (B) B36 terminal 12.

15 – 12 : Continuity should exist.

4. Check continuity between display harness connector (A) M81 terminal 15 and ground.

15 – Ground : Continuity should not exist.



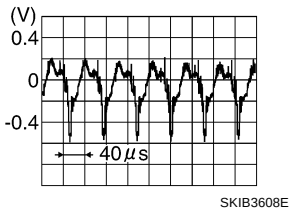
OK or NG

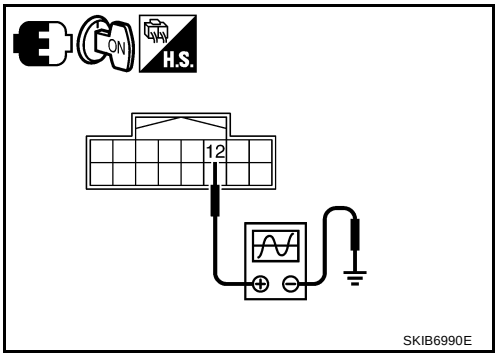
OK >> GO TO 9.
NG >> Repair harness or connector.

9. CHECK REAR VIEW IMAGE SIGNAL

1. Connect display and rear view camera control unit connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage waveform between rear view camera control unit harness connector B36 terminal 12 and ground with CONSULT-II or oscilloscope.

12 – Ground:





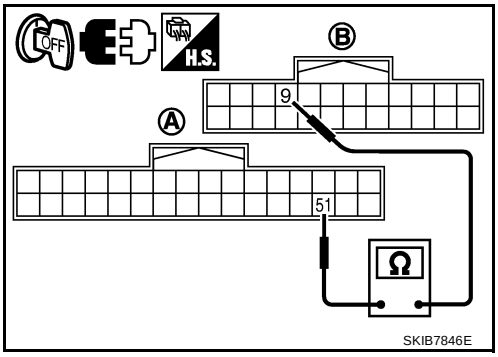
OK or NG

OK >> GO TO 10.
NG >> Replace rear view camera control unit.

10. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M83 terminal 51 and display harness connector (B) M81 terminal 9.

51 – 9 : Continuity should exist.



OK or NG

OK >> GO TO 11.
NG >> Repair harness or connector.

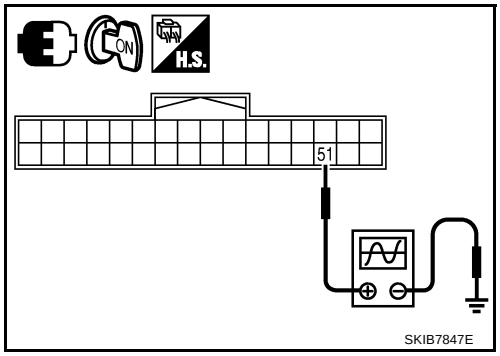
11. CHECK RGB AREA (YS) SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage waveform between display control unit harness connector M83 terminal 51 and ground with CONSULT-II or oscilloscope.

51 – Ground

When displaying RGB image : Approx. 5 V

When displaying rear view image : Approx. 0 V



OK or NG

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

12. SELF-DIAGNOSIS

Start self-diagnosis, and check the self-diagnosis result. Refer to AV-87, "Self-Diagnosis Mode" .

OK or NG

OK >> GO TO 13.
NG >> Repair malfunctioning part.

13. CHECK DISPLAY CONTROL UNIT REVERSE SIGNAL

Select “Vehicle Signal” of DCU Confirmation mode, and check the reverse signal inputting to display control unit. Refer to AV-90, "Vehicle Signal" .

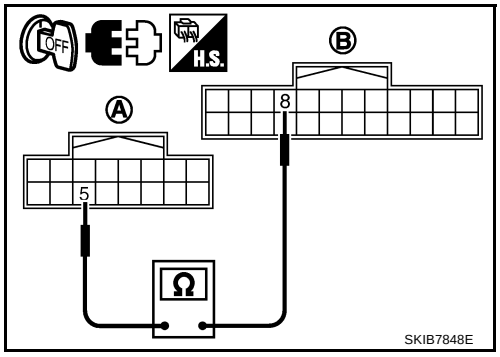
OK or NG

OK >> GO TO 14.
NG >> Check display control unit reverse signal circuit, and repair malfunctioning part.

14. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit and display control unit connectors.
3. Check continuity between rear view camera control unit harness connector (A) B36 terminal 5 and display control unit harness connector (B) M82 terminal 8.

5 – 8 : Continuity should exist.

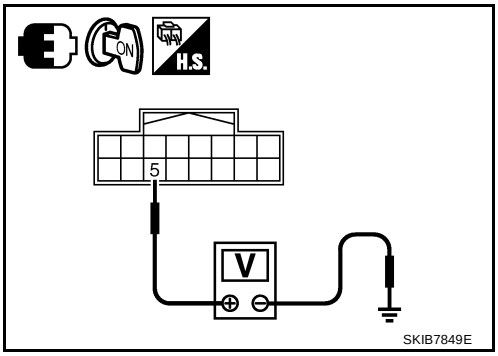


OK or NG

OK >> GO TO 15.
NG >> Repair harness or connector.

15. CHECK CAMERA-CONNECTION RECOGNITION SIGNAL

1. Connect rear view camera control unit and display control unit connectors.
2. Turn ignition switch ON.
3. Check voltage between rear view camera control unit harness connector B36 terminal 5 and ground.



5 – Ground : Approx. 0 V

OK or NG

OK >> Replace display control unit.
NG >> Replace rear view camera control unit.

When Displaying Rear View Image, SETTING Menu Is Not Displayed

BKS00287

Symptom: Pressing the “SETTING” button when displaying rear view image, SETTING menu is not displayed or rolls.

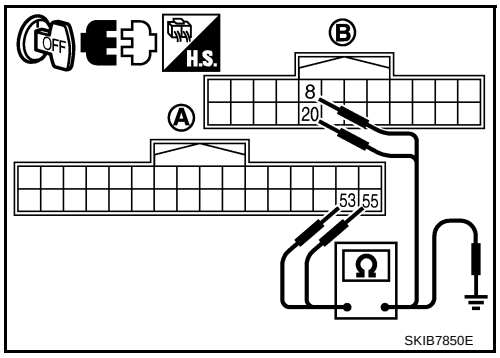
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M83 terminals 53, 55 and display harness connector (B) M81 terminals 20, 8.

   53 – 20 : Continuity should exist.
   55 – 8 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M83 terminals 53, 55 and ground.

   53, 55 – Ground : Continuity should not exist.



SKIB7850E

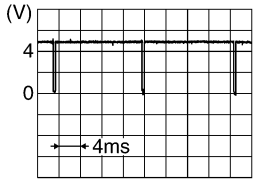
OK or NG

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

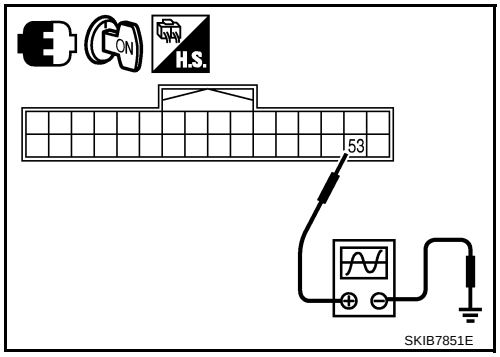
2. CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between display control unit harness connector M83 terminal 53 and ground with CONSULT-II or oscilloscope.

53 – Ground:



SKIB3598E



SKIB7851E

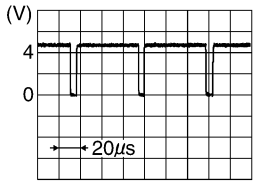
OK or NG

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

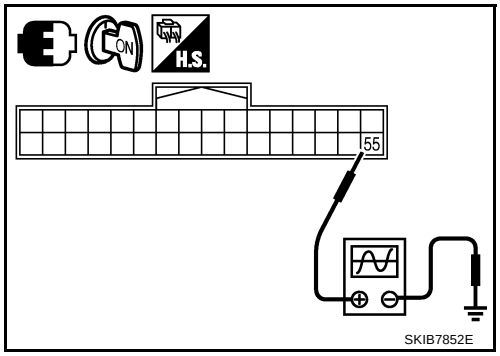
3. CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

Check voltage waveform between display control unit harness connector M83 terminal 55 and ground with CONSULT-II or oscilloscope.

55 – Ground:



SKIB3601E



SKIB7852E

OK or NG

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

Tint Is Strange for The RGB Image

BKS00288

Symptom: Tint of all RGB images is strange.

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check the malfunctioning circuit according to the symptoms.

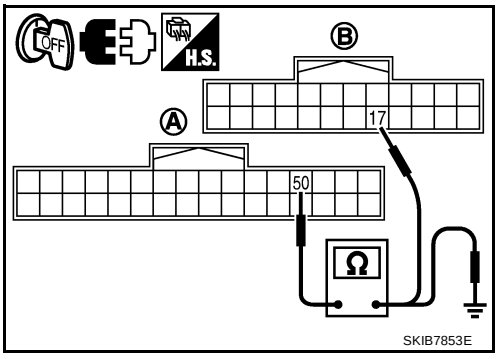
- **Light blue (Cyan) tinged screen**

Check continuity between display control unit harness connector (A) M83 terminal 50 and display harness connector (B) M81 terminal 17.

50 – 17 : Continuity should exist.

Check continuity between display control unit harness connector (A) M83 terminal 50 and ground.

50 – Ground : Continuity should not exist.



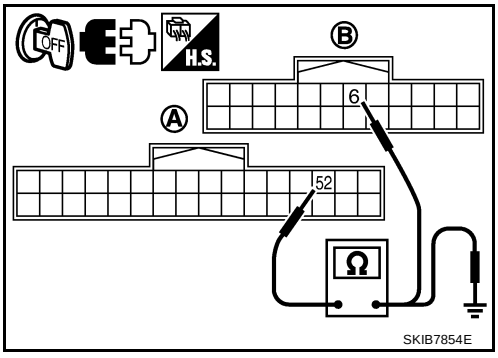
- **Purple (Magenta) tinged screen**

Check continuity between display control unit harness connector (A) M83 terminal 52 and display harness connector (B) M81 terminal 6.

52 – 6 : Continuity should exist.

Check continuity between display control unit harness connector (A) M83 terminal 52 and ground.

52 – Ground : Continuity should not exist.



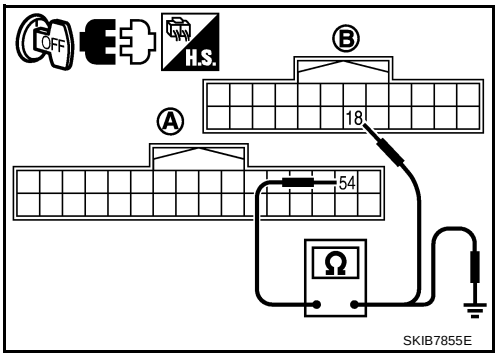
- **Yellow tinged screen**

Check continuity between display control unit harness connector (A) M83 terminal 54 and display harness connector (B) M81 terminal 18.

54 – 18 : Continuity should exist.

Check continuity between display control unit harness connector (A) M83 terminal 54 and ground.

54 – Ground : Continuity should not exist.



OK or NG

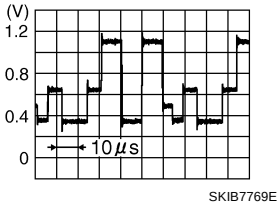
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

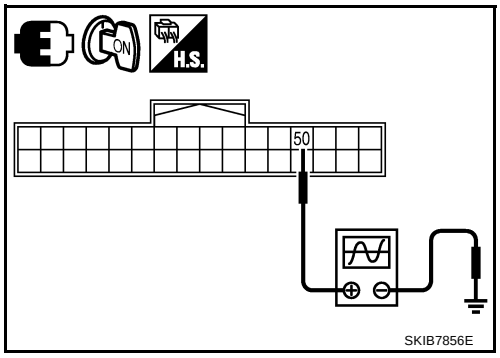
1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Start Confirmation mode. Refer to AV-89, "Confirmation Mode" .
4. Display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen. Refer to AV-89, "Display Diagnosis" .
5. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check voltage waveform between display control unit harness connector M83 terminal 50 and ground with CONSULT-II or oscilloscope.

50 – Ground:



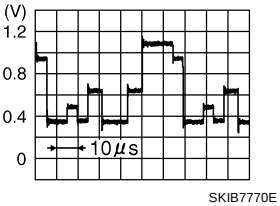
SKIB7769E



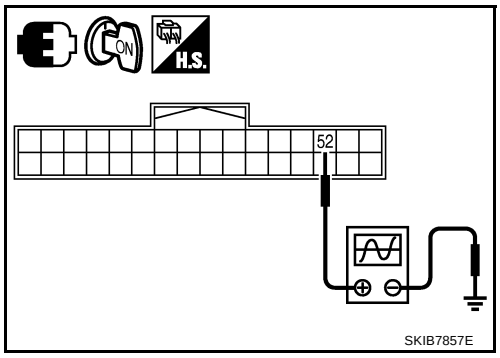
SKIB7856E

- **Purple (Magenta) tinged screen**
  Check voltage waveform between display control unit harness connector M83 terminal 52 and ground with CONSULT-II or oscilloscope.

52 – Ground:



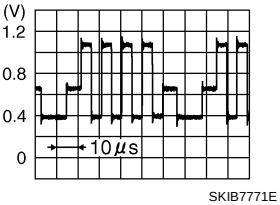
SKIB7770E



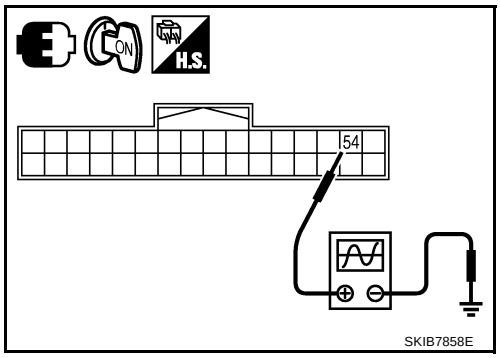
SKIB7857E

- **Yellow tinged screen**
  Check voltage waveform between display control unit harness connector M83 terminal 54 and ground with CONSULT-II or oscilloscope.

54 – Ground:



SKIB7771E



SKIB7858E

OK or NG

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

RGB Image Is Rolling

BKS00289

Symptom: RGB image is rolling.

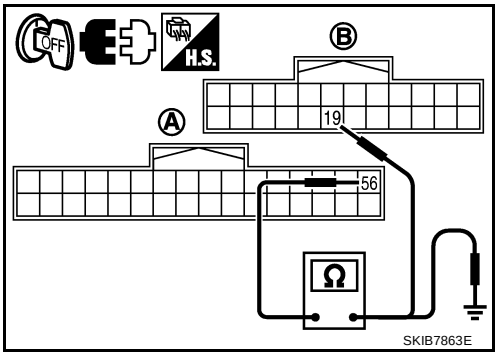
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M83 terminal 56 and display harness connector (B) M81 terminal 19.

56 – 19 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M83 terminal 56 and ground.

56 – Ground : Continuity should not exist.



SKIB7863E

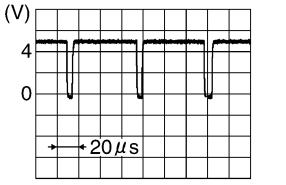
OK or NG

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

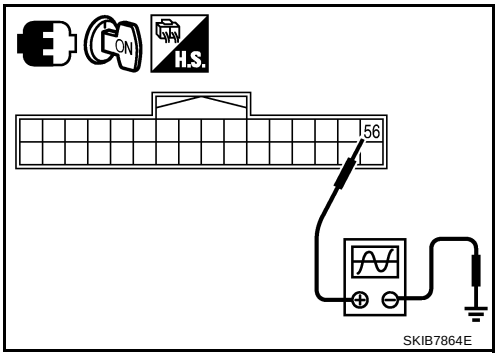
2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying RGB image, check voltage waveform between display control unit harness connector M83 terminal 56 and ground with CONSULT-II or oscilloscope.

56 – Ground:



SKIB3603E



SKIB7864E

OK or NG

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

Values for All Items in The TRIP Screen Do Not Change

BKS0028A

Symptom: Values for items, “Elapsed Time”, “Driving Distance” and “Average Speed” in the TRIP screen do not change.

1. CHECK DISPLAY CONTROL UNIT IGNITION SIGNAL

Select “Vehicle Signal” in Confirmation mode, and check the ignition signal inputting to display control unit. Refer to AV-90, "Vehicle Signal" .

OK or NG

OK >> Replace display control unit.
NG >> Check display control unit ignition signal circuit, and repair malfunctioning part.

Values for Items, “Driving Distance” and “Average Speed” Do Not Change

BKS0028B

Symptom: Values for Items, "Driving Distance" and "Average Speed" do not change. (The Value for "Elapsed Time" Changes.)

1. CHECK DISPLAY CONTROL UNIT VEHICLE SPEED SIGNAL

Select “Vehicle Signal” in Confirmation mode, and check the vehicle speed signal inputting to display control unit. Refer to AV-90, "Vehicle Signal" .

OK or NG

OK >> Replace display control unit.
NG >> Check display control unit vehicle speed signal circuit, and repair malfunctioning part.

Values for All Items in The FUEL ECONOMY Screen Do Not Change

BKS0028C

Symptom: Values for items, “Average Fuel Economy” and “Distance to Empty” in the FUEL ECONOMY screen do not change.

1. CHECK CONDITION

Check if values for all items in the TRIP screen change properly.

OK or NG

OK >> Select “CAN Diagnosis” in Confirmation mode, and check the status of CAN communication. Refer to AV-93, "CAN DIAGNOSIS" . Repair malfunctioning part after checked the status of CAN communication. Refer to LAN-49, "CAN System Specification Chart" .
NG >> Repair malfunctioning part. Refer to AV-110, "Values for All Items in The TRIP Screen Do Not Change" or AV-110, "Values for Items, “Driving Distance” and “Average Speed” Do Not Change" .

Example of Symptoms Possible No Malfunction

BKS0028D

For system operation information, refer to Owner's Manual.

DISPLAY

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The display is turned off.	Turn on the display.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, then operate the system.

REAR VIEW MONITOR

Symptom	Possible cause	Possible solution
Rear view monitor image is not shown.	Selector lever is not set to R position.	Shift the selector lever to R position.
Rear view monitor image is fuzzy.	The front glass of the camera lens is dirty.	Wipe it with a soft wet cloth lightly.
	Adherence of raindrops or snow.	Wipe it with a soft cloth lightly.
	The lens is illuminated directly by sunlight or light from headlight of cars behind.	The fuzzy image recovers when the light is covered.

Removal and Installation of A/C and AV Switch

BKS0028E

REMOVAL

Remove A/C and AV switch integral with audio unit. Refer to AV-34, "Removal and Installation of Audio Unit" .

INSTALLATION

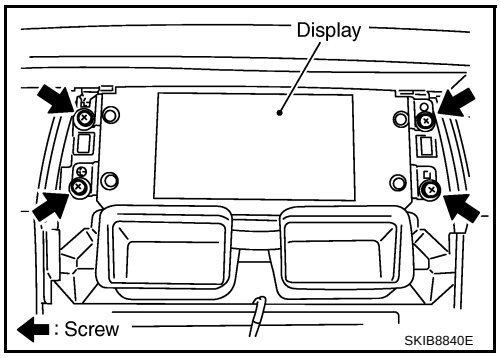
Installation is the reverse order of removal.

Removal and Installation of Display

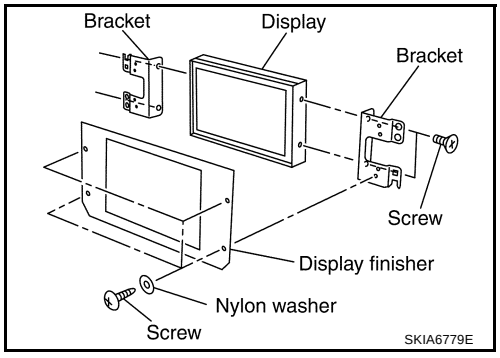
BKS0028G

REMOVAL

1. Remove cluster lid D. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4), and remove display unit.



3. Remove screws (4) and nylon washers (4), and then remove display finisher.
4. Remove screws (4), and remove bracket.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Display Control Unit

BKS0028H

REMOVAL

Remove display control unit integral with audio unit. Refer to AV-34, "Removal and Installation of Audio Unit" .

INSTALLATION

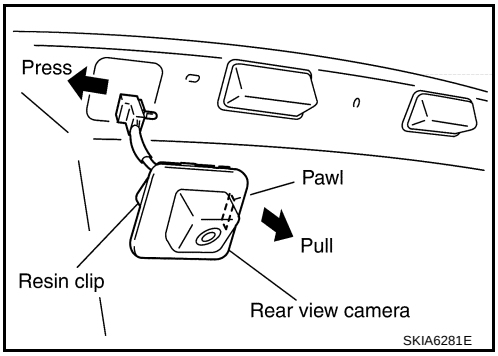
Installation is the reverse order of removal.

Removal and Installation of Rear View Camera

BKS0028I

REMOVAL

1. Remove trunk lid finisher (upper). Refer to EI-33, "TRUNK LID FINISHER" .
2. Disconnect connector and remove connector clip.
3. While pressing the rear view camera to left side, pull right side pawl of it and remove.



INSTALLATION

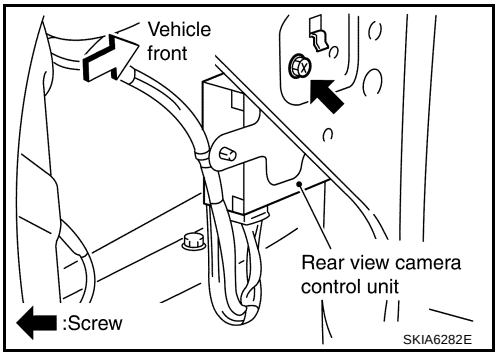
Installation is the reverse order of removal.
Adjust the vehicle width and distance guiding line referring to AV-95, "Vehicle Width and Distance Guiding Line Correction" if there is a difference after installing rear view camera.

Removal and Installation of Rear View Camera Control Unit

BKS0028J

REMOVAL

1. Remove trunk wheelhouse finisher (Left side). Refer to EI-58, "TRUNK ROOM TRIM & TRUNK LID FINISHER" .
2. Remove screw and remove rear view camera control unit.
3. Disconnect connector.



INSTALLATION

Installation is the reverse order of removal.