SECTION AV

AUDIO VISUAL, NAVIGATION & TELEPHONE SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

EKS00ECJ

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

Wiring Diagrams and Trouble Diagnosis

EKS00ECK

When you read wiring diagrams, refer to the followings:

- Refer to GI-14, "How to Read Wiring Diagrams" in GI section
- Refer to PG-2, "POWER SUPPLY ROUTING" for power distribution circuit in PG section

When you perform trouble diagnosis, refer to the followings:

- Refer to GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in PG section
- Refer to GI-23, "How to Perform Efficient Diagnosis for an Electrical Incident" in PG section

AUDIO

PFP:28111

System Description

EKS00INI

WITH CASSETTE DECK

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

- through 15A fuse [No. 32, located in the fuse and fusible link box]
- to audio unit terminal 6.

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 10.

When audio switch is pushed, audio signals are supplied

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

When one of audio steering wheel switches is pushed to volume up, seek up, or source, resistance in steering switch circuit changes depending on which button is pushed. This will change voltage. Power is supplied

- from audio unit terminal 26
- through combination switch (spiral cable) terminal 4 and 15
- to audio steering wheel switch terminal 1.

Ground is supplied

- from audio steering wheel switch terminal 2
- through combination switch (spiral cable) terminal 17 and 7
- to audio unit terminal 29.

When one of audio steering wheel switches is pushed to volume down, seek down, or special, resistance in steering switch circuit changes depending on which button is pushed. This will change voltage. Power is supplied

- from audio unit terminal 27
- through combination switch (spiral cable) terminal 5 and 16
- to audio steering wheel switch terminal 3.

Ground is supplied

- from audio steering wheel switch terminal 2
- through combination switch (spiral cable) terminal 17 and 7
- to audio unit terminal 29.

Speed Sensitive Volume System

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

NATS Audio Link

Description

The link with the NATS IMMU implies that the audio unit can basically only be operated if connected to the matching NATS IMMU to which the audio unit was initially fitted on the production line.
Since radio operation is impossible after the link with the NATS is disrupted theft of the audio unit is basically useless since special equipment is required to reset the audio unit.

Initialization process for audio units that are linked to the NATS IMMU

New audio units will be delivered to the factories in the “NEW” state, i.e. ready to be linked with the vehicle's NATS. When the audio unit in “NEW” state is first switched on at the factory, it will start up communication with the vehicle's immobilizer control unit (IMMU) and send a code (the “audio unit Code”) to the IMMU. The IMMU will then store this code, which is unique to each audio unit, in its (permanent) memory.
Upon receipt of the code by the IMMU, the NATS will confirm correct receipt of the audio unit code to the audio unit. Hereafter, the audio unit will operate as normal.
During the initialization process, “NEW” is displayed on the audio unit display. Normally though, communication between audio unit and IMMU takes such a short time (300 ms) that the audio unit seems to switch on directly without showing “NEW” on its display.

Normal operation

Each time the audio unit is switched on afterwards, the audio unit code will be verified between the audio unit and the NATS before the audio unit becomes operational. During the code verification process, “WAIT” is shown on the audio unit display. Again, the communication takes such a short time (300 ms) that the audio unit seems to switch on directly without showing “WAIT” on its display.

When the radio is locked

In case of an audio unit being linked with the vehicle's NATS (immobilizer system), disconnection of the link between the audio unit and the IMMU will cause the audio unit to switch into the lock (“SECURE”) mode in which the audio unit is fully inoperative. Hence, repair of the audio unit is basically impossible, unless the audio unit is reset to the “NEW” state for which special decoding equipment is required.
Clarion has provided their authorized service representatives with so called “decoder boxes” which can bring the audio unit back to the “NEW” state, enabling the audio unit to be switched on after which repair can be carried out. Subsequently, when the repaired audio unit is delivered to the final user again, it will be in the “NEW” state to enable re-linking the audio unit to the vehicle's immobilizer system. As a result of the above, repair of the audio unit can only be done by an authorized Clarion representative (when the owner of the vehicle requests repair and can show personal identification).

Service Procedure

Item	Service procedure	Description
Battery disconnection	No additional action required.	—
Radio needs repair	Repair needs to be done by authorized representative of radio manufacturer since radio cannot be operated unless it is reset to NEW state, using special decoding equipment.	—
Replacement of radio by new part	No additional action required.	Radio is delivered in NEW state.
Transferring radio to another vehicle/ replacement of radio by an “old” part	Radio needs to be reset to NEW state by authorized representative of radio manufacturer.	—
Replacement of IMMU	Radio needs to be reset to NEW state by authorized representative of Clarion.	After switching on the radio, it will display “SECURE” after 1 minute.
No communication from IMMU to radio	1. If NATS is malfunctioning, check NATS system. 2. After NATS is repaired, reset radio to NEW state by authorized representative of Clarion.	After switching on the radio, the radio will display “SECURE” after 1 minute. Further use of radio is impossible until communication is established again, or after radio is reset by authorized representative of Clarion.
When initialized between ECM and IMMU.	Radio needs to be reset to NEW status by authorized representative of Clarion.	After switching on the radio, it will display “SECURE” after 1 minute.

Personal Audio Setting

Description

- The radio is designed to store several settings (volume, bass, treble, preset stations) with every NATS ignition key used. Up to a maximum of 4 NATS keys can be registered. During the communication mentioned under “Anti-Theft System”, the radio will recognize the used ignition key and select the accompanying settings.

WITHOUT CASSETTE DECK

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

- through 15A fuse [No. 32, located in the fuse and fusible link box]
- to audio unit terminal 9.

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 3.

When audio switch is pushed, audio signals are supplied

- through audio unit terminals 7, 10, 11, 12, 13, 14, 15, and 16
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear speaker LH and RH
- to terminals 1 and 2 of tweeter LH and RH.

When one of audio steering wheel switches is pushed to volume up, seek up, or source, resistance in steering switch circuit changes depending on which button is pushed. This will change voltage. Power is supplied

- from audio unit terminal 20
- through combination switch (spiral cable) terminal 4 and 15
- to audio steering wheel switch terminal 1.

Ground is supplied

- from audio steering wheel switch terminal 2
- through combination switch (spiral cable) terminal 17 and 7
- to audio unit terminal 22.

When one of audio steering wheel switches is pushed to volume down, seek down, or special, resistance in steering switch circuit changes depending on which button is pushed. This will change voltage. Power is supplied

- from audio unit terminal 21
- through combination switch (spiral cable) terminal 5 and 16
- to audio steering wheel switch terminal 3.

Ground is supplied

- from audio steering wheel switch terminal 2
- through combination switch (spiral cable) terminal 17 and 7
- to audio unit terminal 22.

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Description

The link with the NATS IMMU implies that the audio unit can basically only be operated if connected to the matching NATS IMMU to which the audio unit was initially fitted on the production line.
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Item	Service procedure	Description
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Replacement of radio by new part	No additional action required.	Radio is delivered in NEW state.
Transferring radio to another vehicle/ replacement of radio by an “old” part	Radio needs to be reset to NEW state by authorized representative of radio manufacturer.	—
Replacement of IMMU	Radio needs to be reset to NEW state by authorized representative of Clarion.	After switching on the radio, it will display “SECURE” after 1 minute.
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When initialized between ECM and IMMU.	Radio needs to be reset to NEW status by authorized representative of Clarion.	After switching on the radio, it will display “SECURE” after 1 minute.

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Description

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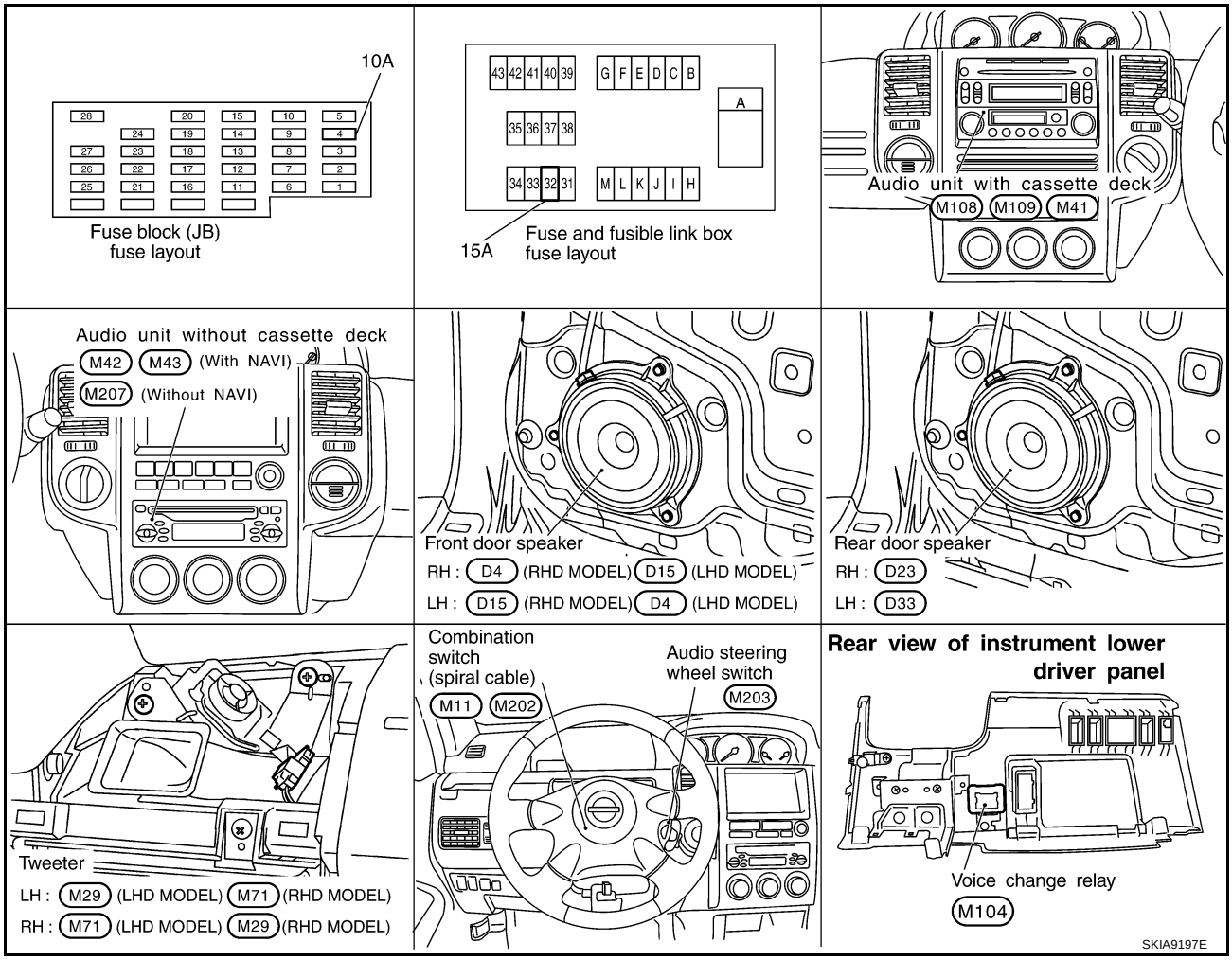
Component Parts Location

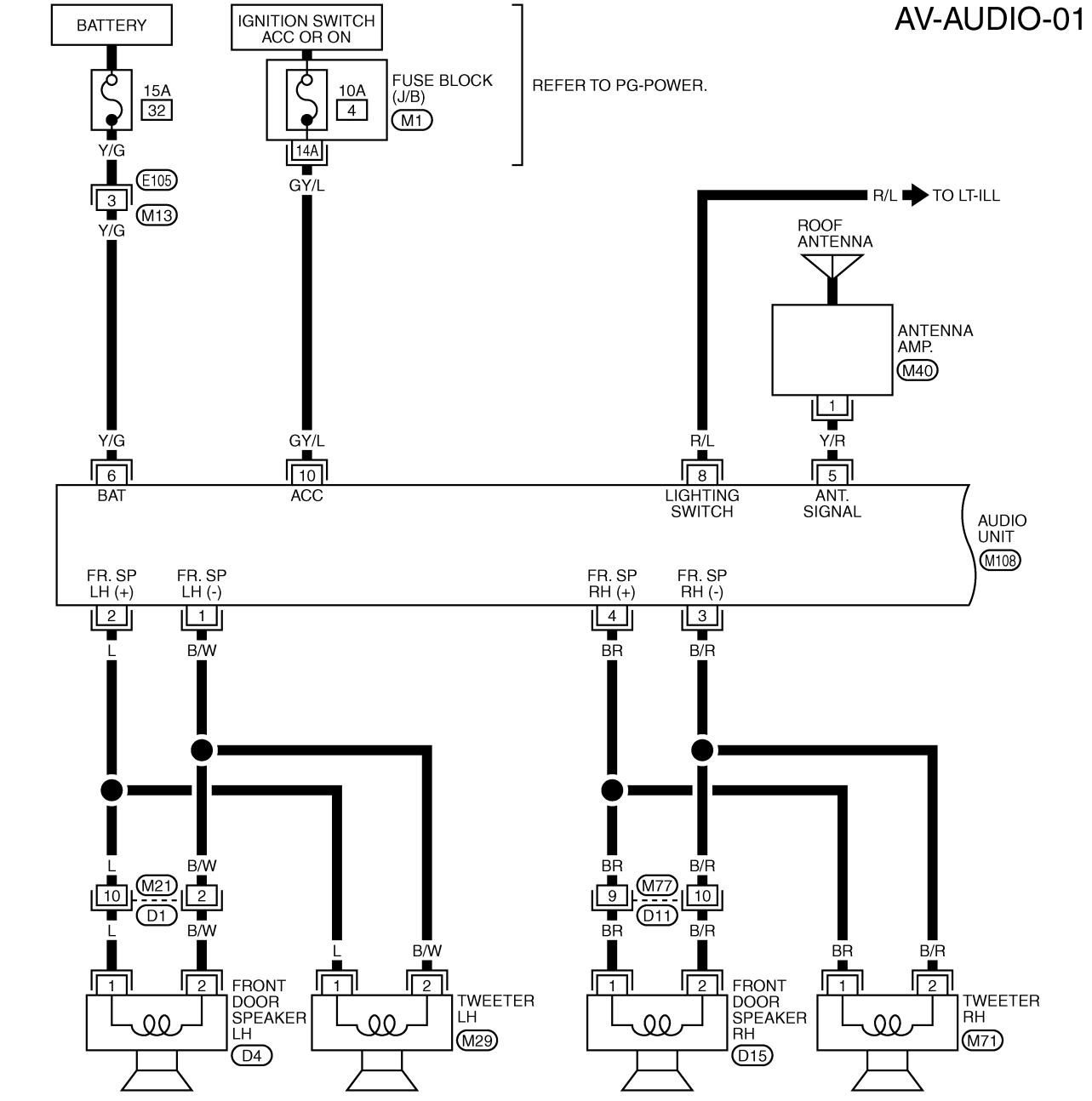
EKS00EHR

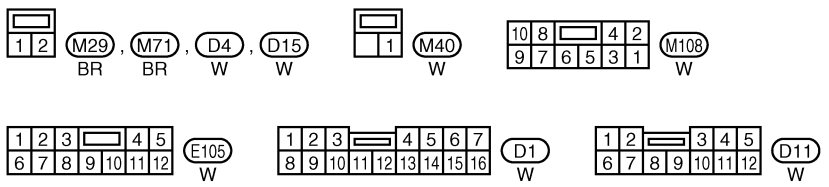


Wiring Diagram —AUDIO— (With Cassette Deck)

EKS00ECN

LHD MODELS



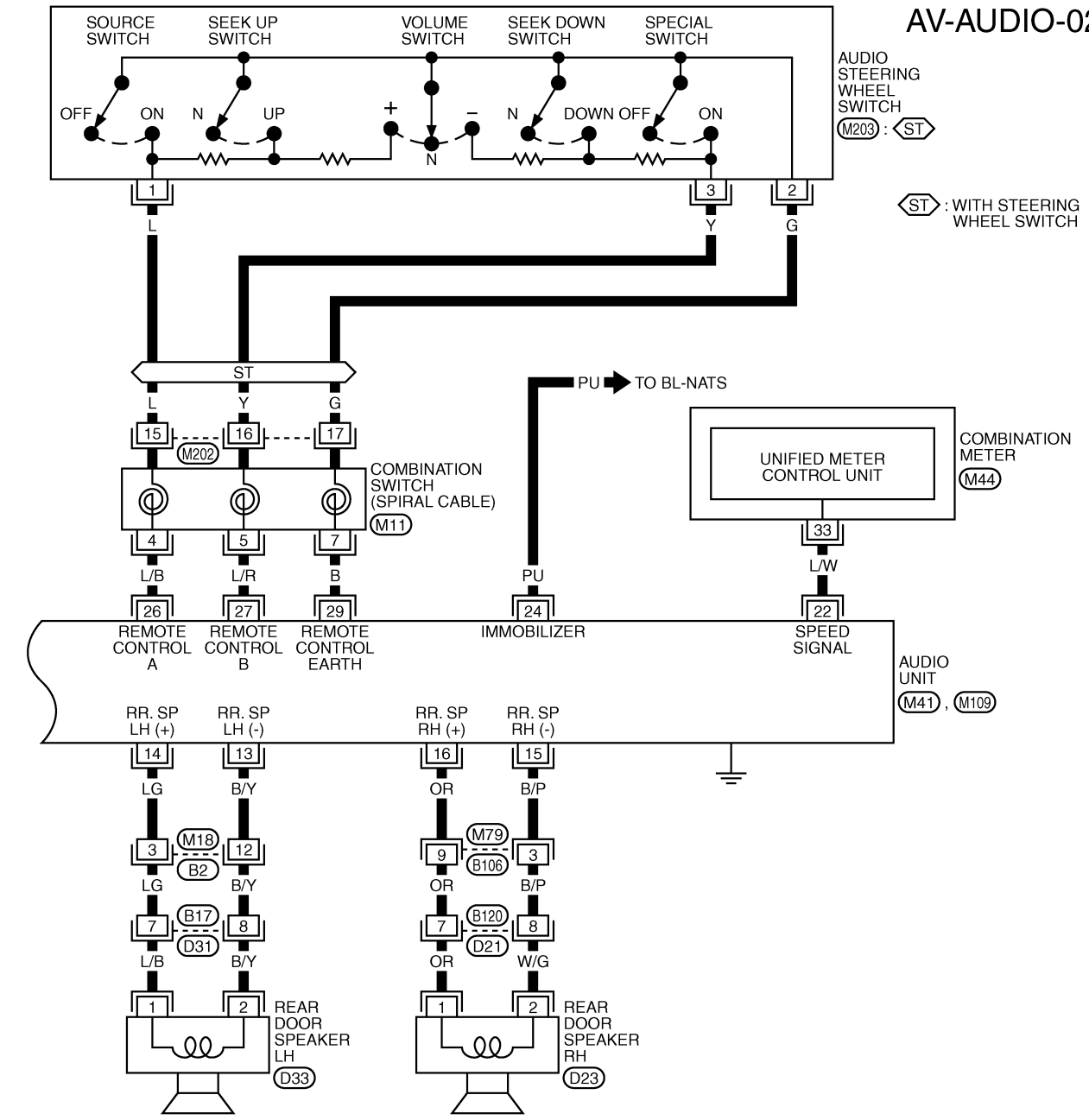


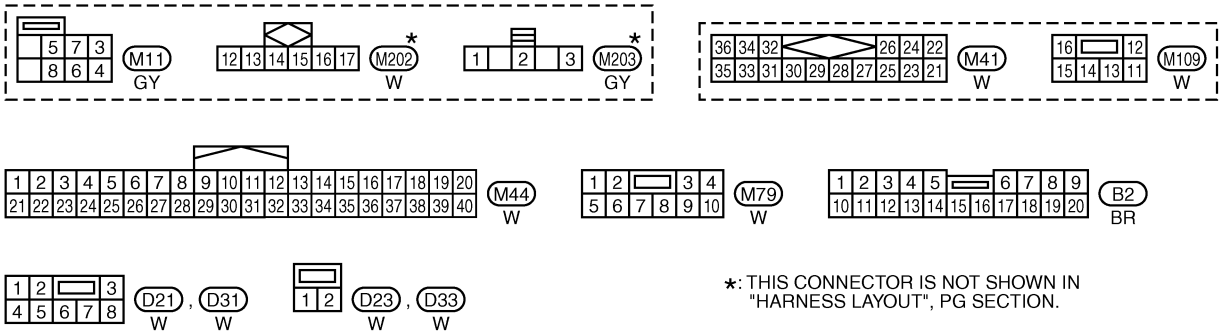
REFER TO THE FOLLOWING.

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

TKWA1578E

AV-AUDIO-02



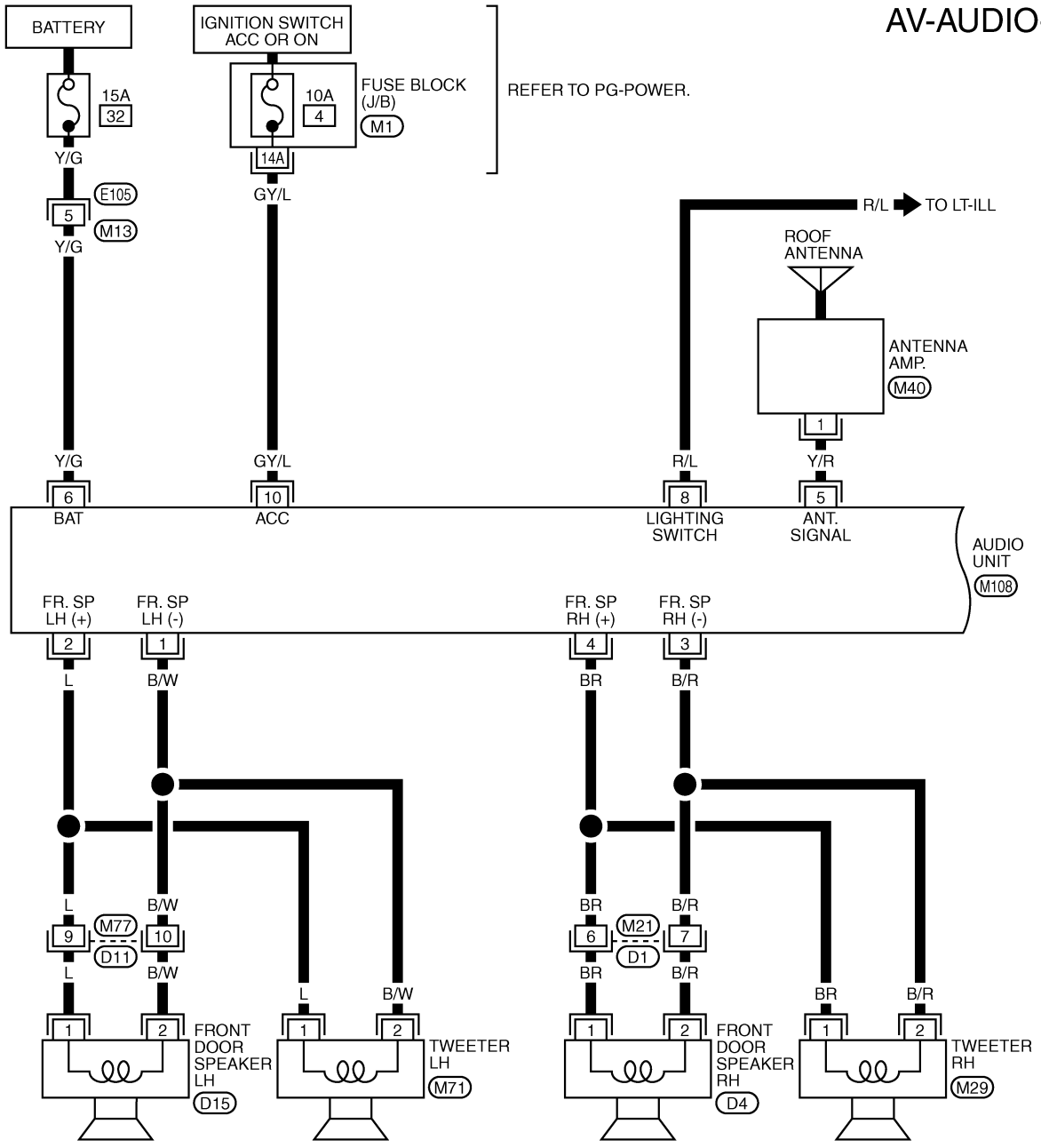


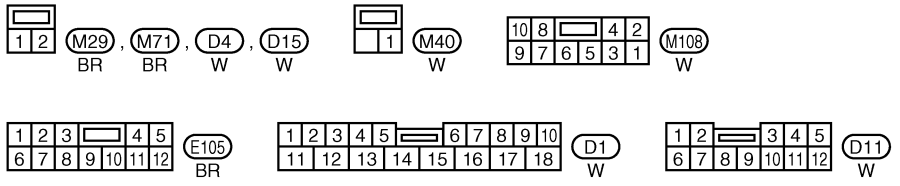
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB1143E

RHD MODELS

AV-AUDIO-03

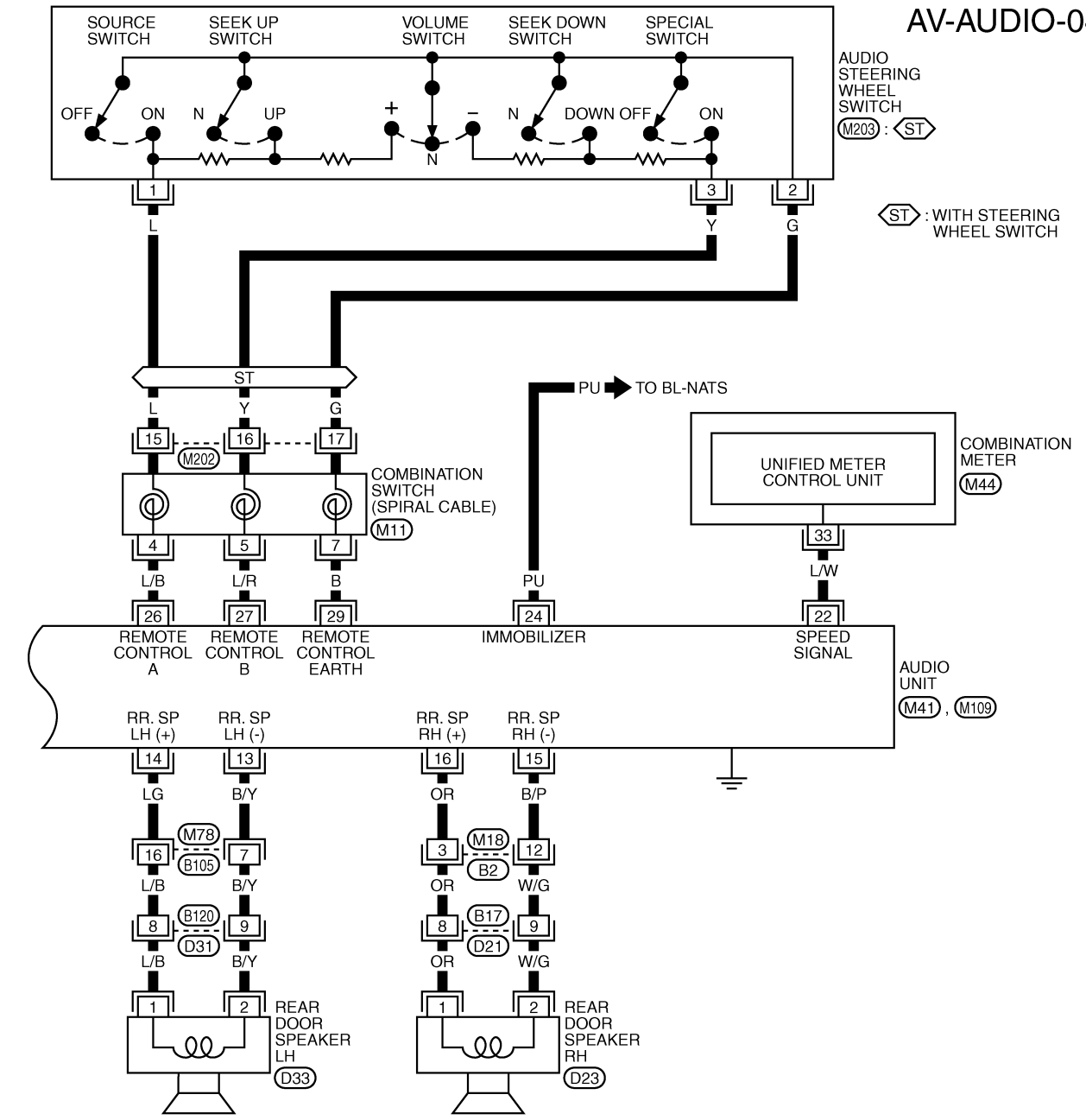


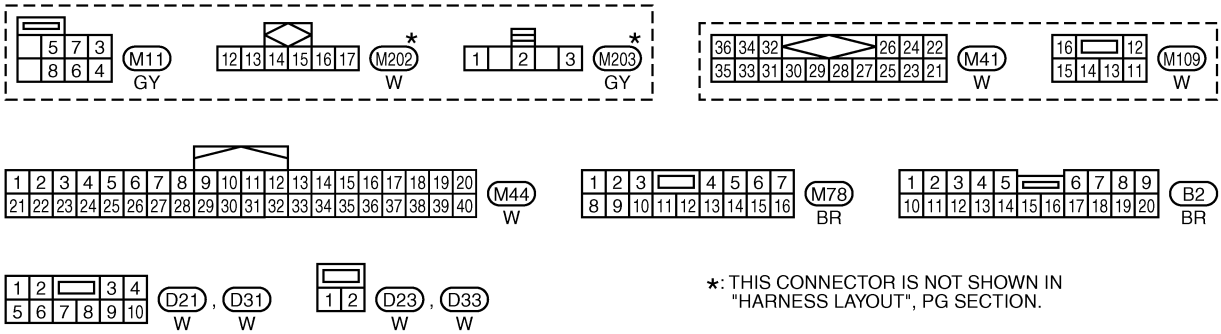


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWA1580E

AV-AUDIO-04





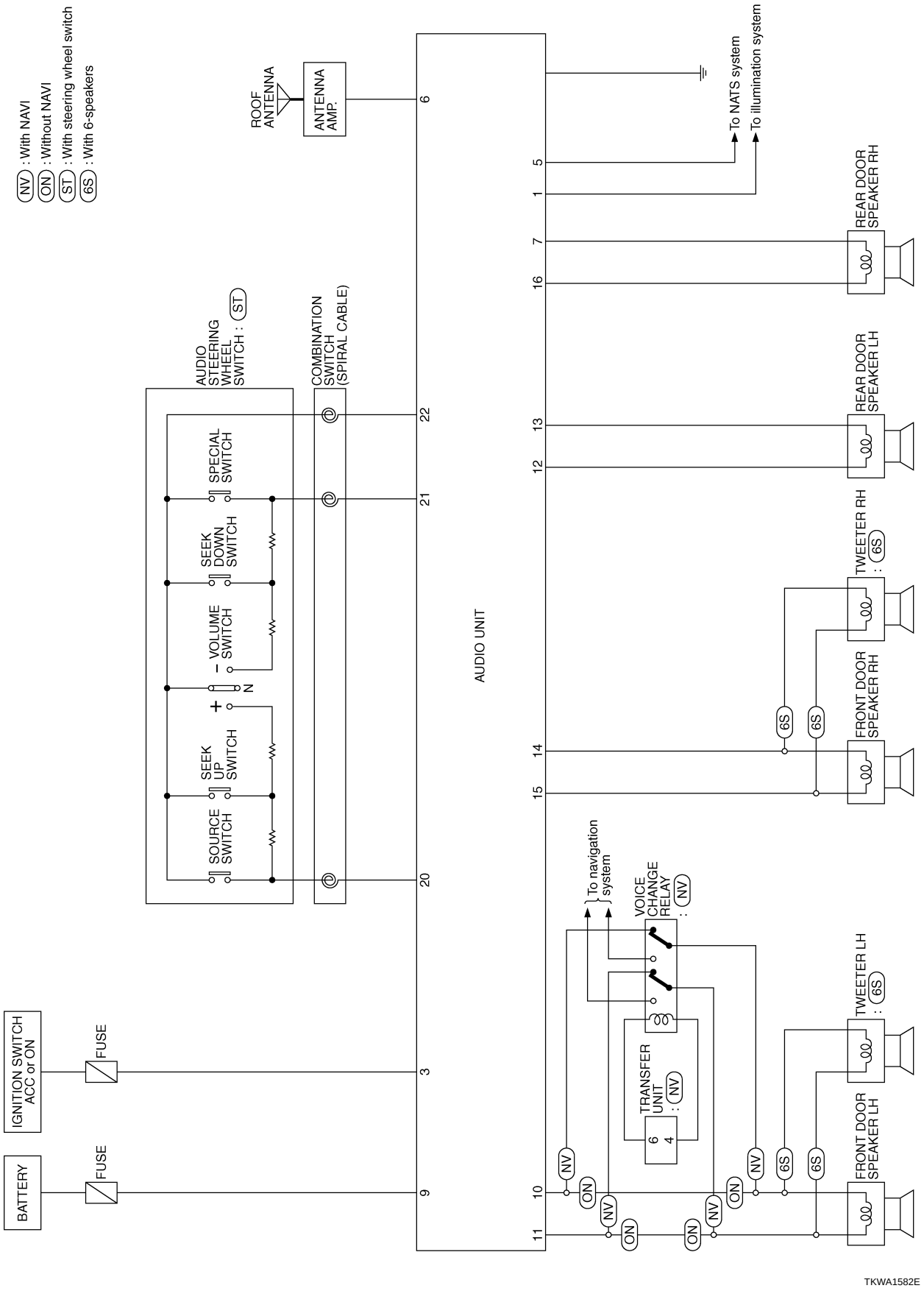
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB1144E

Schematic (Without Cassette Deck)

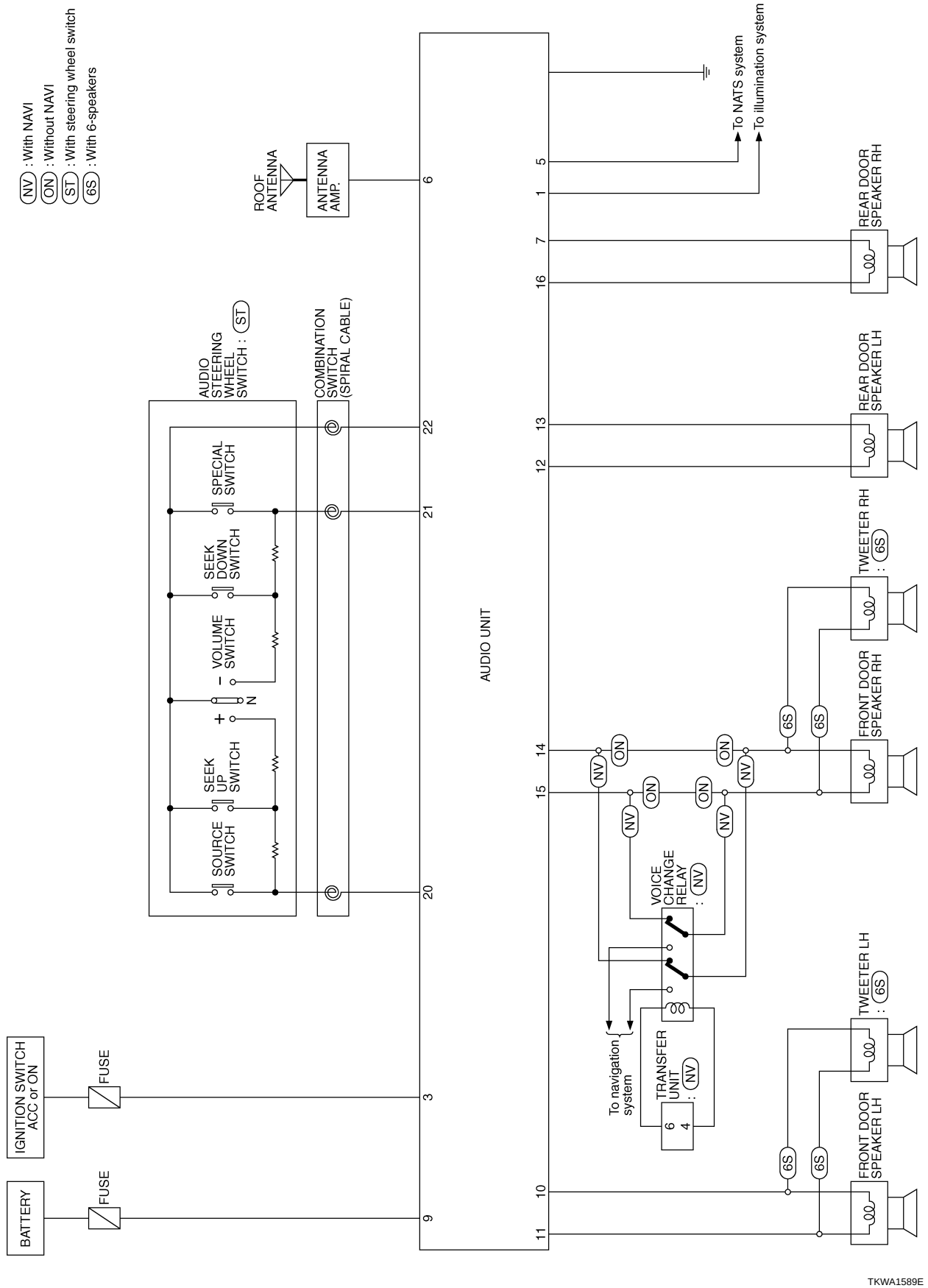
LHD MODELS

EKS00ECM



TKWA1582E

RHD MODELS

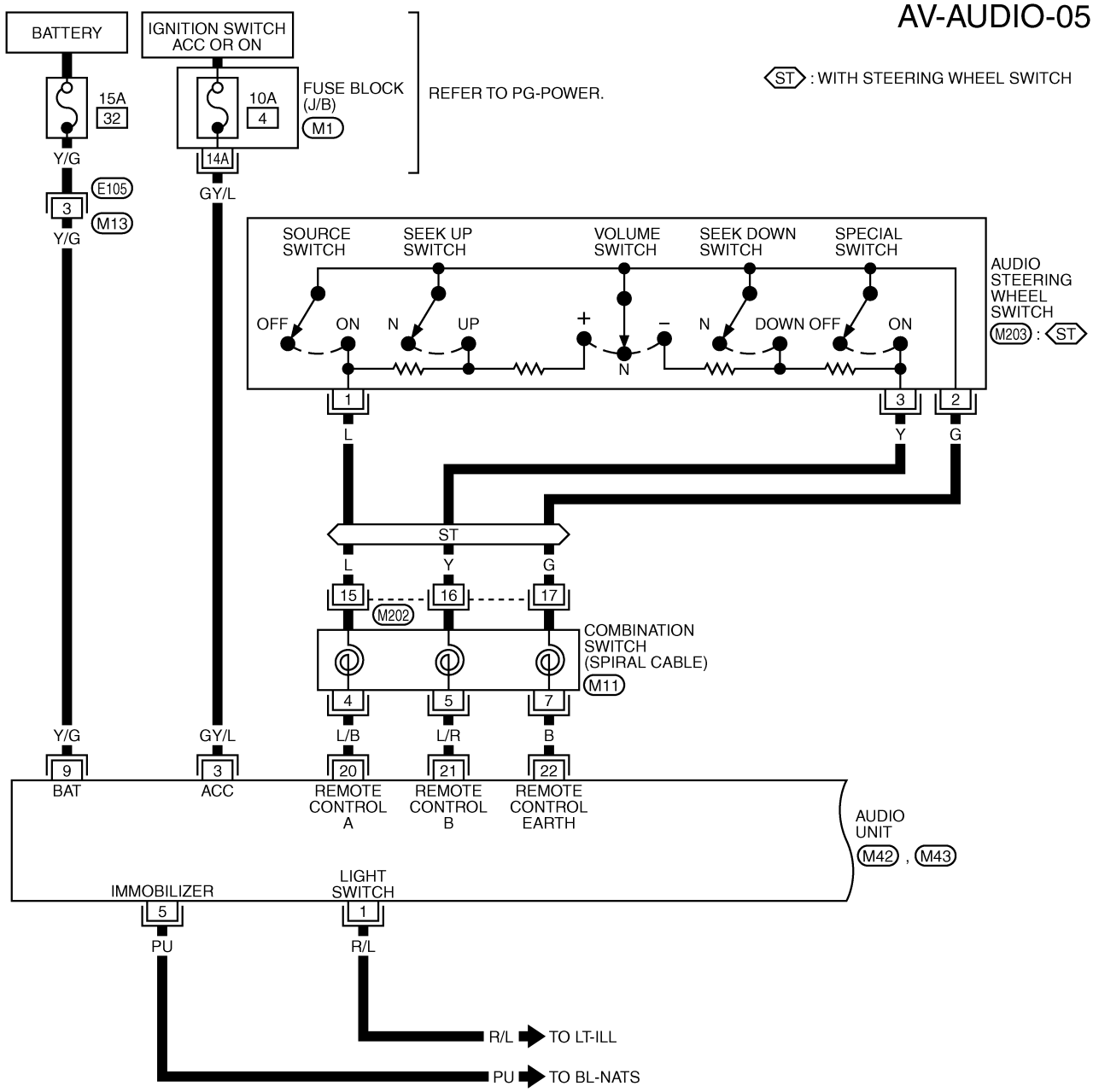

(NV) : With NAVI
(ON) : Without NAVI
(ST) : With steering wheel switch
(6S) : With 6-speakers
ROOF ANTENNA
ANTENNA AMP.
To NATS system
To illumination system
AUDIO STEERING WHEEL SWITCH : (ST)
COMBINATION SWITCH (SPIRAL CABLE)
SPECIAL SWITCH
SEEK DOWN SWITCH
VOLUME SWITCH
SEEK UP SWITCH
SOURCE SWITCH
AUDIO UNIT
REAR DOOR SPEAKER RH
REAR DOOR SPEAKER LH
TWEETER RH : (6S)
FRONT DOOR SPEAKER RH
VOICE CHANGE RELAY : (NV)
TRANSFER UNIT : (NV)
To navigation system
TWEETER LH : (6S)
FRONT DOOR SPEAKER LH
IGNITION SWITCH ACC or ON
FUSE
BATTERY
FUSE
TKWA1589E

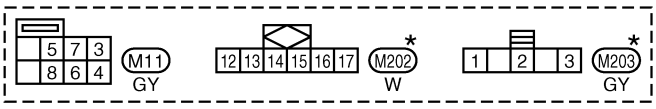
Wiring Diagram —AUDIO— (Without Cassette Deck)

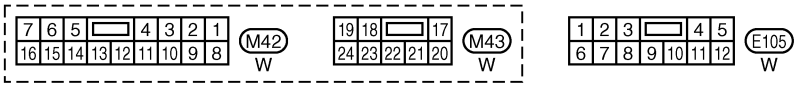
EKS00FB9

LHD MODELS WITH NAVIGATION

AV-AUDIO-05





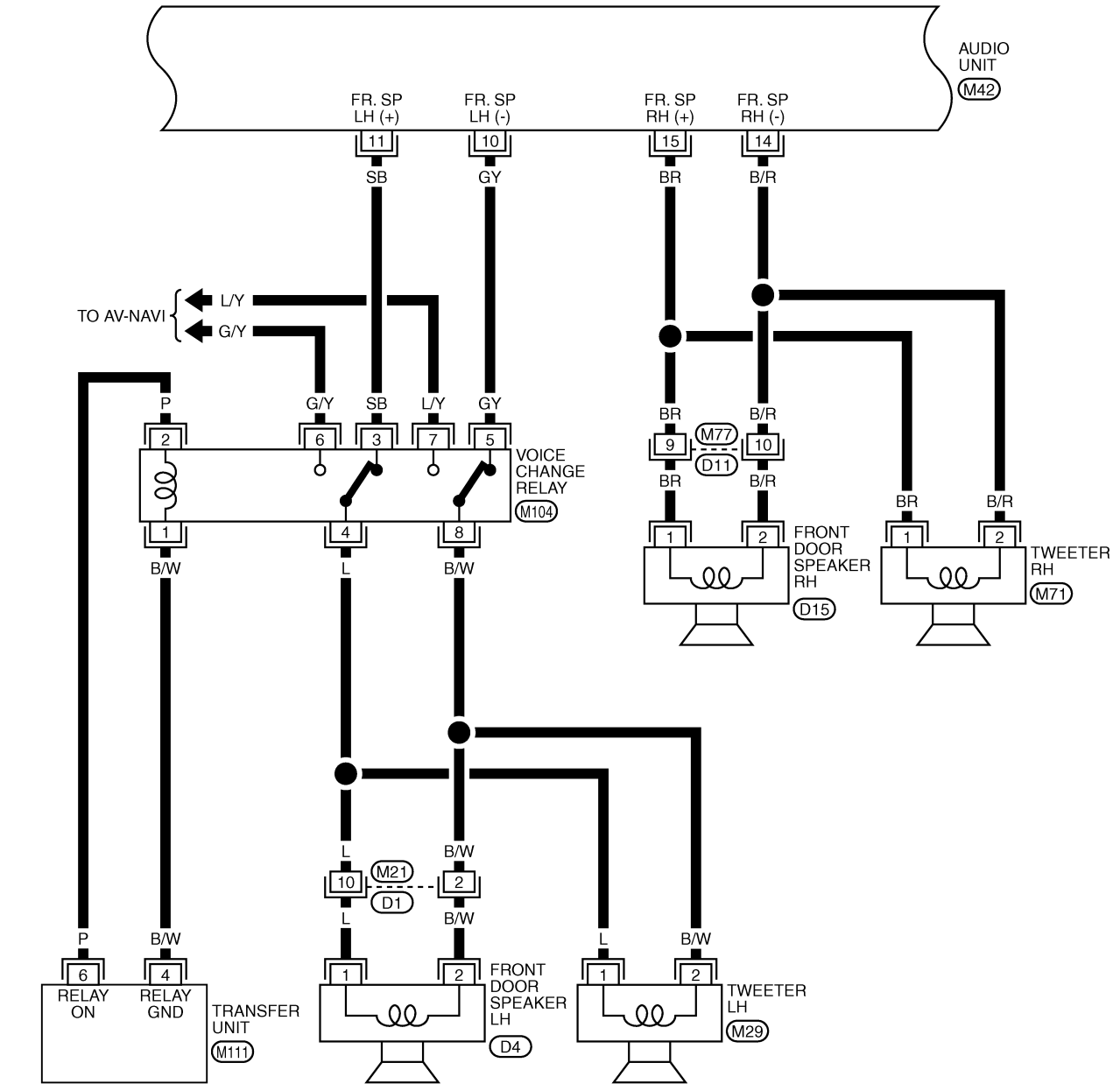


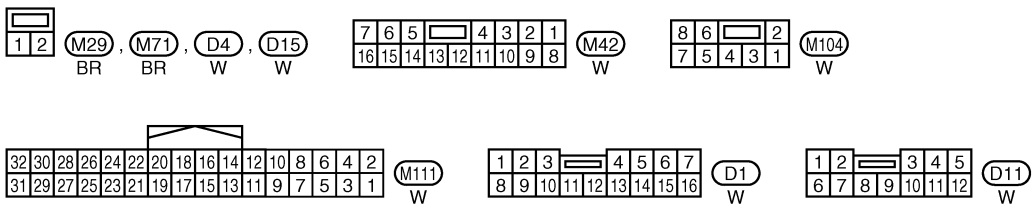
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWB1147E

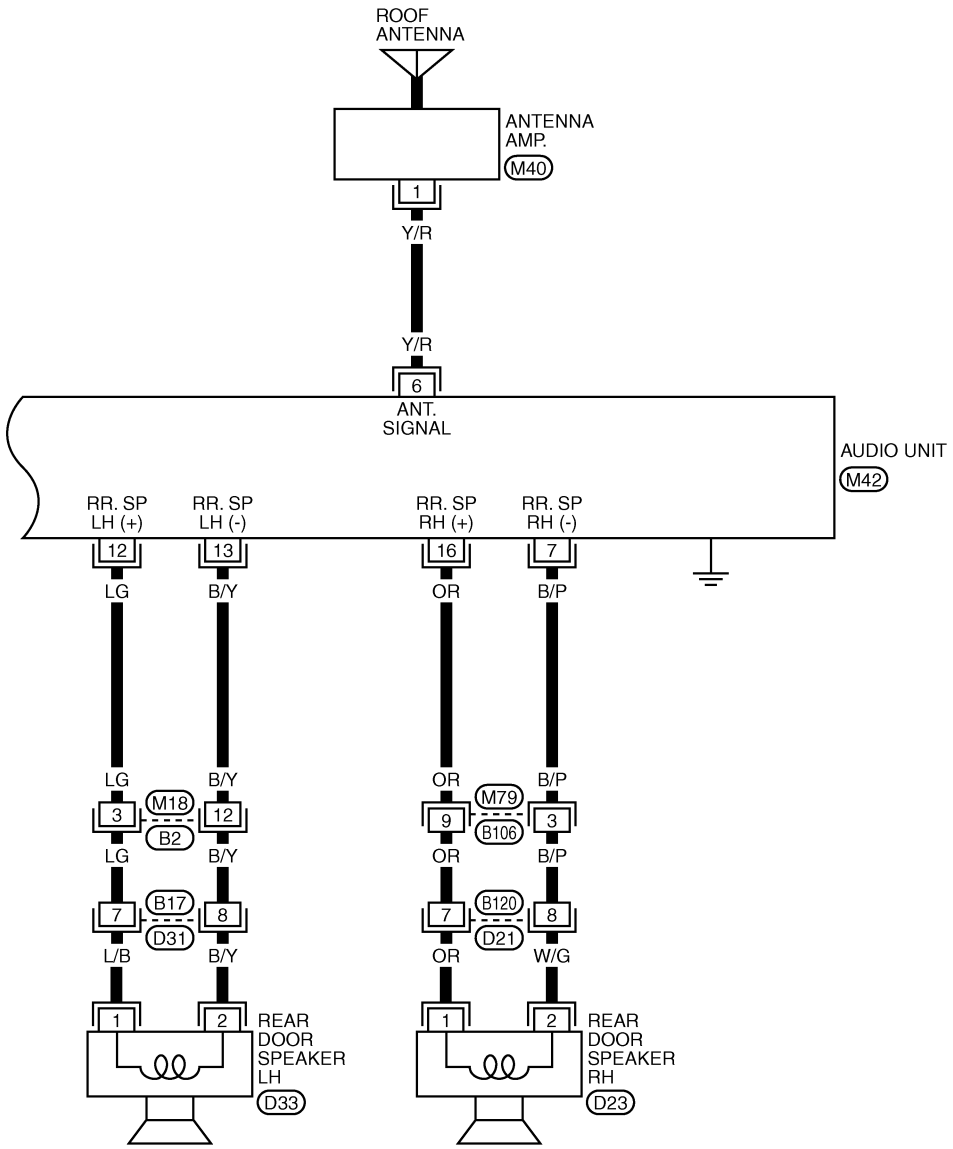
AV-AUDIO-06

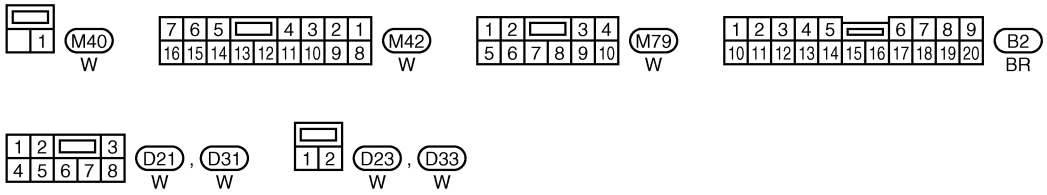




TKWA1584E

AV-AUDIO-07

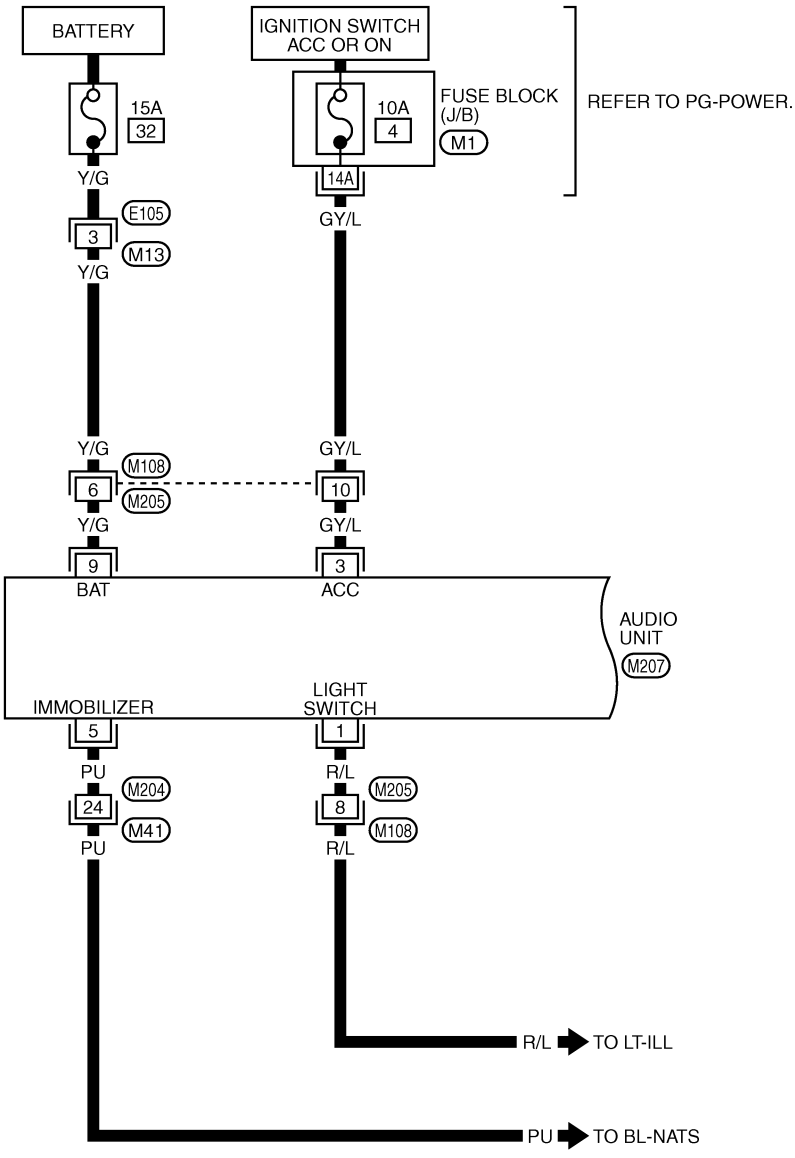


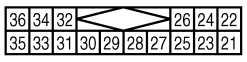


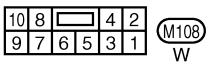
TKWA1585E

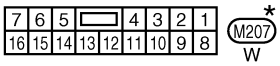
LHD MODELS WITHOUT NAVIGATION

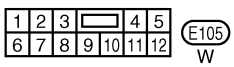
AV-AUDIO-08











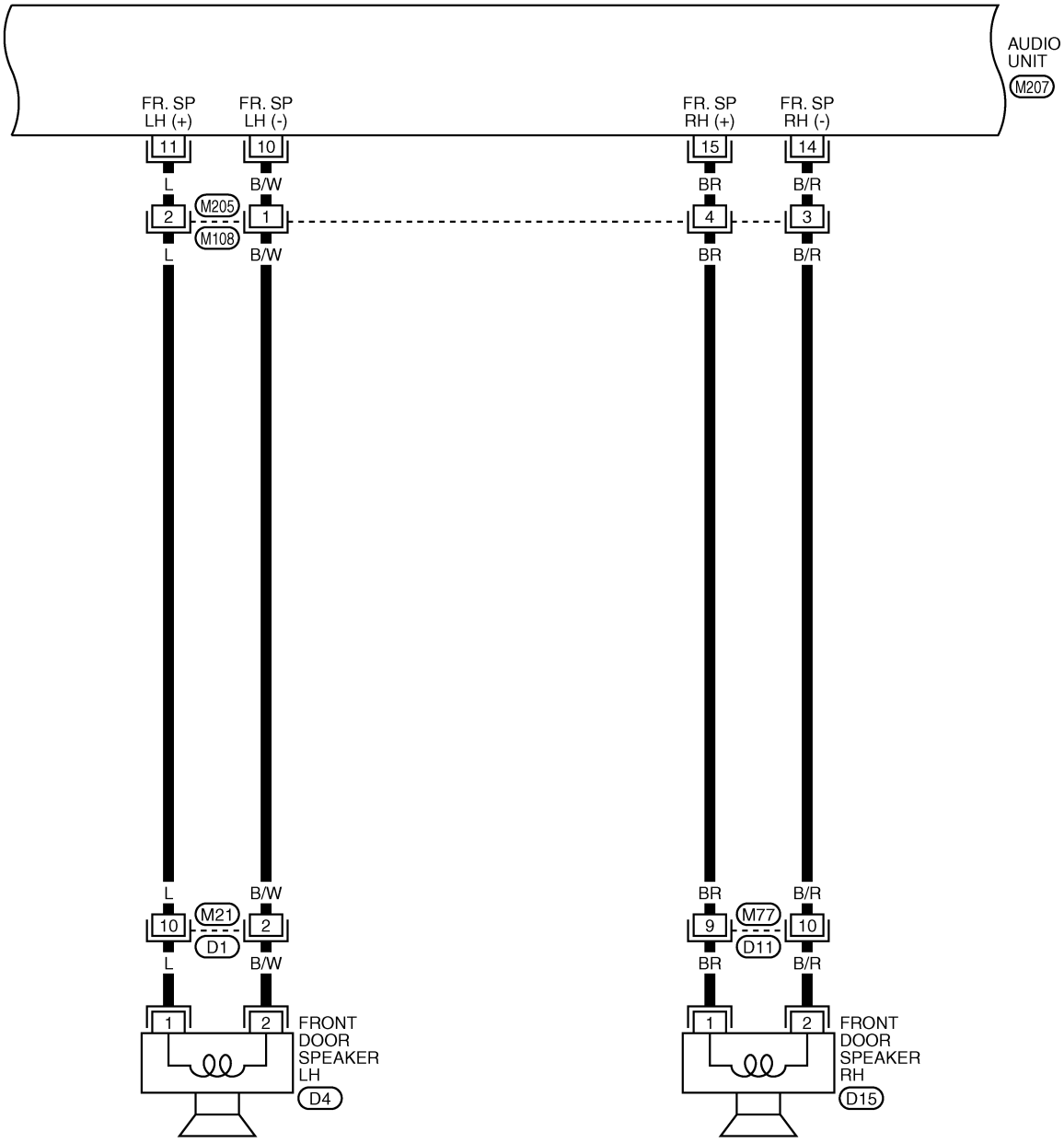
∗: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

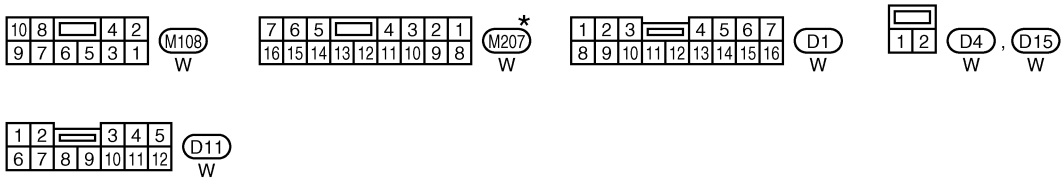
REFER TO THE FOLLOWING.

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

TKWA1586E

AV-AUDIO-09

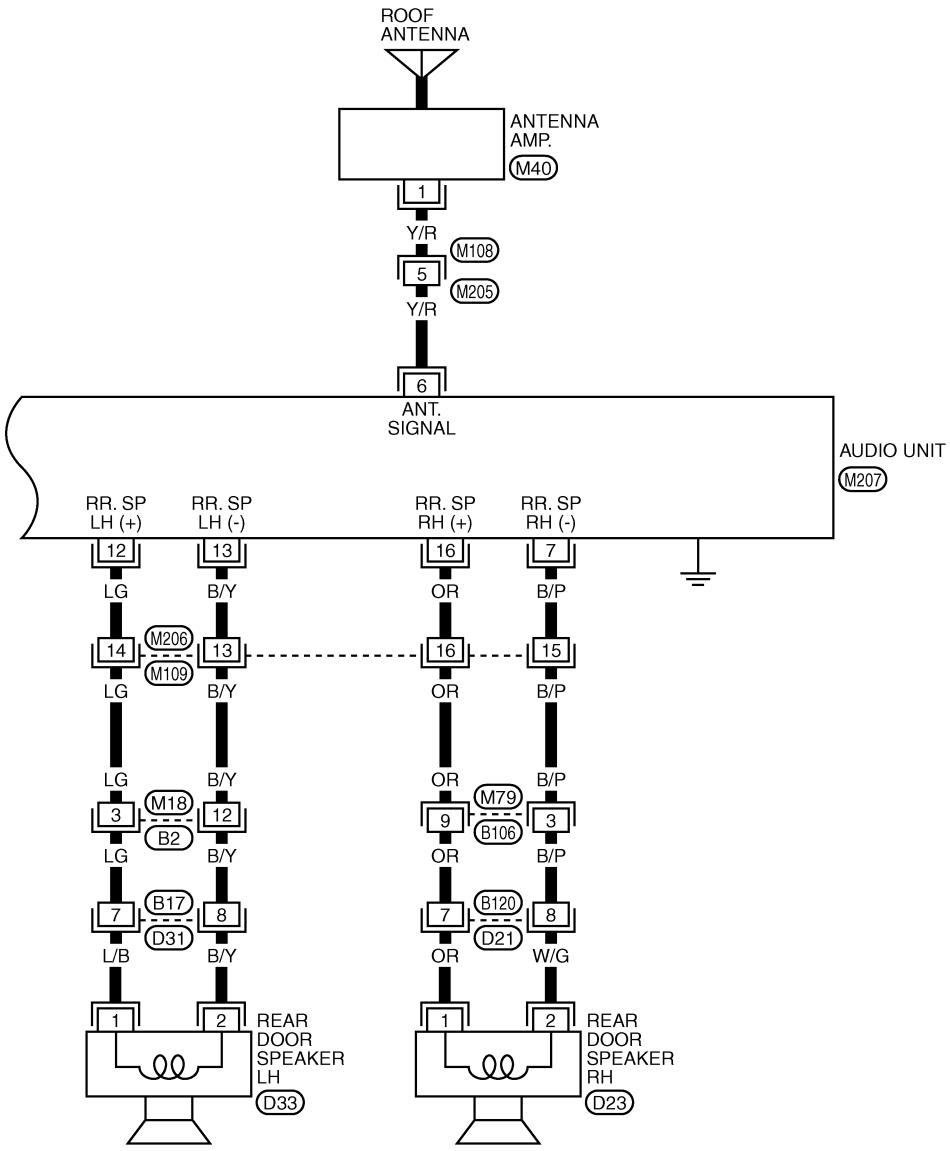


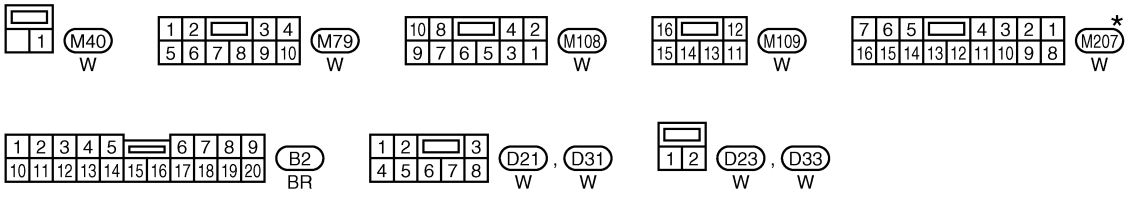


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA1587E

AV-AUDIO-10



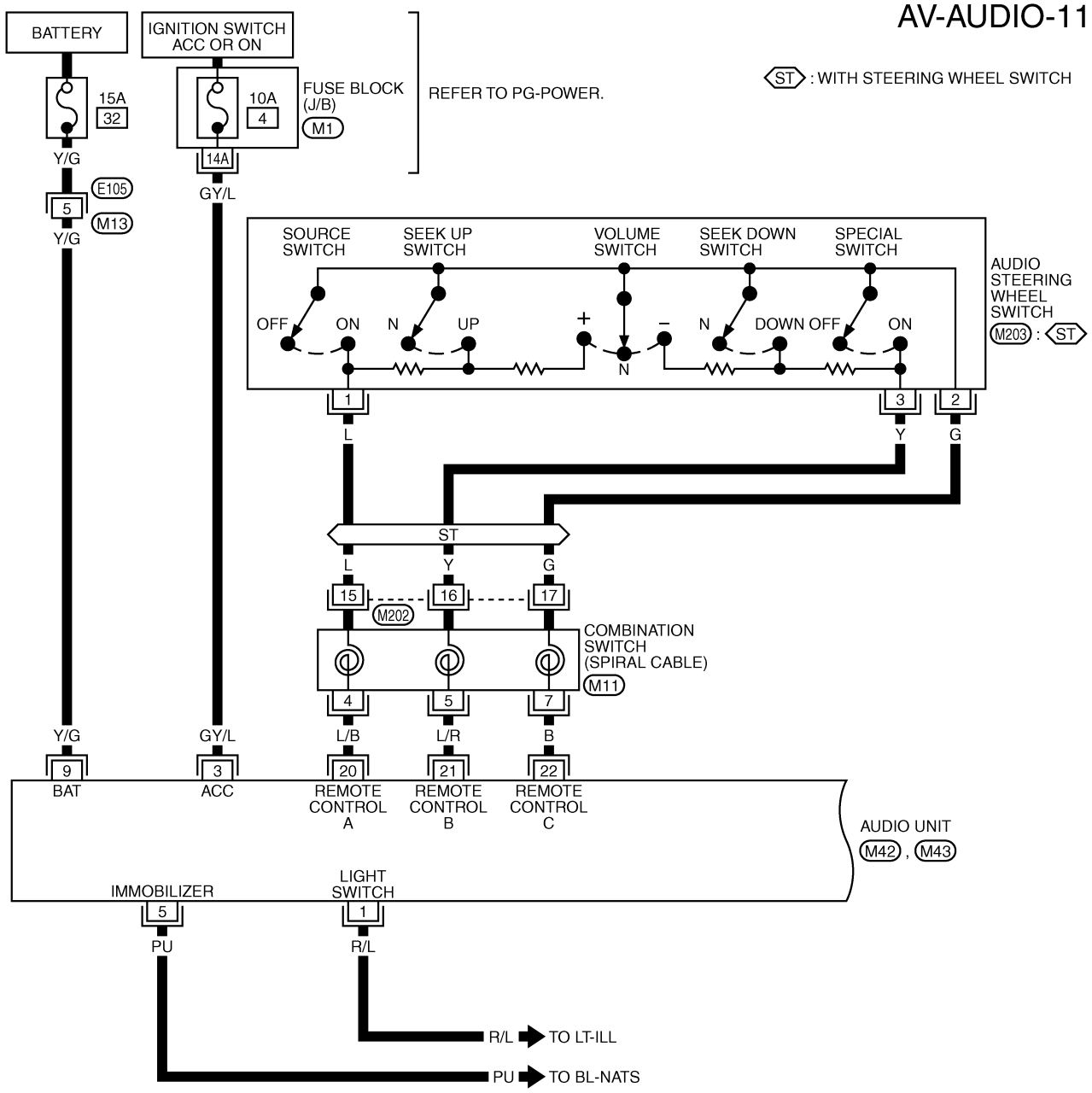


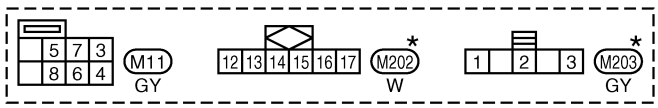
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

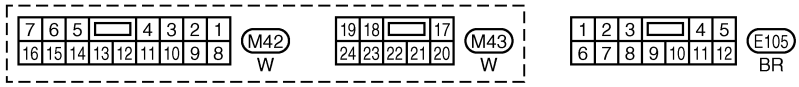
TKWA1588E

RHD MODELS WITH NAVIGATION

AV-AUDIO-11





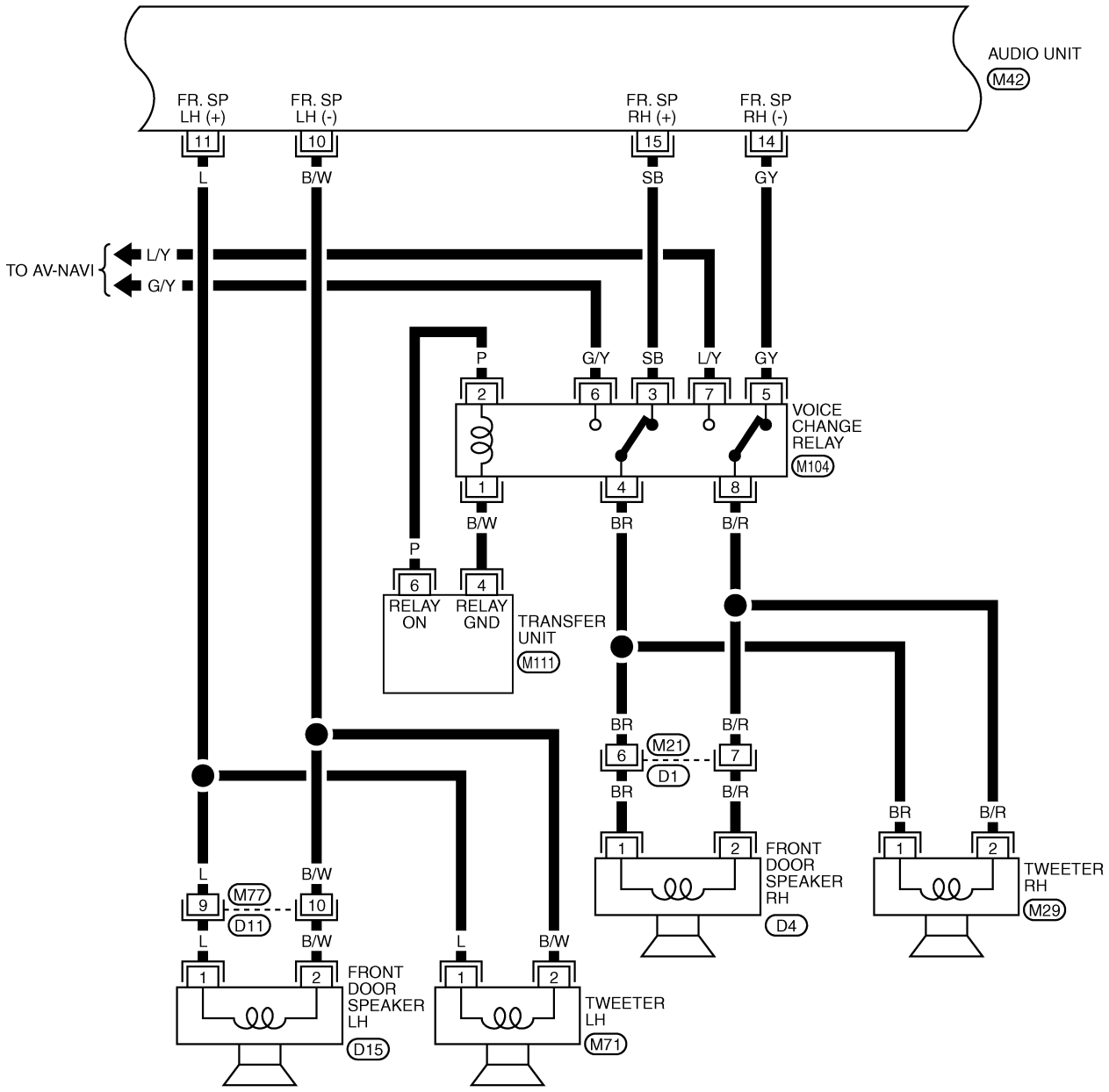


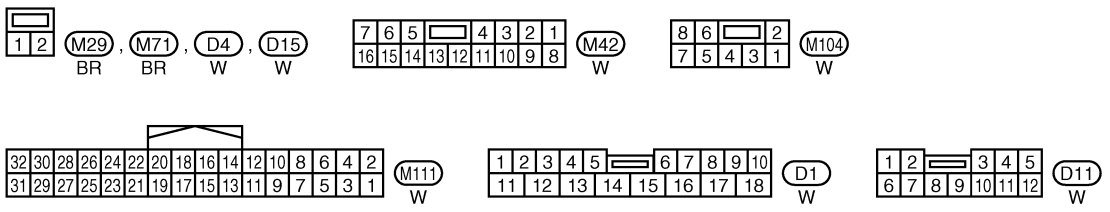
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWB1148E

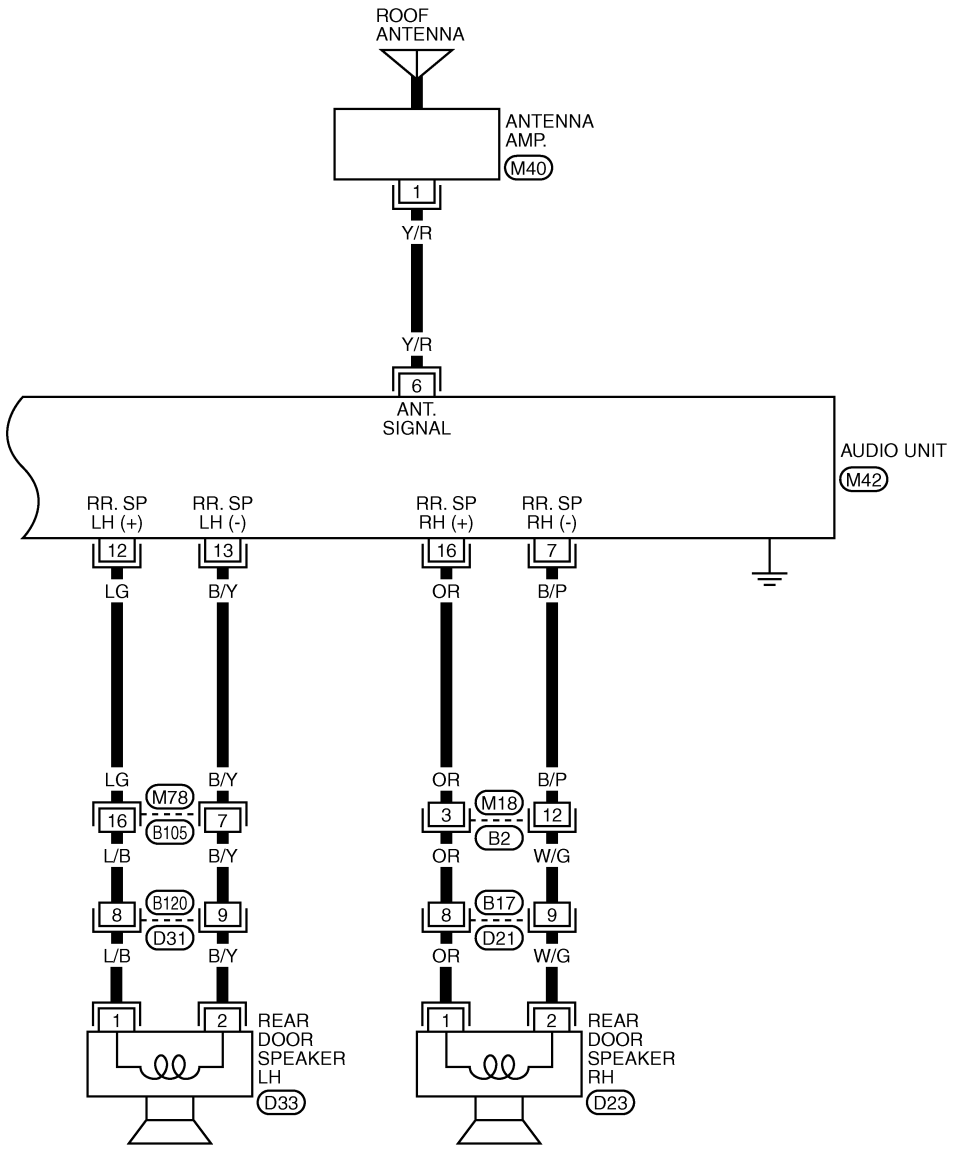
AV-AUDIO-12

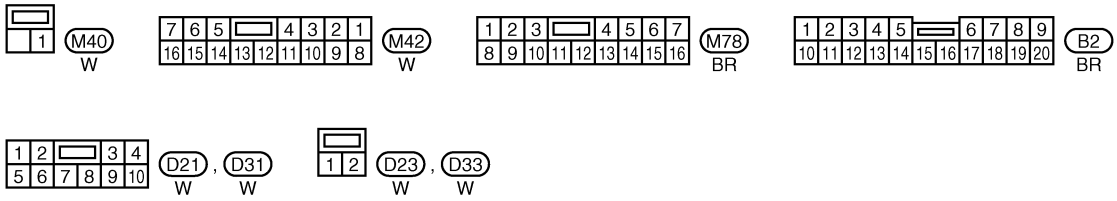




TKWA1591E

AV-AUDIO-13

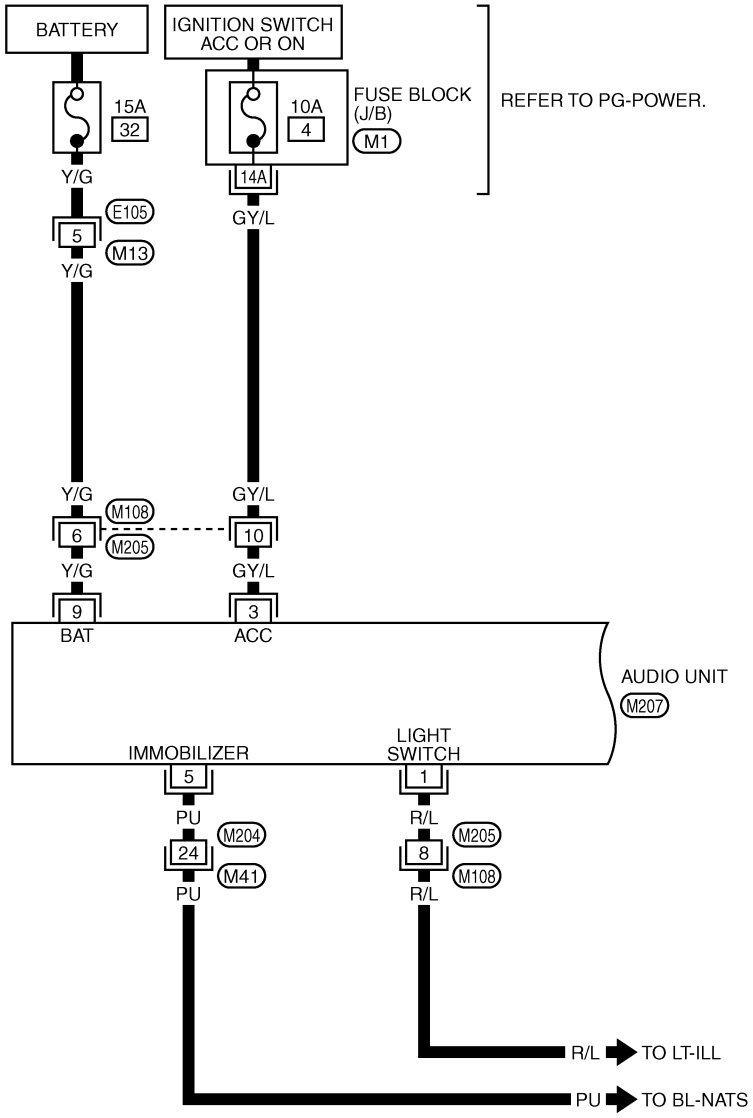


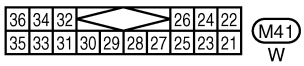


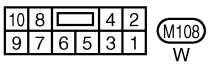
TKWA1592E

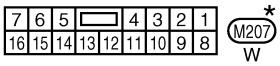
RHD MODELS WITHOUT NAVIGATION

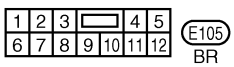
AV-AUDIO-14









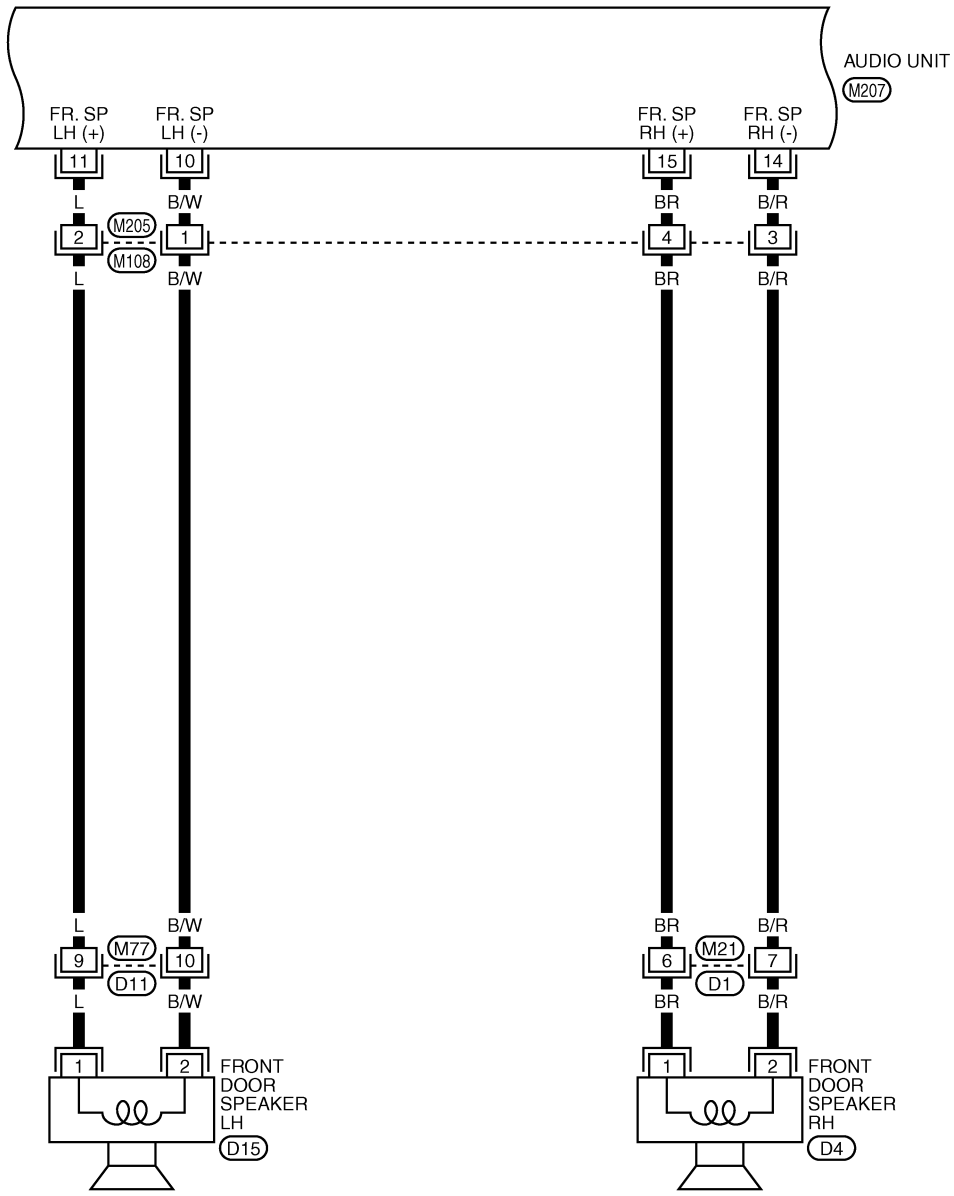


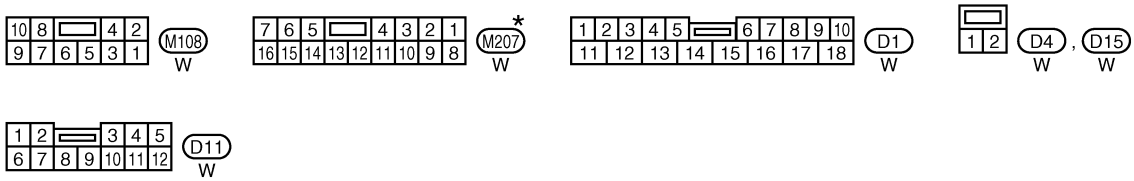
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWA1593E

AV-AUDIO-15

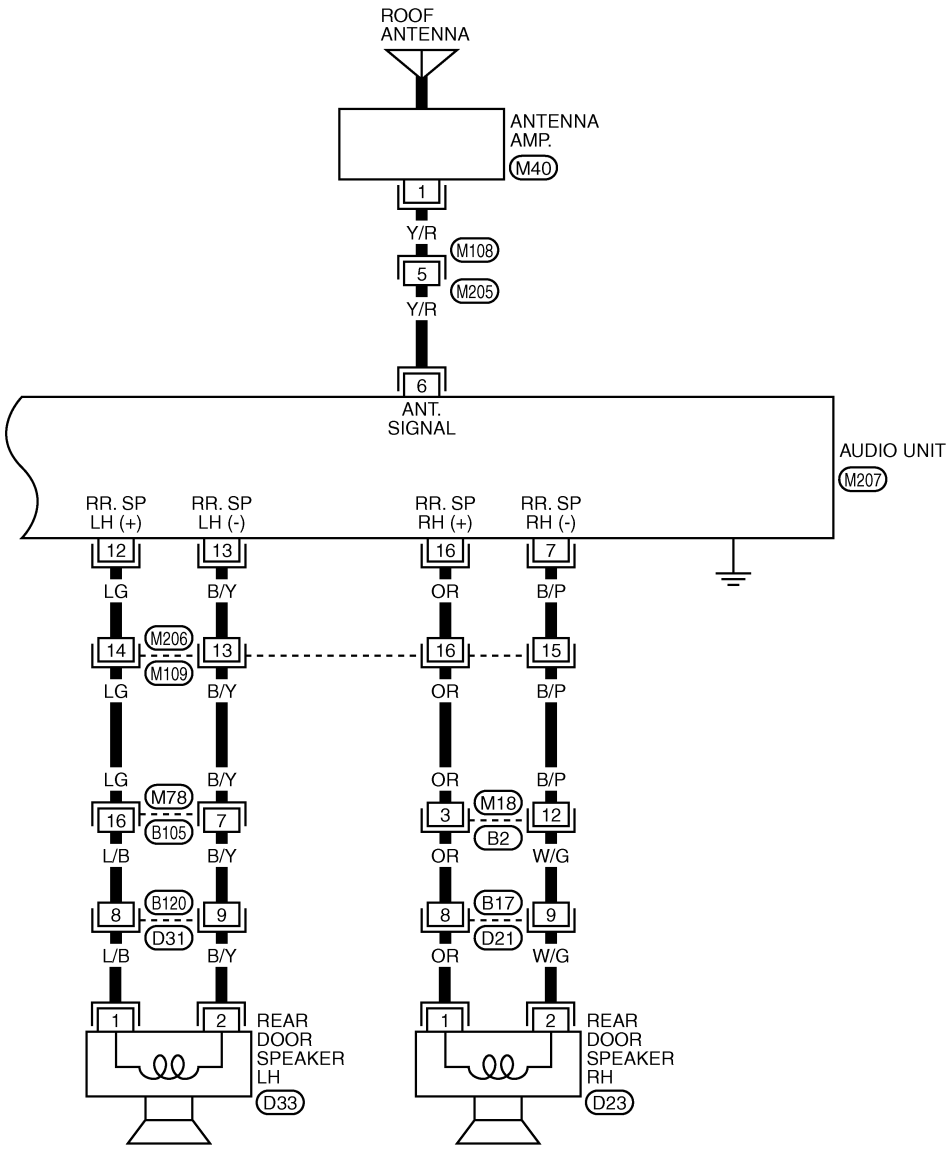


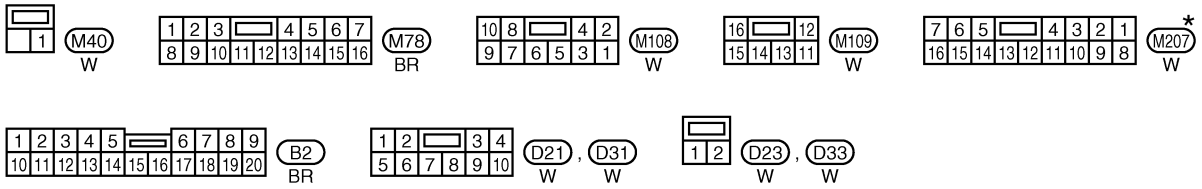


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA1594E

AV-AUDIO-16



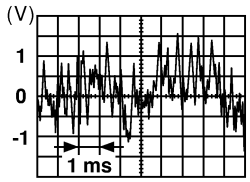
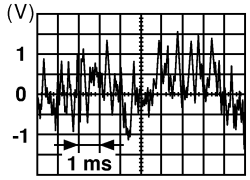
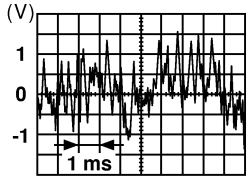
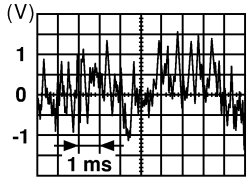
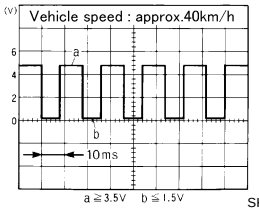


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA1595E

Terminals and Reference Value for Audio Unit With Cassette Deck

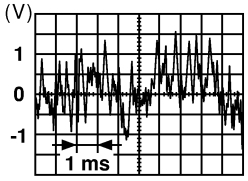
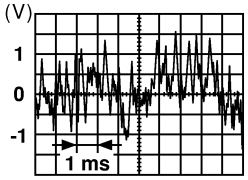
EKS00EHS

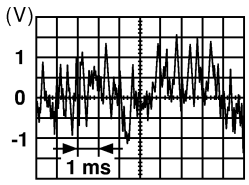
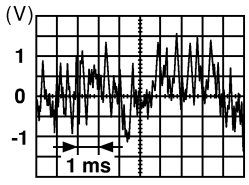
Terminal (Wire color) (+)	Terminal (Wire color) (–)	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value	Example of symptom
2 (L)	1 (B/W)	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker and tweeter LH.
4 (BR)	3 (B/R)	Audio sound signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker and tweeter RH.
5 (Y/R)	Ground	Antenna signal	Output	ACC	–	More than approx. 10V	Receiving status of radio broadcast becomes bad.
6 (Y/G)	Ground	Battery power	Input	–	–	Battery voltage	System does not work properly.
8 (R/L)	Ground	Lighting switch signal	Input	ON	Lighting switch ON (1st position)	Approx.12V	Audio unit illumination does not function when lighting switch is ON (position 1).
					Lighting switch OFF	Approx. 0V	
10 (GY/L)	Ground	ACC power	Input	ACC	–	Battery voltage	System does not work properly.
14 (LG)	13 (B/Y)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker LH.
16 (OR)	15 (B/P)	Audio sound signal rear RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker RH.
22 (L/W)	Ground	Vehicle speed signal (2-pulse)	Input	ON	When vehicle speed is approx.40km/h (25MPH)	 SKIA0168E	Speed sensitive volume system does not work properly.
24 (PU)	–	Immobilizer	–	–	–	–	–

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
26 (L/B)	Ground	Remote control A	Input	ON	Press SOURCE switch	Approx. 0V	Steering wheel audio controls do not function.
					Press SEEK UP switch	Approx. 1.7V	
					Press VOL UP switch	Approx. 3.3V	
					Except for above	Approx. 5V	
27 (L/R)	Ground	Remote control B	Input	ON	Press SPECIAL switch	Approx. 0V	Steering wheel audio controls do not function.
					Press SEEK DOWN switch	Approx. 1.7V	
					Press VOL DOWN switch	Approx. 3.3V	
					Except for above	Approx. 5V	
29 (B)	Ground	Remote control ground	–	ON	–	Approx. 0V	–

Terminals and Reference Value for Audio Unit Without Cassette Deck

EKS00EHT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (R/L)	Ground	Lighting switch signal	Input	ON	Lighting switch ON (1st position)	Approx. 12V	Audio unit illumination does not function when lighting switch is ON (position 1).
					Lighting switch OFF	Approx. 0V	
3 (GY/L)	Ground	ACC power	Input	ACC	–	Battery voltage	System does not work properly.
5 (PU)	–	immobilizer	–	–	–	–	–
6 (Y/R)	Ground	Antenna signal	Output	ON	–	More than approx. 10V	Receiving status of radio broadcast becomes bad.
9 (Y/G)	Ground	Battery power	Input	OFF	–	Battery voltage	System does not work properly.
11 (SB)*1 (L)*2	10 (GY)*1 (B/W)*2	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker or tweeter LH.
12 (LG)	13 (B/Y)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker LH.

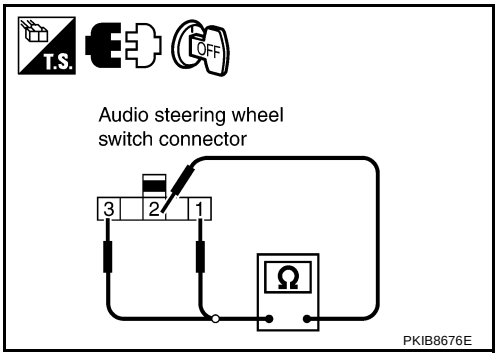
Terminal (Wire color) (+)	Terminal (Wire color) (–)	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value	Example of symptom
15 (SB)*3 (BR)*4	14 (GY)*3 (B/R)*4	Audio sound signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker or tweeter RH.
16 (OR)	7 (B/P)	Audio sound signal rear RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker RH.
20*5 (L/B)	22*5 (B)	Remote control A	Input	ON	Press SOURCE switch	Approx. 0V	Steering wheel audio controls do not function.
					Press SEEK UP switch	Approx. 1.7V	
					Press VOL UP switch	Approx. 3.3V	
					Except for above	Approx. 5V	
21*5 (L/R)	22*5 (B)	Remote control B	Input	ON	Press SPECIAL switch	Approx. 0V	Steering wheel audio controls do not function.
					Press SEEK DOWN switch	Approx. 1.7V	
					Press VOL DOWN switch	Approx. 3.3V	
					Except for above	Approx. 5V	
22*5 (B)	Ground	Remote control ground	–	ON	–	Approx. 0V	

- *1: LHD model with navigation system
- *2: Except *1
- *3: RHD model with navigation system
- *4: Except *3
- *5: With audio steering wheel switch only

Audio Steering Wheel Switch Resistance Check

EKS00EHW

Terminal		Signal name	Condition	Resistance (Ω)
1	2	Source	Depress source switch.	Approx.0
		Seek up (next)	Depress (station) up switch.	Approx.165
		Volume (up)	Depress volume up switch.	Approx.652
3		Special	Depress special switch.	Approx.0
		Seek up (previous)	Depress (station) down switch.	Approx.165
		Volume (down)	Depress volume down switch.	Approx.652



PKIB8676E

Trouble Diagnoses

EKS00EHY

AUDIO UNIT

Symptom	Possible causes	Repair order
Audio unit inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. 15A fuse 3. Audio unit ground 4. Audio unit	1. Check 10A fuse [No. 4, located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal 10 (with cassette deck), 3 (without cassette deck) of audio unit. 2. Check 15A fuse (No. 32, located in fuse and fusible link box) and verify that battery positive voltage is present at terminal 6 (with cassette deck), 9 (without cassette deck) of audio unit. 3. Check audio unit ground. 4. Remove audio unit for repair.
Individual rear speaker is noisy or inoperative.	1. Each speaker 2. Output circuit to each speaker	1. Check speaker. 2. Check the output circuits to each speaker between audio unit and each speaker.
AM/FM stations are weak or noisy.	1. Roof antenna 2. Audio unit ground 3. Audio unit	1. Check roof antenna. 2. Check audio unit ground condition. 3. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	1. Poor audio unit ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Ignition coil 5. Audio unit	1. Check audio unit ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check ignition coil. 5. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor audio unit ground 2. Antenna 3. Accessory ground 4. Malfunctioning accessory	1. Check audio unit ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

Inspection

EKS00EHX

AUDIO UNIT

All voltage inspections are made with:

- Ignition switch ON or ACC
- Audio unit ON
- Audio unit connected

ANTENNA

Using a jumper wire, clip an auxiliary ground between antenna and body.

- If reception improves, check antenna ground (at body surface).
- If reception does not improve, check main feeder cable for short circuit or open circuit.

Audio Steering Wheel Switch Does Not Operate (With Cassette Deck)

EKS00EJ1

1. AUDIO STEERING WHEEL SWITCH RESISTANCE CHECK

1. Disconnect audio steering wheel switch connector.
2. Check resistance audio steering wheel switch. Refer to AV-29, "Audio Steering Wheel Switch Resistance Check" .

Resistance value is OK?

OK or NG

OK >> GO TO 2.
NG >> Replace audio steering wheel switch.

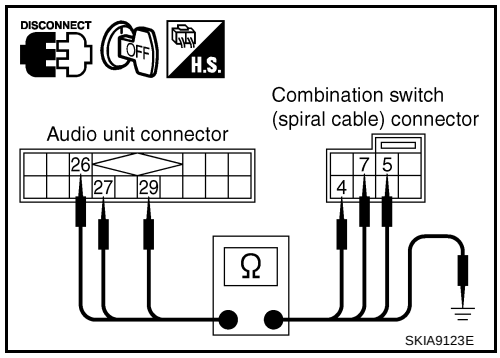
2. AUDIO STEERING WHEEL SWITCH CIRCUIT CHECK

1. Disconnect audio unit connector and combination switch (spiral cable) connector.
2. Check continuity between audio unit harness connector M41 terminal 26 (L/B), 27 (L/R), 29 (B) and combination switch (spiral cable) harness connector M11terminal 4 (L/B), 5 (L/R), 7 (B).

26 (L/B)- 4 (L/B) : Continuity should exist.
27 (L/R)- 5 (L/R) : Continuity should exist.
29 (B) - 7 (B) : Continuity should exist.

3. Check continuity between audio unit harness connector M41 terminal 26 (L/B), 27 (L/R), 29 (B) and ground.

Continuity should not exist.



OK or NG

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

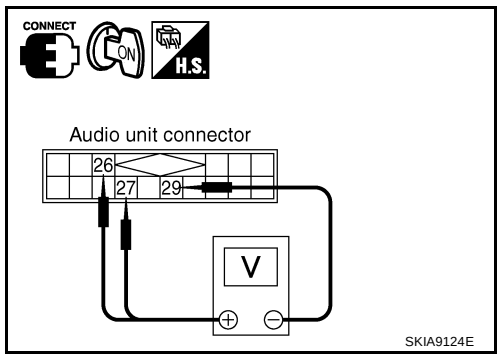
3. CONTROL SIGNAL CHECK

1. Connect audio unit connector and combination switch (spiral cable) connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector M41 terminal 26 (L/B), 27 (L/R) and 29 (B).

26 (L/B) - 29 (B) : Approx. 5V
27 (L/R) - 29 (B) : Approx. 5V

OK or NG

OK >> Check combination switch (spiral cable).
NG >> Replace audio unit.



Audio Steering Wheel Switch Does Not Operate (Without Cassette Deck)

EKS00EJ3

1. AUDIO STEERING WHEEL SWITCH RESISTANCE CHECK

1. Disconnect audio steering wheel switch connector.
2. Check resistance audio steering wheel switch. Refer to AV-29, "Audio Steering Wheel Switch Resistance Check" .

Resistance value is OK?

OK or NG

OK >> GO TO 2.
NG >> Replace audio steering wheel switch.

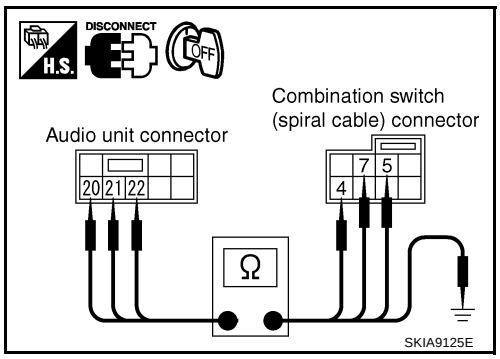
2. AUDIO STEERING WHEEL SWITCH CIRCUIT CHECK

1. Disconnect audio unit connector and combination switch (spiral cable) connector.
2. Check continuity between audio unit harness connector M43 terminal 20 (L/B), 21 (L/R), 22 (B) and combination switch (spiral cable) harness connector M11terminal 4 (L/B), 5 (L/R), 7 (B).

   20 (L/B)- 4 (L/B) : Continuity should exist.
   21 (L/R)- 5 (L/R) : Continuity should exist.
   22 (B) - 7 (B) : Continuity should exist.

3. Check continuity between audio unit harness connector M41 terminal 20 (L/B), 21 (L/R), 22 (B) and ground.

   Continuity should not exist.



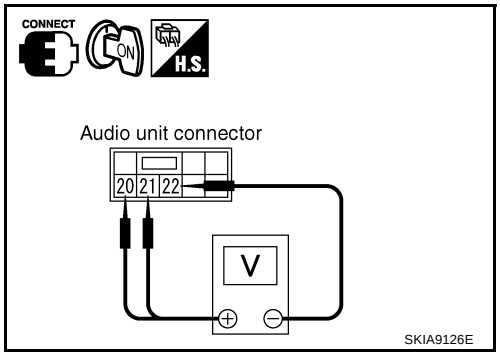
OK or NG

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

3. CONTROL SIGNAL CHECK

1. Connect audio unit connector and combination switch (spiral cable) connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector M43 terminal 20 (L/B), 21 (L/R) and 22 (B).

   20 (L/B) - 22 (B) : Approx. 5V
   21 (L/R) - 22 (B) : Approx. 5V



OK or NG

OK >> Check combination switch (spiral cable).
NG >> Replace audio unit.

Speed Sensitive Volume System Does Not Work (With Cassette Deck)

EKS00EJ4

1. VEHICLE SPEED OPERATION CHECK

Does speedometer is operated normally?

Yes or No

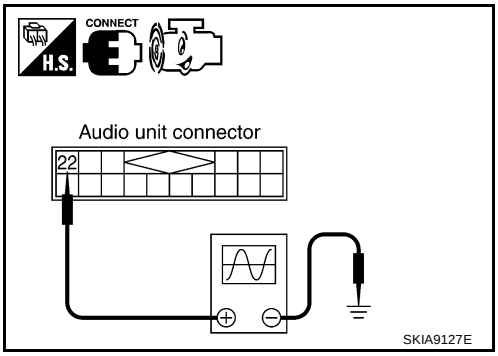
Yes >> GO TO 2.

No >> Check combination meter trouble diagnosis. Refer toDI-28, "Vehicle Speed Signal Inspection [With ESP]" in “COMBINATION METERS”.

2. VEHICLE SPEED SIGNAL CHECK

1. Start engine and drive vehicle at more than 40 km/h (25MPH).
2. Check the signal between audio unit harness connector M41 terminal 22 (L/W) and ground with CONSULT-II or oscilloscope.

22 (L/W) – Ground **:Refer to AV-27, "Terminals and Reference Value for Audio Unit With Cassette Deck" .**



OK or NG

OK >> Replace audio unit.

NG >> GO TO 3.

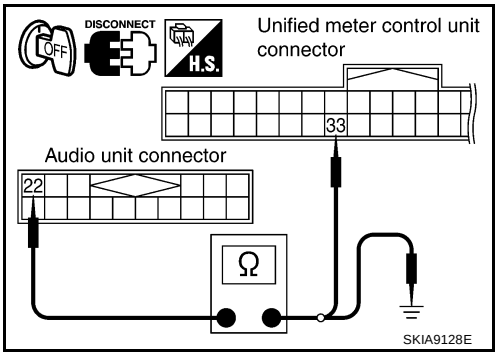
3. HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect audio unit connector and combination meter connector.
3. Check continuity between audio unit harness connector M41 terminal 22 (L/W) and Unified meter control unit harness connector M44 terminal 33 (L/W).

22 (L/W) - 33 (L/W) : Continuity should exist.

4. Check continuity between audio unit harness connector M42 terminal 22 (L/W) and ground.

Continuity should not exist.



OK or NG

OK >> Check combination meter system. Refer to DI-22, "Diagnosis Flow" in “COMBINATION METERS”.

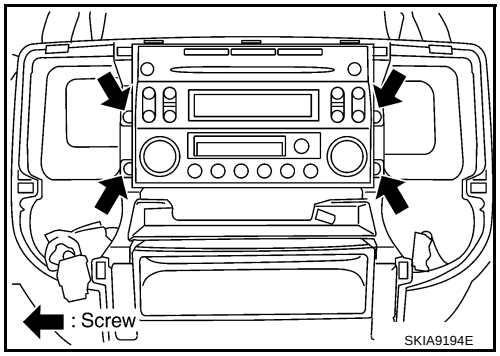
NG >> ● Check connector housings for disconnected or loose terminals.
● Repair harness or connector.

Removal and Installation of Audio Unit (With Cassette Deck)

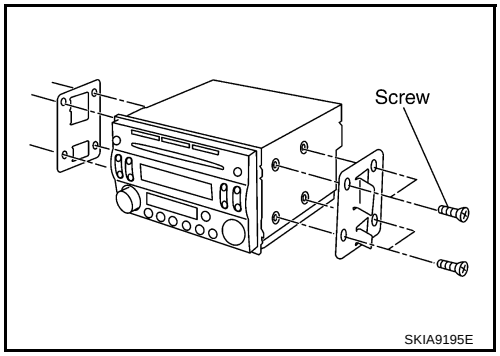
EKS00EKR

REMOVAL

1. Remove instrument cluster lid C. Refer to IP-11, "Removal and Installation" .
2. Remove screws (4) and connector, and remove audio unit.



3. Remove screws (8) and bracket.



INSTALLATION

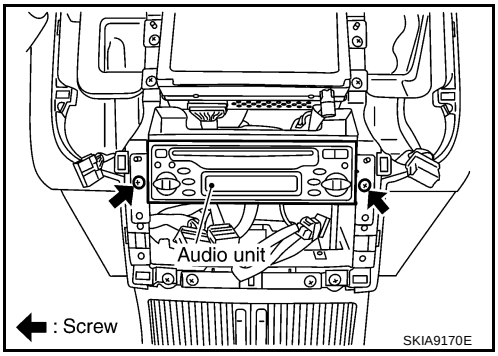
Installation is the reverse order of removal.

Removal and Installation of Audio Unit (Without Cassette Deck)

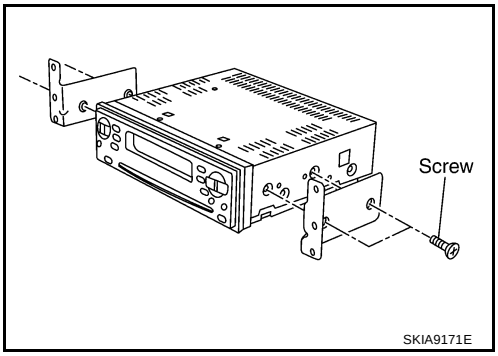
EKS00ECQ

REMOVAL

1. Remove instrument cluster lid C. Refer to IP-11, "Removal and Installation" .
2. Remove screws (2) and remove audio unit.



3. Remove screws (4), and bracket.



INSTALLATION

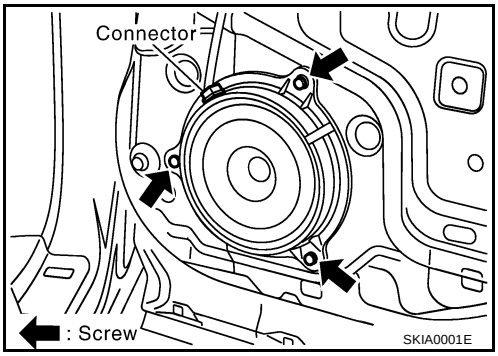
Installation is the reverse order of removal.

Removal and Installation of Speakers

EKS00ECT

REMOVAL

1. Remove door finisher. Refer to EI-32, "Removal and Installation" .
2. Remove screws (3) and remove speakers.



INSTALLATION

Installation is the reverse order of removal.

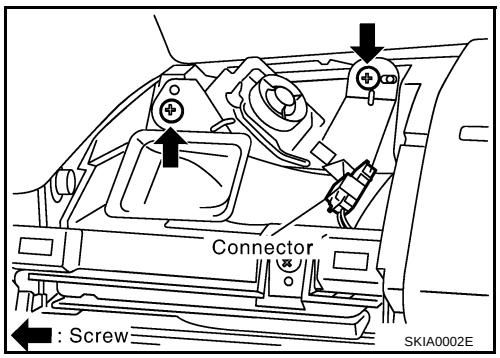
Removal and Installation of Tweeters

EKS00ECU

REMOVAL

1. Remove front speaker grille. Refer to IP-11, "Removal and Installation" .

2. Remove screws (2) and remove tweeters.



INSTALLATION

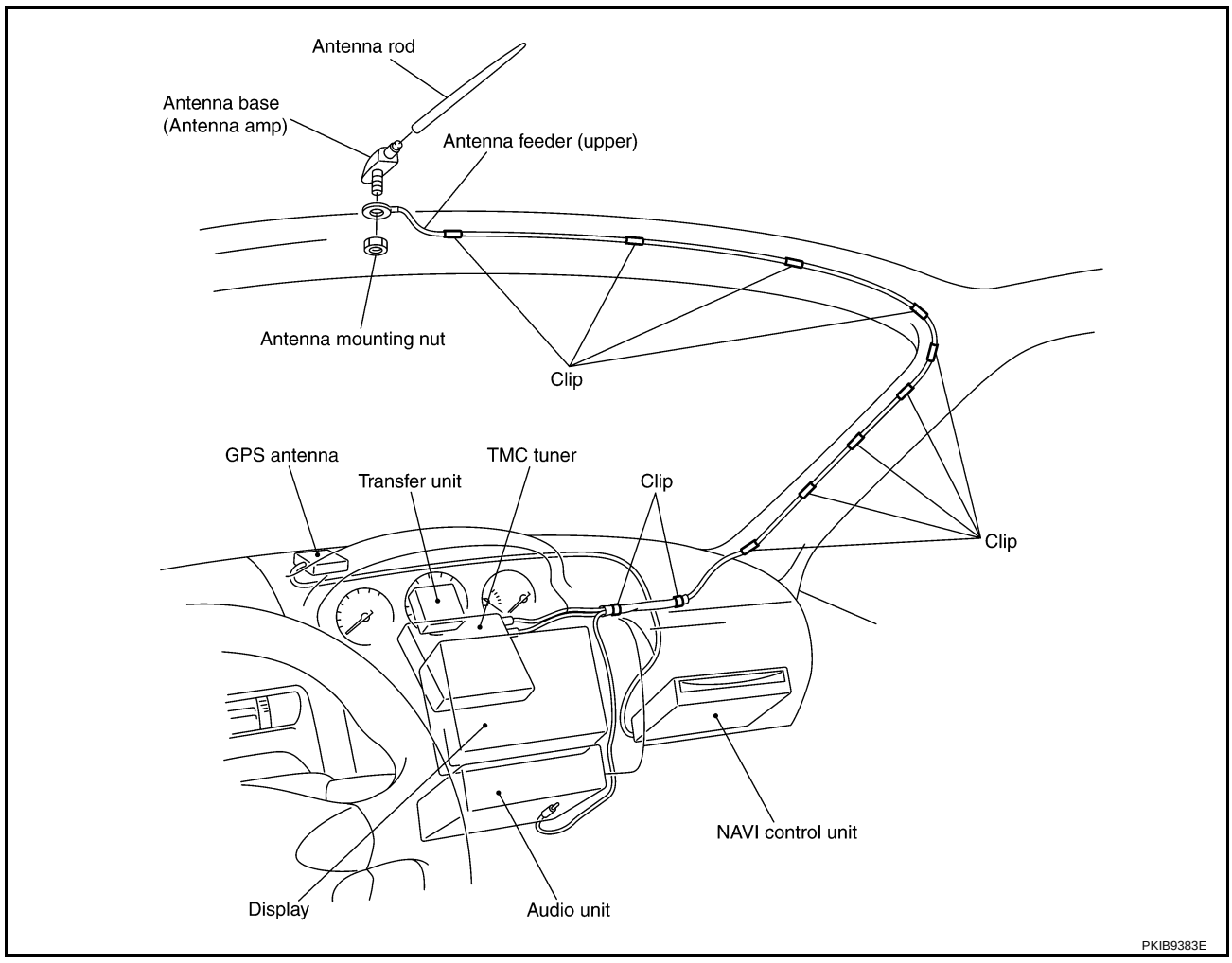
Installation is the reverse order of removal.

AUDIO ANTENNA

PFP:28200

Antenna Route

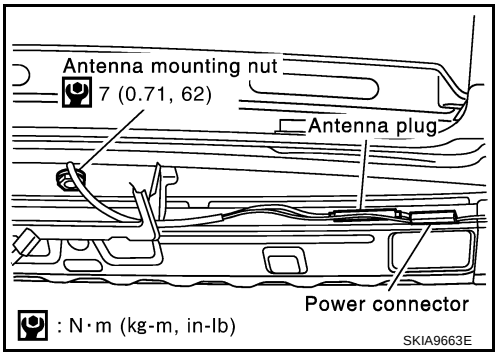
EKS00ECV

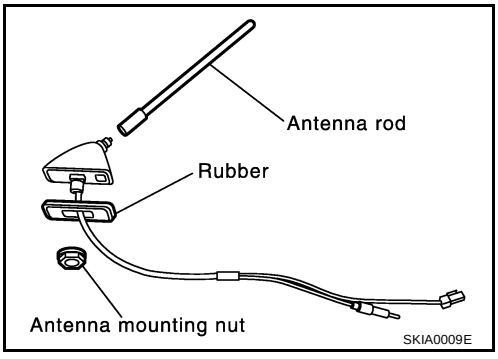


Removal and Installation of Roof Antenna

EKS00ECW

1. Remove headlining.
   - Refer to EI-39, "HEADLINING" in “Exterior/Interior (EI)” section.
2. Remove roof antenna mounting nuts, antenna plug, and power connector. Then remove roof antenna.





NAVIGATION SYSTEM

PFP:25915

System Description

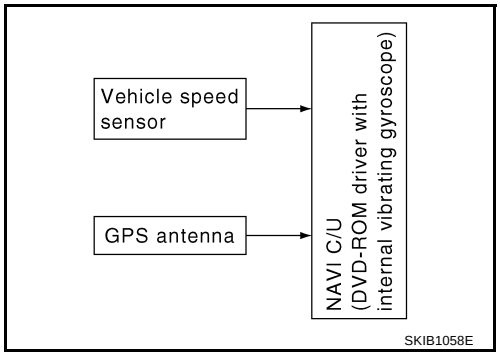
EKS00M7F

NAVIGATION SYSTEM

Location Detection Principle

The navigation system periodically calculates the vehicle's current position according to the following three signals:

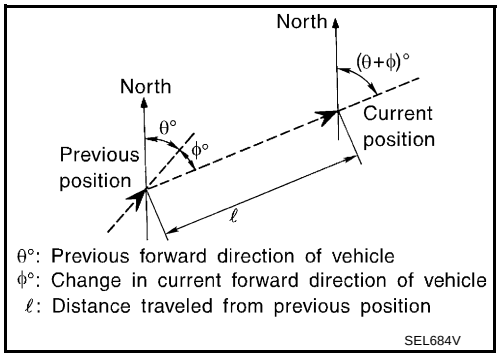
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)



The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen as a vehicle mark. More accurate data is judged and used by comparing vehicle position detection results found by the GPS with the result by map-matching.

The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

- Travel distance
  Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.
- Travel direction
  Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



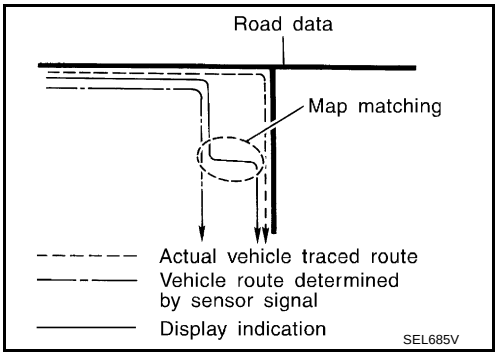
Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).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

More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

Map-Matching

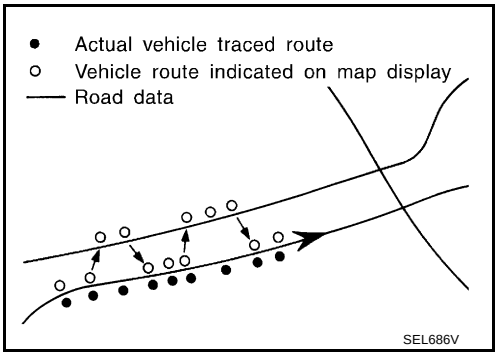
Map-matching compares a current location detected by the method in the “Location Detection Principle“ (refer to AV-38) with a road map data from Map DVD-ROM stored in DVD-ROM drive.

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

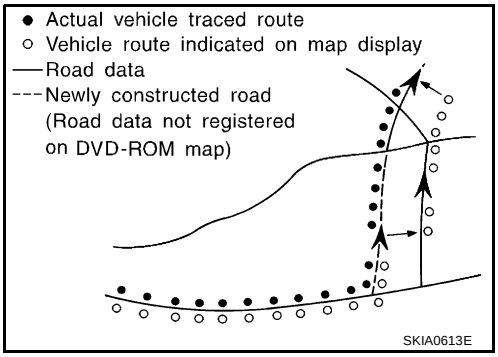


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the vehicle mark on the display must be corrected manually.

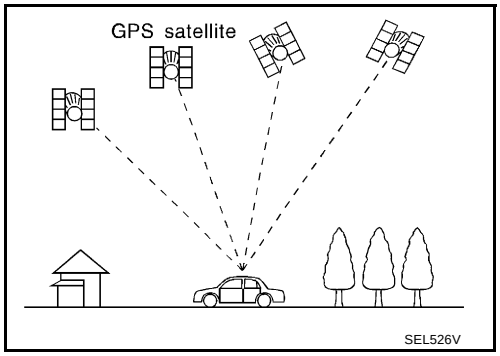
- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the vehicle mark has been repositioned.
  If there is an error in distance and/or direction, alternative routes will be shown in different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



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



GPS (Global Positioning System)



GPS (Global Positioning System) was developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), sending out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km.
The GPS receiver calculates the vehicle's position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves received from four or more GPS satellites (three-dimensional positioning). If radio waves were received only from three GPS satellites, the GPS receiver calculates the vehicle's position in two dimensions (latitude/longitude), utilizing the altitude data calculated previously with radio waves from four or more GPS satellites (two-dimensional positioning).
Position correction by GPS is not available while the vehicle is stopped.
Accuracy of GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The accuracy can be even lower depending on the arrangement of the GPS satellites utilized for the positioning.
- Position detection is not possible when vehicle is in an area where radio waves from the GPS satellite do not reach, such as in a tunnel, parking lot in a building, and under an elevated highway. Radio waves from the GPS satellites may not be received when some object is located over the GPS antenna.

NOTE:

- Even a high-precision three dimensional positioning, the detection result has an error about 10 m (30 ft).
- Because the signals of GPS satellite is controlled by the Tracking and Control Center in the United States, the accuracy may be degraded lower intentionally or the radio waves may stop.

Traffic Information (RDS-TMC)

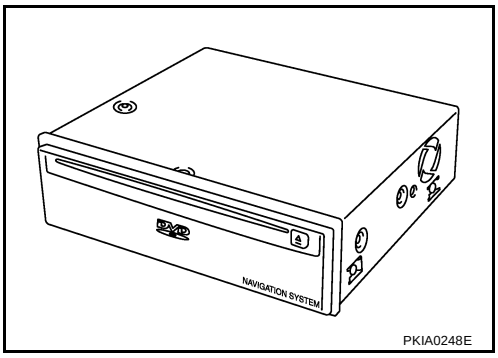
The Traffic Information broadcast allows to you to avoid delays due to traffic incidents.
Traffic jams, roadwork, closed roads around your current location, etc. are represented graphically on the map by icons depicting the nature of the event.
Incidents on the route are automatically brought to your attention when they are approached.
The Traffic Information feature gives you the opportunity to forecast traffic incidents, determine how serious they are and, via the guidance mode, allows you to detour around traffic problems.
The navigation system receives traffic information from best available sources and enables the RDS-TMC (Radio Data System-Traffic Message Channel) to inform and guide you.
The RDS-TMC broadcast is fed by a dedicated FM tuner so that you can still tune your radio station while Traffic Information is being broadcasted.

Component Description

EKS00M7G

NAVI CONTROL UNIT

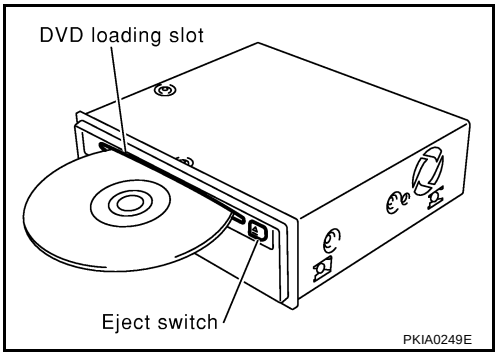
- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the DVD-ROM map. Location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



PKIA0248E

DVD-ROM Drive

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



PKIA0249E

Map DVD-ROM

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

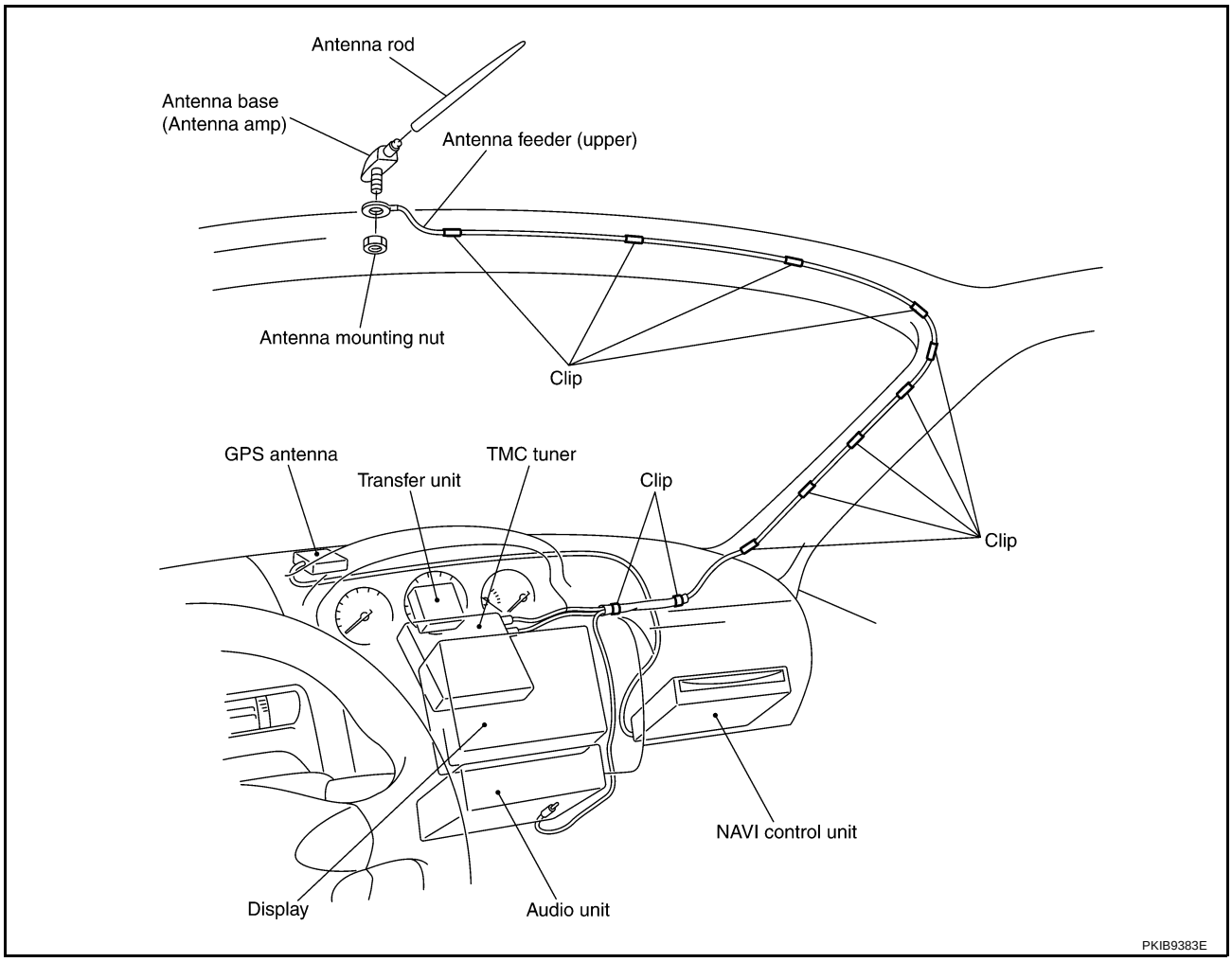
Gyro (Angular Speed Sensor)

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

GPS ANTENNA

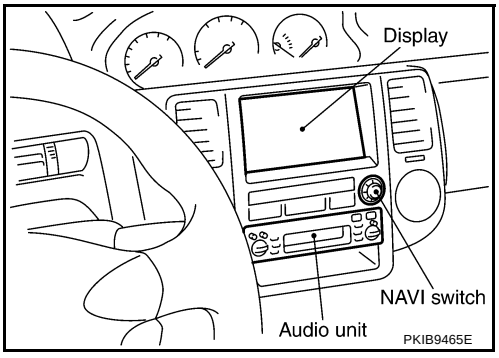
The GPS antenna receives and amplifies the radio waves from the GPS satellites, and then transmits the GPS signal to NAVI control unit.

Antenna Route



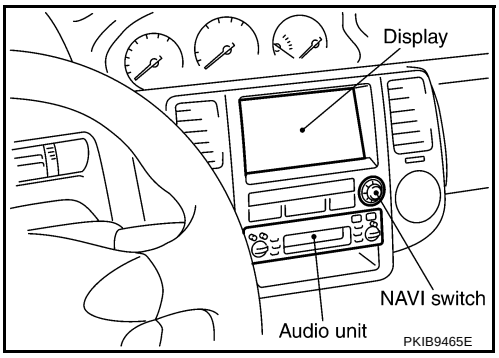
DISPLAY

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



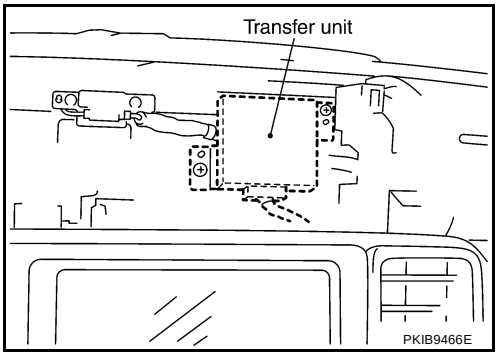
NAVI SWITCH

- NAVI switch connects to the display and transfer unit with communication lines. NAVI switch transmits the demand signal and the response signal with the serial transmission.
- Communication form of the operation signal is conversed in transfer unit to NAVI switch. The operation signal is transmitted to NAVI control unit.



TRANSFER UNIT

- Transfer unit interfaces the communication signal among NAVI switch, display and transfer unit to the communication signal between transfer unit and NAVI control unit.
- Transfer unit outputs ON signal and voice guidance signal to voice change relay.

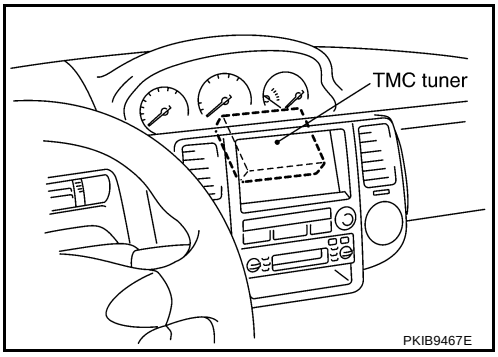


VOICE CHANGE RELAY

Voice change relay converses the voice signal transmitted from audio unit and the voice guidance signal transmitted from NAVI control unit through transfer unit. And voice change relay outputs the voice signal and the voice guidance signal to driver-side speaker.

TMC TUNER

TMC tuner connects to NAVI control unit with a communication line. TMC tuner transmits traffic message channel information to NAVI control unit, and indicates the traffic message channel information on the display. Also TMC tuner receives the receivable channel list from NAVI control unit.



System Operation Description

EKS00M7H

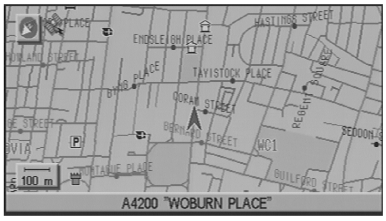
NAVIGATION SYSTEM

Here is an example of functions. For details, refer to the owner's manual or navigation system owner's manual.

MAP VIEWING STYLE

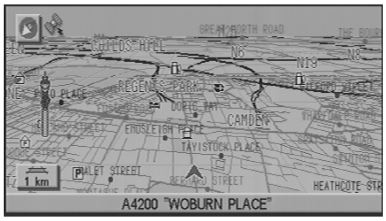
- The NISSAN Navigation System gives you a choice of two map viewing styles, a normal 2-dimensional PLAN VIEW map and 3-dimensional BIRDVIEW® map.
- The 3-dimensional BIRDVIEW® map depicts a geographic area as seen from an elevated perspective.

PLAN VIEW Map



SKIA1377E

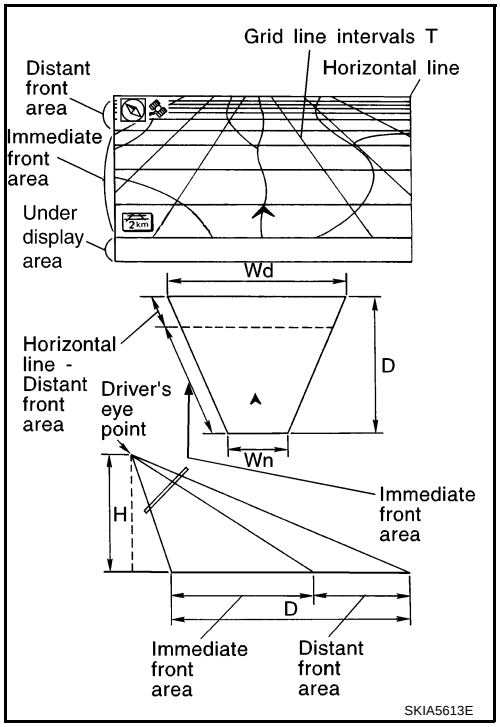
BIRDVIEW® Map



SKIA1378E

Description

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

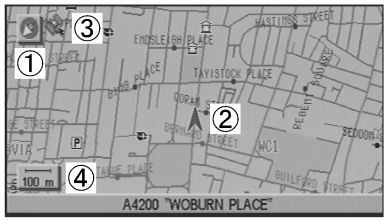


SKIA5613E

MAP DISPLAY

Function of each icon is as follows:

1. Direction indicator
   - This indicates the direction of the map.
2. Vehicle mark (cross pointer)
   - This indicates your vehicle position and the direction of travel.
3. GPS indicator
   - This indicates the strength of the GPS signal received.
4. Distance indicator
   - This indicates the distance on the screen according to the map scale.



SKIA1379E

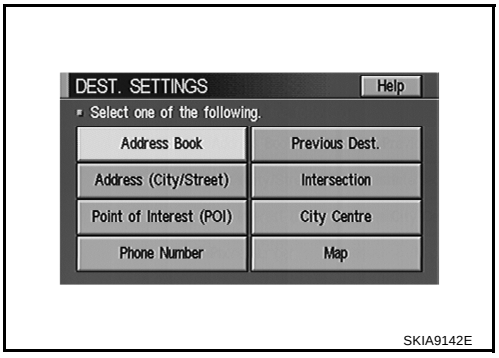
FUNCTION OF NAVI SWITCH

DEST Button

This key is used to set the destination (and way points).

- Easy Mode

- Expert Mode



The function of each icon is as follows:

Icon	Mode		Description
	Easy	Expert	
Address Book		×	Use this category item if you want to go to places stored in the address book.
Address (City / Street)	×	×	Use this category item if you know the city name, street name and house number of the destination (and way points).
Point of Interest (POI)	×	×	Use this category item if you want to go to a restaurant, hotel, gas station or other facility.
Phone Number		×	Use this category item when the destination phone number is known.
Previous Dest.		×	The ten previous destinations are registered automatically, thereby deleting the older ones.
Intersection		×	Sets a destination using the intersection of 2 streets.
City Centre		×	Sets the destination (way point) on the map screen of the area around the input city.
Map		×	Use this category item if you want to choose the place directly on the map display.
Home	×		When you set your home in the address book, a route home will be calculated by selecting this key.
Help	×	×	You can see the explanation of the navigational functions.

MAP Button

The map will be displayed.

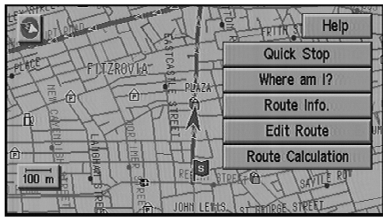
ROUTE Button

This key is used to set useful functions for the route guidance to the destination.

- Easy Mode

SKIA1382E

- Expert Mode



SKIA1383E

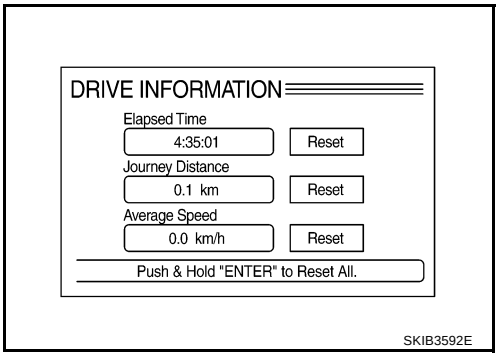
The function of each icon is as follows:

Icon	Mode		Description
	Easy	Expert	
Quick Stop	×	×	This key is used to set the destination (and way points) from a list of commonly used facilities.
Where am I?	×	×	This key is used to show the next, current, and previous streets on the screen.
Route Info.		×	This key is used to show the route to the destination in three different ways.
Edit Route		×	This key is used to alter or reset the pre-set destination (and way points).
Route Calculation		×	This key is used to start the route calculation after all the settings are completed.
Help	×	×	You can see the explanation of the navigational functions.

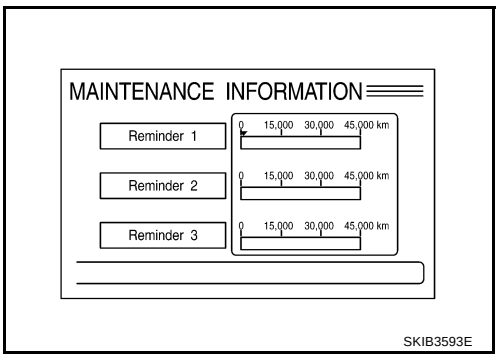
INFO Button

This button is used to show the drive information and maintenance information on the screen.

- “DRIVE INFORMATION” screen is displayed when pressing “INFO” button once.



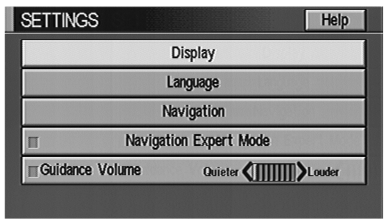
- “MAINTENANCE INFORMATION” screen is displayed when pressing “INFO” button twice.



Display items	Display/Setting contents	
DRIVE INFORMATION	Elapsed Time	Displays driving time with a range of 0:00:00 to 9999:59:59.
	Journey Distance	Displays journey distance with a range of 0.0 to 99999.9.
	Average Speed	Displays average speed with a range of 0.0 to 999.9.
MAINTENANCE INFORMATION	Reminder 1	Maintenance intervals of vehicle's consumable and setting of cycles.
	Reminder 2	
	Reminder 3	

SETTING Button

This button is used to set various navigational functions for convenient use.



SKIA9143E

The function of each icon is as follows:

Icon	Description
Display	The key also adjusts the display Brightness/Contrast/Map Background.
Language	This key is used to choose one of the languages shown on the display.
Navigation	Changes various settings of the navigation system.
Navigation Expert Mode	This key changes between Expert Mode and Easy Mode.
Guidance Volume	Adjusts or turns off volume of the voice guidance.
Help (only easy mode)	You can see the explanation of the navigational functions.

VOICE Button

When the guidance volume is set off, and the “VOICE” button is pushed, the guidance volume will be set to ON, and the system will announce the current vehicle location.

BACK Button

This button has two functions:

To return to the previous screen

- When this key is pushed during set-up, set-up will be cancelled, and the screen display will return to the previous screen.

To finish the set-up

- When this key is pushed after set-up is completed, the settings will be renewed as directed, and the screen will return to the map.

ZOOM IN/ZOOM OUT Button

Use the “ZOOM IN/ZOOM OUT” button to change the scale of the display and height view.

CANCEL Button

This button has two functions:

- Operation is cancelled when pushed during operation.
- The “CONFIRMATION” screen is displayed during route guidance in the present location map.

DAY/NIGHT Button

To change the display brightness, push the “☀/☽” button.

Precautions for NAVI Control Unit Replacement

EKS00F2T

- When replacing the NAVI control unit, eject the map DVD-ROM before disconnecting the battery.
- The NAVI control unit has the following information stored in its memory. Record the memory contents before replacing the control unit, and input them in the new unit as necessary.

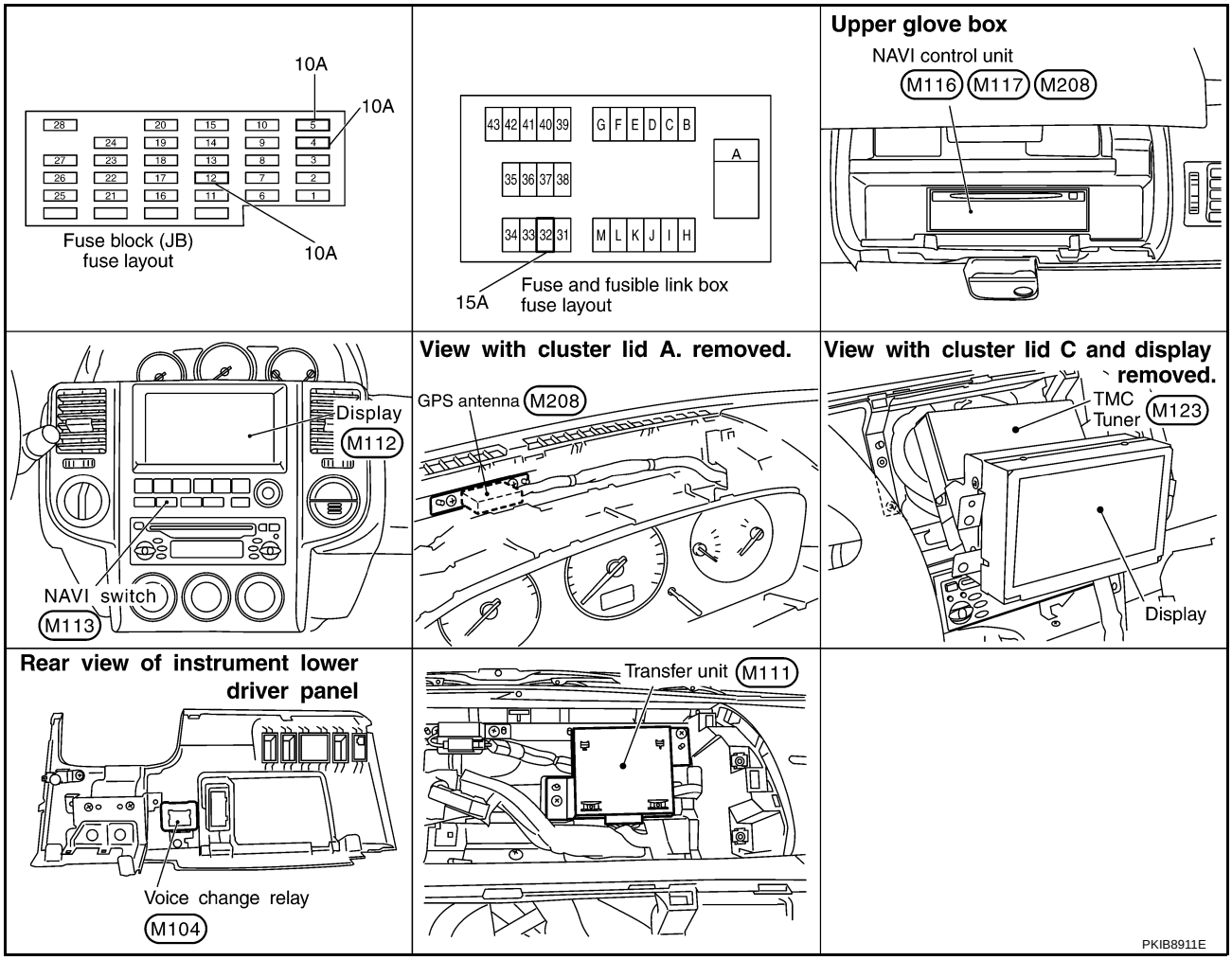
<Image quality>
- **Brightness of light when ON/OFF**
- **Dimming switching**
- **Display color switching**

<Navigation mode>
- **Latest status (map screen/BIRDVIEW® , reduced scale, rotation angle of map screen, route guide ON/OFF, track ON/OFF, etc.)**
- **Current position**
- **Destination, passing point 1 - 5**
- **Registered places, their names, etc.**

NOTE:
Only removing the battery does not erase the memory.

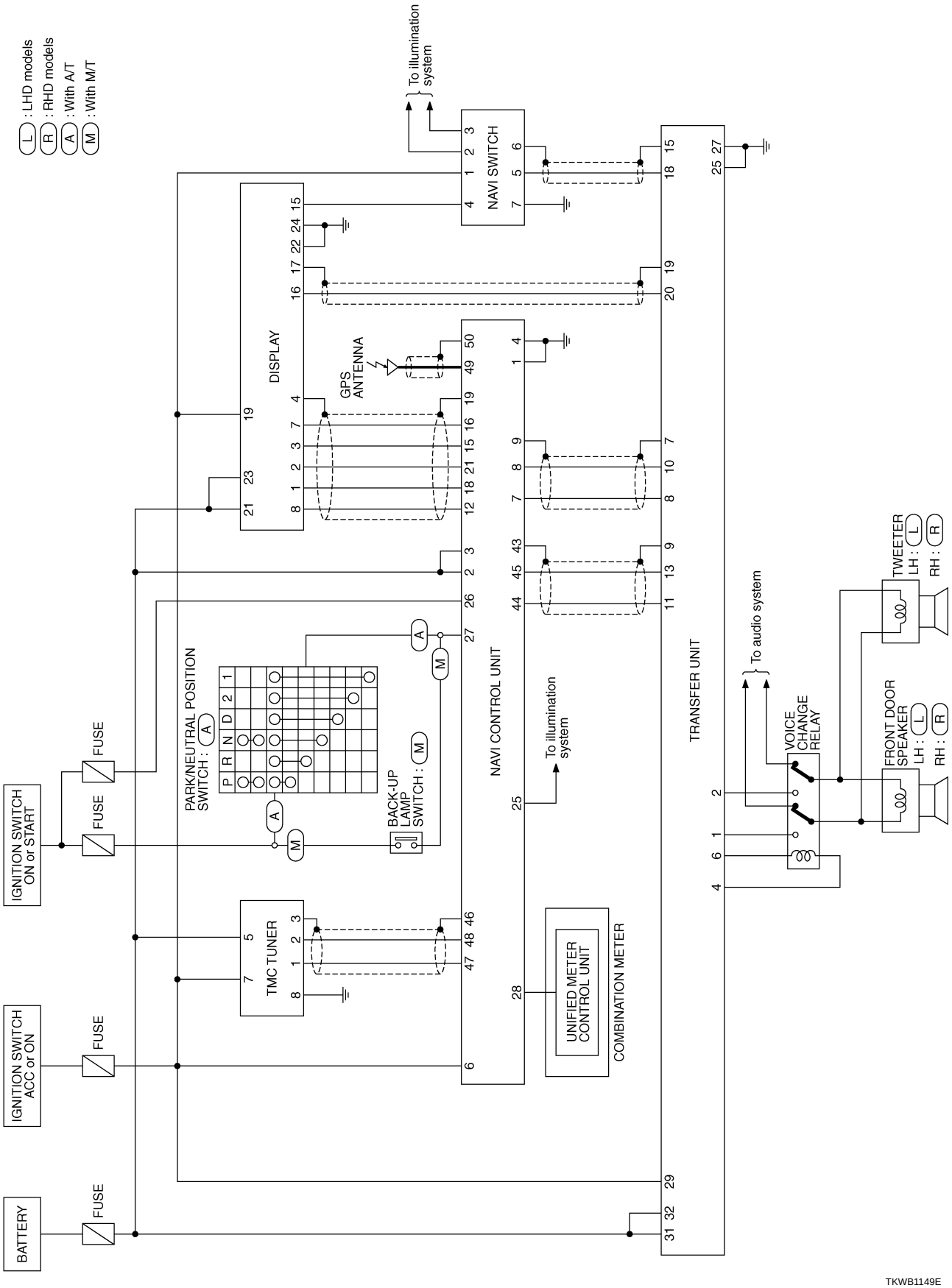
Component Parts And Harness Connector Location

EKS00F2U



Schematic

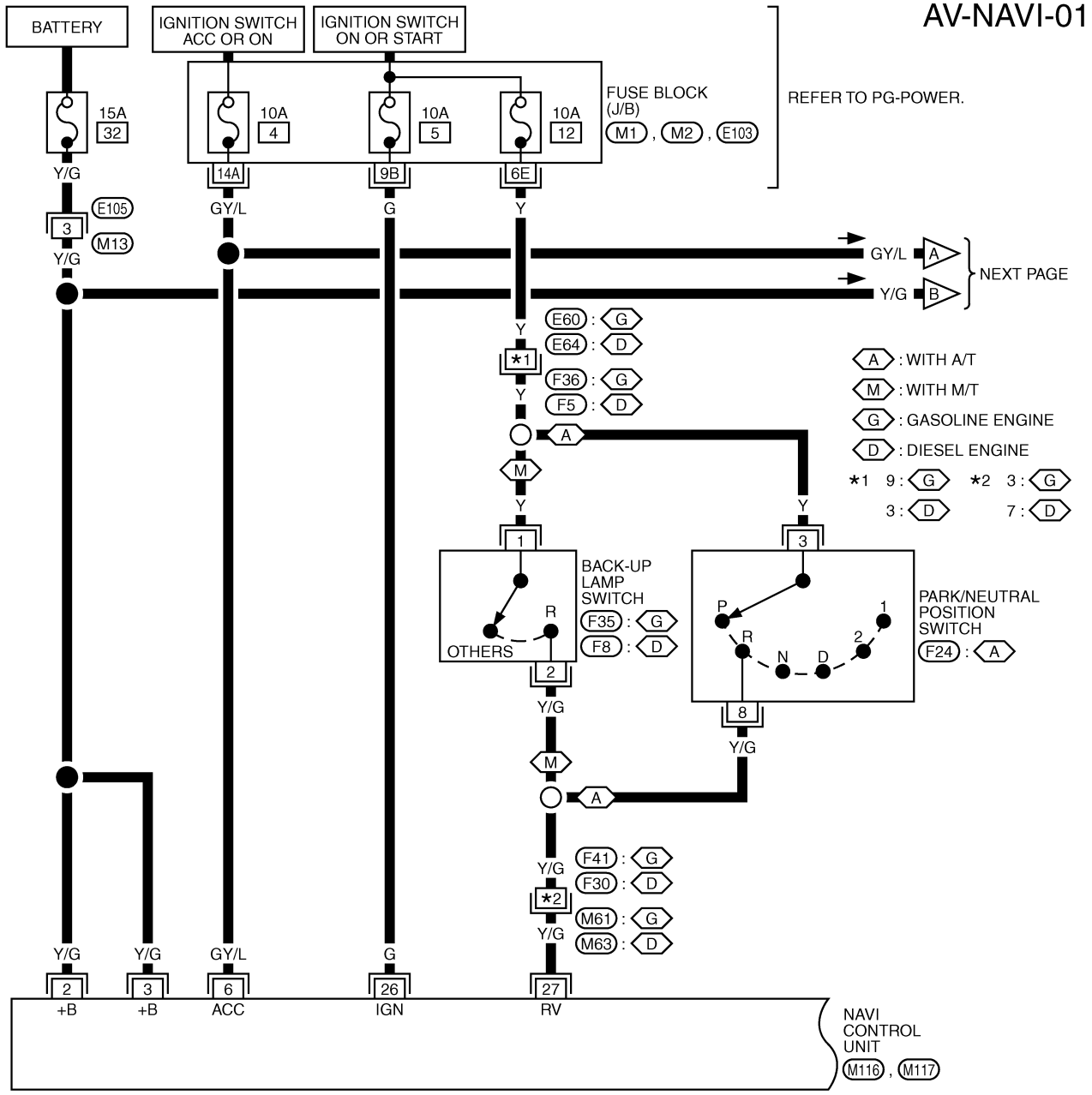
EKS00F2V

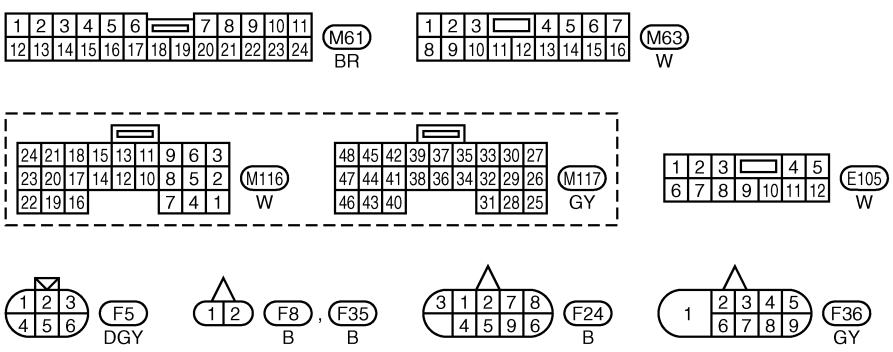


Wiring Diagram — NAVI —

EKS00F2W

LHD MODELS

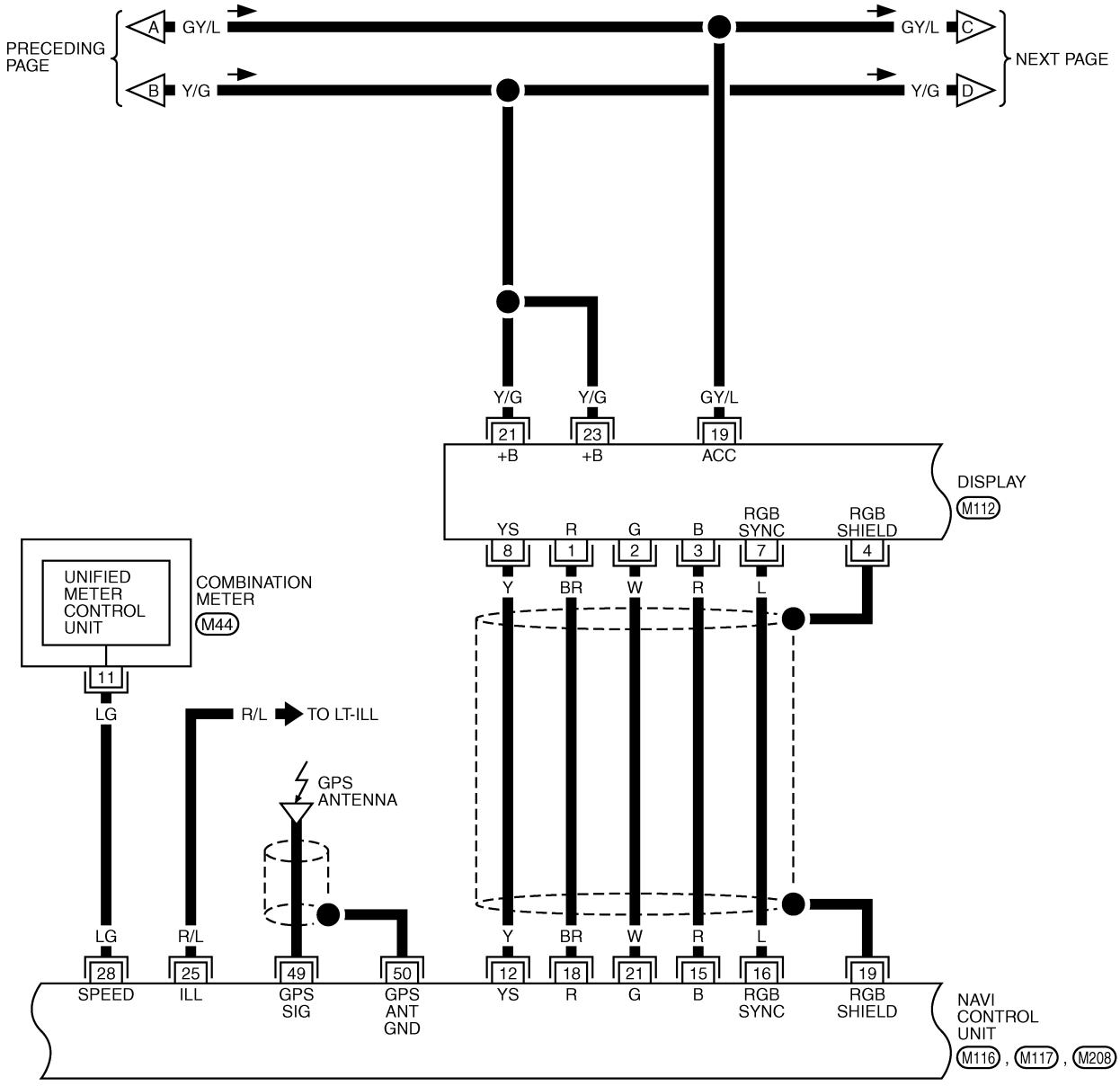


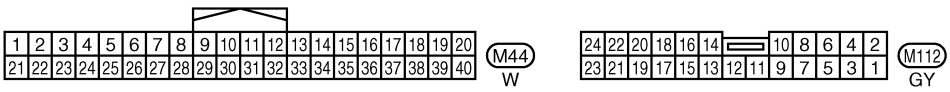


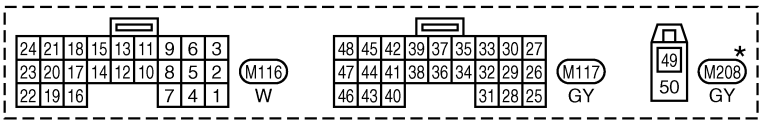
REFER TO THE FOLLOWING.
M1 , M2 , E103 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWA1597E

AV-NAVI-02



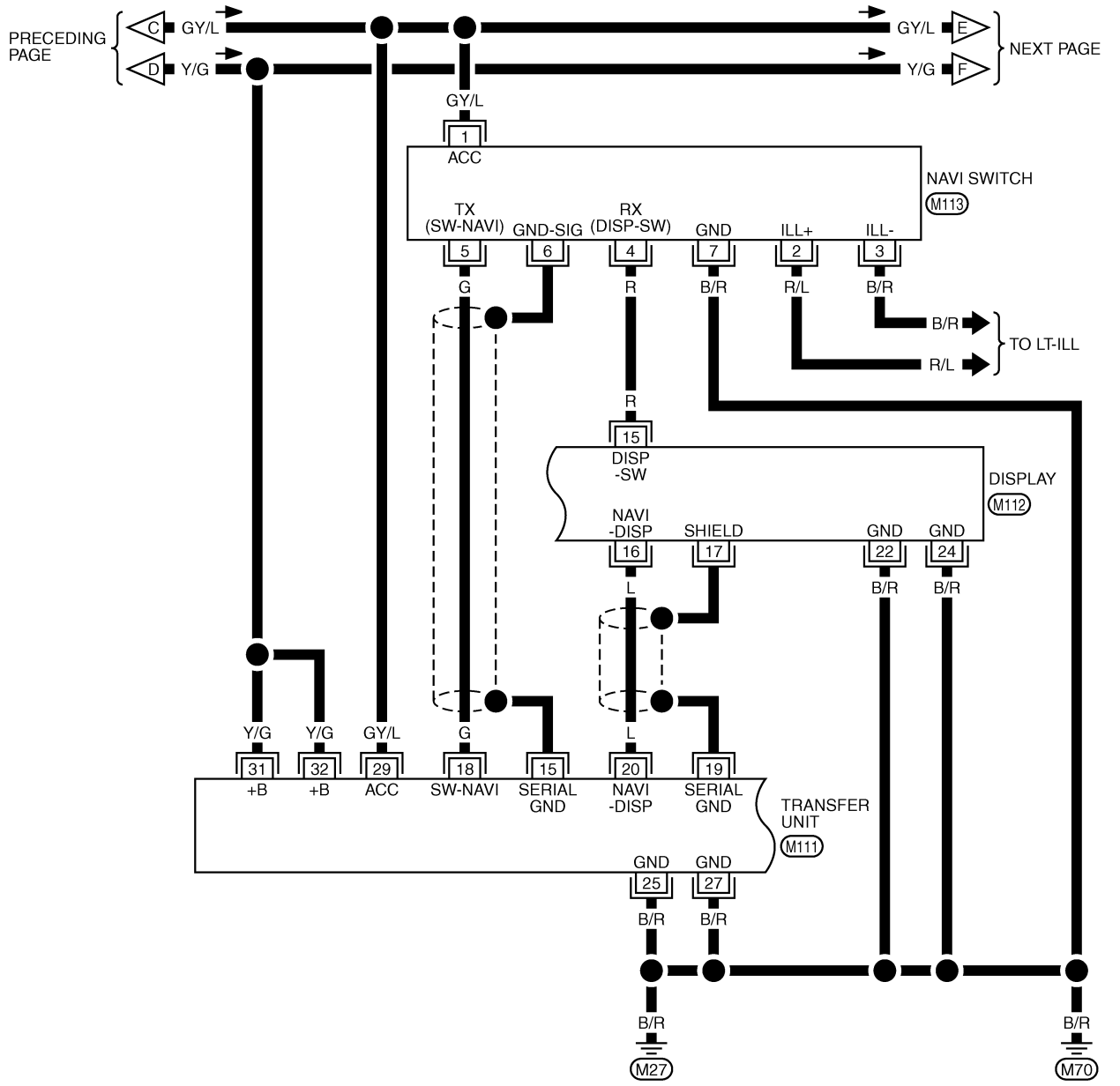


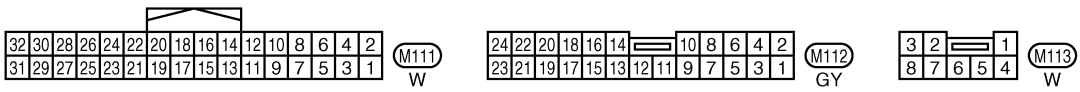


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

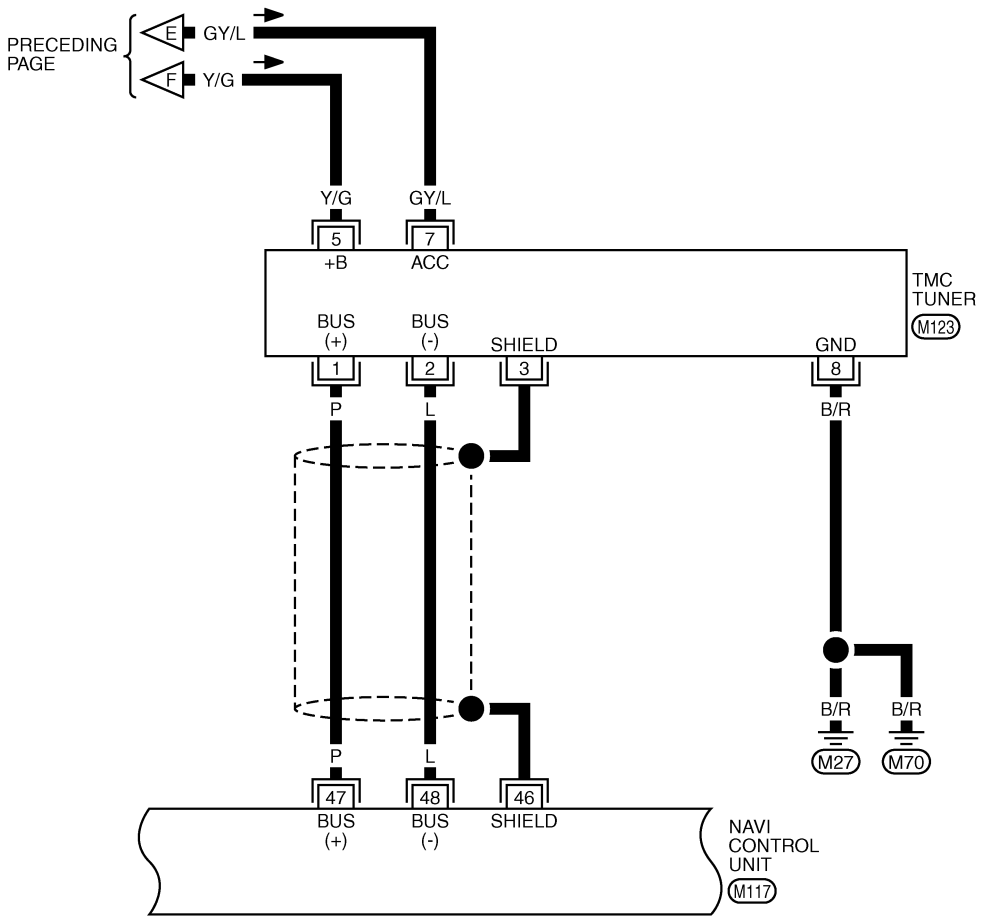
TKWA1598E

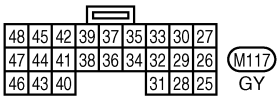
AV-NAVI-03

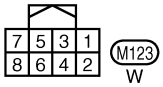




TKWB1150E

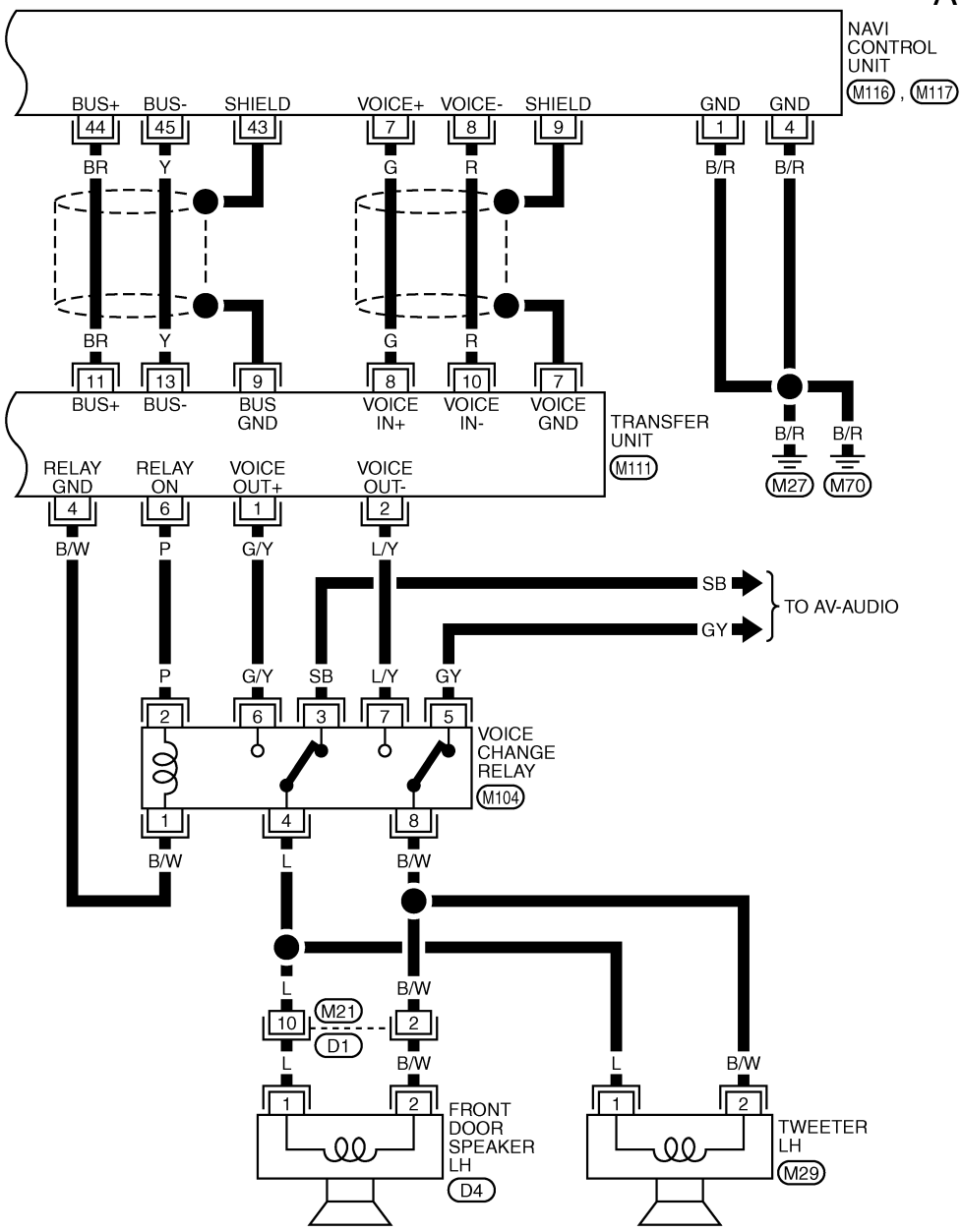

PRECEDING PAGE
E
GY/L
F
Y/G
Y/G
GY/L
5
+B
7
ACC
TMC TUNER
M123
BUS (+)
1
BUS (-)
2
SHIELD
3
GND
8
P
L
B/R
B/R
B/R
M27
M70
P
L
47
BUS (+)
48
BUS (-)
46
SHIELD
NAVI CONTROL UNIT
M117

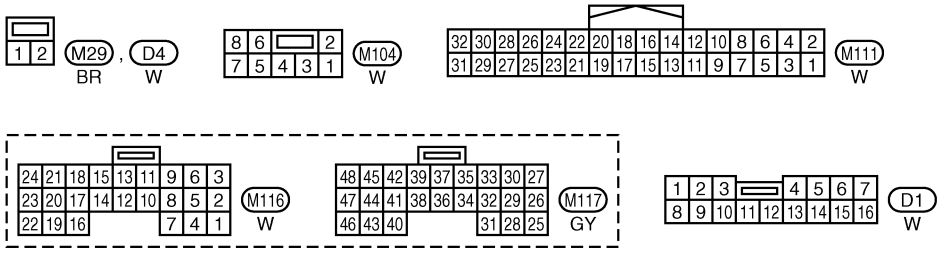

48 45 42 39 37 35 33 30 27
47 44 41 38 36 34 32 29 26
46 43 40 31 28 25
M117
GY


7 5 3 1
8 6 4 2
M123
W

TKWB1186E

AV-NAVI-05

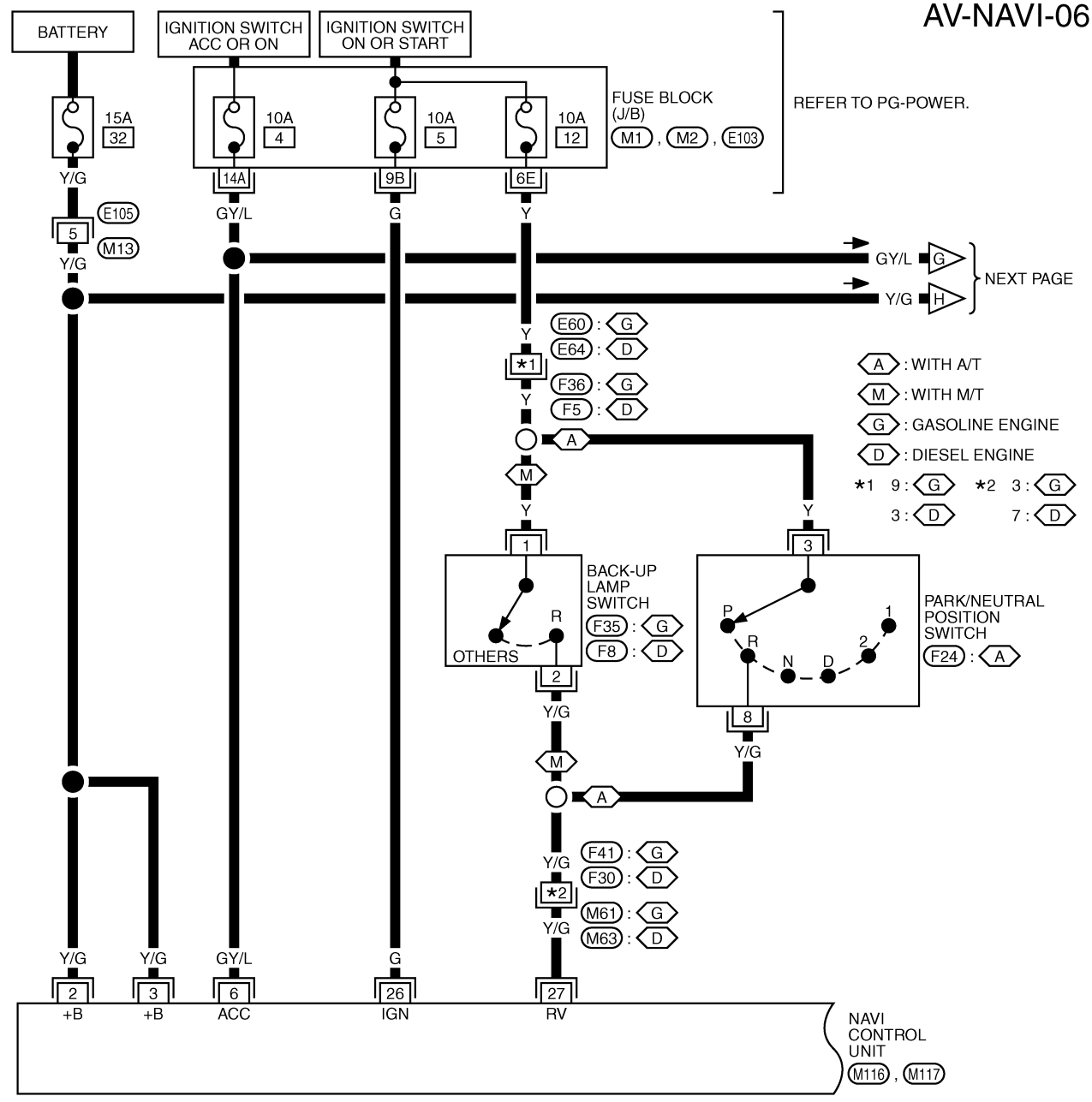


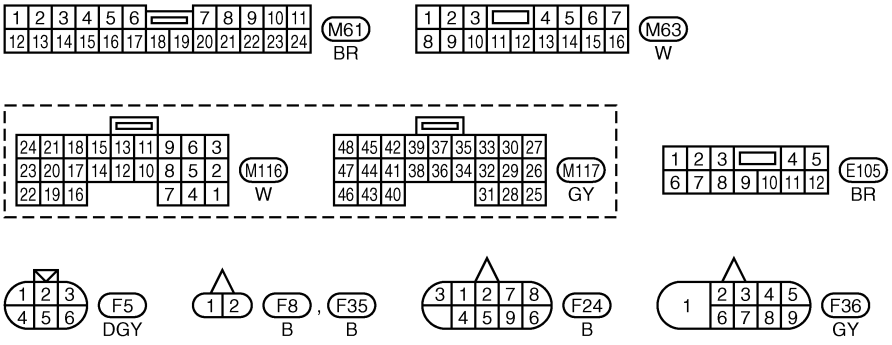


TKWB1187E

RHD MODELS

AV-NAVI-06

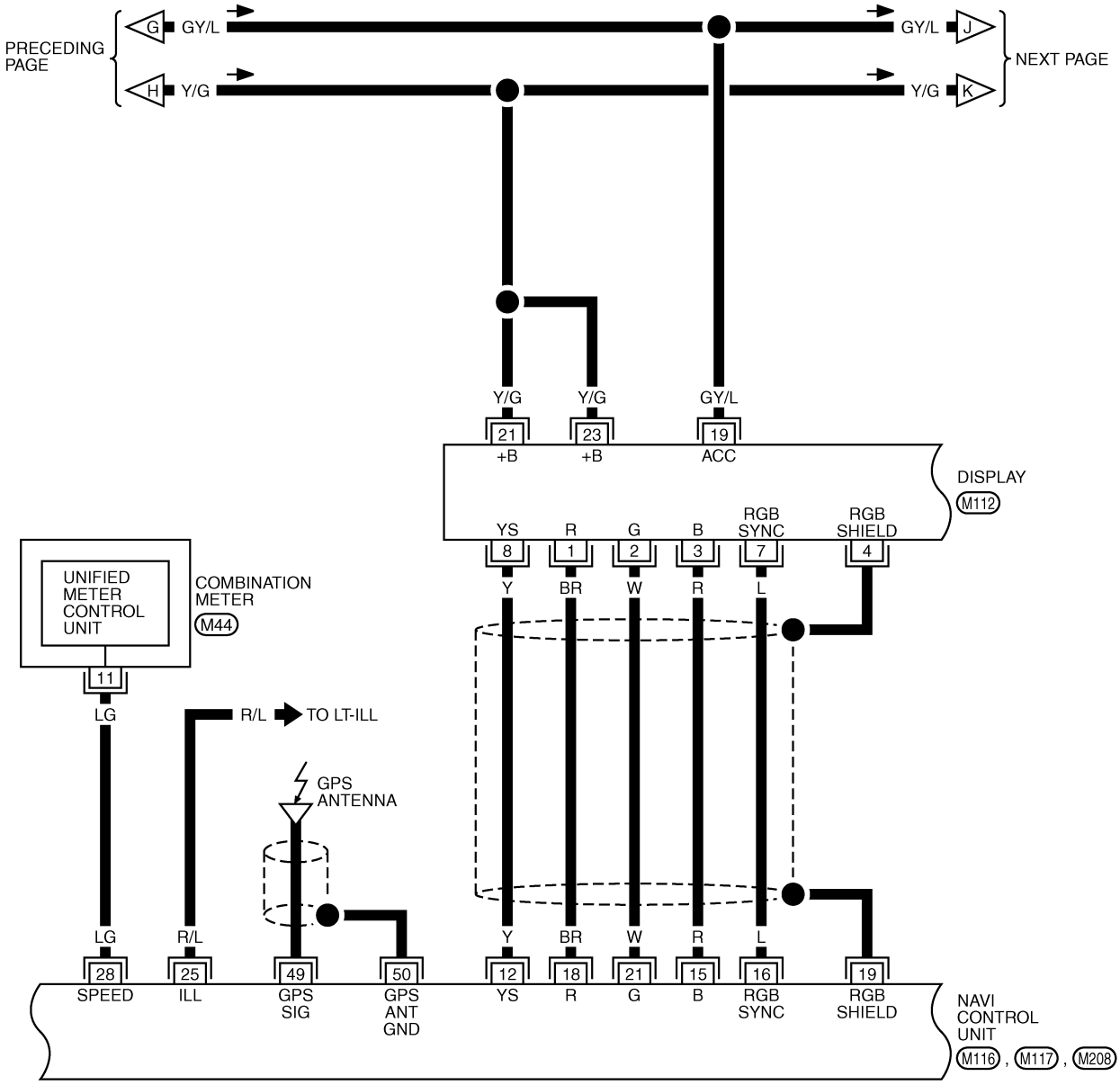


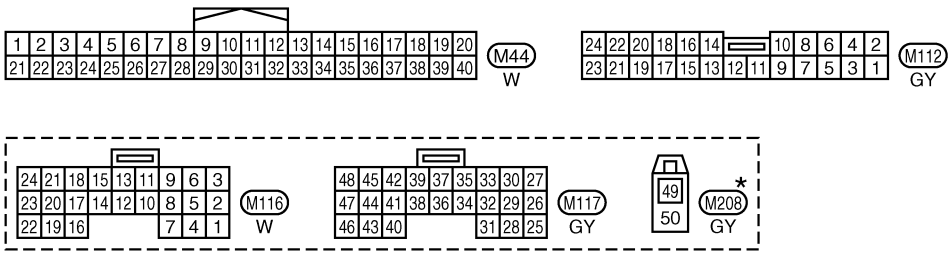


REFER TO THE FOLLOWING.
M1 , M2 , E103 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB1188E

AV-NAVI-07

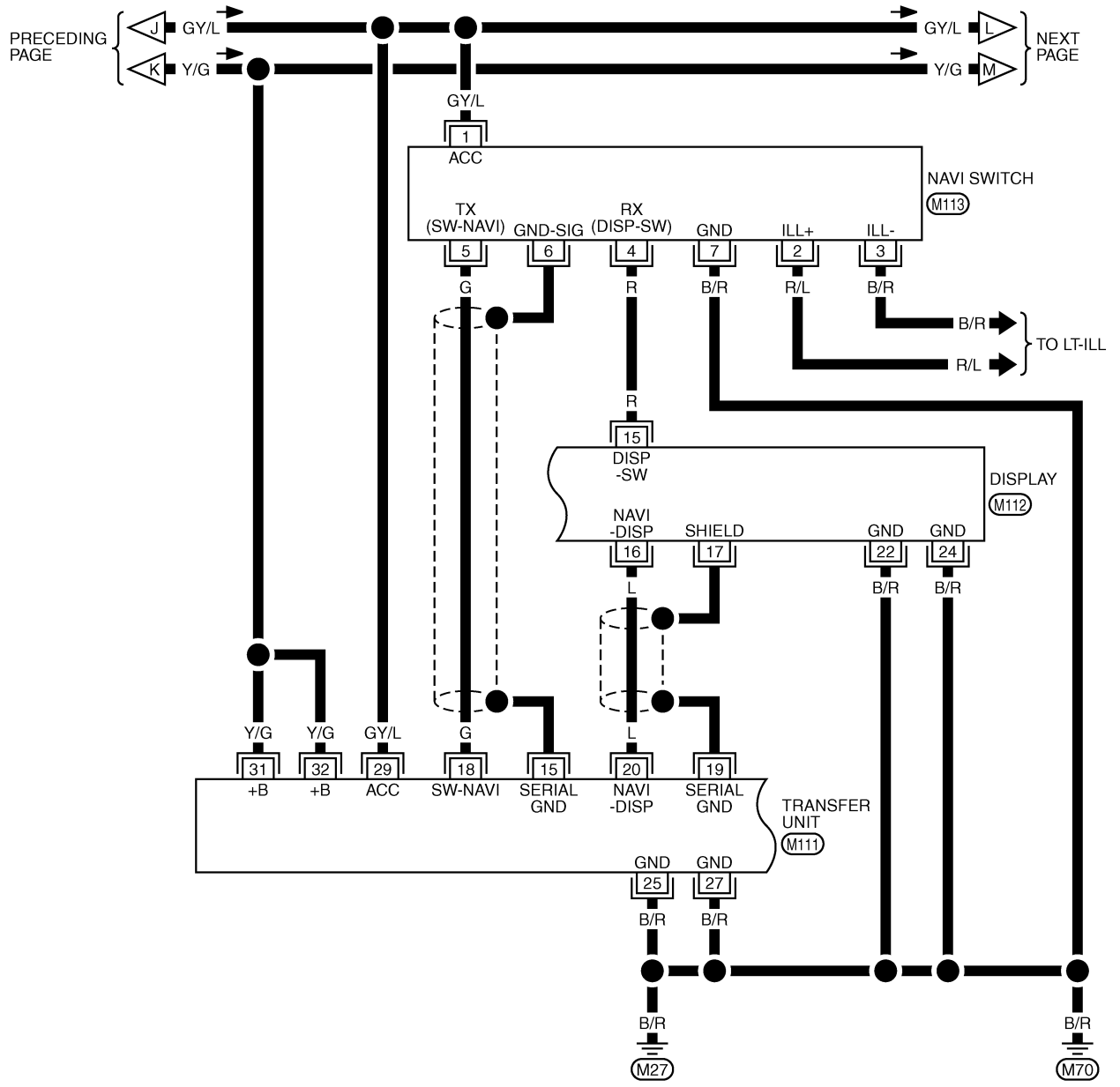


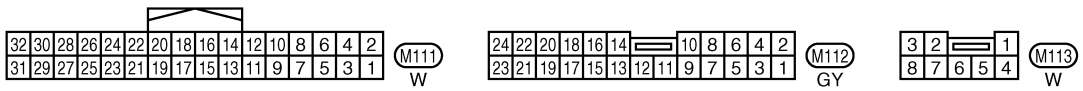


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

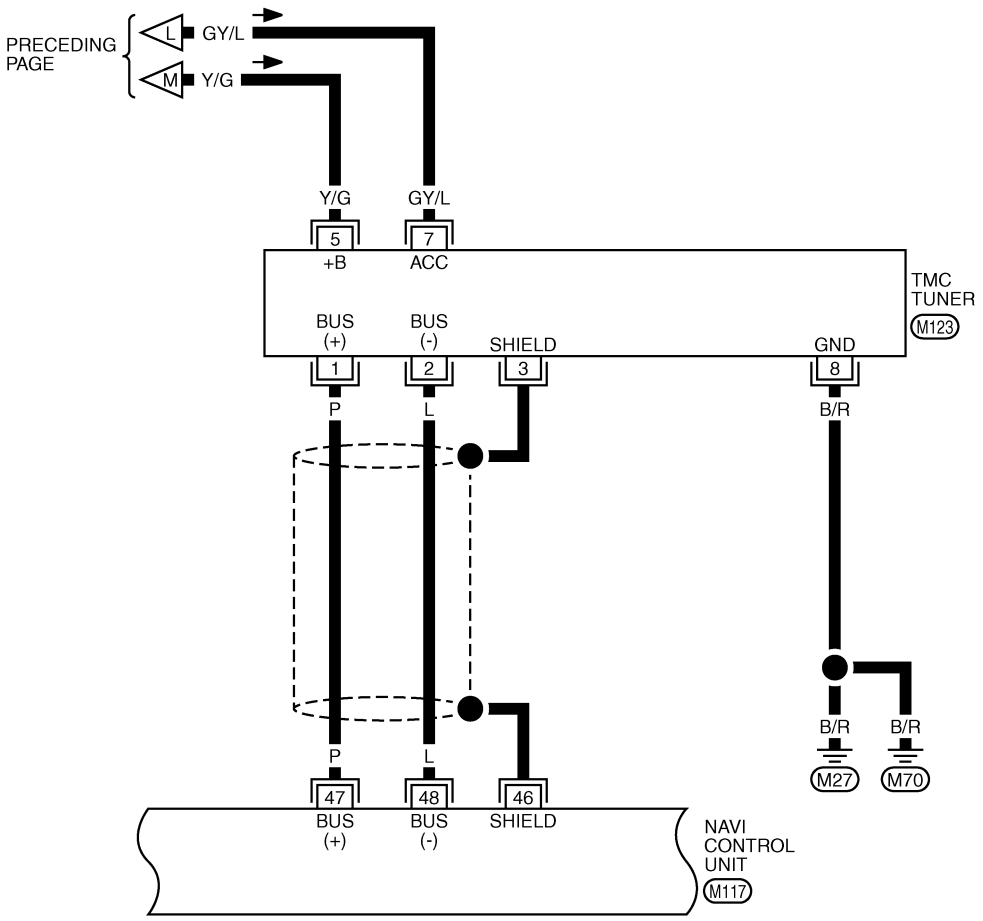
TKWB1189E

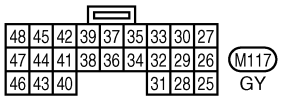
AV-NAVI-08

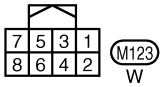




TKWB1190E

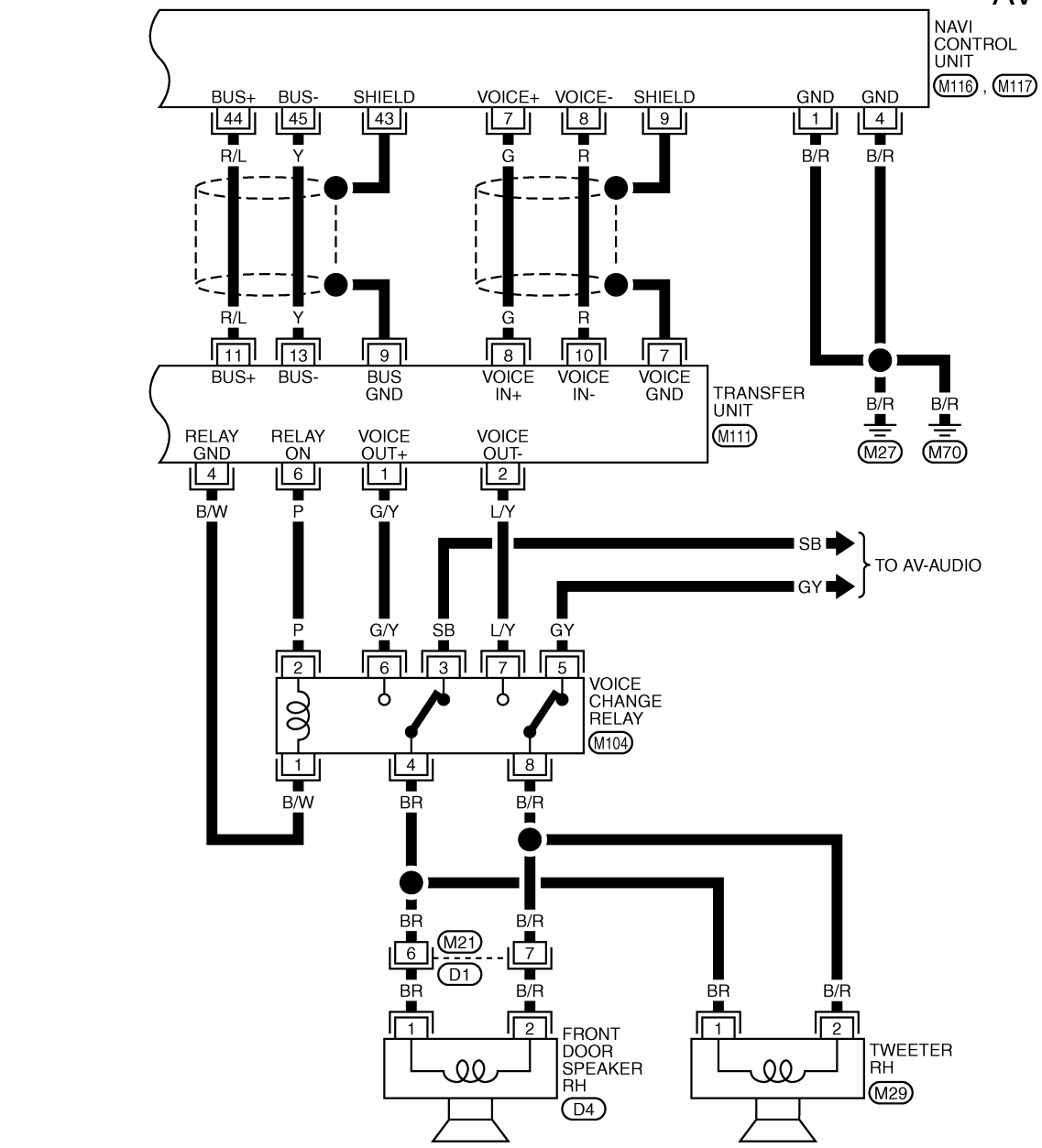

PRECEDING PAGE
L
GY/L
M
Y/G
Y/G
GY/L
5
+B
7
ACC
TMC TUNER
M123
BUS (+)
BUS (-)
SHIELD
GND
1
2
3
8
P
L
B/R
B/R
B/R
M27
M70
P
L
47
48
46
BUS (+)
BUS (-)
SHIELD
NAVI CONTROL UNIT
M117

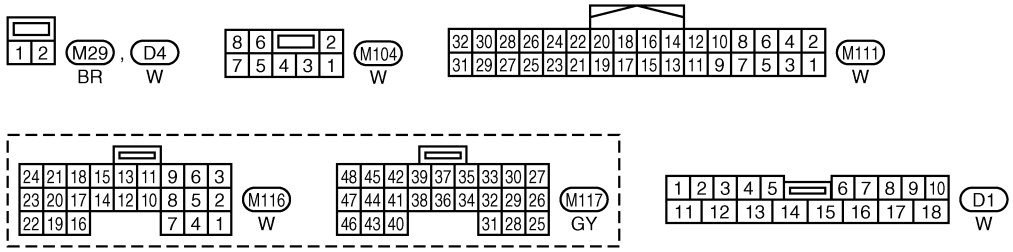

48 45 42 39 37 35 33 30 27
47 44 41 38 36 34 32 29 26
46 43 40 31 28 25
M117
GY


7 5 3 1
8 6 4 2
M123
W

TKWB1191E

AV-NAVI-10

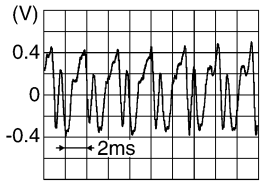
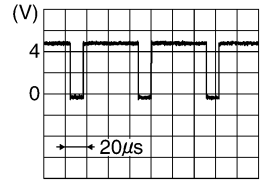
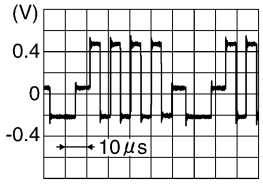
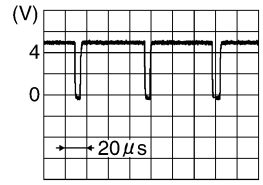
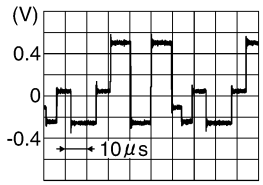


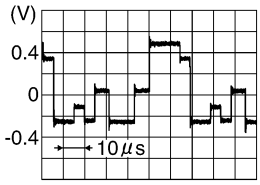
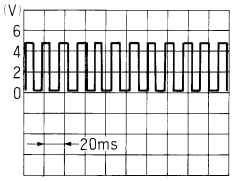
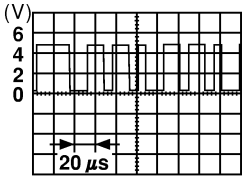
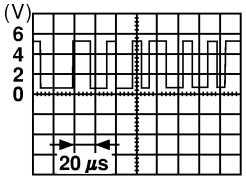
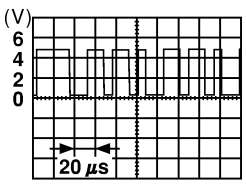


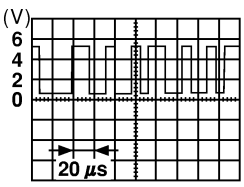
TKWB1192E

Terminals and Reference Value for NAVI Control Unit

EKS00F2X

Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (B/R)	Ground	Ground	–	ON	–	Approx. 0V	–
2 (Y/G)	Ground	Battery power supply	Input	–	–	Battery voltage	System does not work properly.
3 (Y/G)							
4 (B/R)	Ground	Ground	–	ON	–	Approx. 0V	–
6 (GY/L)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
7 (G)	8 (R)	Voice guide signal	Output	ON	Push the “VOICE” switch.	 SKIB3597E	Only route guide and operation guide are not heard.
9	–	Shield	–	–	–	–	–
12 (Y)	19	RGB area signal	Output	ON	–	 SKIB3600E	RGB screen is not shown.
15 (R)	19	RGB signal (B: blue)	Output	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB3602E	RGB screen looks yellowish.
16 (L)	19	RGB synchronizing signal	Output	ON	–	 SKIB3603E	RGB screen is rolling.
18 (BR)	19	RGB signal (R: red)	Output	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB3604E	RGB screen looks bluish.
19	–	Shield	–	–	–	–	–

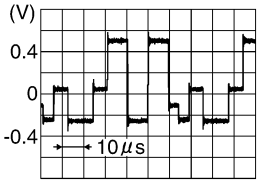
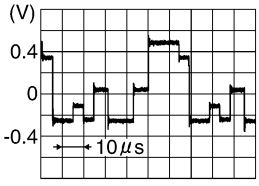
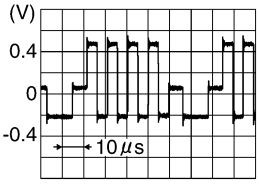
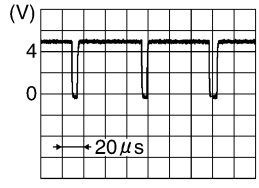
Terminal No. (wire color) (+)	Terminal No. (wire color) (–)	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value	Example of symptom
21 (W)	19	RGB signal (G: green)	Output	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB3605E	RGB screen looks reddish.
25 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch position 1st or 2nd	Approx.12V	Night illumination for switches does not illuminate.
					Lighting switch position OFF	Approx. 0V	
26 (G)	Ground	IGN signal	Input	ON	–	Battery voltage.	Vehicle information setting is not possible.
27 (Y/G)	Ground	Reverse signal	Input	ON	Select R-position	Approx.12V	The navigation current-location mark moves strangely when the vehicle is moving backwards.
					Other position	Approx. 0V	
28 (LG)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 ELF1084D	Navigation current-location mark does not indicate the correct position.
43	–	shield	–	–	–	–	–
44 (BR)*1 (R/L)*2	43	Communication signal (+)	Input/ output	ON	–	 SKIA0175E	System does not work properly.
45 (Y)	43	Communication signal (–)	Input/ output	ON	–	 SKIA0176E	System does not work properly.
46	–	Shield	–	–	–	–	–
47 (P)	46	Communication signal (+)	Input/ output	ON	–	 SKIA0175E	System does not work properly.

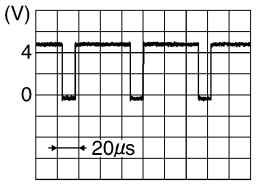
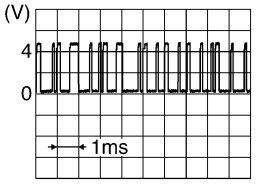
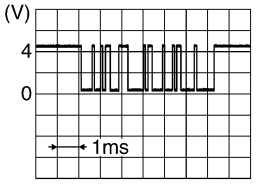
Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
48 (L)	46	Communication signal (–)	Input/ output	ON	–	 SKIA0176E	System does not work properly.
49	Ground	GPS antenna signal	Input	ON	Connector is not connected.	Approx. 5V	GPS correction is not possible.
50	–	Shield	–	–	–	–	–

- *1: LHD models
- *2: RHD models

Terminals and Reference Value for Display

EKS00F2Y

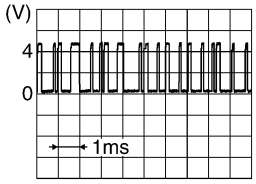
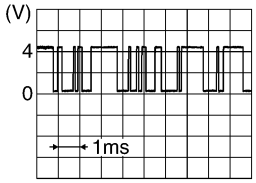
Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (BR)	4	RGB signal (R: red)	Input	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB3604E	RGB screen looks bluish.
2 (W)	4	RGB signal (G: green)	Input	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB3605E	RGB screen looks reddish.
3 (R)	4	RGB signal (B: blue)	Input	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB3602E	RGB screen looks yellowish.
4	–	Shield	–	–	–	–	–
7 (L)	4	RGB synchronizing signal	Input	ON	–	 SKIB3603E	RGB screen is rolling.

Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
8 (Y)	Ground	RGB area signal	Input	ON	–	 SKIB3600E	RGB screen is not shown.
15 (R)	Ground	Communication signal (DISP-SW)	Output	ON	–	 SKIB3606E	System does not work properly.
16 (L)	17	Communication signal (NAVI-DISP)	Input	ON	–	 SKIB3607E	System does not work properly.
17	–	Shield	–	–	–	–	–
19 (GY/L)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
21 (Y/G)	Ground	Battery power supply	Input	–	–	Battery voltage	System does not work properly.
22 (B/R)	Ground	Ground	–	ON	–	Approx. 0V	–
23 (Y/G)	Ground	Battery power supply	Input	–	–	Battery voltage	System does not work properly.
24 (B/R)	Ground	Ground	–	ON	–	Approx. 0V	–

Terminals and Reference Value for NAVI Switch

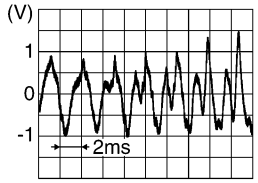
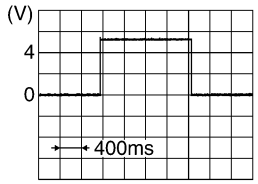
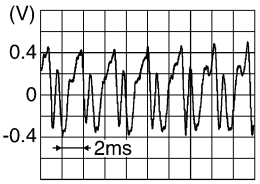
EKS00F2Z

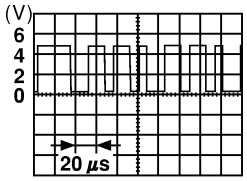
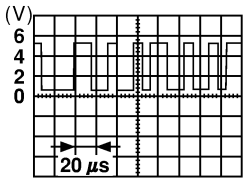
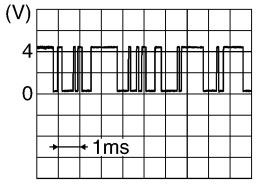
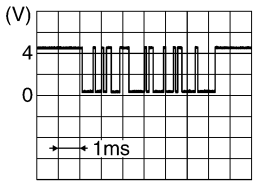
Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (GY/L)	Ground	ACC power supply	Input	ACC	–	Battery voltage	All operations do not work.
2 (R/L)	3 (B/R)	Illumination signal	Input	ON	Lighting switch position 1st or 2nd	Approx. 12V	Night illumination for switches does not illuminate.
					Lighting switch position OFF	Approx. 0V	

Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
4 (R)	Ground	Communi-cation signal (DISP-SW)	Input	ON	–	 SKIB3606E	System does not work properly.
5 (G)	6	Communi-cation signal (SW-NAVI)	Output	ON	–	 SKIB3611E	System does not work properly.
6	–	Shield	–	–	–	–	–
7 (B/R)	Ground	Ground	–	ON	–	Approx. 0V	All operations do not work.

Terminals and Reference Value for Transfer Unit

EKS00F30

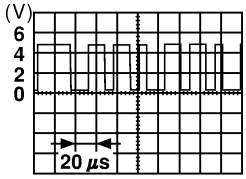
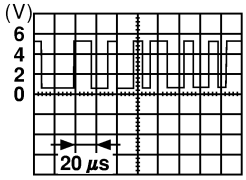
Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (G/Y)	2 (L/Y)	Voice guide signal	Output	ON	Push the “VOICE” switch.	 SKIB3609E	Only route guide and operation guide are not heard.
6 (P)	4 (B/W)	Voice change relay ON sig-nal	Output	ON	Push the “VOICE” switch.	 SKIB3610E	Only route guide and operation guide are not heard.
7	–	Shield	–	–	–	–	–
8 (G)	10 (R)	Voice guide signal	Input	ON	Push the “VOICE” switch.	 SKIB3597E	Only route guide and operation guide are not heard.
9	–	Shield	–	–	–	–	–

Terminal No. (wire color) (+)	Terminal No. (wire color) (–)	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value	Example of symptom
11 (BR)*1 (R/L)*2	9	Communication signal (+)	Input/ output	ON	–	 SKIA0175E	System does not work properly.
13 (Y)	9	Communication signal (–)	Input/ output	ON	–	 SKIA0176E	System does not work properly.
15	–	Shield	–	–	–	–	–
18 (G)	15	Communication signal (SW-NAVI)	Input	ON	–	 SKIB3611E	System does not work properly.
19	–	Shield	–	–	–	–	–
20 (L)	19	Communication signal (NAVI-DISP)	Input	ON	–	 SKIB3607E	System does not work properly.
25 (B/R)	Ground	Ground	–	ON	–	Approx. 0V	–
27 (B/R)	Ground	Ground	–	ON	–	Approx. 0V	–
29 (GY/L)	Ground	ACC power supply	Input	ACC	–	Battery voltage	System does not work properly.
31 (Y/G)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.
32 (Y/G)	Ground	Battery power supply	Input	OFF	–	Battery voltage	System does not work properly.

- *1: LHD models
- *2: RHD models

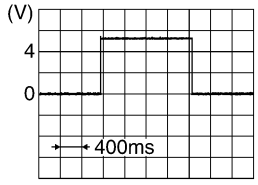
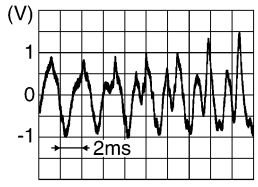
Terminals and Reference Value for TMC Tuner

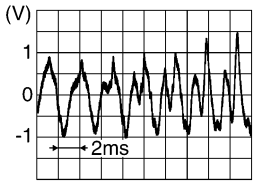
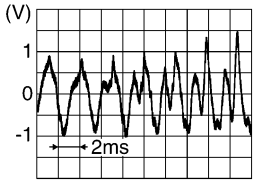
EKS00LYJ

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (P)	Ground	Communication signal (+)	Input/ output	ON	–	 SKIA0175E
2 (L)	Ground	Communication signal (–)	Input/ output	ON	–	 SKIA0176E
3	–	Shield	–	–	–	–
5 (Y/G)	Ground	Battery power supply	Input	OFF	–	Battery voltage
7 (GY/L)	Ground	ACC power supply	Input	ACC	–	Battery voltage
8 (B/R)	Ground	Ground	–	ON	–	Approx. 0V

Terminals and Reference Value for Voice Change Relay

EKS00F31

Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
2 (P)	1 (B/W)	Voice change relay ON signal	Input	ON	Push the “VOICE” switch.	 SKIB3610E	Only route guide and operation guide are not heard.
3 (SB)	5 (GY)	Audio sound signal (passenger side)	Input	ON	Receive audio signal.	 SKIB3609E	No sound from door speaker and tweeter (passenger side).

Terminal No. (wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
4 (L)*1 (BR)*2	8 (B/W)*1 (B/R)*2	Voice guide signal	Output	ON	Push the “VOICE” switch.	 SKIB3609E	Only route guide and operation guide are not heard.
6 (G/Y)	7 (L/Y)	Voice guide signal	Input	ON	Push the “VOICE” switch.	 SKIB3609E	Only route guide and operation guide are not heard.

- *1: LHD models.
- *2: RHD models.

Self-Diagnosis Function

EKS00F32

DESCRIPTION

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

DIAGNOSIS ITEM

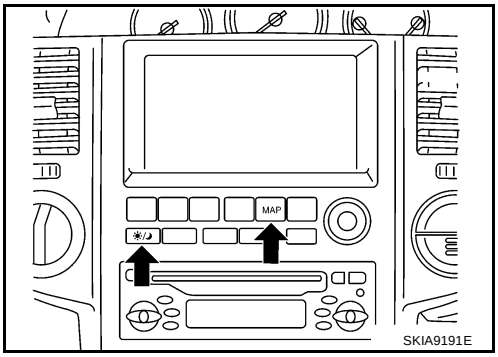
Mode			Description
Self-diagnosis			● NAVI Control unit diagnosis (DVD-ROM drive will not be diagnosed when no map DVD-ROM is in it.). ● Performs diagnosis of each unit and connections between control unit and GPS antenna, as well as between control unit and each unit.
Confirmation / Adjustment	Display		Color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle signals		Analyzes the following vehicle signals: Vehicle speed signal, light signal, ignition switch signal, and reverse signal.
	History of Errors		Diagnosis results previously stored in the memory (before turning ignition switch ON) are displayed in this mode. Time and location when/where the errors occurred are also displayed.
	Navigation	Display Longitude & Latitude	Display the map. Use the joystick to adjust position. Longitude and latitude will be displayed.
		Speed Calibration	Under ordinary conditions, the navigation system distance measuring function will automatically compensate for minute decreases in wheel and tire diameter caused by tire wear or low pressure. Speed calibration immediately restores system accuracy in cases such as when distance calibration is needed because of the use of tire chains in inclement weather.
		Angle Adjustment	Corrects difference between actual turning angle of a vehicle and turning angle of the car mark on the display.
		Initialize Location	This mode is for initializing the current location. Use when the vehicle is transported a long distance on a trailer, etc.
	Feature Restriction Setting		Operations of navigation system that are performed while driving can be restricted by using this function.

Self-Diagnosis Mode

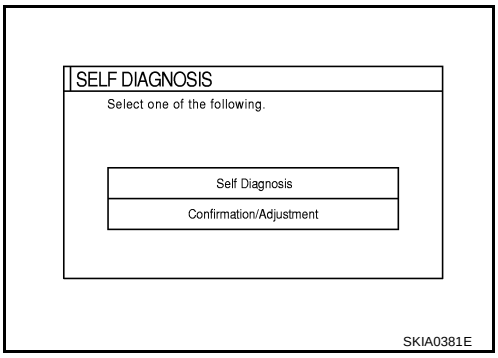
EKS00F33

OPERATION PROCEDURE

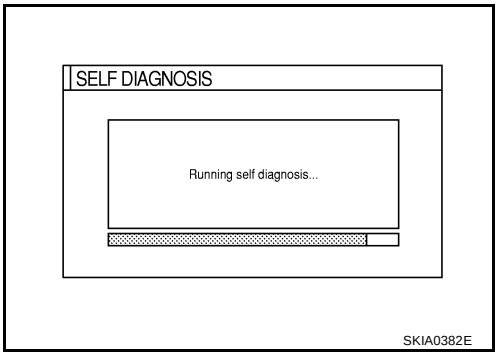
1. Start the engine.
2. Push and hold “MAP” and “☀/☽” switches simultaneously for 5 seconds or more.
   - Push the “BACK” switch and the initial system screen will be shown.



3. The initial trouble diagnosis screen will be shown, and items “Self-Diagnosis” and “Confirmation / Adjustment” will become selective.

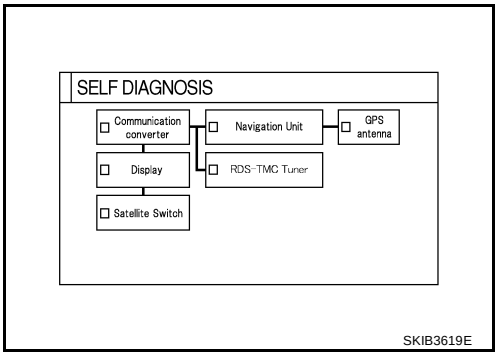


4. Perform self-diagnosis by selecting the “Self-Diagnosis”.
   - Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
   - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



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

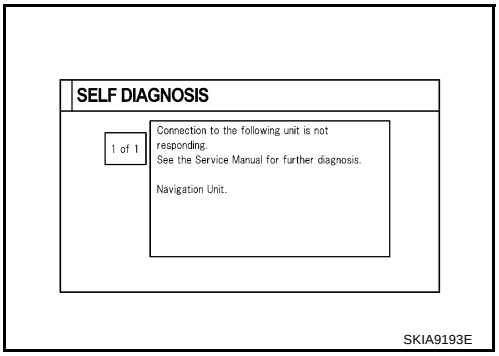
   Green : No malfunctioning.
   Yellow : Cannot be judged by self-diagnosis results.
   Red : Unit is malfunctioning.
   Gray : Diagnosis has not been done.



NOTE:
- Navigation Unit = NAVI control unit
- Communication converter = Transfer unit
- Satellite Switch = NAVI switch
- RDS–TMC Tuner = TMC tuner
- 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.
- Display when it is normal
  - Between Navigation Unit and GPS antenna, Communication Converter and Display, Display and Satellite Switch are connected in green.
  - Between Navigation Unit and Communication Converter, Navigation Unit and RDS-TMC tuner are connected in gray.

- Refer to AV-85, "Communication Line Check (Between NAVI Control Unit and TMC Tuner)" and repair the malfunction part unless displayed “RDS-TMC Tuner” on self-diagnosis screen despite TMC tuner is installed on the vehicle.

6. Select a switch on the “SELF-DIAGNOSIS” screen and comments for the diagnosis results will be shown.



SELF–DIAGNOSIS RESULT

Quick reference table

1. Select an applicable diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check.
3. Turn the ignition switch to OFF and perform self-diagnosis again.

Diagnosis result quick reference table

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

Method of diagnosis for malfunctioning system

- When system does not start, indicate malfunction connection between units by outbreak sound from system.

Diagnosis procedure

1. Turn ignition switch ON. Make sure whether or not route guide start sound which is output from NAVI control unit indicate 10 seconds after.
2. Push and hold “MAP” and “☀/☽” switches simultaneously for 5 seconds or more. Make sure whether or not 2 times of beep sound or route guide start sound indicate.
3. According to the former two steps, Select an proper diagnosis No. in the diagnosis result quick reference table.
4. Find estimated malfunctioning system from the diagnosis No. table and perform check.

Diagnosis result quick reference table

Procedure 1	Procedure 2	Diagnosis No.
10 seconds after turn ignition switch ON	Push and hold “MAP” and “☀/☽” switches simultaneously for 5 seconds or more.	
Route guide start sound appears	Route guide start sound indicates	6
	There is no sound	7
There is no sound	Two times of beep sound from NAVI switch *	8
	There is no sound	9

*: Indicated when pushing both “MAP” and “☀/☽” simultaneously. (Unnecessary to push them 5 seconds or more.)

Self–diagnosis codes

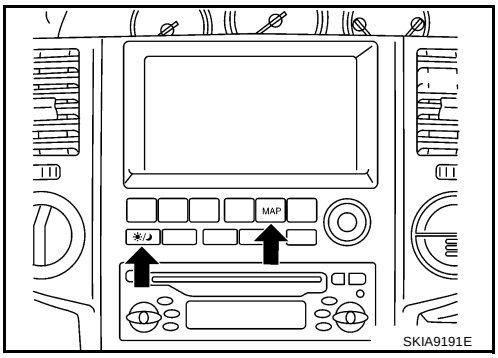
Diagnosis No.	Possible cause	Reference page
1	NAVI control unit malfunction	–
2	NAVI control unit judged no map DVD-ROM is inserted.	–
3	When “DVD-ROM error. Please check disc.” is shown 1. Eject map DVD-ROM and check if it is compatible with the system. 2. Check ejected DVD-ROM for dirt, damage, and warpage. 3. If no error is found, insert a known good map DVD-ROM of the same type and perform self-diagnosis again. If same result is shown, the NAVI control unit is malfunctioning. If result is normal, the map DVD-ROM is malfunctioning.	–
4	If “Error found in DVD-ROM or DVD-ROM driver in control unit. Please perform diagnosis in accordance with service manual” is shown, carry out same inspection as diagnosis No. 3.	–
5	GPS antenna system 1. Visually check for a broken wire in the GPS antenna coaxial cable. 2. Disconnect the GPS antenna connector and check that approximately 5V is supplied from NAVI control unit. If not, the NAVI control unit is inoperative. If the voltage is supplied, replace the GPS antenna and perform self-diagnosis again. If the same result is shown, the NAVI control unit is inoperative.	–
6	Display power supply and ground circuit Communication line between display and NAVI switch	AV-85
7	NAVI switch power supply and ground circuit Communication line between NAVI switch and transfer unit	AV-86
8	NAVI control unit power supply and ground circuit Communication line between NAVI control unit and transfer unit	AV-86
9	Transfer unit power supply and ground circuit Communication line between transfer unit and display	AV-88

CONFIRMATION/ADJUSTMENT Mode

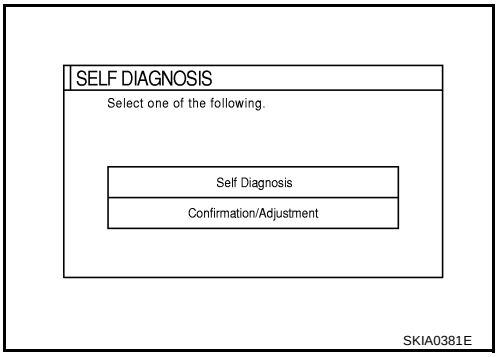
EKS00F34

OPERATION PROCEDURE

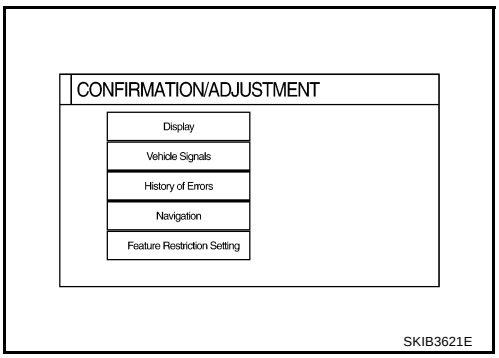
1. Start the engine.
2. Push and hold “MAP” and “☀/☽” switches simultaneously for 5 seconds or more.
   - Push the “BACK” switch and the initial system screen will be shown.



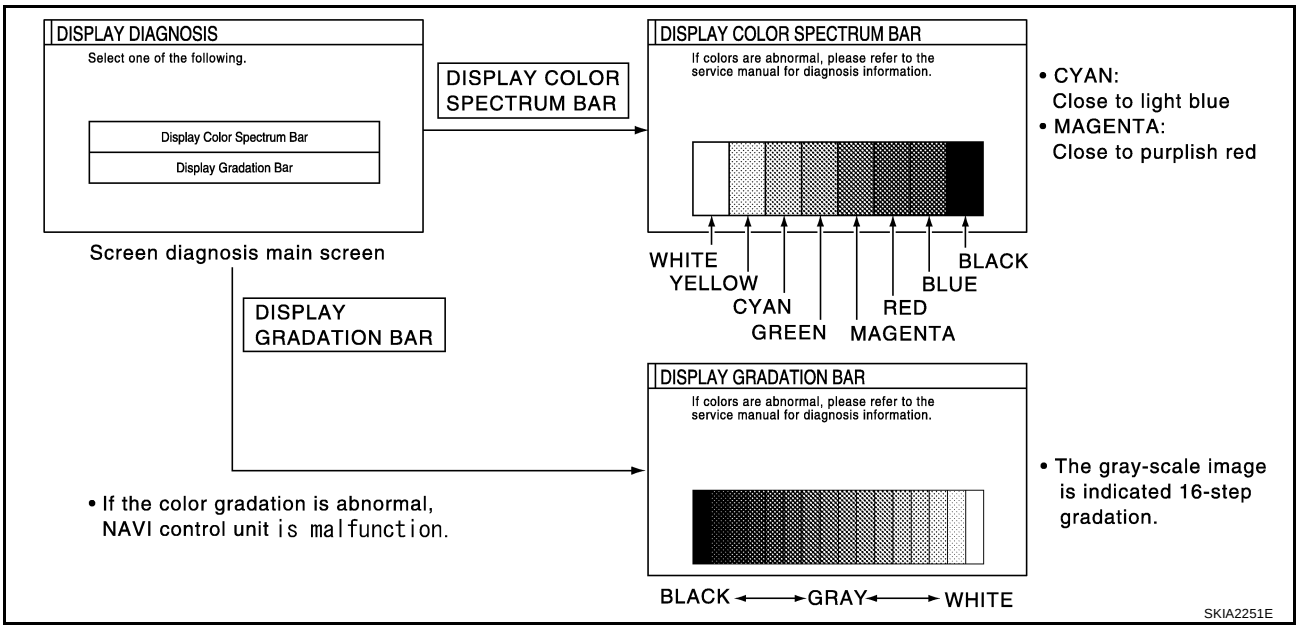
3. The initial trouble diagnosis screen will be shown, and items “Self-Diagnosis” and “Confirmation/Adjustment” will become selective.



4. When “Confirmation/Adjustment” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
5. Select each switch on “Confirmation/Adjustment” screen to display the relevant diagnosis screen.



DISPLAY



CAUTION:

When Display Color Spectrum Bar screen is completed after “BACK” switch is Pushed, the screen color changes once. This is normal.

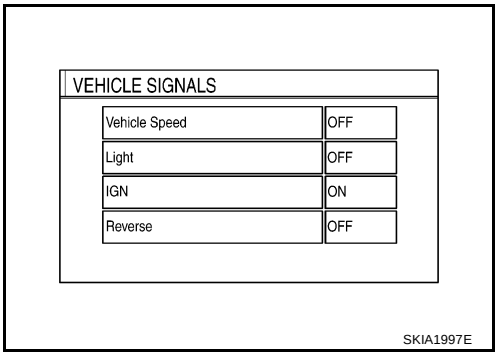
- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.

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

- When the color of the screen looks unusual, refer to AV-91, "Color of RGB Image Is Not Proper" .

VEHICLE SIGNALS

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



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

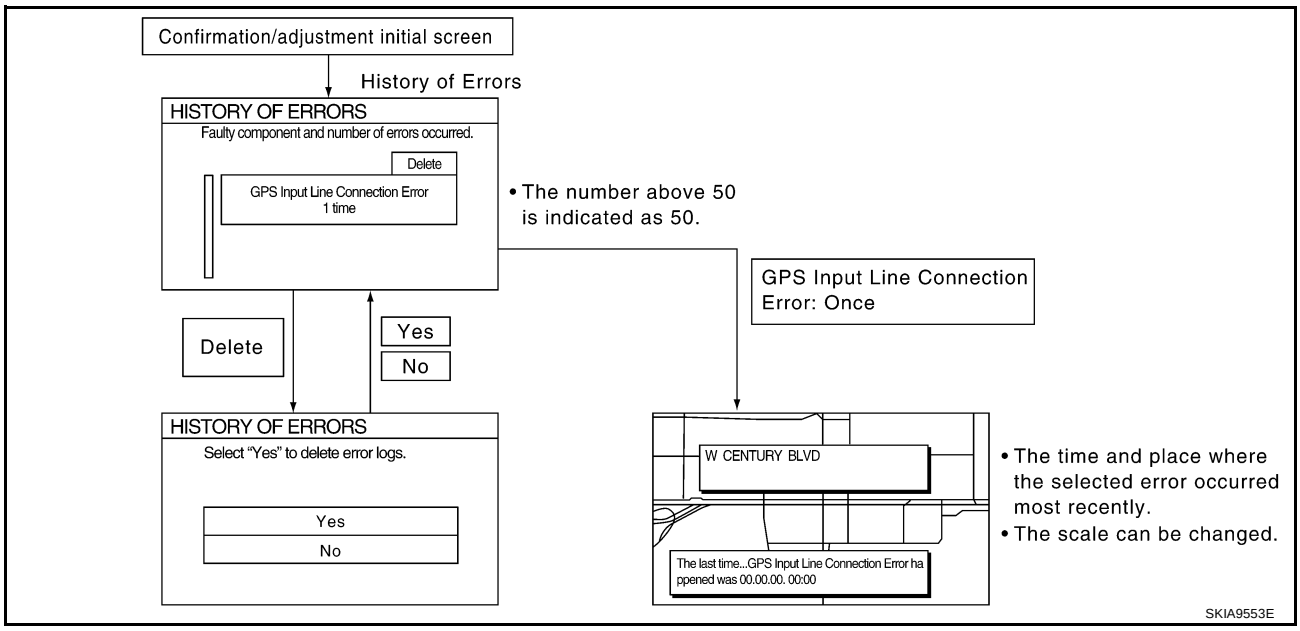
- If vehicle speed is NG, refer to AV-89, "Vehicle Speed Signal Check" .
- If light is NG, refer to AV-90, "Illumination Signal Check" .
- If IGN is NG, refer to AV-90, "Ignition Signal Check" .
- If reverse is NG, refer to AV-91, "Reverse Signal Check" .

HISTORY OF ERRORS

Diagnosis results of self-diagnosis depend on if any error occurred during the time after selecting “Self-Diagnosis” until self-diagnosis results is displayed.
Meanwhile, when an error occurs before selecting “Self-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” displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- Correct time of the error occurrence may not be displayed when the GPS antenna substrate within the NAVI control unit has malfunctioned.
- Place of the error occurrence is represented by the position of the vehicle mark at the time when the error occurred. If the vehicle mark has deviated from the correct position, then the place of the error occurrence may be located correctly.

- “History of Error” stores error occurrences up to 50, and errors after the 51st are displayed as the 50th.



Diagnosis by History of Errors

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.

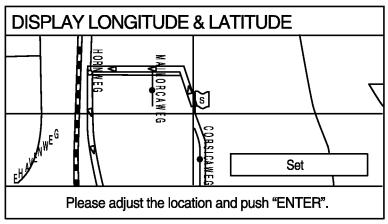
Error item	Possible causes Action/symptom	Example of symptom
Gyro sensor disconnected	Communications malfunction between NAVI control unit and internal gyro. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)
GPS disconnected	Communication error between NAVI control unit and internal GPS substrate. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS transmission cable malfunction	Malfunctioning transmission wires to NAVI control unit and internal GPS substrate. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● During self-diagnosis, GPS diagnosis is not performed.
GPS input line connection error	Malfunctioning receiving wires to NAVI control unit and internal GPS substrate. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.

Error item	Possible causes Action/symptom	Example of symptom
GPS TCX0 over GPS TCX0 under	Oscillating frequency of the GPS substrate frequency synchronizing oscillation circuit exceeded (or below) the specification. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference, or the control unit may have been subjected to excessively high or low temperatures.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS ROM malfunction GPS RAM malfunction	Contents of ROM (or RAM) in GPS substrate are malfunctioning. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Location detection accuracy of the navigation system will deteriorate, depending on the error area in the memory, because GPS cannot make correct positioning. (Location correction using GPS is not performed.)
GPS RTC malfunction	Clock IC in GPS substrate is malfunctioning. ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Correct time may not be displayed. ● After the power is turned on, the system always takes some time until GPS positioning becomes possible. (The GPS receiver starts positioning without re-collecting the whole satellite information when it judged the data stored in the receiver is correct.) ● Correct time of error occurrence may not be stored in the ″History of Errors″.
GPS antenna disconnected	Malfunctioning connection between GPS substrate in NAVI control unit and GPS antenna. ● Perform self-diagnosis. ● When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
Low voltage of GPS	The power voltage supplied to the GPS circuit board has decreased. ● Perform self-diagnosis. ● When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
DVD-ROM malfunction DVD-ROM read error DVD-ROM response Error	Malfunctioning NAVI control unit.	-
	Dedicated map DVD-ROM is in the system, but the data cannot be read. ● Is map DVD-ROM damaged, warped, or dirty? – If damaged or warped, the map DVD-ROM is malfunctioning. – If dirty, wipe the DVD-ROM clean with a soft cloth. ● Perform self-diagnosis. ● When NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration.	● The map of a particular location cannot be displayed. ● Specific guidance information cannot be displayed. ● Map display is slow. ● Guidance information display is slow. ● System has been affected by vibration.

NAVIGATION

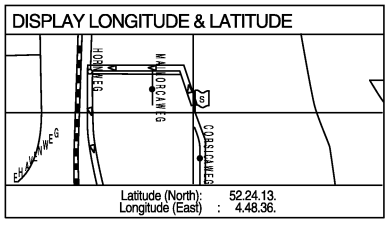
Display Longitude & Latitude

- Adjust the pointer with using the joystick and touch “Set”.



SKIA1616E

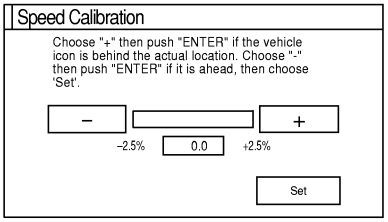
- The longitude and latitude are displayed.



SKIA1617E

Speed Calibration

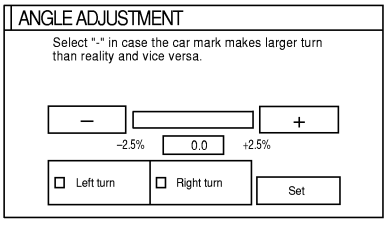
- During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



SKIA0365E

Angle Adjustment

- Adjusts turning angle output detected by the gyroscope.



SKIA0364E

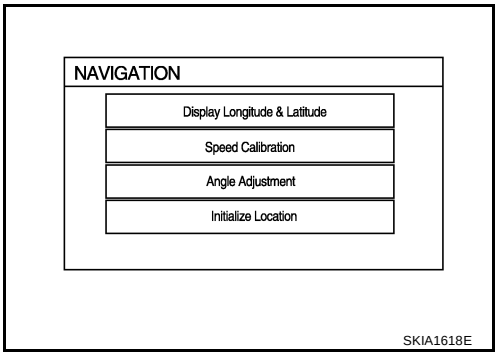
Initialize Location

Description

- Location data for GPS in the Center control unit is initialized in Europe by this mode. Then it is possible for Center control unit to receive GPS signals for short time.

How to perform “Initialize Location” mode

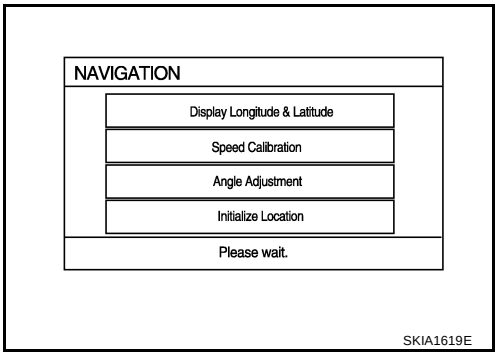
1. select “Initialize Location”, and push “ENTER”.



2. A message “Please wait.” is displayed and then backs to another display of “Confirmation/Adjustment” mode.

NOTE:

- To continue GPS initialized operation, operate as follows back to “Map” screen.
  - Push “BACK” button twice.
  - Push “MAP” button.
- After above operation, GPS indicator changes to green color within half a minute, unless improper GPS located condition.
- This operation should be performed in out side field.

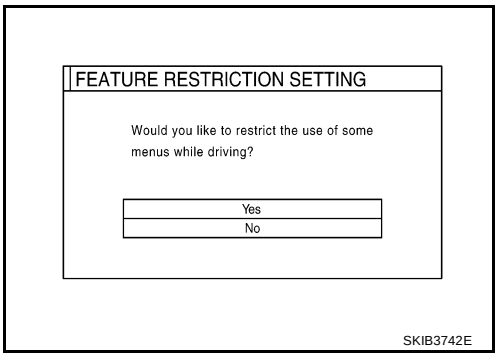


FEATURE RESTRICTION SETTING

Operations of navigation system that are performed while driving can be restricted by using this function.

CAUTION:

Once operational restrictions are imposed, they can not be cancelled even when the software is updated or the language-switching program is loaded.



Power Supply and Ground Circuit Check for NAVI Control Unit

EKS00F35

1. CHECK FUSE

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

Terminals		Power source	Fuse No.
Connector	Terminal (wire color)		
NAVI control unit M116	2 (Y/G)	Battery	32
	3 (Y/G)		
	6 (GY/L)	Ignition switch ACC or ON	4

OK or NG

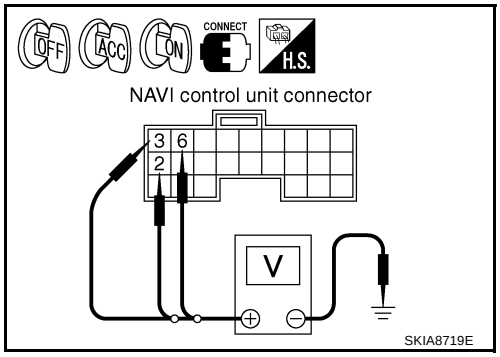
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-2, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

Check voltage between NAVI control unit and ground.

Terminals			OFF	ACC	ON
(+)		(-)			
Connector	Terminal (wire color)				
NAVI control unit M116	2 (Y/G)	Ground	Battery voltage	Battery voltage	Battery voltage
	3 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	6 (GY/L)		0V	Battery voltage	Battery voltage



OK or NG

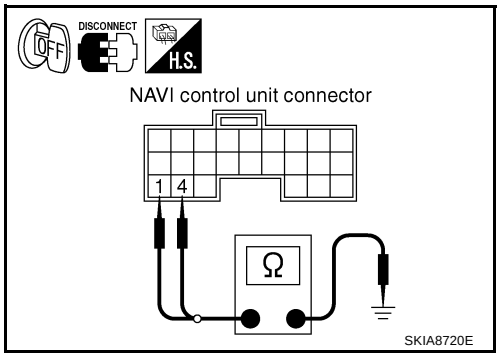
OK >> GO TO 3.

NG >> Repair or replace harness.

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector.
3. Check continuity between NAVI control unit and ground.

Terminals			Continuity
(+)		(-)	
Connector	Terminal (wire color)		
NAVI control unit M116	1 (B/R)	Ground	Yes
	4 (B/R)		



OK or NG

OK >> INSPECTION END

NG >> Repair or replace harness.

Power Supply and Ground Circuit Check for Display

EKS00F36

1. CHECK FUSE

Check that the following fuses of the display are not blown.

Unit	Terminals		Power source	Fuse No.
	Connector	Terminal (wire color)		
Display	M112	21 (Y/G)	Battery	32
		23 (Y/G)		
		19 (GY/L)	Ignition switch ACC or ON	4

OK or NG

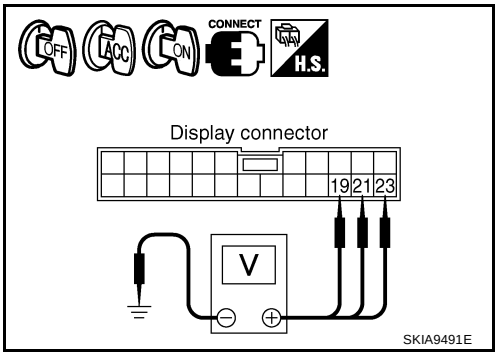
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-2, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

Check voltage between display and ground.

Unit	Terminals			OFF	ACC	ON
	(+)		(-)			
	Connector	Terminal (wire color)				
Display	M112	21 (Y/G)	Ground	Battery voltage	Battery voltage	Battery voltage
		23 (Y/G)		Battery voltage	Battery voltage	Battery voltage
		19 (GY/L)		0V	Battery voltage	Battery voltage



OK or NG

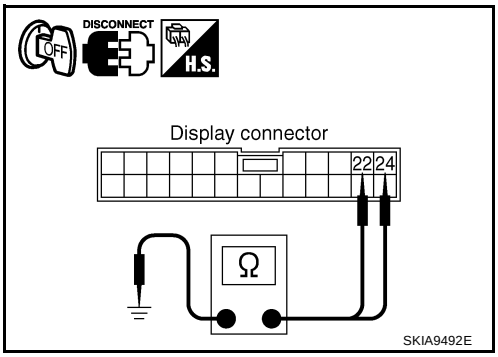
OK >> GO TO 3.

NG >> Repair or replace harness.

3. GROUND CIRCUIT CHECK

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

Unit	Terminals			Continuity
	(+)		(-)	
	Connector	Terminal (wire color)		
Display	M112	22 (B/R)	Ground	Yes
		24 (B/R)		



OK or NG

OK >> INSPECTION END

NG >> Repair or replace harness.

Power Supply and Ground Circuit Check for NAVI Switch

EKS00F37

1. CHECK FUSE

Check 10A fuse [No.4, located in fuse block (J/B)].

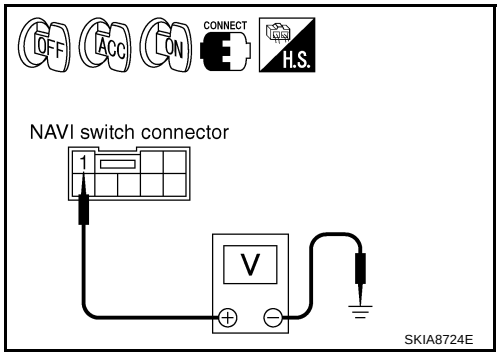
OK or NG

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

2. POWER SUPPLY CIRCUIT CHECK

Check voltage between NAVI switch and ground.

Unit	Terminals			OFF	ACC	ON
	(+)		(-)			
	Connector	Terminal (wire color)				
NAVI switch	M113	1 (GY/L)	Ground	0V	Battery voltage	Battery voltage



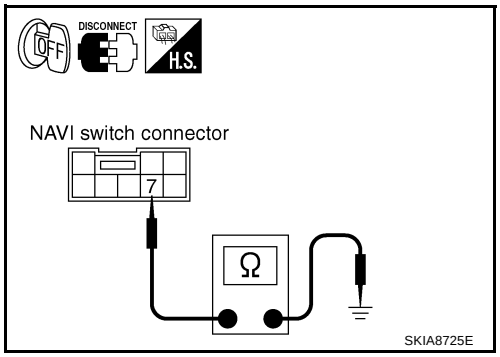
OK or NG

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

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect NAVI switch connector.
3. Check continuity between NAVI switch harness connector M113 terminal 7 (B/R) and ground.

Continuity should exist.



OK or NG

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

Power Supply and Ground Circuit Check for Transfer Unit

EKS00F38

1. CHECK FUSE

Check that the following fuses of the transfer unit are not blown.

Unit	Terminals		Power source	Fuse No.
	Connector	Terminal (wire color)		
Transfer unit	M111	31 (Y/G)	Battery	32
		32 (Y/G)		
		29 (GY/L)	Ignition switch ACC or ON	4

OK or NG

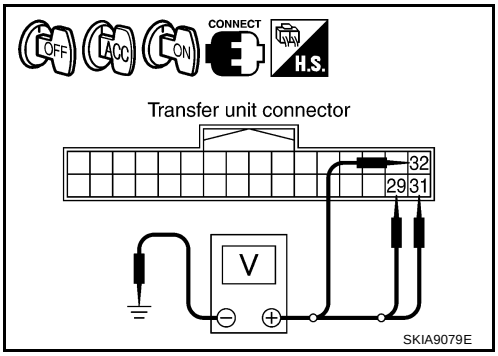
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-2, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

Check voltage between transfer unit and ground.

Unit	Terminals			OFF	ACC	ON
	(+)		(-)			
	Connector	Terminal (wire color)				
Transfer unit	M111	31 (Y/G)	Ground	Battery voltage	Battery voltage	Battery voltage
		32 (Y/G)		Battery voltage	Battery voltage	Battery voltage
		29 (GY/L)		0V	Battery voltage	Battery voltage



OK or NG

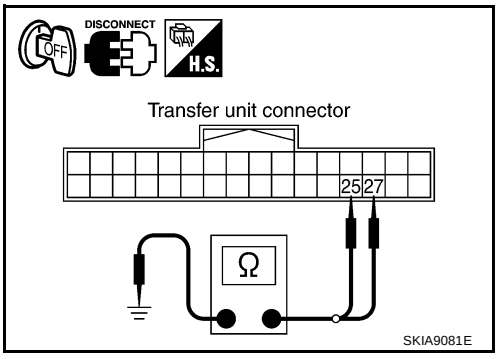
OK >> GO TO 3.

NG >> Repair or replace harness.

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect transfer unit connector.
3. Check continuity between transfer unit and ground.

Unit	Terminals			Continuity
	(+)		(-)	
	Connector	Terminal (wire color)		
Transfer unit	M111	25 (B/R)	Ground	Yes
		27 (B/R)		



OK or NG

OK >> INSPECTION END

NG >> Repair or replace harness.

Power Supply and Ground Circuit Check for TMC Tuner

EKS00LYK

1. CHECK FUSE

Make sure that the following fuses of TMC tuner are not blown.

Unit	Terminals		Power source	Fuse No.
	Connector	Terminal (wire color)		
TMC tuner	M123	5 (Y/G)	Battery	32
		7 (GY/L)	Ignition switch ACC or ON	4

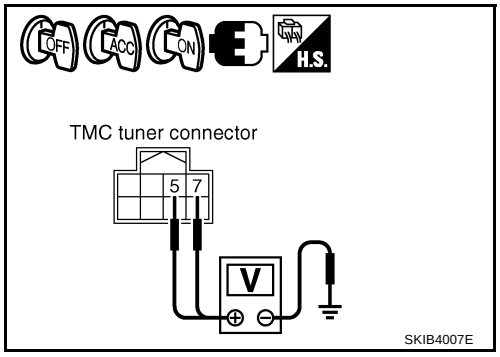
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between TMC tuner harness connector terminals and ground.

Unit	Terminals			OFF	ACC	ON
	(+)		(-)			
	Connector	Terminal (wire color)				
TMC tuner	M123	5 (Y/G)	Ground	Battery voltage	Battery voltage	Battery voltage
		7 (GY/L)		0V	Battery voltage	Battery voltage



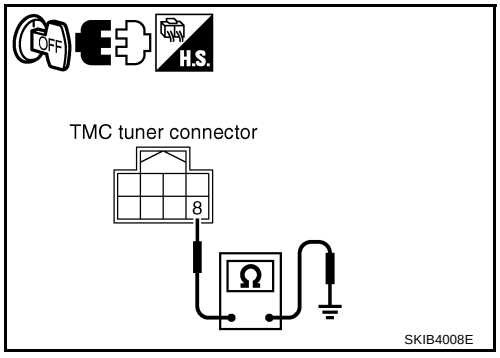
OK or NG

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

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TMC tuner connector.
3. Check continuity between TMC tuner harness connector M123 terminal 8 (B/R) and ground.

8 (B/R) – Ground : Continuity should exist.



OK or NG

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

Communication Line Check (Between NAVI Control Unit and TMC Tuner)

EKS00LYL

Symptom: “RDS-TMC Tuner” is not displayed on self-diagnosis screen.

1. CHECK TMC TUNER POWER SUPPLY AND GROUND CIRCUIT

Check TMC tuner power supply and ground circuit. Refer to AV-84, "Power Supply and Ground Circuit Check for TMC Tuner" .

OK or NG

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

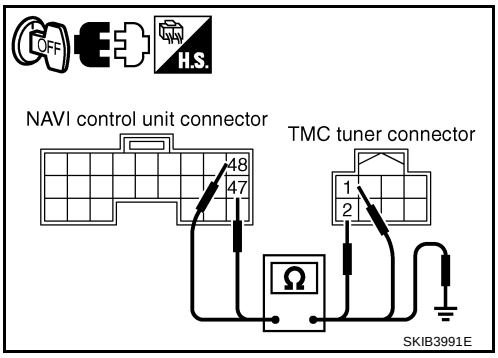
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and TMC tuner connectors.
3. Check continuity between NAVI control unit harness connector M117 terminals 47 (P), 48 (L) and TMC tuner harness connector M123 terminals 1 (P), 2 (L).

   47 (P) – 1 (P) : Continuity should exist.
   48 (L) – 2 (L) : Continuity should exist.

4. Check continuity between NAVI control unit harness connector M117 terminals 47 (P), 48 (L) and ground.

   47 (P), 48 (L) – Ground : Continuity should not exist.



OK or NG

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

3. CHECK NAVI CONTROL UNIT AND TMC TUNER

1. Replace NAVI control unit or TMC tuner.
2. Turn ignition switch ON.
3. Start self-diagnosis, and check if any malfunction is detected from the self-diagnosis result.

Is any malfunction detected from self-diagnosis result?

YES >> Replace the other unit.
NO >> INSPECTION END

Communication Line Check (Between Display and NAVI switch)

EKS00F39

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check system of power supply and ground circuit display. Refer to AV-81, "Power Supply and Ground Circuit Check for Display" .

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

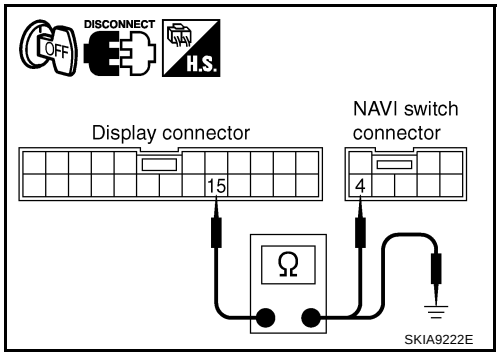
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display connector and NAVI switch connector.
3. Check continuity between display harness connector M112 terminal 15 (R) and NAVI switch harness connector M113 terminal 4 (R).

   15 (R) - 4 (R) : Continuity should exist.

4. Check continuity between display harness connector M112 terminal 15 (R) and ground.

   15 (R) - Ground : Continuity should not exist.



OK or NG

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

Communication Line Check (Between NAVI Switch and Transfer Unit)

EKS00F3A

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check system of power supply and ground circuit NAVI switch. Refer to AV-82, "Power Supply and Ground Circuit Check for NAVI Switch" .

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

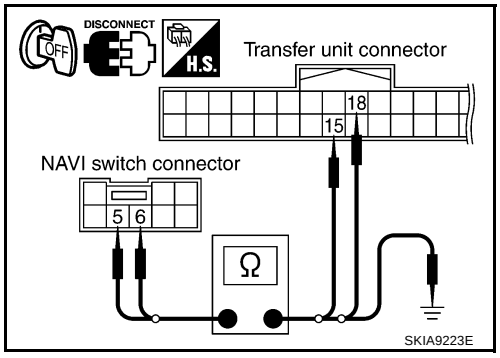
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI switch connector and transfer unit connector.
3. Check continuity between NAVI switch harness connector M113 terminal 5 (G), 6 and transfer unit harness connector M111 terminal 18 (G), 15.

   5 (G) - 18 (G) : Continuity should exist.
   6 - 15 : Continuity should exist.

4. Check continuity between NAVI switch harness connector M113 terminal 5 (G), 6 and ground.

   5 (G), 6 - Ground : Continuity should not exist.



OK or NG

OK >> Replace NAVI switch.
NG >> Repair harness or connector.

Communication Line Check (Between NAVI Control Unit and Transfer Unit)

EKS00F3B

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check system of power supply and ground circuit NAVI control unit. Refer to AV-80, "Power Supply and Ground Circuit Check for NAVI Control Unit" .

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector and transfer unit connector.
3. Check continuity between and NAVI control unit harness connector M117 terminal 43, 44 * , 45 (Y) and transfer unit harness connector M111 terminal 9, 11*, 13 (Y).

   43 - 9 : Continuity should exist.

   44* - 11* : Continuity should exist.

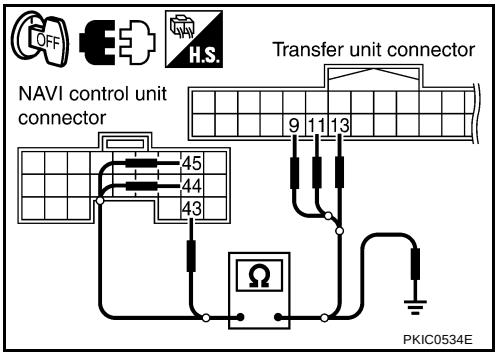
   45 (Y) - 13 (Y) : Continuity should exist.

   - ***: LHD model (BR), RHD model (R/L)**

4. Check continuity between NAVI control unit harness connector M117 terminal 43, 44*, 45 (Y) and ground.

   43, 44*, 45 (Y) - Ground : Continuity should not exist.

   - ***: LHD model (BR), RHD model (R/L)**



OK or NG

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

Communication Line Check (Between Transfer Unit and Display)

EKS00F3C

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check system of power supply and ground circuit transfer unit. Refer to AV-83, "Power Supply and Ground Circuit Check for Transfer Unit" .

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

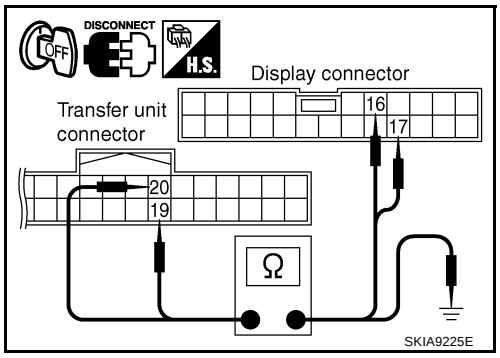
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect transfer unit connector and display connector.
3. Check continuity between transfer unit harness connector M111 terminal 19, 20 (L) and display harness connector M112 terminal 17, 16 (L).

   19 - 17 : Continuity should exist.
   20 (L) - 16 (L) : Continuity should exist.

4. Check continuity between transfer unit harness connector M111 terminal 19, 20 (R/L) and ground.

   19, 20 (L) - Ground : Continuity should not exist.



OK or NG

OK >> Replace transfer unit.
NG >> Repair harness or connector.

Vehicle Speed Signal Check

EKS00F3D

1. VEHICLE SPEED OPERATION CHECK

Does speedometer operate normally?

Yes or No

Yes >> GO TO 2.

No >> Check combination meter trouble diagnosis. Refer to DI-28, "Vehicle Speed Signal Inspection [With ESP]" in “COMBINATION METERS”.

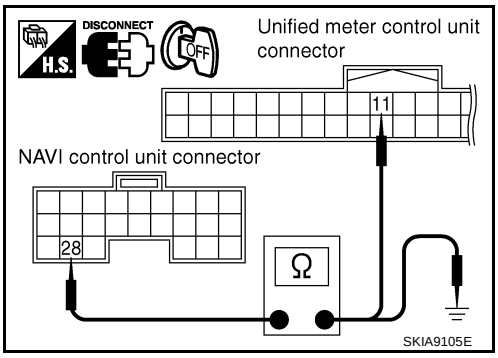
2. HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect NAVI control unit connector and combination meter connector.
3. Check continuity between NAVI control unit harness connector M117 terminal 28 (LG) and Unified meter control unit harness connector M44 terminal 11 (LG).

   28 (LG) - 11 (LG) : Continuity should exist.

4. Check continuity between NAVI control unit harness connector M117 terminal 28 (LG) and ground.

   28 (LG) - Ground : Continuity should not exist.



OK or NG

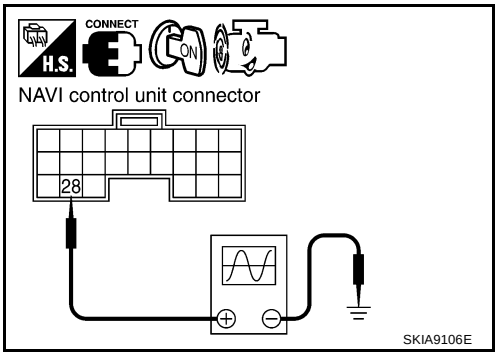
OK >> GO TO 3.

NG >> Repair harness or connector.

3. VEHICLE SPEED SIGNAL CHECK

1. Connect NAVI control unit and combination meter connector.
2. Start engine and drive vehicle at more than 40 km/h (25MPH).
3. Check the signal between NAVI control unit harness connector M117 terminal 28 (LG) and ground with CONSULT-II or oscilloscope.

   28 (LG) – Ground : Refer to AV-62, "Terminals and Reference Value for NAVI Control Unit" .



OK or NG

OK >> Replace NAVI control unit.

NG >> Check combination meter system. Refer to DI-22, "Diagnosis Flow" in “COMBINATION METERS”.

Illumination Signal Check

EKS00F3E

1. TAIL LAMP OPERATION CHECK

When lighting switch turned 1st or 2nd position, does tail lamp illuminate?

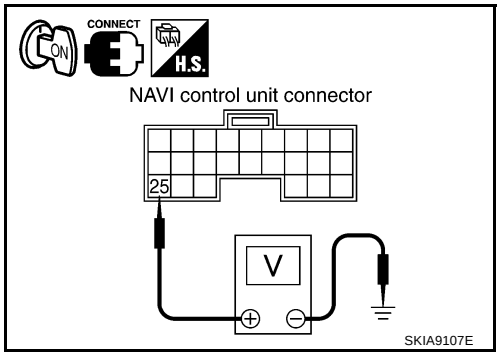
YES or NO

YES >> GO TO 2.
NO >> Go to tail lamp trouble diagnosis.

2. ILLUMINATION SIGNAL CHECK

Check voltage between NAVI control unit and ground.

Terminals			Lighting switch position	Voltage
(+)		(–)		
Connector	Terminal (wire color)			
M117	25 (R/L)	Ground	1st or 2nd position	Battery voltage
			OFF	Approx. 0V



OK or NG

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

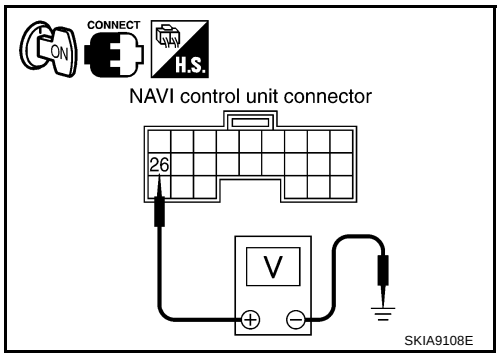
Ignition Signal Check

EKS00F3F

1. IGNITION SIGNAL CHECK

1. Turn the ignition switch ON.
2. Check voltage between NAVI control unit harness connector M117 terminal 26 (G) and ground.

26 (G) - Ground : Battery voltage



OK or NG

OK >> Replace NAVI control unit.
NG >> Check the following.

- 10A fuse [No. 5, located in fuse block (J/B)]
- Harness for open or short between NAVI control unit and fuse

Reverse Signal Check

EKS00F3G

1. REVERSE LAMP CHECK

Turn the ignition switch ON.

- With the A/T selector lever in R-position, does “R” in the shift position indicator turned on? (With A/T)
- With the shift lever in R-position, are reverse lamps turned on? (With M/T)

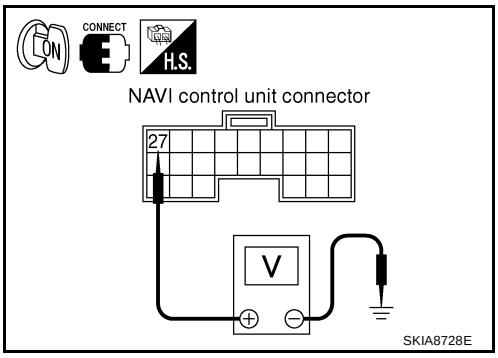
YES or NO

YES >> GO TO 2.
NO >> Check “BACK-UP LAMP” system.

2. REVERSE SIGNAL CHECK

- Shift the A/T selector lever in R-position. (With A/T)
- Shift the shift lever in R-position. (With M/T)
- Check voltage between NAVI control unit and ground.

Terminals			A/T selector lever position	Voltage (V)
(+)		(–)		
Connector	Terminal (wire color)			
M117	27 (Y/G)	Ground	R-position	Battery voltage
			Other than R-position	Approx. 0



OK or NG

OK >> Replace NAVI control unit.
NG >> Check the following.

- Harness for open or short between NAVI control unit and park/neutral position switch (A/T models)
- Harness for open or short between NAVI control unit and back-up lamp switch (M/T models)

Color of RGB Image Is Not Proper

EKS00F3H

1. COLOR BAR DIAGNOSIS CHECK

Check color tone by “SCREEN ADJUSTMENT” of CONFIRMATION/ADJUSTMENT function.

OK or NG

OK >> INSPECTION END
NG >> GO TO 2.

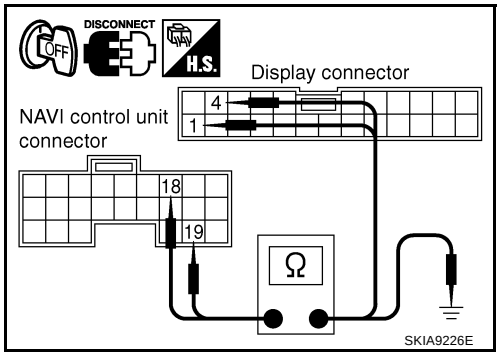
2. RGB HARNESS CHECK

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

- **When the screen looks bluish**

Terminals				Continuity
NAVI control unit		Display		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M116	18 (BR)	M112	1 (BR)	Yes
	19		4	

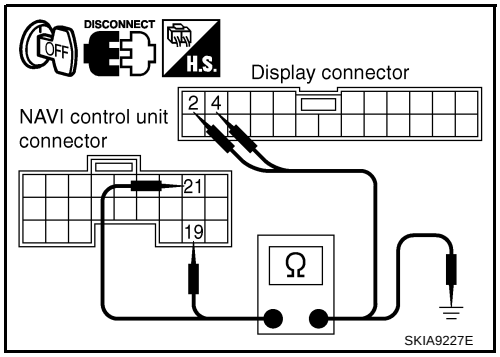
Terminals			Continuity
Connector	Terminal (wire color)	–	
M116	18(BR)	Ground	No
	19		



- **When the screen looks reddish**

Terminals				Continuity
NAVI control unit		Display		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M116	21 (W)	M112	2 (W)	Yes
	19		4	

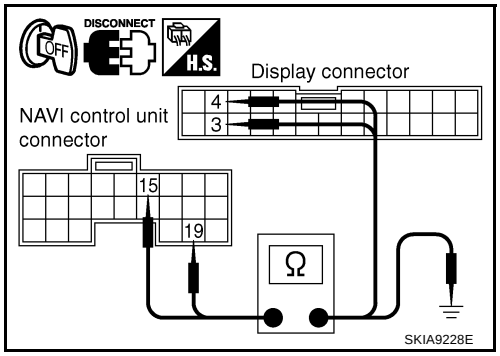
Terminals			Continuity
Connector	Terminal (wire color)	–	
M116	21 (W)	Ground	No
	19		



- **When the screen looks yellowish**

Terminals				Continuity
NAVI control unit		Display		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M116	15 (R)	M112	3 (R)	Yes
	19		4	

Terminals			Continuity
Connector	Terminal (wire color)	–	
M116	15 (R)	Ground	No
	19		

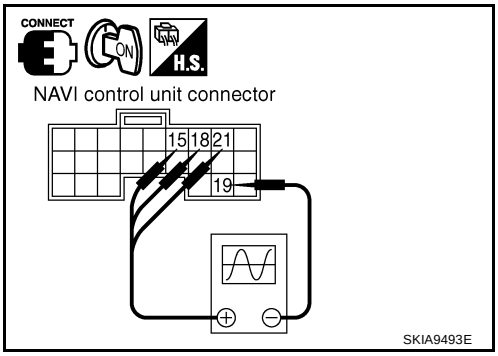


OK or NG

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

3. RGB SIGNAL CHECK

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



- **When the screen looks bluish**
  Voltage signal between NAVI control unit connector M116 terminal 18 (BR) and 19.

  18 (BR) – 19 : Refer to AV-62, "Terminals and Reference Value for NAVI Control Unit" .

- **When the screen looks reddish**
  Voltage signal between NAVI control unit connector M116 terminal 21 (W) and 19.

  21 (W) – 19 : Refer to AV-62, "Terminals and Reference Value for NAVI Control Unit" .

- **When the screen looks yellowish**
  Voltage signal between NAVI control unit connector M116 terminal 15 (R) and 19.

  15 (R) – 19 : Refer to AV-62, "Terminals and Reference Value for NAVI Control Unit" .

OK or NG

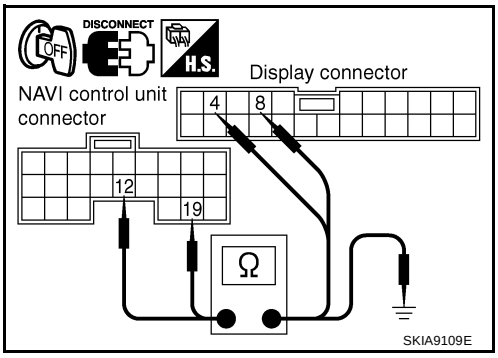
OK >> Replace display.
NG >> Replace NAVI control unit.

RGB Screen Is Not Shown

EKS00F3I

1. HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect NAVI control unit connector and display connector.
3. Check continuity between NAVI control unit harness connector M116 terminal 12 (Y), 19 and display harness connector M112 terminal 8 (Y), 4.



12 (Y) - 8 (Y) : Continuity should exist.
19 - 4 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector M112 terminal 12 (Y), 19 and ground.

12 (Y), 19 - Ground : Continuity should not exist.

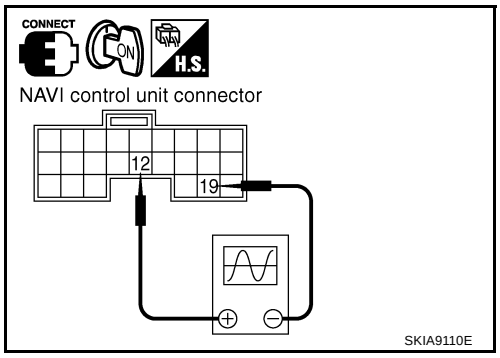
OK or NG

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

2. RGB AREA SIGNAL CHECK

1. Connect NAVI control unit connector and display connector.
2. Turn ignition switch ON.
3. Push “INFO” switch.
4. Check the signal between NAVI control unit connector M116 terminals 12 (Y) and 19 with CONSULT-II or oscilloscope.

12 (Y) - 19 **: Refer to AV-62, "Terminals and Reference Value for NAVI Control Unit"**



OK or NG

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

RGB Screen Is Rolling

EKS00F3J

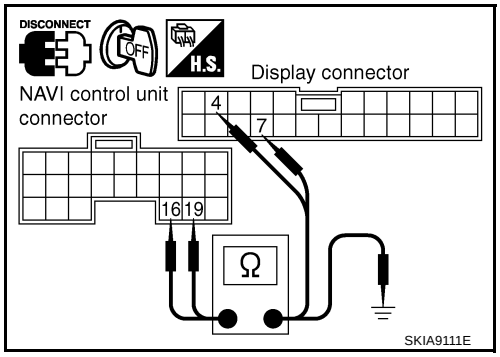
1. RGB SYNCHRONIZING CIRCUIT CHECK

1. Turn the ignition switch OFF.
2. Disconnect NAVI control unit connector and display connector.
3. Check continuity between NAVI control unit harness connector M116 terminals 16 (L), 19 and display harness connector M112 terminals 7 (L), 4.

16 (L) - 7 (L) **: Continuity should exist.**
19 - 4 **: Continuity should exist.**

4. Check continuity between NAVI control unit harness connector M116 terminal 16 (L), 19 and ground.

16 (L), 19 - Ground **: Continuity should not exist.**



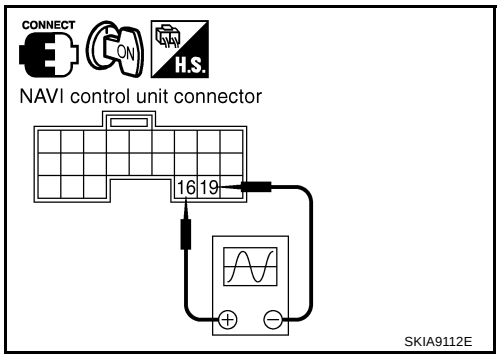
OK or NG

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

2. RGB SYNCHRONIZING SIGNAL CHECK

1. Connect NAVI control unit connector and display connector.
2. Turn the ignition switch ON.
3. Push the “MAP” switch.
4. Check the signal between NAVI control unit harness connector M116 terminals 16 (L) and 19 with CONSULT-II or oscilloscope.

16 (L) - 19 **: Refer to AV-62, "Terminals and Reference Value for NAVI Control Unit" .**



OK or NG

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

Guide Sound Is Not Heard

EKS00F3K

1. CHECK VOICE GUIDE SETTING

- While driving in the dark pink route, voice guide does not operate.

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

YES or NO

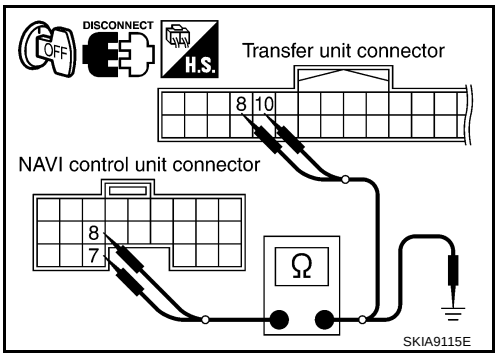
YES >> GO TO 2.
NO >> Switch the setting ON and turn the volume up.

2. VOICE GUIDE CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector and transfer unit connector.
3. Check continuity between NAVI control unit harness connector M116 terminal 7 (G), 8 (R), and transfer unit harness connector M111 terminal 8 (G), 10 (R).

   7 (G) - 8 (G) : Continuity should exist.
   8 (R) - 10 (R) : Continuity should exist.
4. Check continuity between NAVI control unit harness connector M116 terminal 7 (G), 8 (R) and ground.

   7 (G), 8 (G) - Ground : Continuity should not exist.



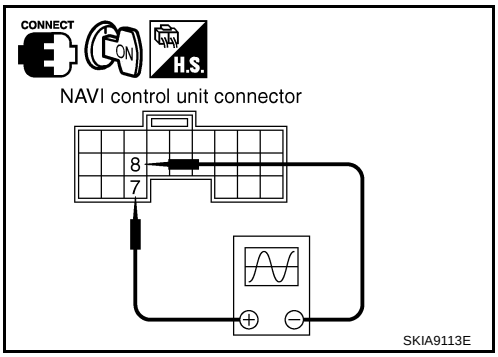
OK or NG

OK >> GO TO 3.
NG >> ● Check connector housings for disconnected or loose terminals.
● Repair harness or connector.

3. VOICE GUIDE SIGNAL CHECK (NAVI CONTROL UNIT)

1. Connect NAVI control unit connector and transfer unit connector.
2. Turn ignition switch ON.
3. Push “VOICE” switch.
4. Check the signal between NAVI control unit harness connector M116 terminal 7 (G) and 8 (R) with CONSULT-II or oscilloscope.

   7 (G) - 8 (R) : Refer to AV-62, "Terminals and Reference Value for NAVI Control Unit" .



OK or NG

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

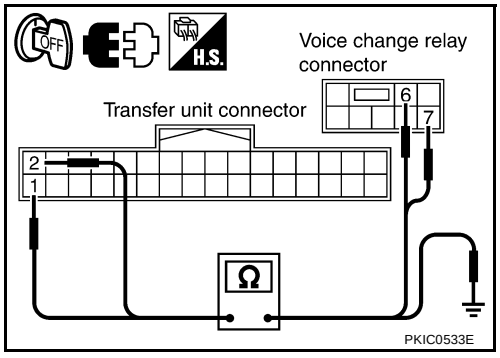
4. VOICE CHANGE RELAY CIRCUIT CHECK 1

1. Turn ignition switch OFF.
2. Disconnect transfer unit connector and voice change relay connector.
3. Check continuity between transfer unit harness connector M111 terminal 1 (G/Y), 2 (L/Y) and voice change relay harness connector M104 terminal 6 (G/Y), 7 (L/Y).

   1 (G/Y) - 6 (G/Y) : Continuity should exist.
   2 (L/Y) - 7 (L/Y) : Continuity should exist.

4. Check continuity between transfer unit harness connector M111 terminal 1 (G/Y), 2 (L/Y) and ground.

   1 (G/Y), 2 (L/Y) - Ground : Continuity should not exist.



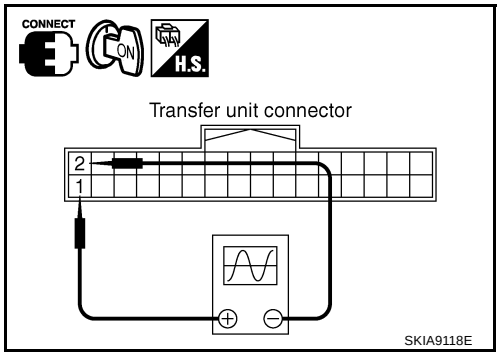
OK or NG

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

5. VOICE GUIDE SIGNAL CHECK (TRANSFER UNIT)

1. Connect transfer unit connector and voice change relay connector.
2. Turn ignition switch ON.
3. Push “VOICE” switch.
4. Check the between transfer unit harness connector M111 terminal 1 (G/Y) and 2 (L/Y) with CONSULT-II or oscilloscope.

   1 (G/Y) - 2 (L/Y) : Refer to AV-66, "Terminals and Reference Value for Transfer Unit"



OK or NG

OK >> GO TO 6
NG >> Replace transfer unit.

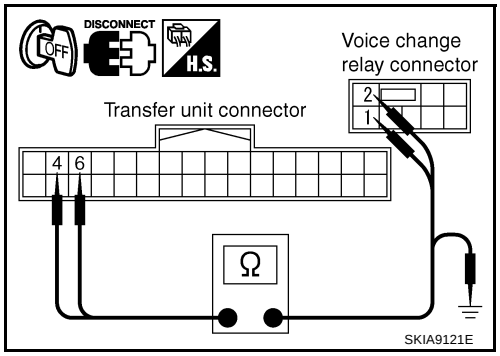
6. VOICE CHANGE RELAY CIRCUIT CHECK 2

1. Turn ignition switch OFF.
2. Disconnect transfer unit connector and voice change relay connector.
3. Check continuity between transfer unit harness connector M111 terminal 6 (P), 4 (B/W) and voice change relay harness connector M104 terminal 2 (P), 1 (B/W).

   6 (P) - 2 (P) : Continuity should exist.
   4 (B/W) - 1 (B/W) : Continuity should exist.

4. Check continuity between transfer unit harness connector M111 terminal 6 (P), 4(B/W) and ground.

   6 (P), 4 (B/W) - Ground : Continuity should not exist.



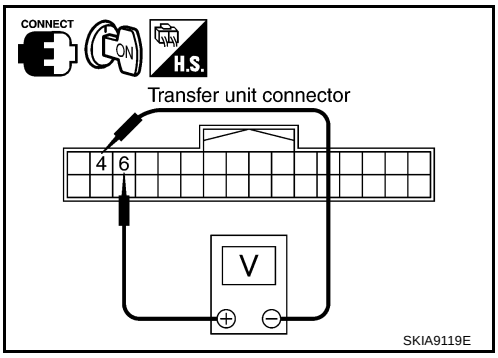
OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.

7. VOICE CHANGE RELAY ON SIGNAL CHECK

1. Connect voice transfer unit connector.
2. Turn ignition ON.
3. Push “VOICE” switch.
4. Check voltage between transfer unit harness connector M111 terminal 6 (P) and 4 (B/W).

6 (P) - 4 (B/W) : Approx. 5V



OK or NG

OK >> Replace voice change relay.
NG >> Replace transfer unit.

Display Quality Control Cannot Change Screen

EKS00F3L

1. SYMPTOM CHECK

Do other systems operate normally?

YES or NO

YES >> Replace display.
NO >> Check symptom again.

Example of Symptoms Judged Not Malfunction

EKS00F3N

BASIC OPERATIONS

Symptom	Possible cause	Remedy
No image comes on.	The brightness adjustment is at the lowest setting.	Adjust to brighter setting.
No map comes on the screen.	No map DVD-ROM is inserted, or it is inserted upside down.	Insert the DVD-ROM correctly.
	The map display mode is switched off.	Push the “MAP” button.
No voice guidance is available. or The volume is not high enough.	The volume is not set correctly or it is turned off.	Adjust the volume correctly.
The screen is too dim. The movement is slow.	The temperature in the vehicle is low.	Wait for the temperature to rise.
There are darker or brighter dots in the display.	It is inherent to LC displays.	This is not malfunction.

VEHICLE MARKS

Symptom	Possible cause	Remedy
The location names differ between PLAN VIEW and BIRDVIEW® .	This is because the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads or locations will be repeatedly displayed. The name appearing on the screen may be different because of the processing procedure.	It should not be regarded as malfunction.
The vehicle mark is not shown correctly.	The vehicle might have moved with the ignition off, for example on a ferry boat or car transporter.	Drive the vehicle with GPS on for some distance.
The screen does not switch to night mode even after turning the headlights on.	The last time the lights were turned on, your setting was in daytime mode.	Turn the headlights on again, go to DISPLAY SETTINGS screen and set it to the night mode.
The map does not scroll even when the vehicle is traveling.	The display is not switched to the map screen.	Push the “MAP” button.
The vehicle mark does not show up.	The display is not switched to the map screen.	Push the “MAP” button.
GPS indicator on the screen remains gray.	GPS signals are not received because the vehicle is indoors or in the shade of buildings.	Move the vehicle outdoors with a clear view of the sky.
	GPS satellites are in poor locations.	Wait for the satellites to move to better locations.
The location of the vehicle mark does not match the actual position.	Driving on slippery road surface	If the vehicle mark does not move to the correct position even after the vehicle has been driven for approximately 10 km (6 miles), adjust the current location. If necessary, adjust the moving speed of the vehicle.
	Driving on slanted area	
	Rough or violent driving.	If the position maker does not move to the correct position even after the vehicle has been driven for approximately 10 km (6 miles), adjust the current location.
	GPS indicator remains gray.	Please check the GPS indicator on the screen to see if it remains gray.
	Errors (gain or loss) result in calculating the speed from the speed pulse because the vehicle has tire chains on, or the system was transferred to a different vehicle.	It will move by driving the vehicle for 30 minutes [in case it is running at 30 km/h (19 MPH)]. If you still notice errors, adjust moving speed.
	The map data has an error or is incomplete (if the location error always happens in the same area).	Please wait for the updated Map

MAP DVD-ROM

Symptom	Possible cause	Remedy
The message “Error” appears after operation.	Map DVD-ROM is soiled or partially damaged.	Check the DVD-ROM and wipe it clean with a soft cloth.
		In case you see any damage, replace the DVD-ROM.

DESTINATION, WAY POINTS OR MENU CONTENTS CANNOT BE CHOSEN OR SET

Symptom	Possible cause	Remedy
Turn list is not displayed.	Route calculation has not yet been requested.	Set the destination and request route calculation.
	The vehicle mark is not on the suggested route.	Please drive the vehicle along the suggested route.
	Route guidance is off.	Turn the route guidance on.
In re-routing, the way points are not included in the calculation.	The system has judged that the vehicle has already passed the point.	If you want to go to that point again, edit the route again.
Route information is not displayed.	Route calculation has not yet been requested.	Set the destination and request route calculation.
	The vehicle mark is not on the suggested route.	Please drive the vehicle along the suggested route.
	Route guidance is off.	Turn the route guidance on.
Route is not calculated automatically.	The vehicle is not running on a route that can be calculated from.	Enter the route that can be calculated from. Alternatively, you can calculate the route manually. In this case, the entire route will be calculated again.
It is impossible to request a detour.	Your vehicle is not running on the suggested route.	Restart route calculation or join the suggested route.
The detour found is the same as the previous suggestion.	The system took many conditions into consideration, but the same result was obtained.	This is not malfunction.
It is impossible to set the waypoints.	The number of way points exceeds 5.	It is impossible to set more than 5 way points. Please divide them in groups to find them all.

VOICE GUIDANCE

Symptom	Possible cause	Remedy
The voice guidance is not available.	Voice guidance is only available at certain intersections marked with ●. In some cases, the guidance is not available even when the vehicle should make a turn.	System is not malfunction.
	The vehicle is off the suggested route.	Return to the recommended route or re-search the route.
	Voice guidance is set off.	Turn the voice guidance on.
	Route guidance is set off.	Turn the route guidance on.
The guidance content does not correspond to the actual condition.	The content of the voice guidance may vary, depending on the types of junctions to make turns on.	Follow the actual rules and regulations.

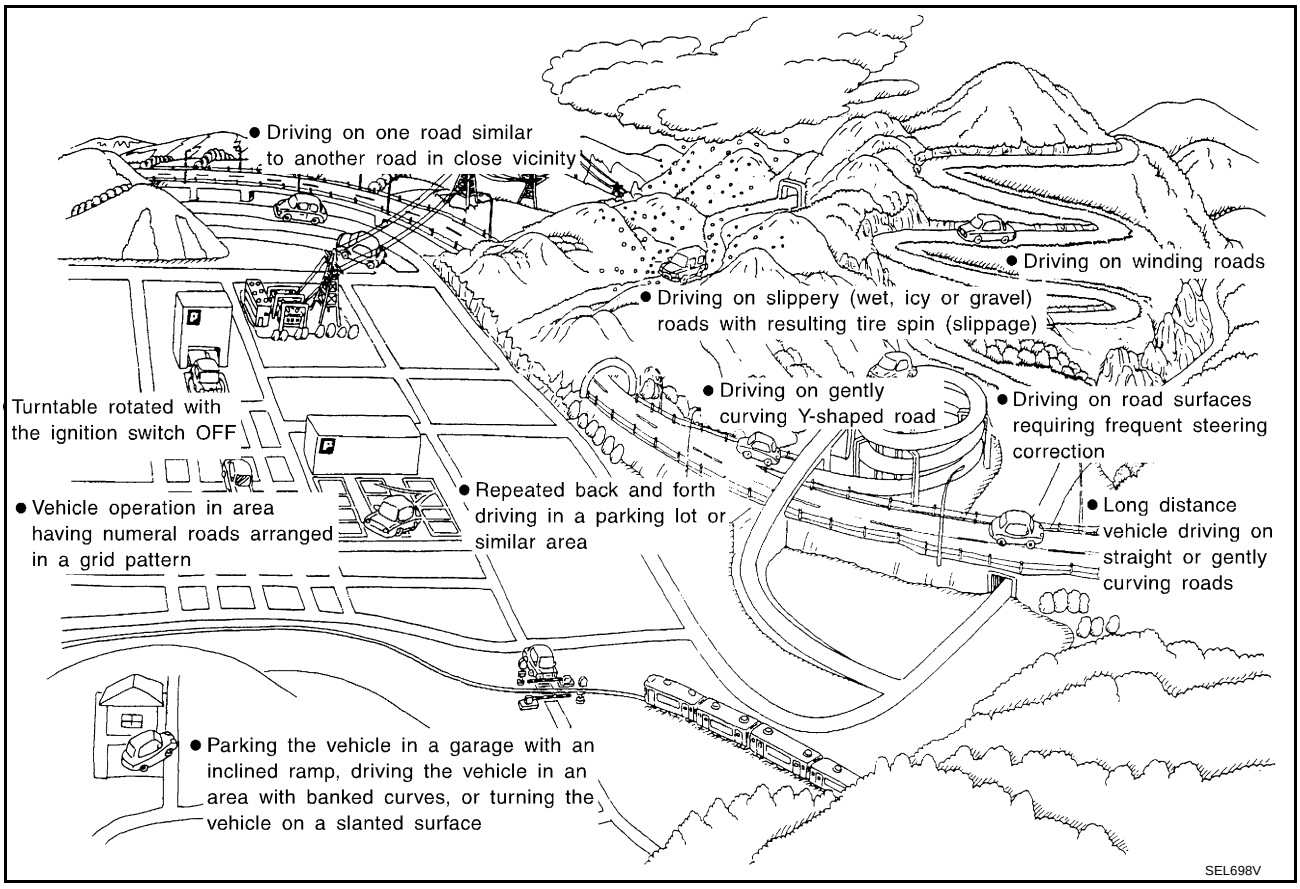
ROUTE CALCULATION

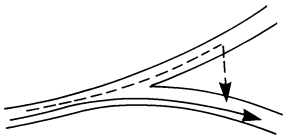
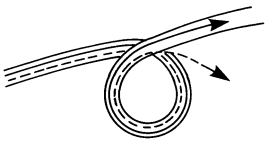
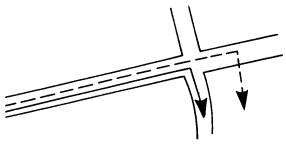
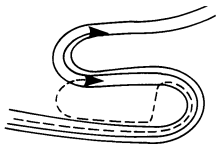
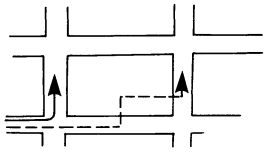
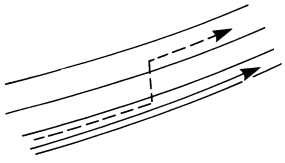
Symptom	Possible cause	Remedy
Although the system is set with the moving direction as the preference, it does not find the route by matching the preference.	There is no route found in that direction.	This is not malfunction.
Route is not indicated.	There is no road close to the destination that can be found by this system.	Reset the destination close to the road displayed with orange, or wider ones. Especially with roads which have separate lanes for opposite directions, be careful in setting the destination or way points on it, as results may differ depending on the lane you choose.
	The starting point to the destination is too close.	Set more distant destinations.
The route is not displayed continuously at way points that are for example not calculated routes from the vehicle's current position.	Suggested routes may be displayed discontinuously near way points as route calculation is done at each way point.	This is not malfunction.
The suggested route the vehicle has travelled is erased.	Suggested routes are stored in memory by the blocks; if the vehicle travels past way point 1, the former data will be erased.	This is not malfunction.
A very detoured route is suggested.	If there are restrictions (such as one-way traffic) on roads close to the starting point or destination, the system may suggest a detoured route.	Try slightly moving the starting point or destination.
The landmark description does not correspond to the actual one.	It may be caused by insufficient or incorrect data on the DVD-ROM.	Please wait for the update Map DVD-ROM.
The suggested route does not exactly connect to the starting point, way points, or destination.	There is no data for route calculation closer to these points.	Set these points on the main road displayed in thick orange. Please note that in some cases even main roads lack the data for route calculation.

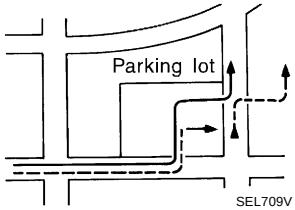
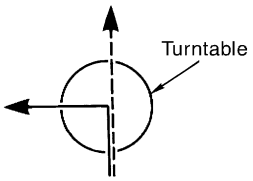
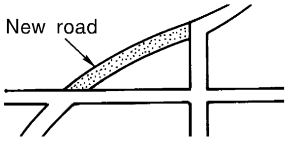
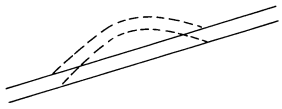
NOTE:
Except for the ordinance-designated cities and the prefectural capitals. (Applicable areas may be changed in the updated map disc.)

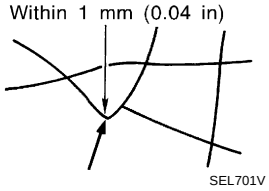
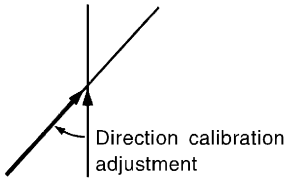
EXAMPLES OF VEHICLE MARK DISPLACEMENT

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



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

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

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

VEHICLE MARK SHOWS A POSITION WHICH IS COMPLETELY WRONG

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

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

VEHICLE MARK JUMPS

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

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

VEHICLE MARK IS IN A RIVER OR SEA

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

VEHICLE MARK AUTOMATICALLY ROTATES

The system wrongly memorizes the rotating status as stopping when the ignition switch is turned ON with the turntable rotating. That causes the vehicle mark to rotate when the vehicle is stopped.

WHEN DRIVING ON SAME ROAD, SOMETIMES VEHICLE MARK IS IN RIGHT PLACE AND SOMETIMES IT IS WRONG PLACE

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

LOCATION CORRECTION BY MAP-MATCHING IS SLOW

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

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

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

NAME OF CURRENT PLACE IS NOT DISPLAYED

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

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

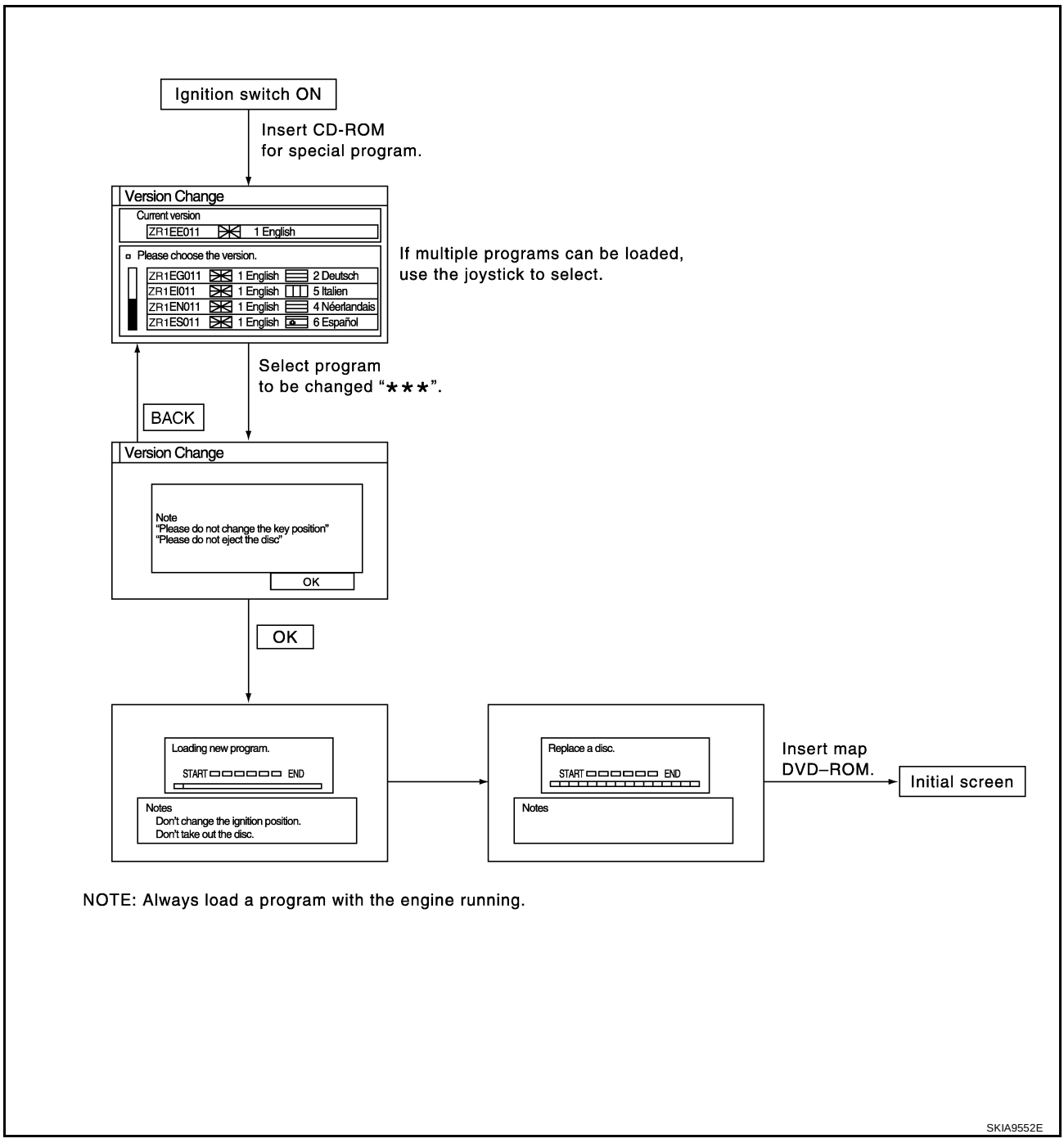
Difference of the BIRDVIEW® Screen From the Flat Map Screen Are As Follows

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

Program Loading

EKS00F3O

NOTE:
Program loading is operated when the version of soft is upgraded to the latest one, or when language is switched.



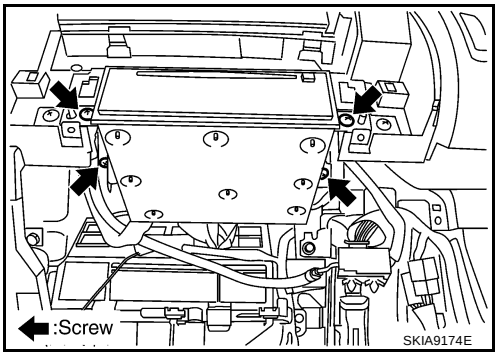
NOTE: Always load a program with the engine running.

Removal and Installation of NAVI Control Unit

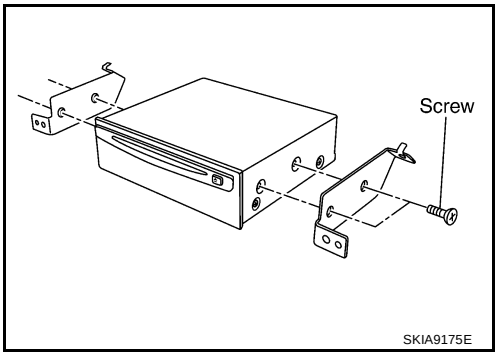
EKS00F3P

REMOVAL

1. Remove upper grove box. Refer to IP-11, "Removal and Installation" .
2. Remove screws (4) and remove NAVI control unit.



3. Remove screws (4) and remove bracket.



INSTALLATION

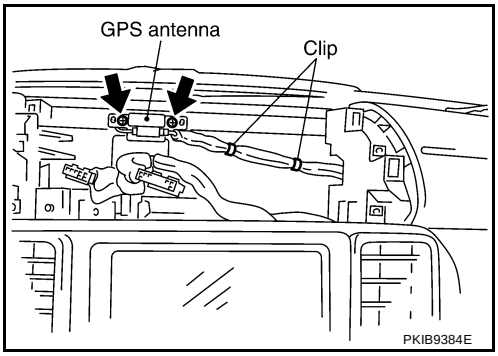
Installation is the reverse order of removal.

Removal and Installation of GPS Antenna

EKS00F3Q

REMOVAL

1. Remove cluster lid A. Refer to IP-11, "Removal and Installation" .
2. Remove screws (2) and remove GPS antenna.



INSTALLATION

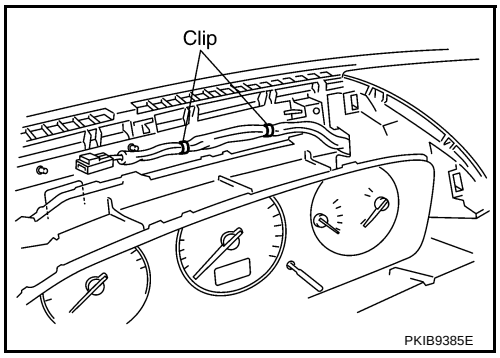
Installation is the reverse order of removal.

Removal and Installation of GPS Antenna Feeder

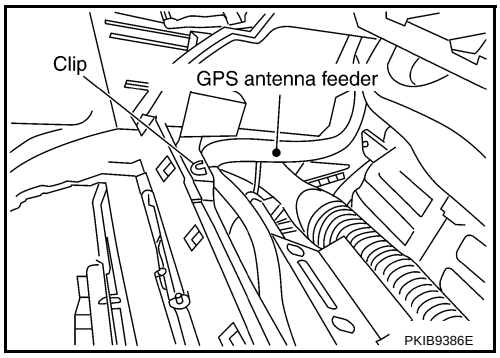
EKS00F3R

REMOVAL

1. Remove combination meter. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove NAVI control unit. Refer to AV-107, "Removal and Installation of NAVI Control Unit" .
3. Remove front passenger air bag module. Refer to SRS-35, "Removal and Installation" .



4. Remove clips (2) and remove GPS antenna feeder.



INSTALLATION

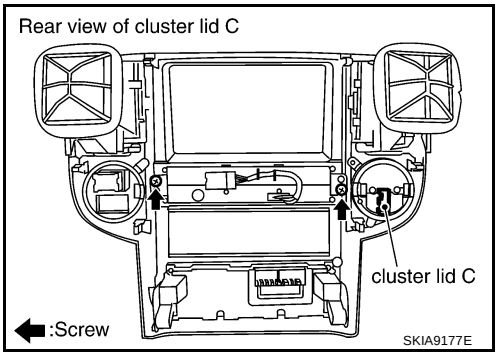
Installation is the reverse order of removal.

Removal and Installation of NAVI Switch

EKS00F3S

REMOVAL

1. Remove cluster lid C. Refer to IP-11, "Removal and Installation" .
2. Remove screws (2) and remove NAVI switch.



INSTALLATION

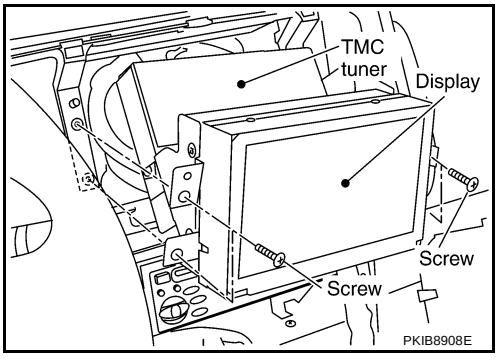
Installation is the reverse order of removal.

Removal and Installation of Display

EKS00F3T

REMOVAL

1. Remove cluster lid C. Refer to IP-11, "Removal and Installation" .
2. Remove screws (4) and remove display.
3. Remove screws (4), and remove bracket.



INSTALLATION

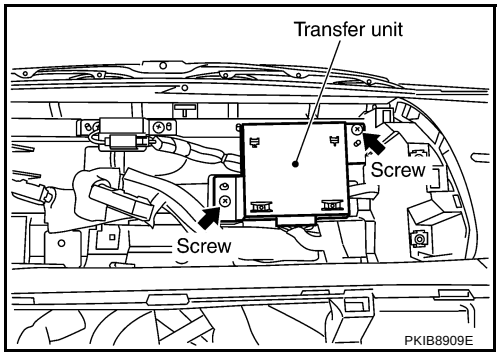
Installation is the reverse order of removal.

Removal and Installation of Transfer Unit

EKS00F3U

REMOVAL

1. Remove combination meter. Refer to DI-33, "Removal and Installation for Combination Meter" .
2. Remove screws (2), and remove transfer unit.



INSTALLATION

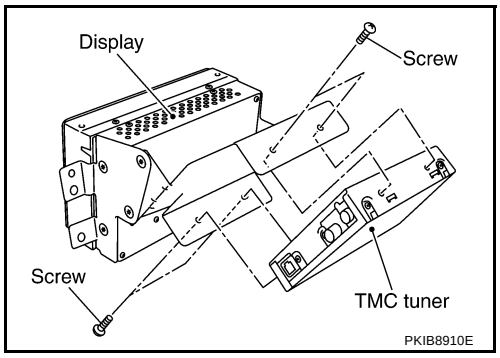
Installation is the reverse order of removal.

Removal and Installation of TMC Tuner

EKS00LYN

REMOVAL

1. Remove display. Refer to AV-109, "Removal and Installation of Display" .
2. Remove screws (4), and remove TMC tuner.



INSTALLATION

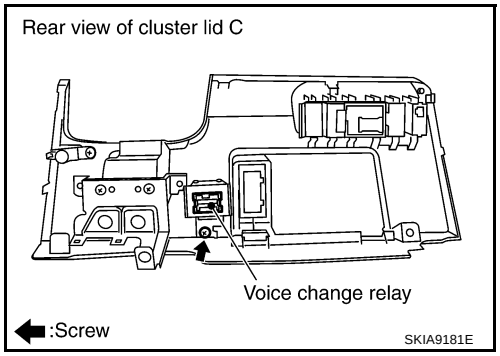
Installation is the reverse order of removal.

Removal and Installation of Voice Change Relay

EKS00F3V

REMOVAL

1. Remove instrument lower driver panel. Refer to IP-11, "Removal and Installation" .
2. Remove screw (1) and remove voice change relay.



INSTALLATION

Installation is the reverse order of removal.

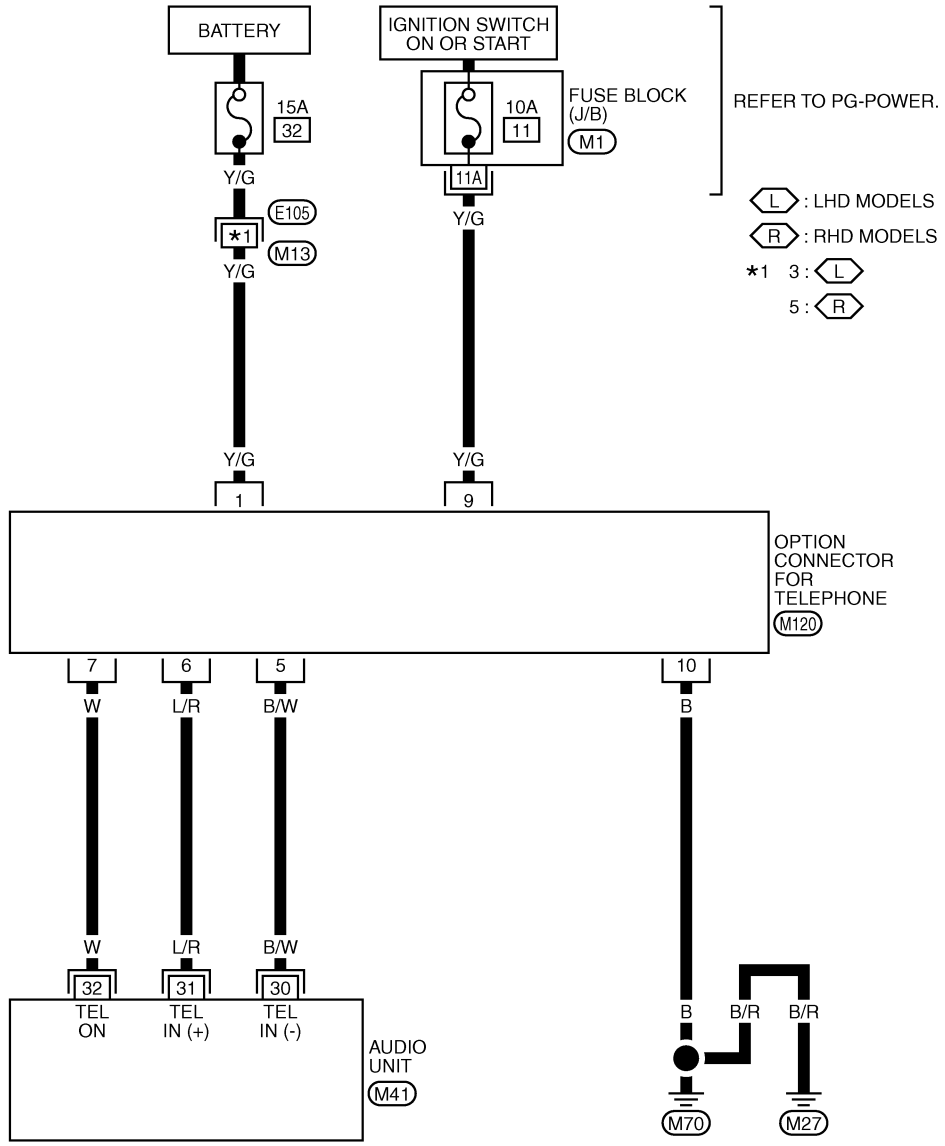
TELEPHONE (PRE WIRE)

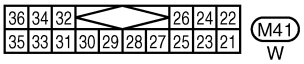
PFP:28342

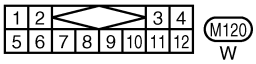
Wiring Diagram — PHONE —

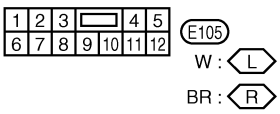
EKS00F2R

AV-PHONE-01









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

TKWB0102E