SECTION AV

AUDIO VISUAL, NAVIGATION & TELEPHONE SYSTEM

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PRECAUTIONS

PFP:00011

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

BKS000Q1

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.**

AUDIO

PFP:28111

System Description

BKS000Q3

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 pressed, 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 pressed to volume up, seek up, or source, resistance in steering switch circuit changes depending on which button is pressed. 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 pressed to volume down, seek down, or special, resistance in steering switch circuit changes depending on which button is pressed. 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 pressed, 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 pressed to volume up, seek up, or source, resistance in steering switch circuit changes depending on which button is pressed. 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 pressed to volume down, seek down, or special, resistance in steering switch circuit changes depending on which button is pressed. 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

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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.

Personal Audio Setting

Description

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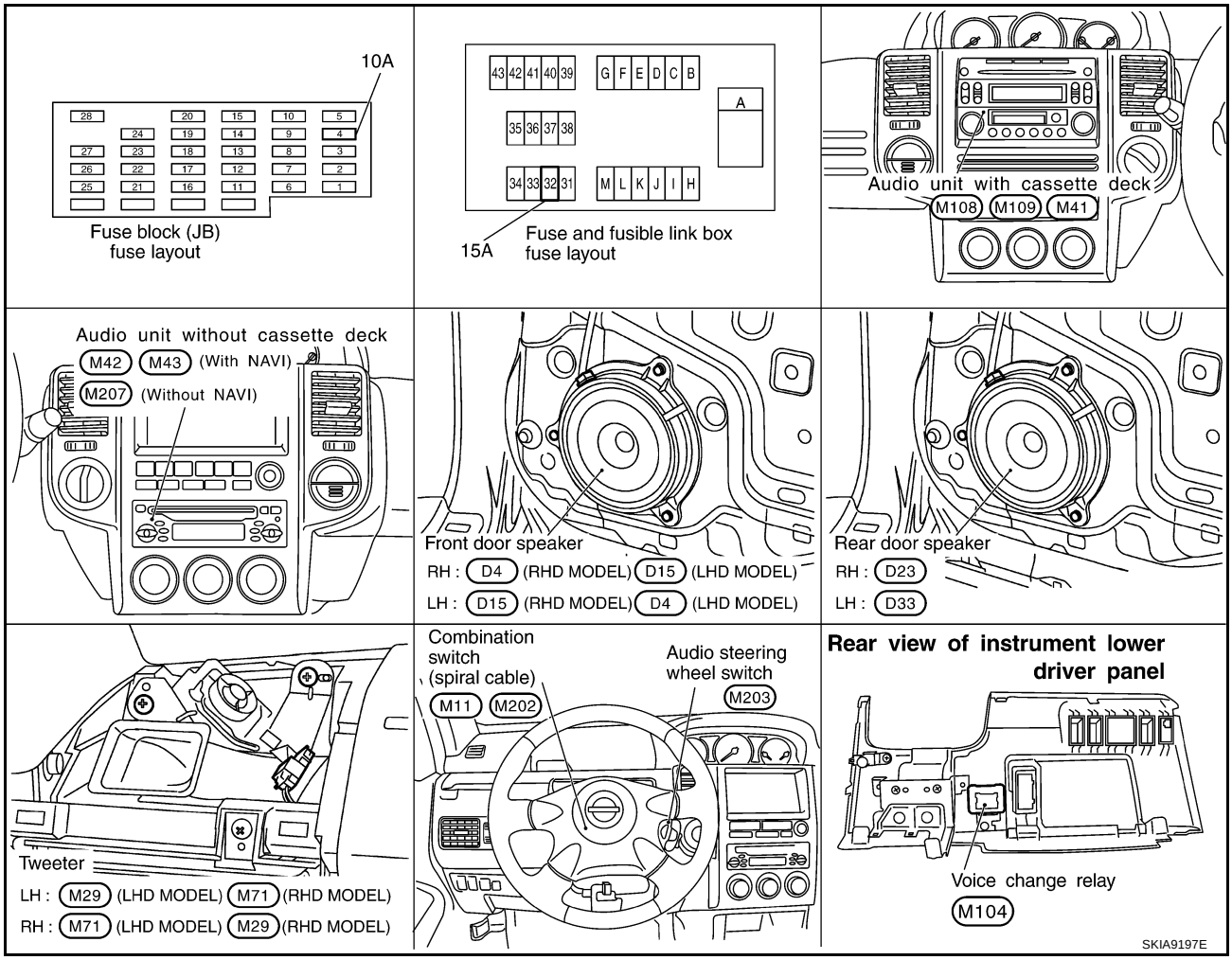
Component Parts Location

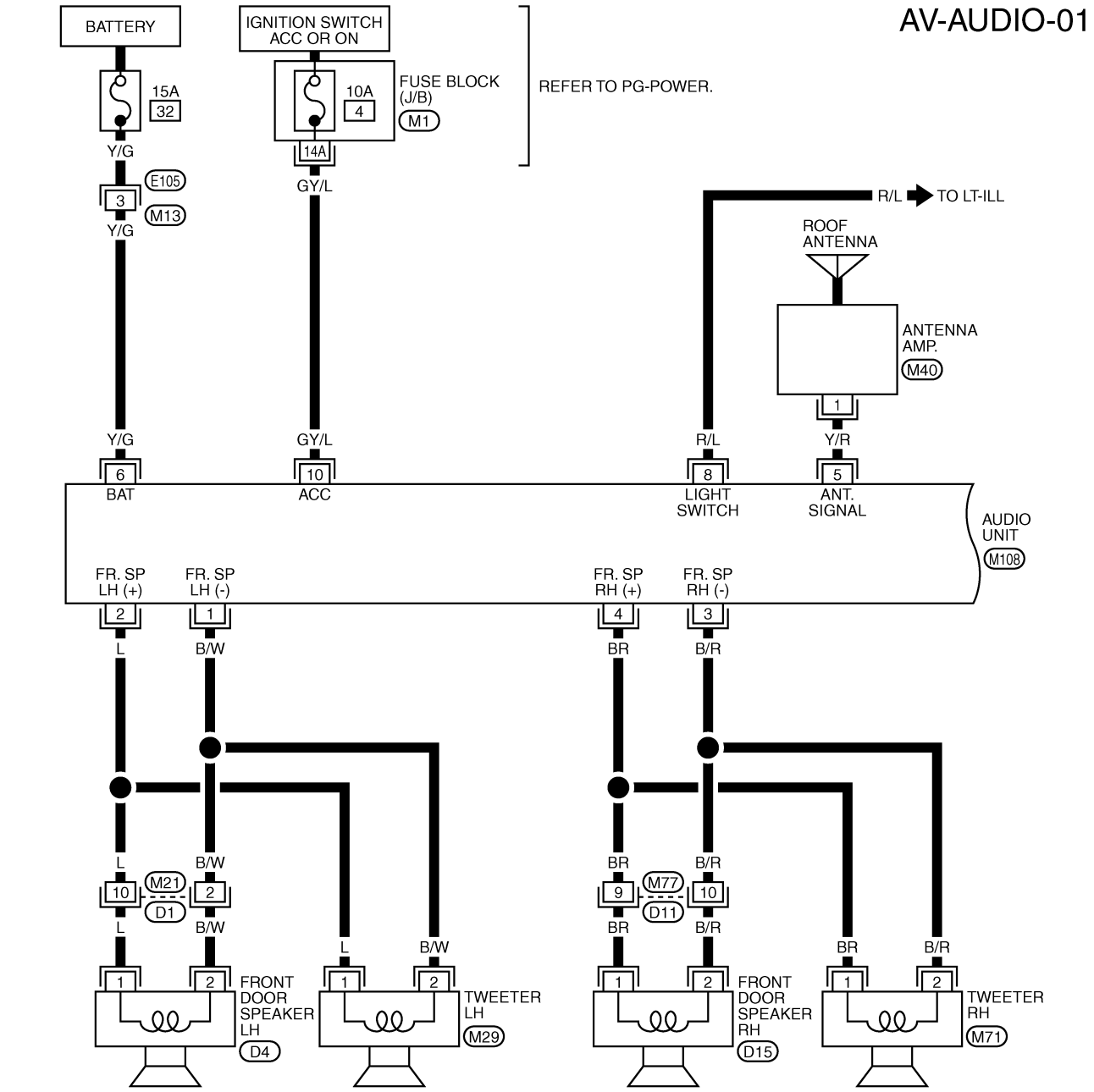
BKS000Q4

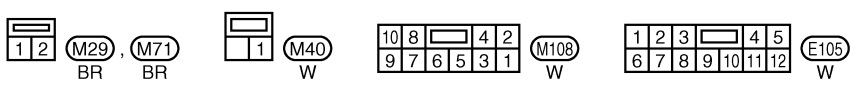


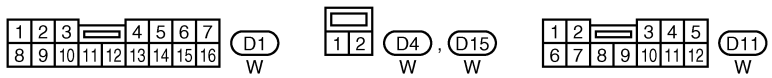
Wiring Diagram —AUDIO— (With Cassette Deck)

BKS000Q5

LHD MODELS



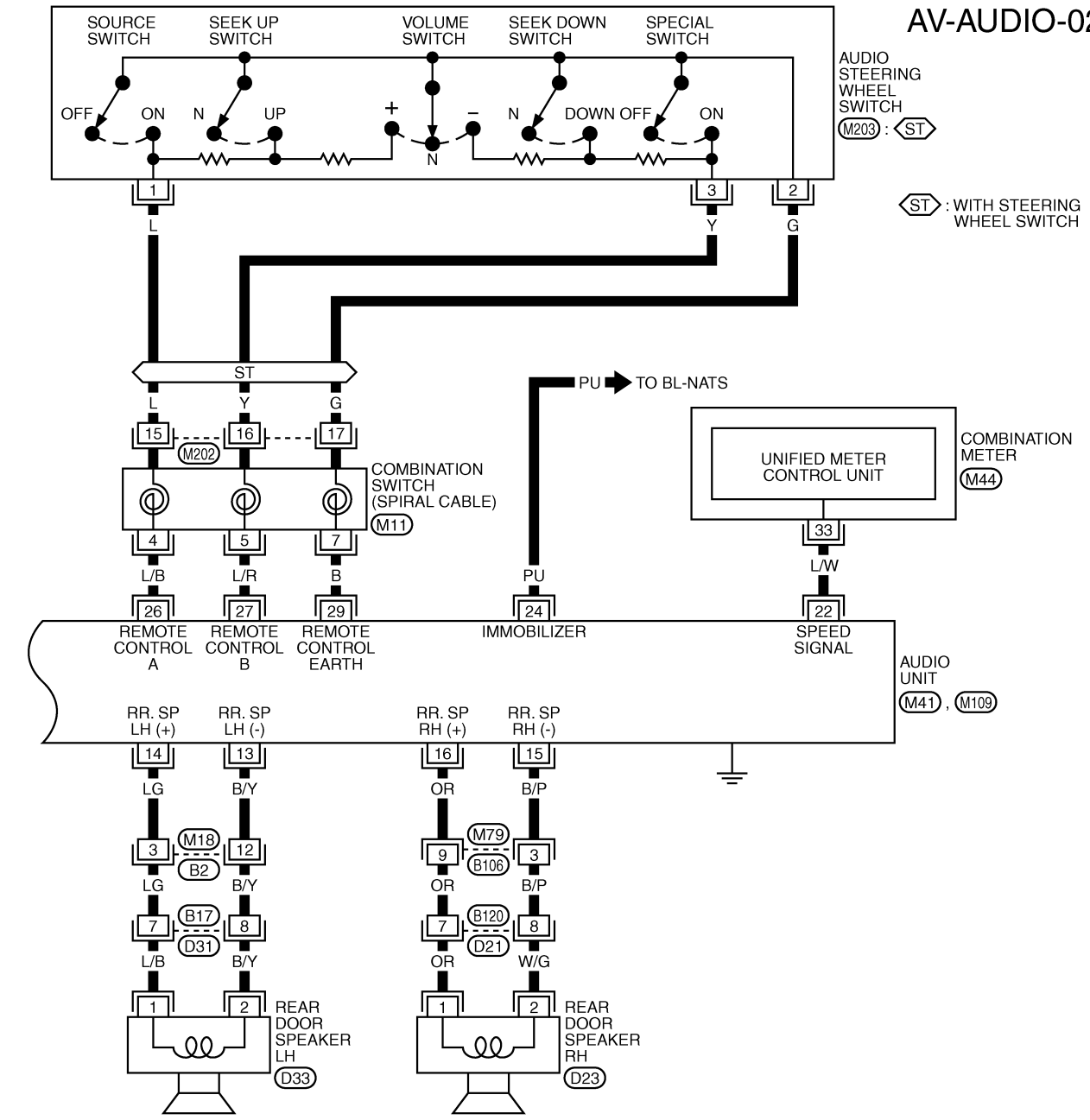


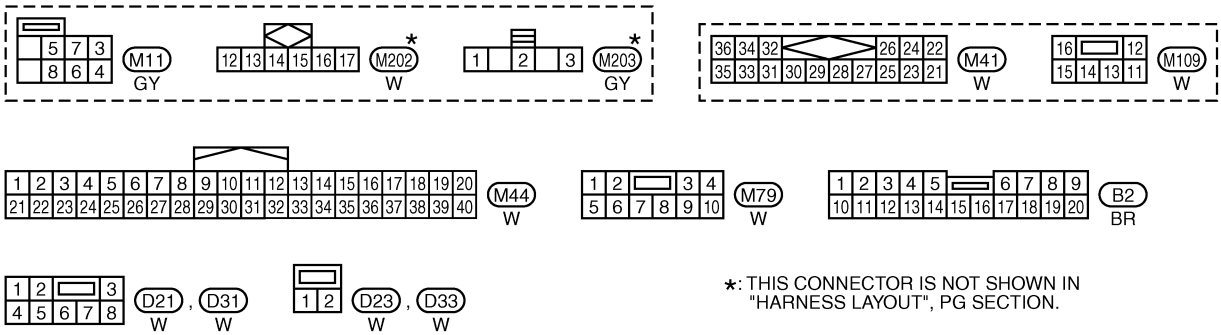


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB2773E

AV-AUDIO-02



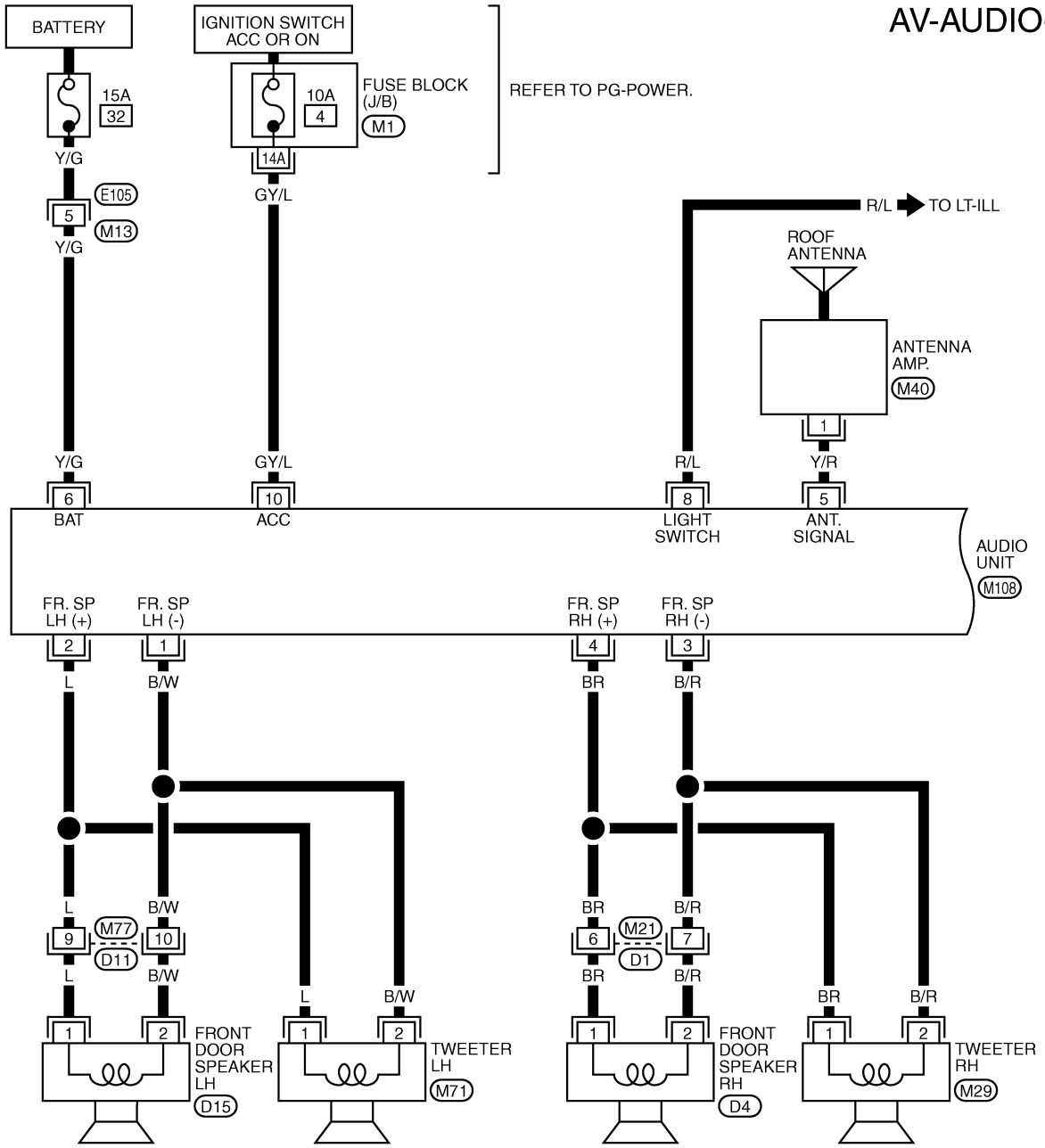


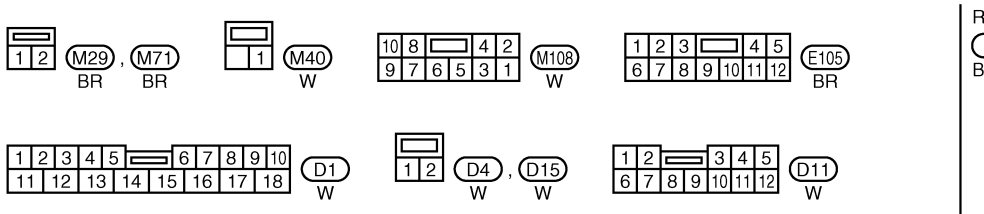
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB1143E

RHD MODELS

AV-AUDIO-03



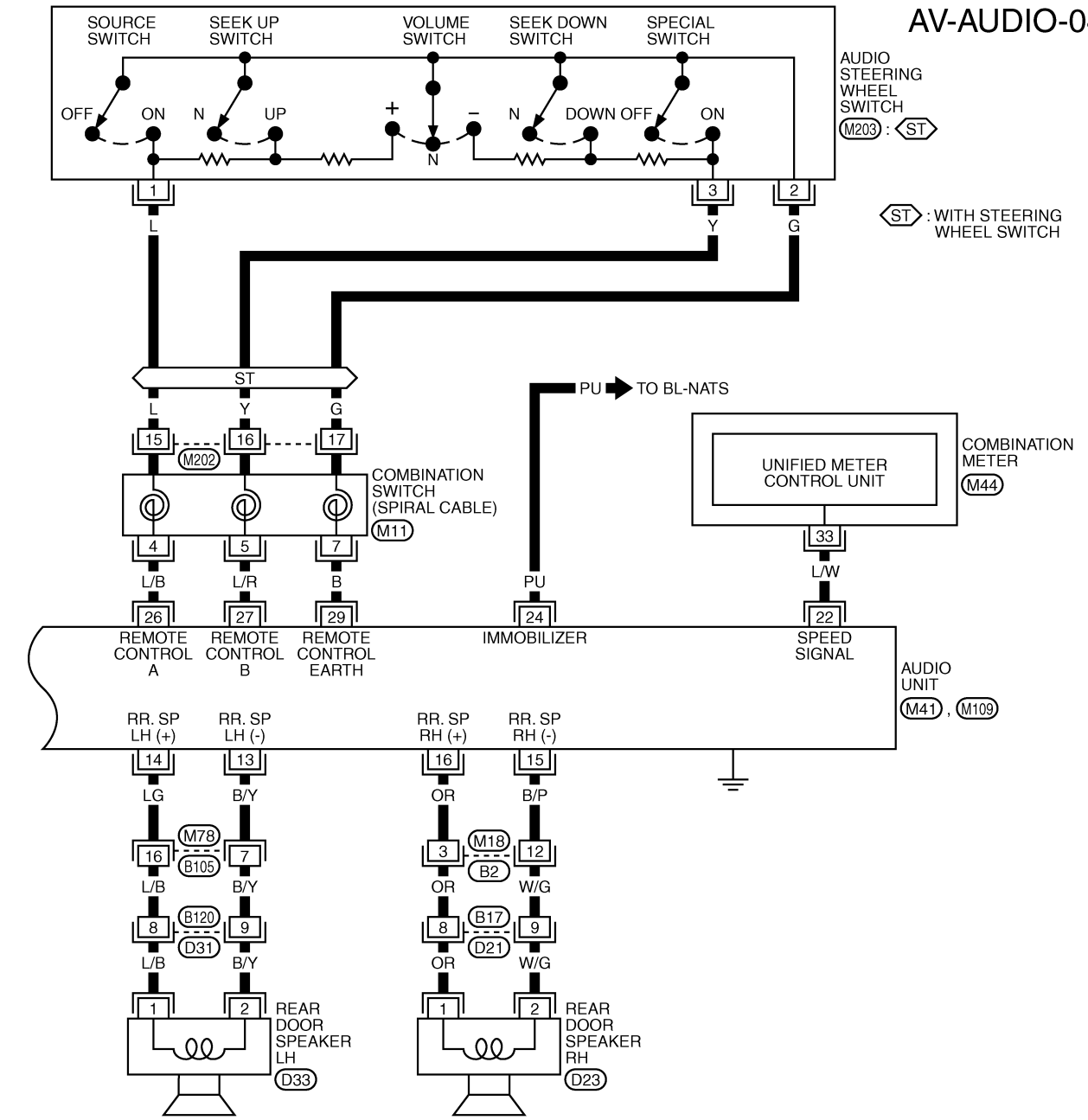


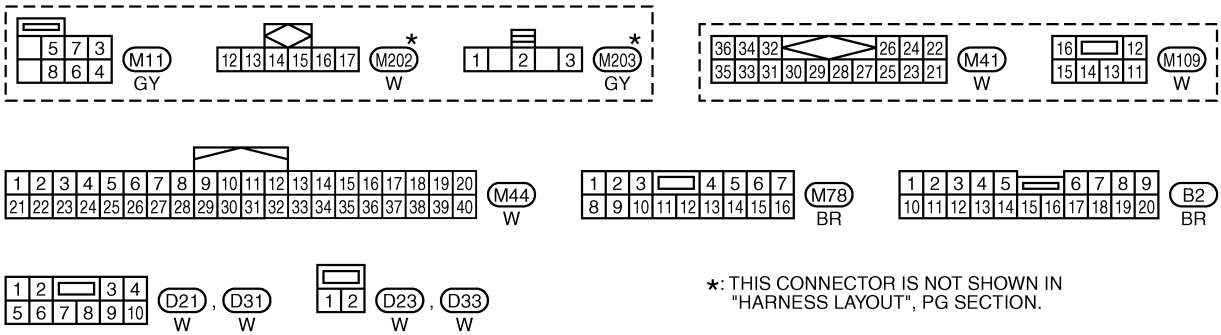
REFER TO THE FOLLOWING.

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

TKWB2774E

AV-AUDIO-04





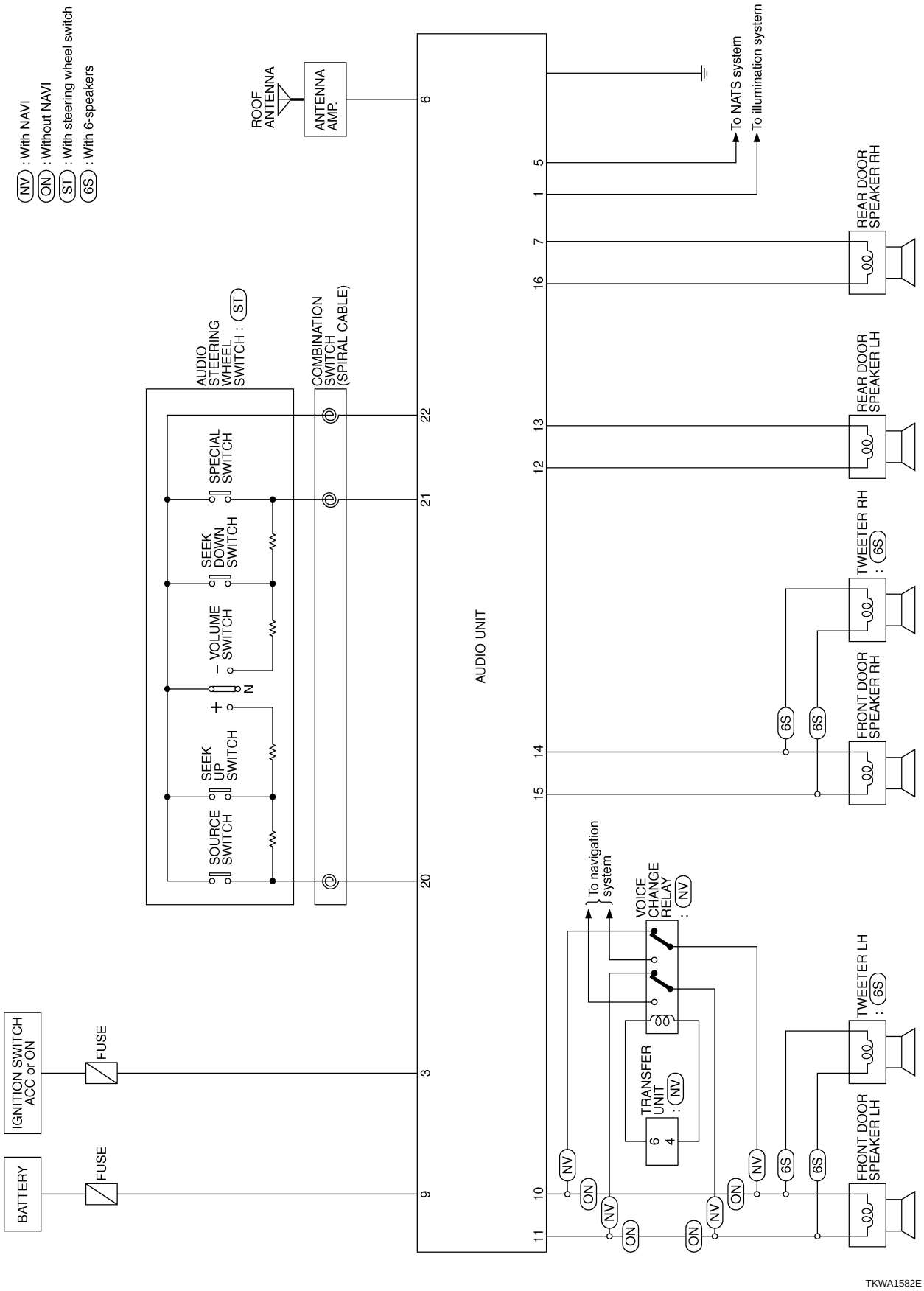
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB1144E

Schematic (Without Cassette Deck)

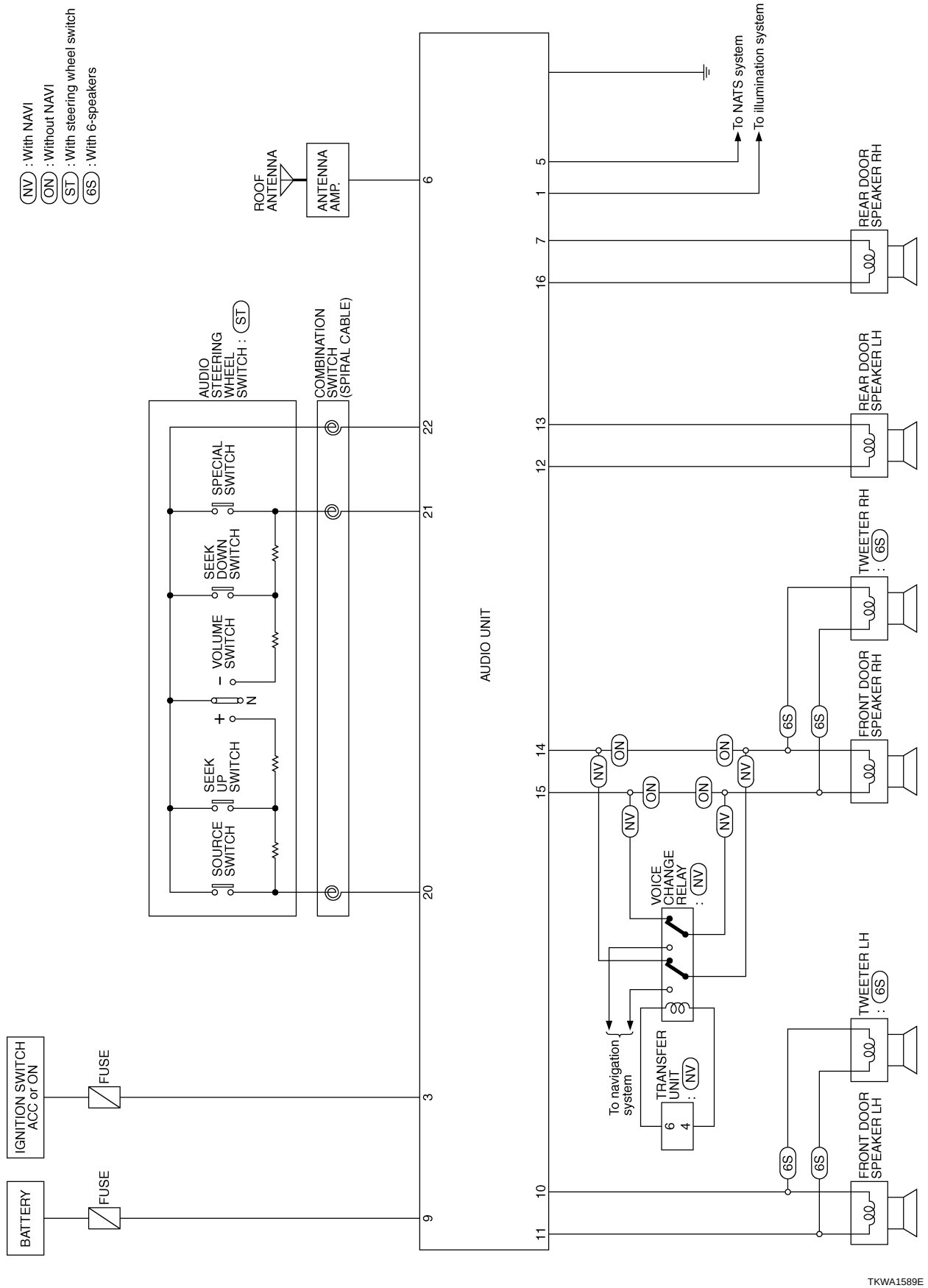
LHD MODELS

BKS000Q6



TKWA1582E

RHD MODELS

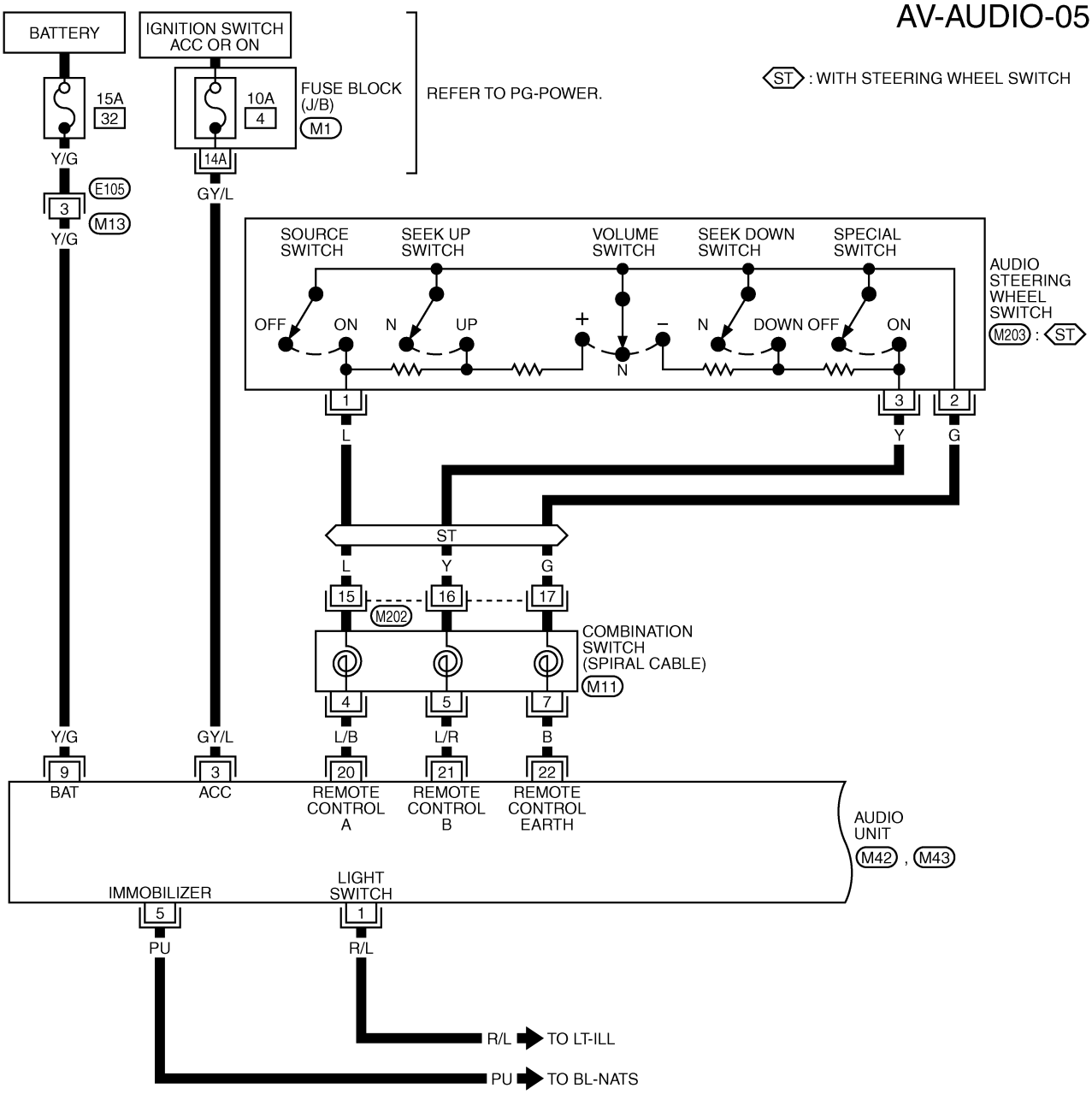

(NV) : With NAVI
(ON) : Without NAVI
(ST) : With steering wheel switch
(6S) : With 6-speakers
BATTERY
FUSE
IGNITION SWITCH ACC or ON
FUSE
ROOF ANTENNA
ANTENNA AMP.
AUDIO STEERING WHEEL SWITCH : (ST)
SOURCE SWITCH
SEEK UP SWITCH
VOLUME SWITCH
SEEK DOWN SWITCH
SPECIAL SWITCH
COMBINATION SWITCH (SPIRAL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

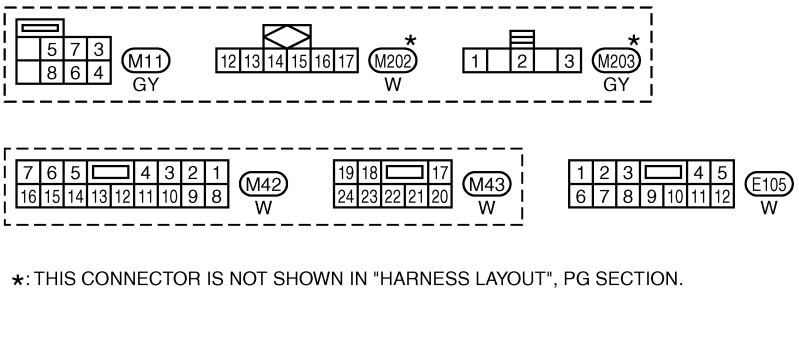
Wiring Diagram —AUDIO— (Without Cassette Deck)

BKS000Q7

LHD MODELS WITH NAVIGATION

AV-AUDIO-05



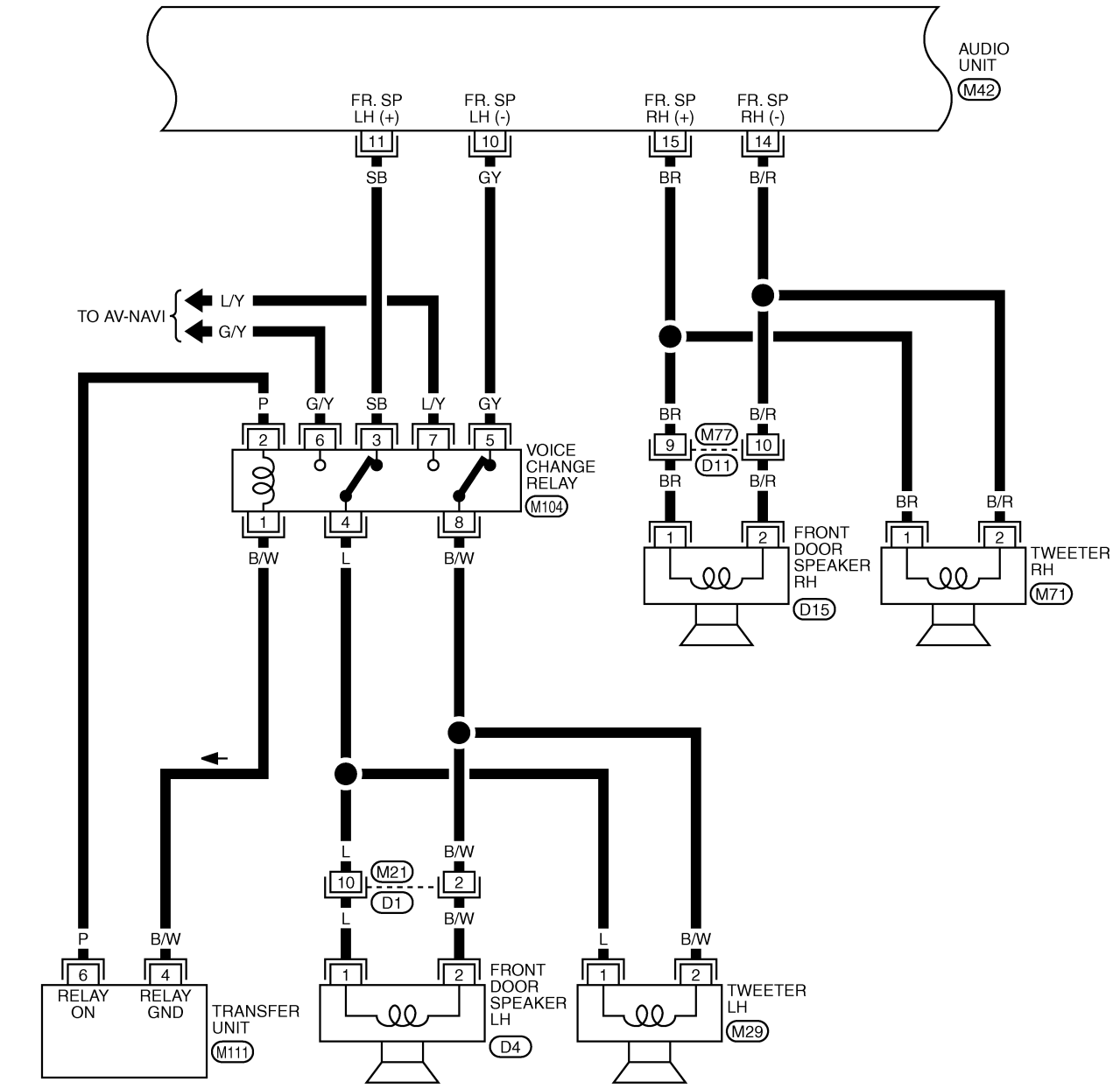


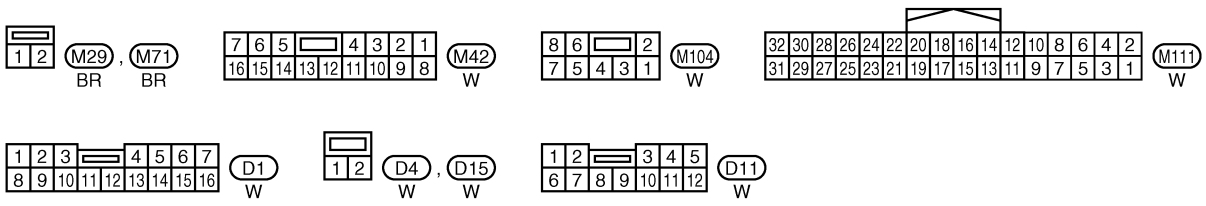
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWB1147E

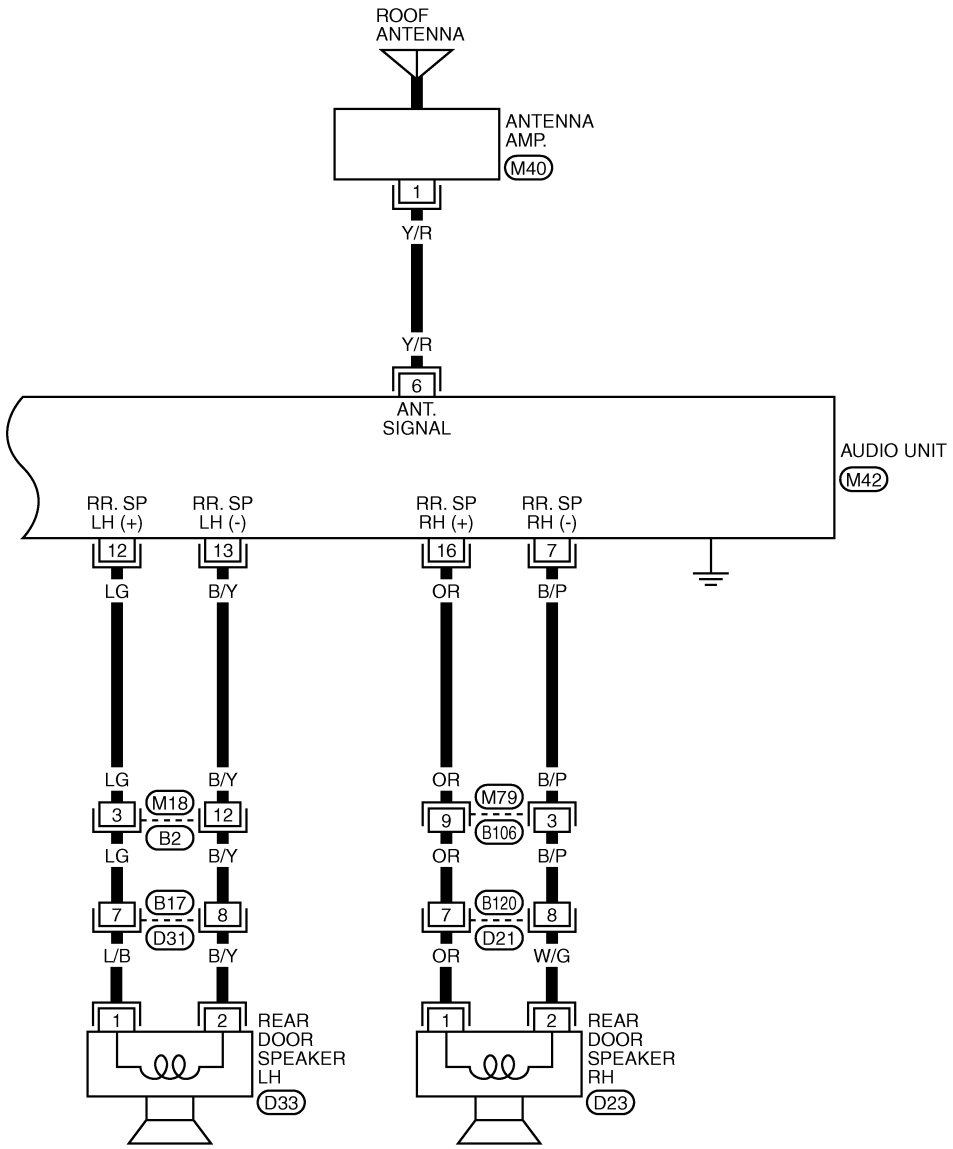
AV-AUDIO-06

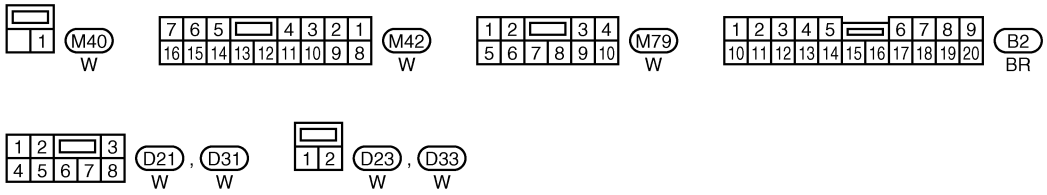




TKWB2775E

AV-AUDIO-07

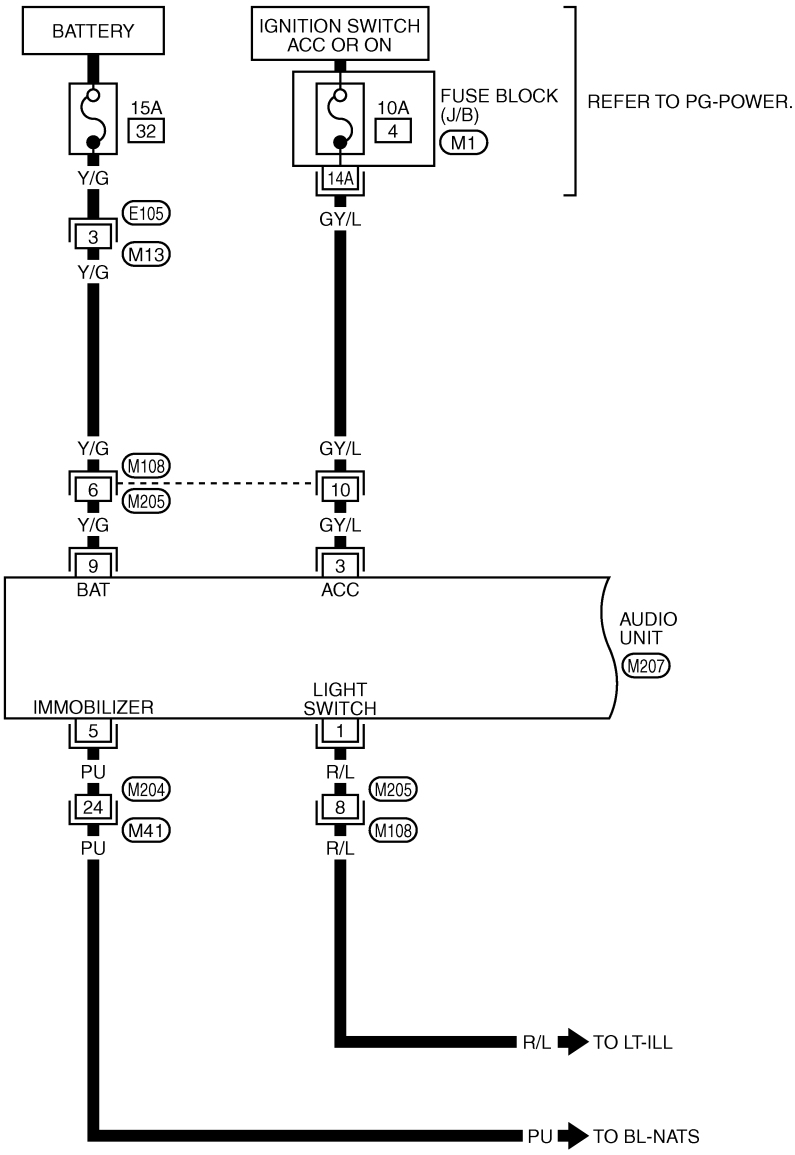


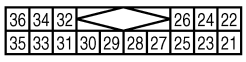


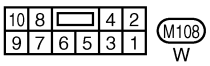
TKWA1585E

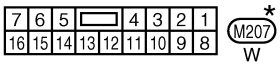
LHD MODELS WITHOUT NAVIGATION

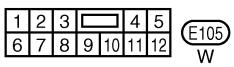
AV-AUDIO-08











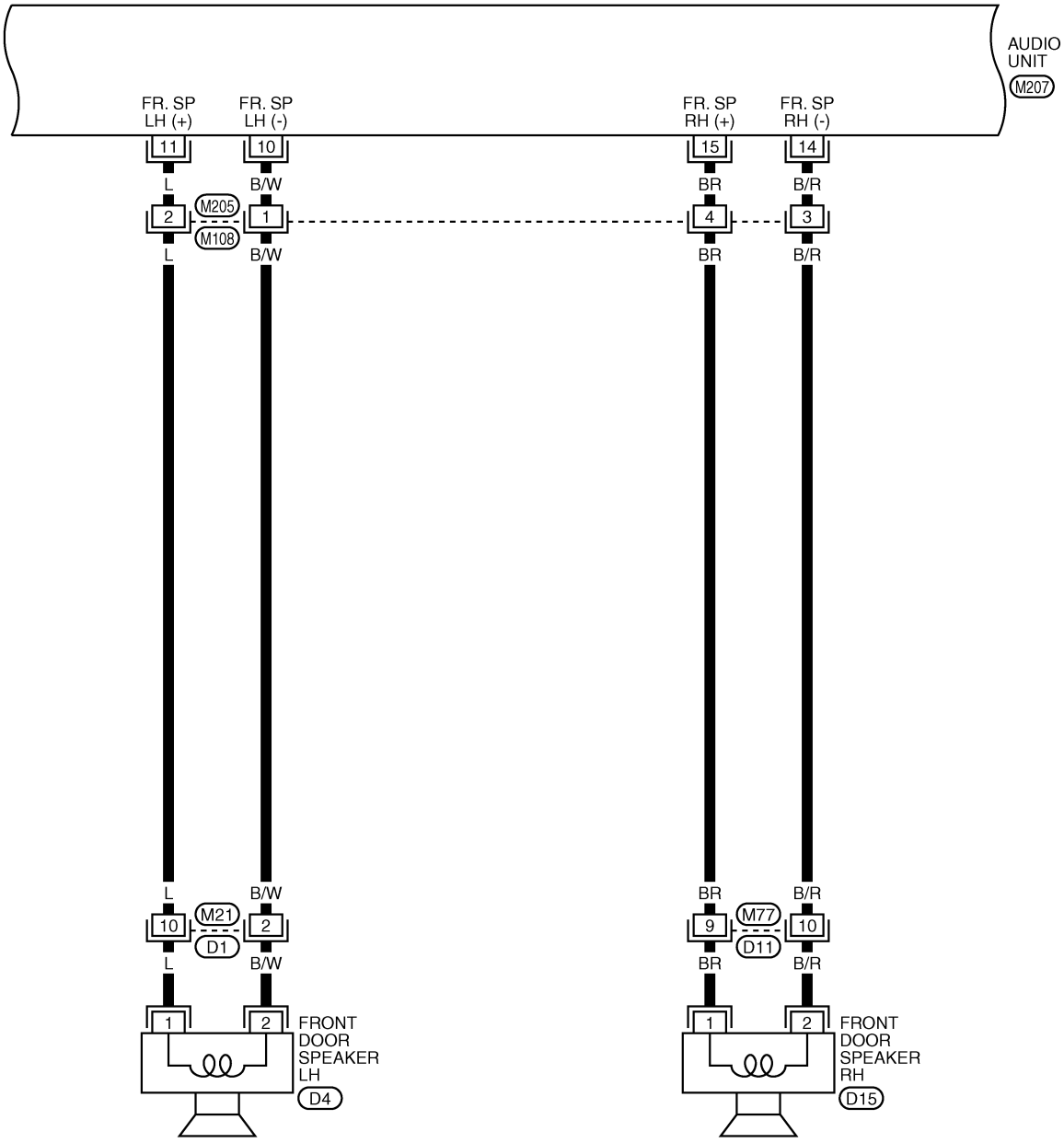
∗: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

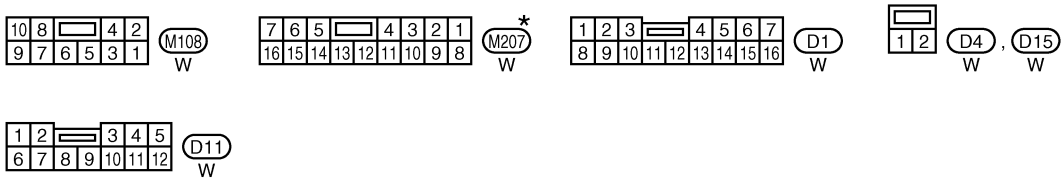
REFER TO THE FOLLOWING.

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

TKWA1586E

AV-AUDIO-09

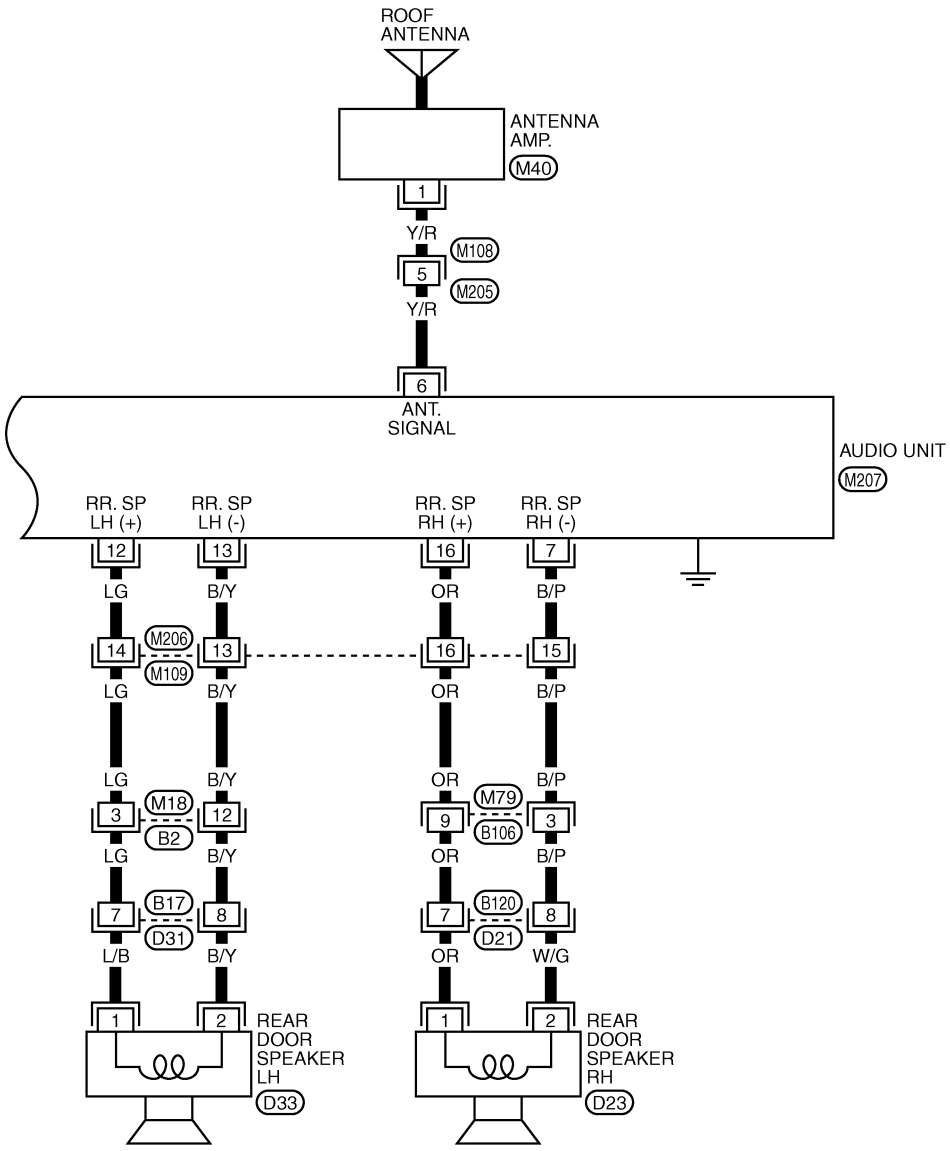


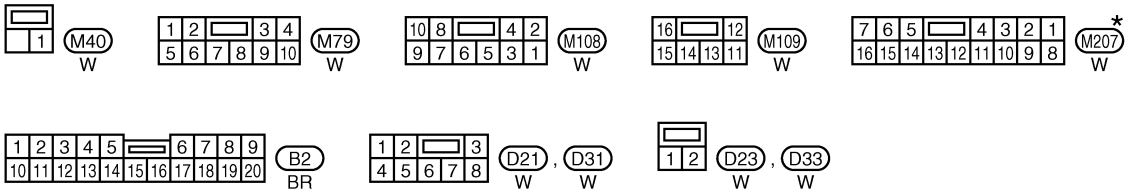


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA1587E

AV-AUDIO-10



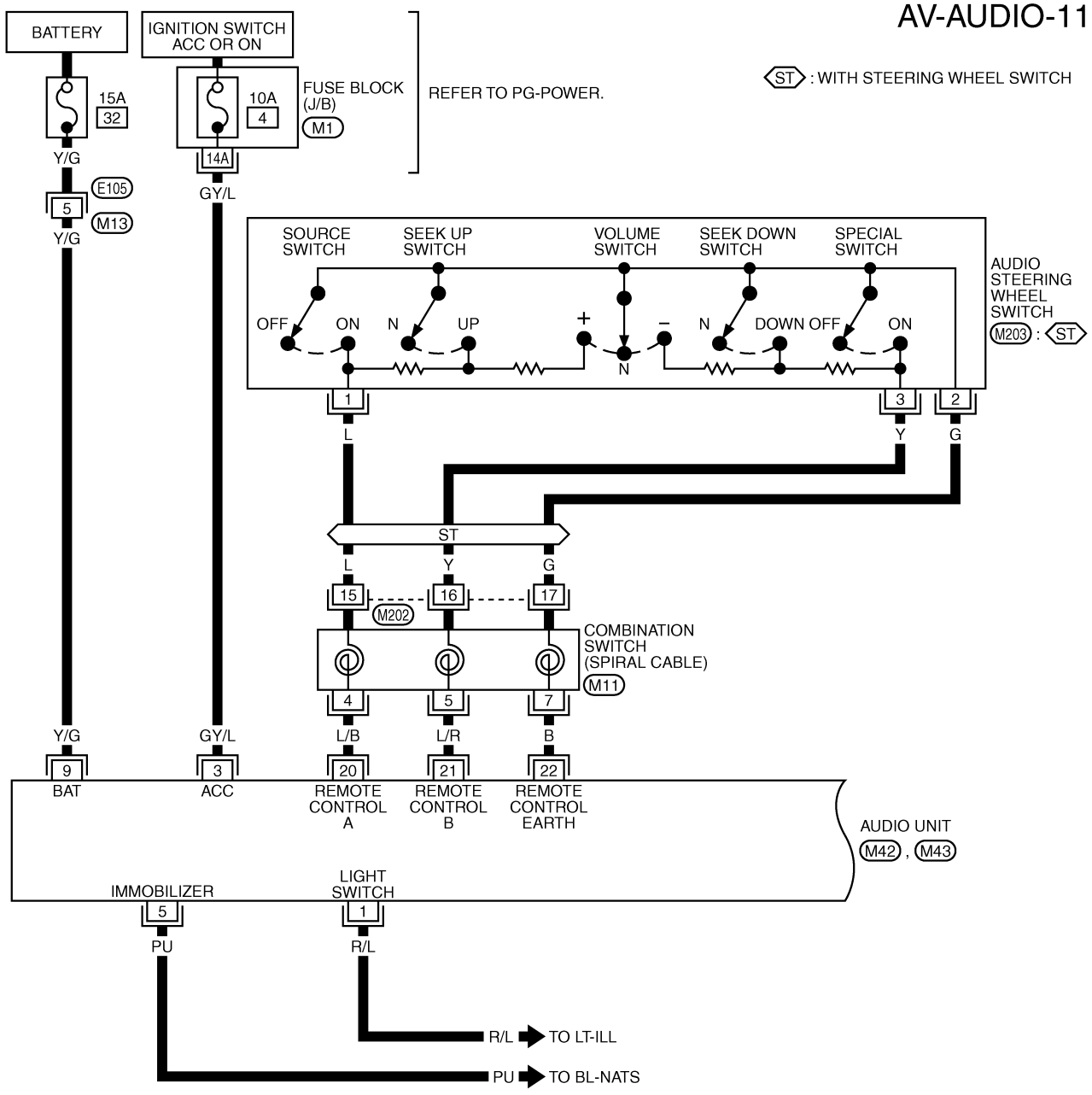


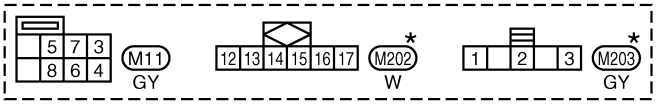
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

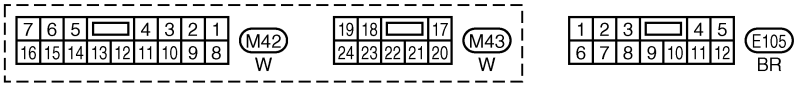
TKWA1588E

RHD MODELS WITH NAVIGATION

AV-AUDIO-11





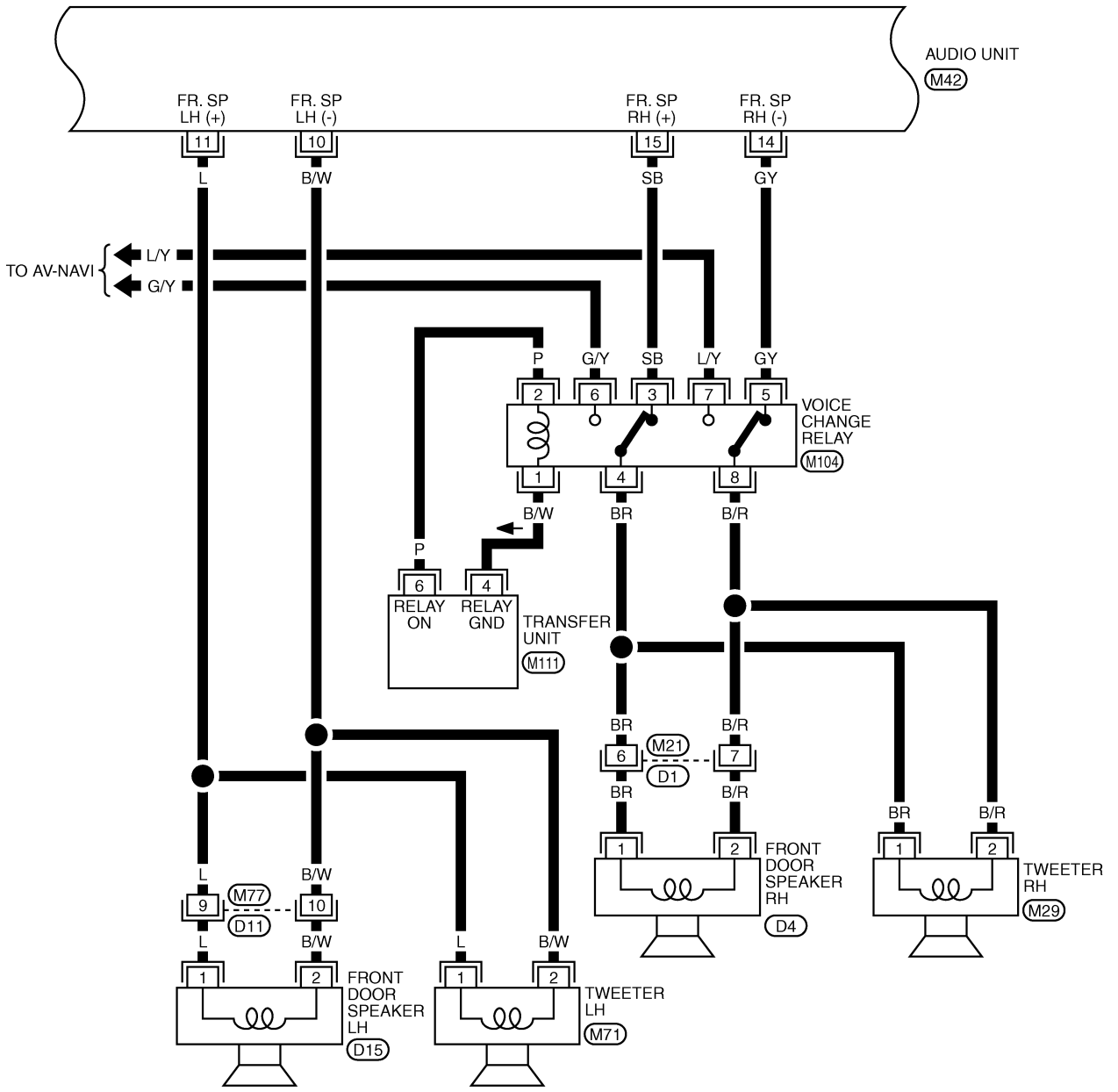


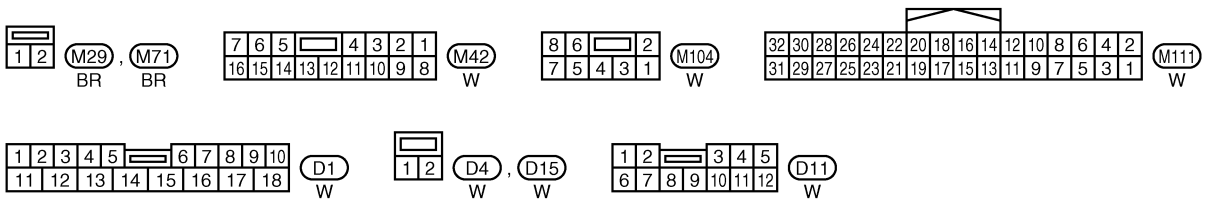
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWB2776E

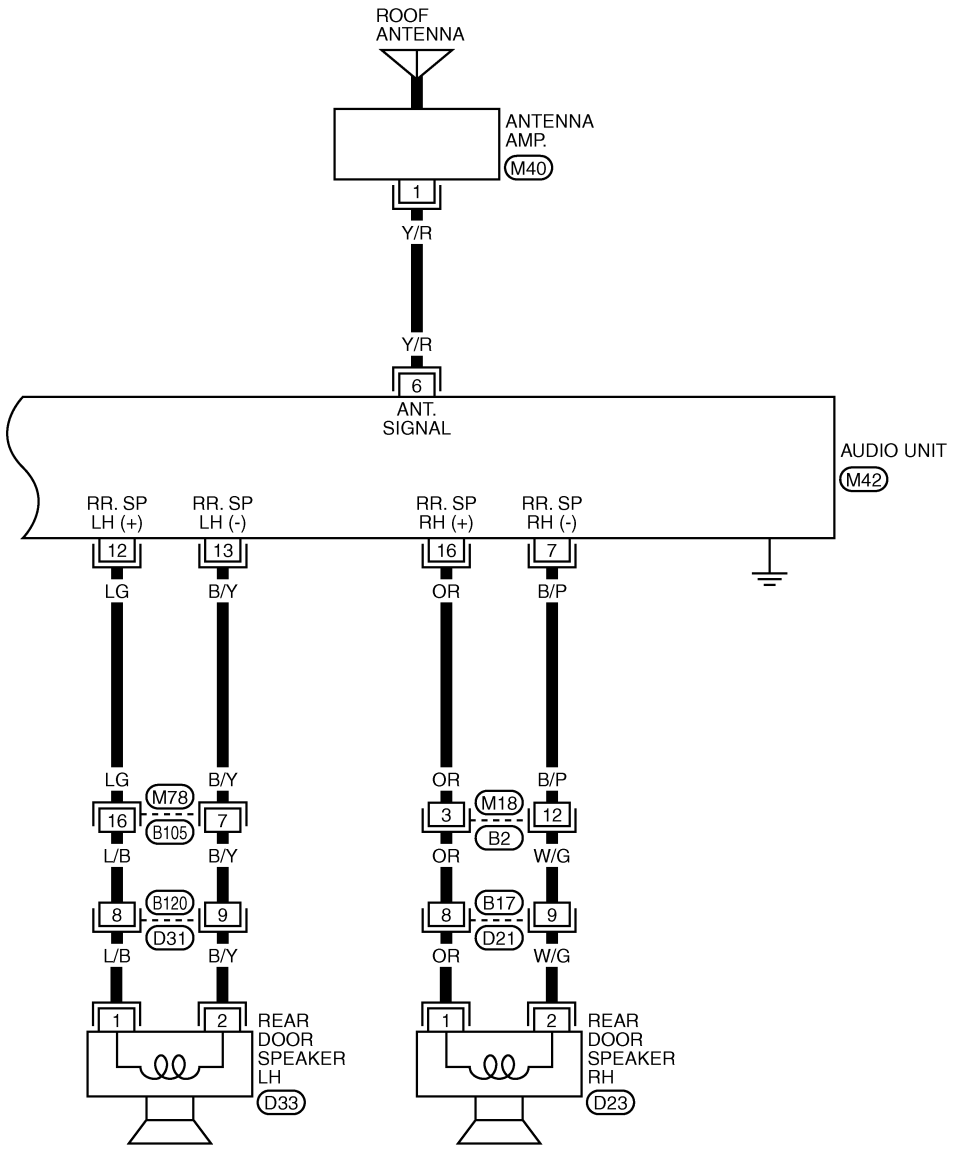
AV-AUDIO-12

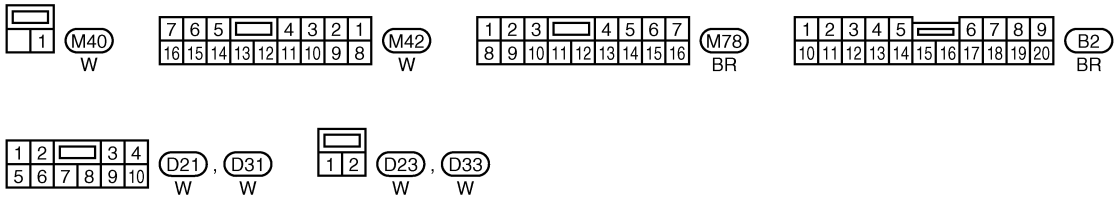




TKWB2777E

AV-AUDIO-13

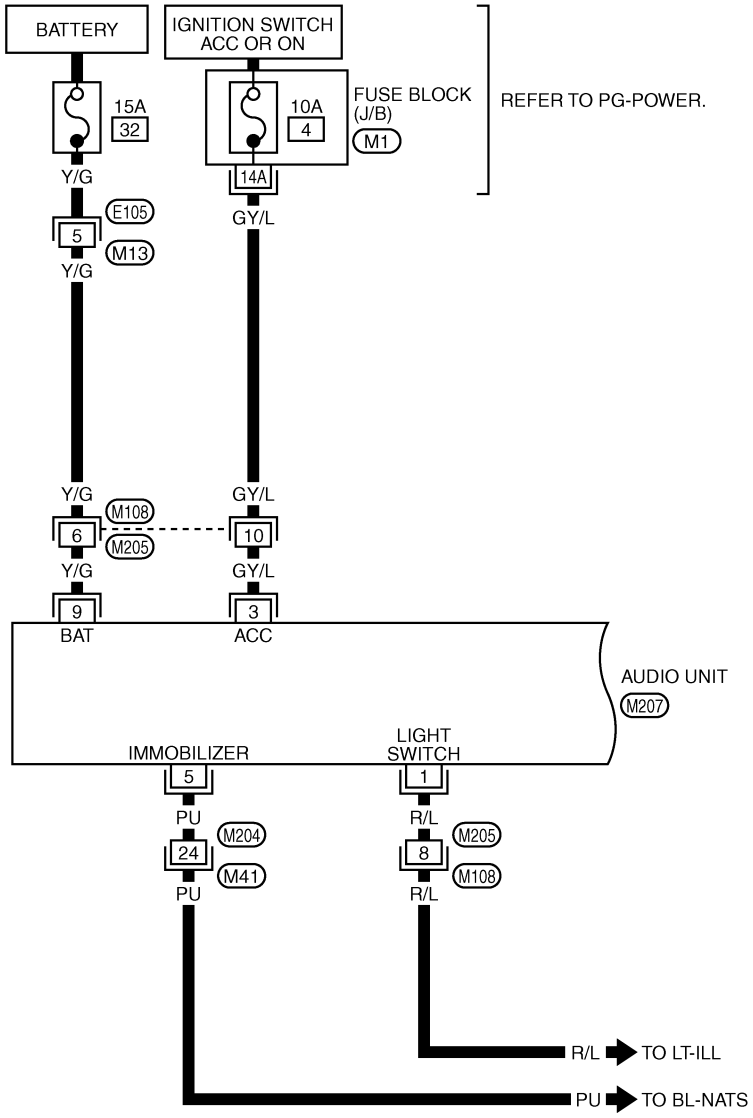


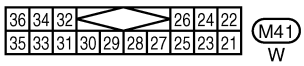


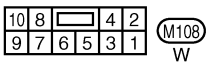
TKWA1592E

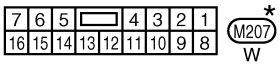
RHD MODELS WITHOUT NAVIGATION

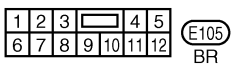
AV-AUDIO-14









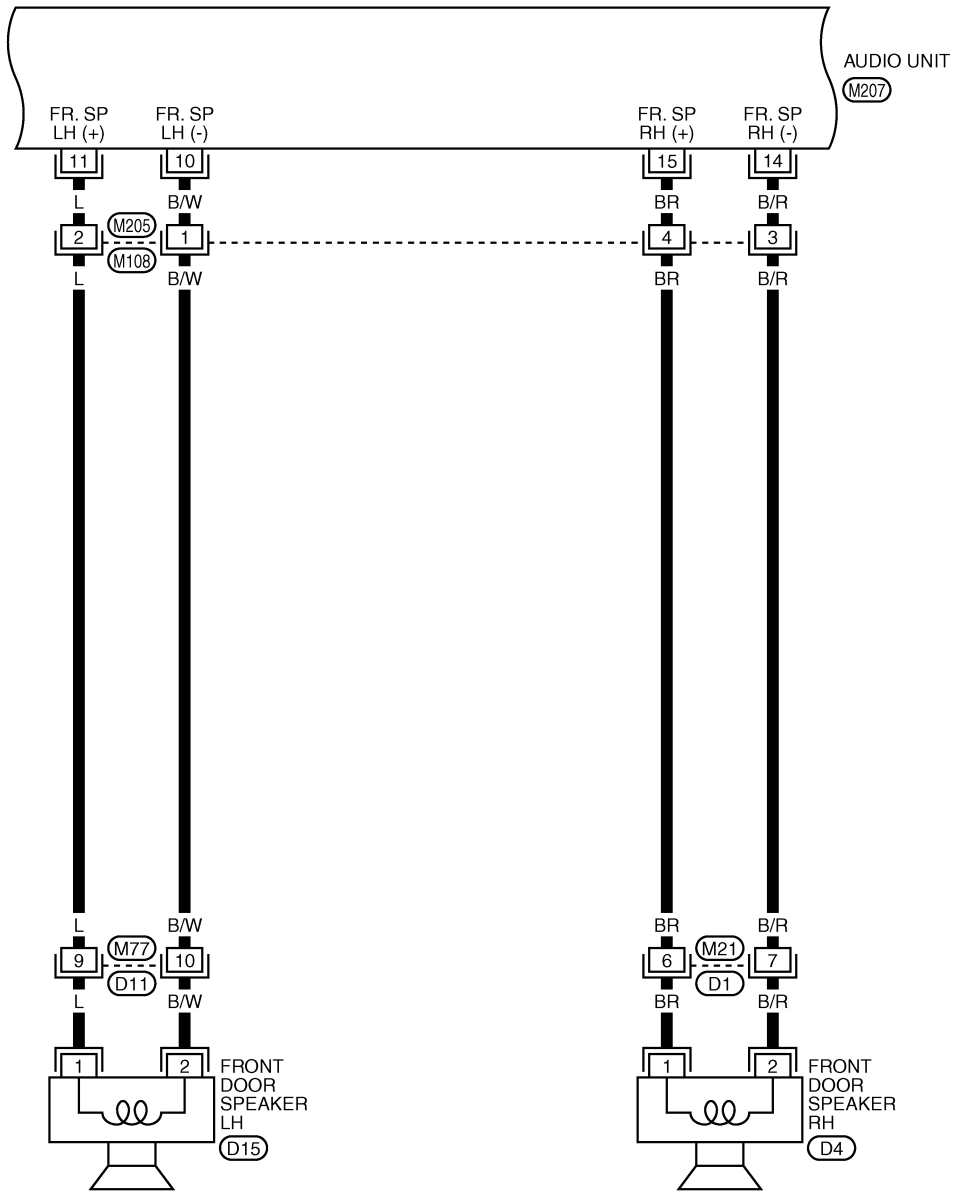


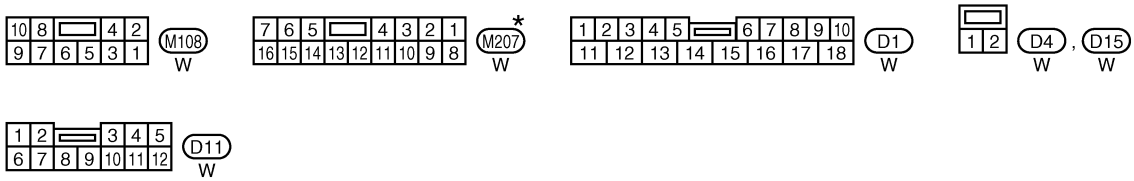
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWA1593E

AV-AUDIO-15

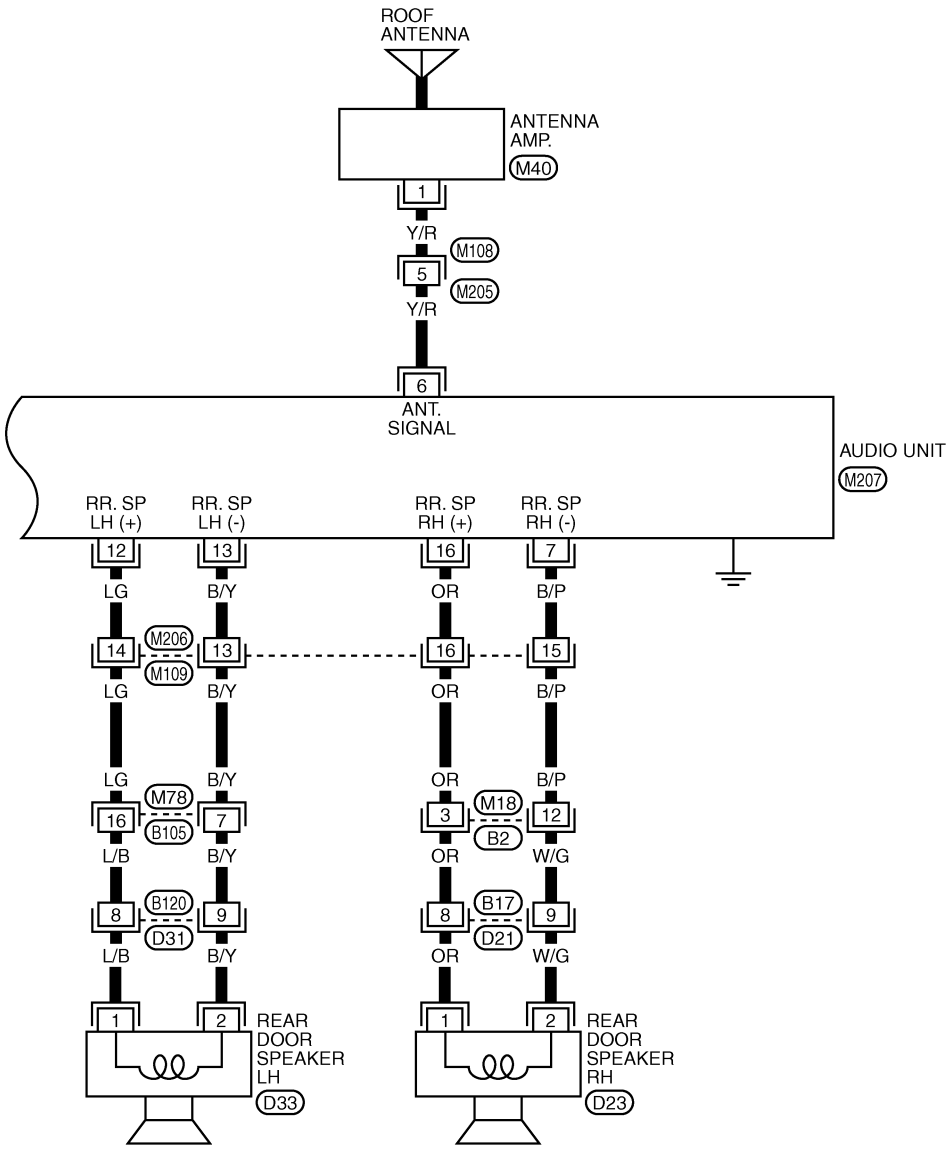


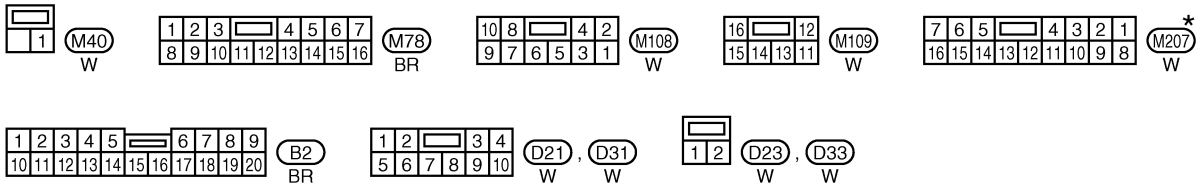


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA1594E

AV-AUDIO-16



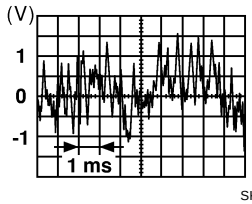
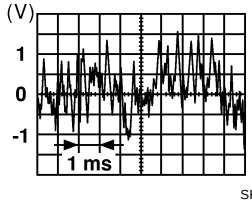
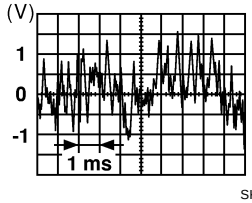
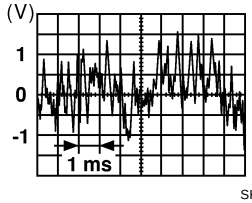
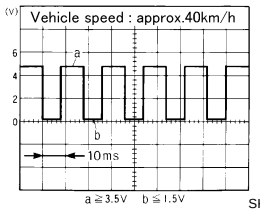


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA1595E

Terminals and Reference Value for Audio Unit With Cassette Deck

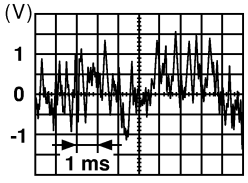
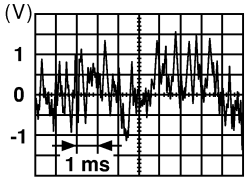
BKS000Q8

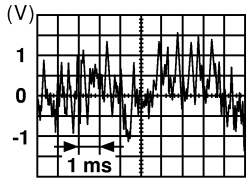
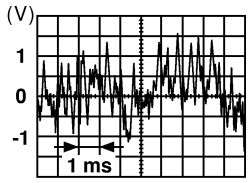
Terminal (Wire color) (+)	Terminal (Wire color) (–)	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value	Example of symptom
2 (L)	1 (B/W)	Audio signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker and tweeter LH.
4 (BR)	3 (B/R)	Audio signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker and tweeter RH.
5 (Y/R)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V	Receiving status of radio broadcast becomes bad.
6 (Y/G)	Ground	Battery power supply	Input	OFF	—	Battery voltage	System does not work properly.
8 (R/L)	Ground	Illmination signal	Input	ON	Lighting switch ON (1st position)	Approx.12 V	Audio unit illumination does not function when lighting switch is ON (position 1).
					Lighting switch OFF	Approx. 0 V	
10 (GY/L)	Ground	ACC power supply	Input	ACC	—	Battery voltage	System does not work properly.
14 (LG)	13 (B/Y)	Audio signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker LH.
16 (OR)	15 (B/P)	Audio 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.40 km/h (25 MPH)	 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 signal A	Input	ON	Press SOURCE switch	Approx. 0 V	Steering wheel audio controls do not function.
					Press SEEK UP switch	Approx. 1.7 V	
					Press VOL UP switch	Approx. 3.3 V	
					Except for above	Approx. 5 V	
27 (L/R)	Ground	Remote control signal B	Input	ON	Press SPECIAL switch	Approx. 0 V	Steering wheel audio controls do not function.
					Press SEEK DOWN switch	Approx. 1.7 V	
					Press VOL DOWN switch	Approx. 3.3 V	
					Except for above	Approx. 5 V	
29 (B)	Ground	Remote control ground	—	ON	—	Approx. 0 V	—

Terminals and Reference Value for Audio Unit Without Cassette Deck

BKS000Q9

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

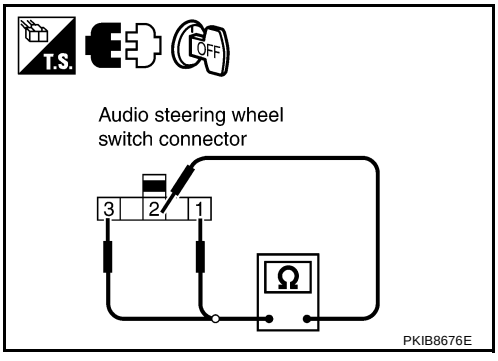
Terminal (Wire color) (+)	Terminal (Wire color) (–)	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value	Example of symptom
15 (SB)*3 (BR)*4	14 (GY)*3 (B/R)*4	Audio signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker or tweeter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

- *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

BKS000QA

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

Symptom Chart

BKS000QB

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

  NOTE:
  - CD–R are not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
  - Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Possible malfunction location
Audio system does not work properly.	● Audio unit power supply circuit ● Audio unit
No sound can be heard from all speakers.	● Audio unit
No sound can be heard from one or several speakers.	● Audio signal circuit between audio unit and speaker ● Speaker ● Tweeter ● Voice change relay (with NAVI) ● Audio unit
No sound can be heard from radio or noise is caught.	● Antenna feeder ● Antenna ● Antenna amp. ● Audio unit

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

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

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

BKS000QD

1. CHECK AUDIO STEERING WHEEL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect audio steering wheel switch connector.
3. 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.

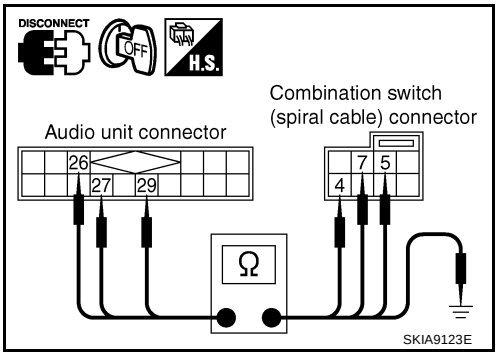
2. CHECK AUDIO STEERING WHEEL SWITCH CIRCUIT

1. Disconnect audio unit connector and combination switch (spiral cable) connector.
2. Check continuity between audio unit harness connector M41 terminals 26, 27, 29 and combination switch (spiral cable) harness connector M11 terminals 4, 5, 7.

26 – 4 : Continuity should exist.
27 – 5 : Continuity should exist.
29 – 7 : Continuity should exist.

3. Check continuity between audio unit harness connector M41 terminals 26, 27, 29 and ground.

26, 27, 29 – Ground : Continuity should not exist.



OK or NG

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

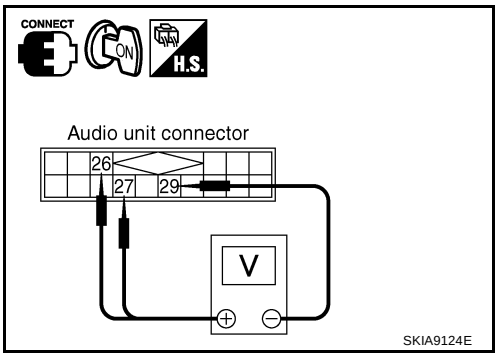
3. CHECK CONTROL SIGNAL

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, 27 and 29.

26 – 29 : Approx. 5 V
27 – 29 : Approx. 5 V

OK or NG

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



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

BKS000QE

1. CHECK AUDIO STEERING WHEEL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect audio steering wheel switch connector.
3. 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.

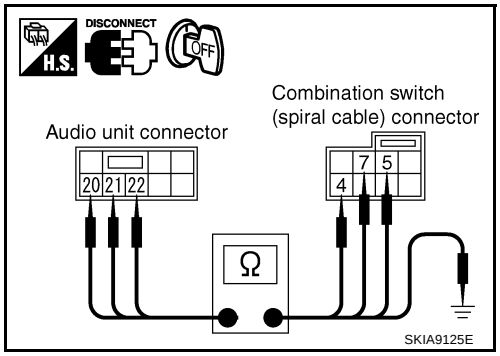
2. CHECK AUDIO STEERING WHEEL SWITCH CIRCUIT

1. Disconnect audio unit connector and combination switch (spiral cable) connector.
2. Check continuity between audio unit harness connector M43 terminals 20, 21, 22 and combination switch (spiral cable) harness connector M11 terminals 4, 5, 7.

20 – 4 : Continuity should exist.
21 – 5 : Continuity should exist.
22 – 7 : Continuity should exist.

3. Check continuity between audio unit harness connector M41 terminals 20, 21, 22 and ground.

20, 21, 22 – Ground : Continuity should not exist.



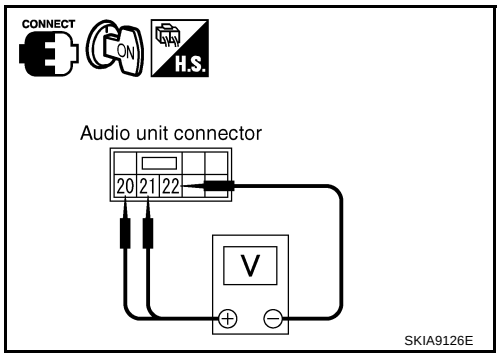
OK or NG

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

3. CHECK CONTROL SIGNAL

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, 21 and 22.

20 – 22 : Approx. 5 V
21 – 22 : Approx. 5 V



OK or NG

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

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

BKS000QF

1. CHECK VEHICLE SPEED OPERATION

Does speedometer operate normally?

YES or NO

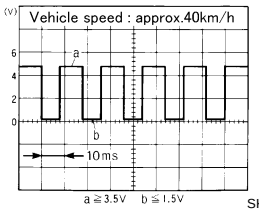
YES >> GO TO 2.

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

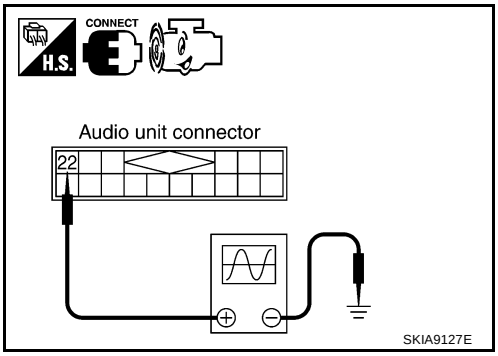
2. CHECK VEHICLE SPEED SIGNAL

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

22 – Ground:



SKIA0168E



SKIA9127E

OK or NG

OK >> Replace audio unit.

NG >> GO TO 3.

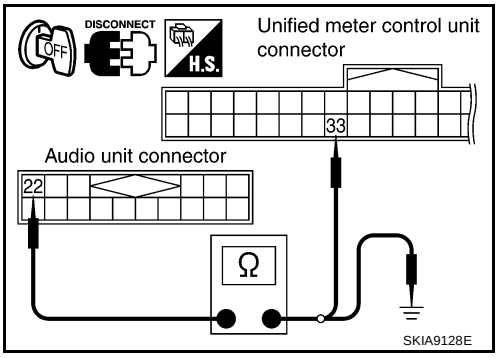
3. CHECK HARNESS

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

22 – 33 : Continuity should exist.

4. Check continuity between audio unit harness connector M42 terminal 22 and ground.

22 – Ground : Continuity should not exist.



SKIA9128E

OK or NG

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

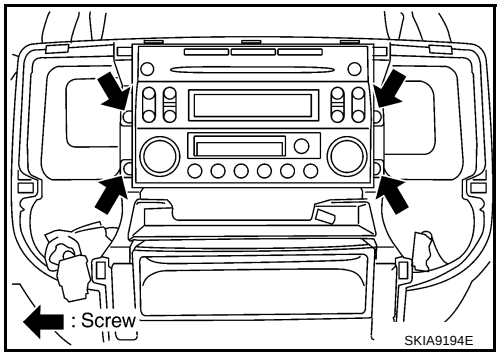
NG >>
- Check connector housings for disconnected or loose terminals.
- Repair harness or connector.

Removal and Installation of Audio Unit (With Cassette Deck)

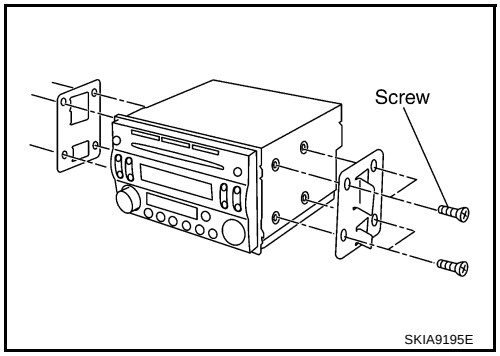
BKS000QG

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 brackets.



INSTALLATION

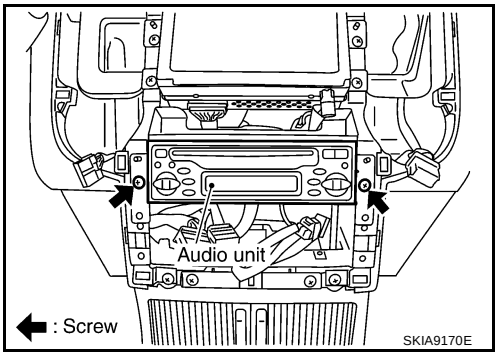
Installation is the reverse order of removal.

Removal and Installation of Audio Unit (Without Cassette Deck)

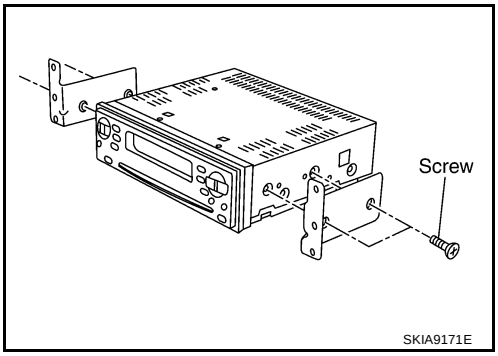
BKS000QH

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 brackets.



INSTALLATION

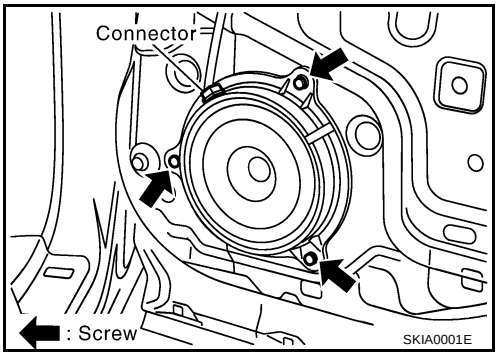
Installation is the reverse order of removal.

Removal and Installation of Speaker

BKS000QI

REMOVAL

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



INSTALLATION

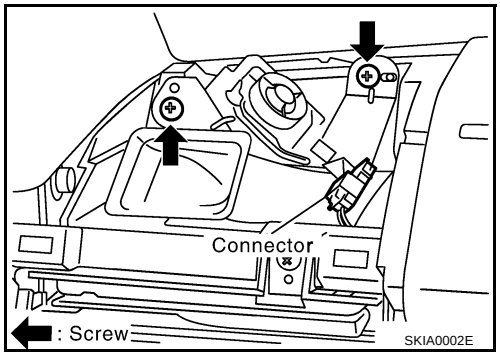
Installation is the reverse order of removal.

Removal and Installation of Tweeter

BKS000QJ

REMOVAL

1. Remove front speaker grille. Refer to IP-11, "Removal and Installation" .
2. Remove screws (2) and remove tweeter.



INSTALLATION

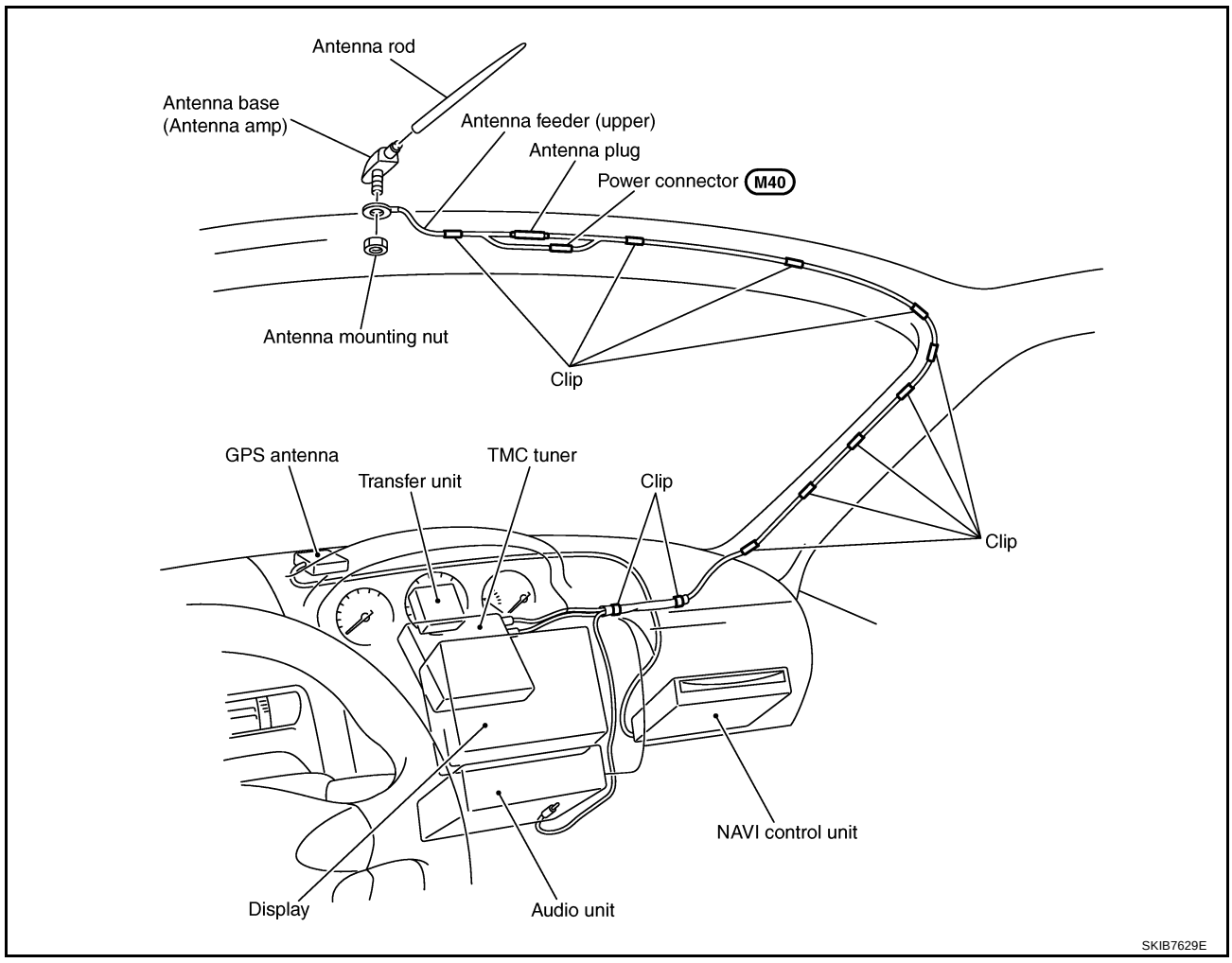
Installation is the reverse order of removal.

AUDIO ANTENNA

PFP:28200

Antenna Route

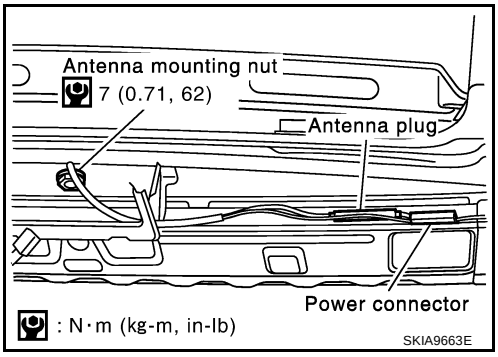
BKS000QK

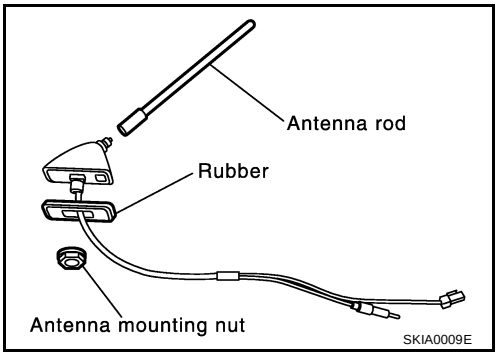


Removal and Installation of Roof Antenna

BKS000QL

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

BKS000QM

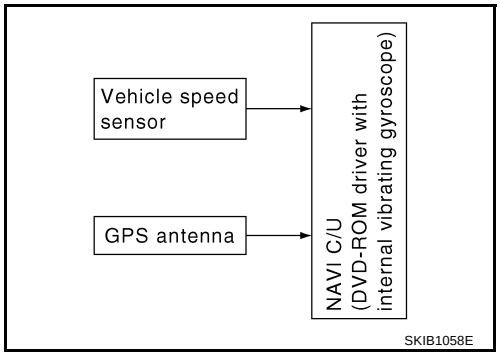
NAVIGATION SYSTEM

Refer to owner's manual or navigation system owner's manual for the system operation.

Location Detection Principle

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

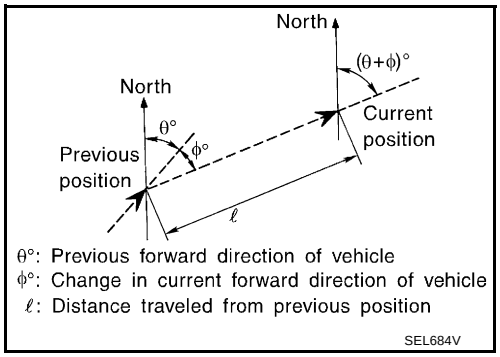
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)



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.



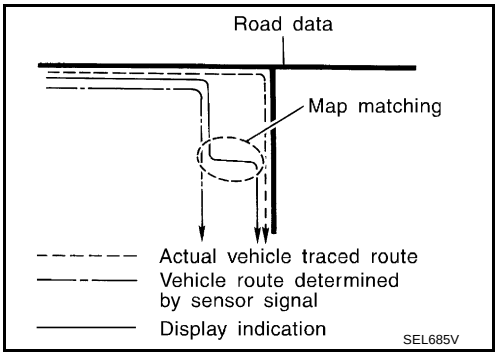
Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).	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

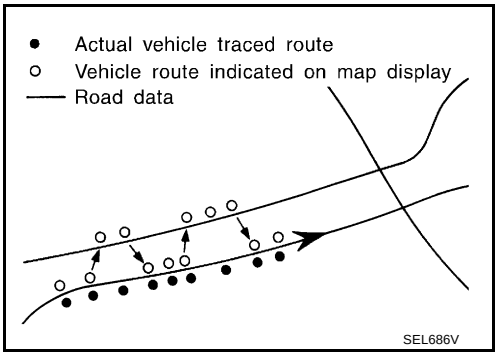
Map-matching compares a current location detected by the method in the “Location Detection Principle“ with a road map data from Map DVD-ROM stored in DVD-ROM drive.

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

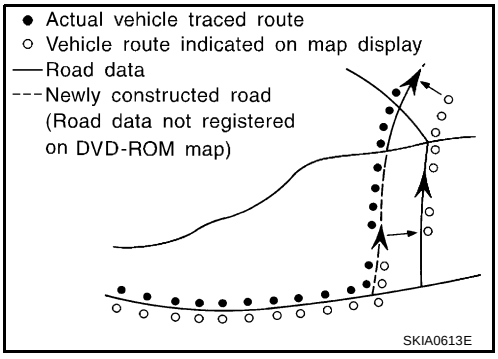


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the vehicle mark on the display must be corrected manually.

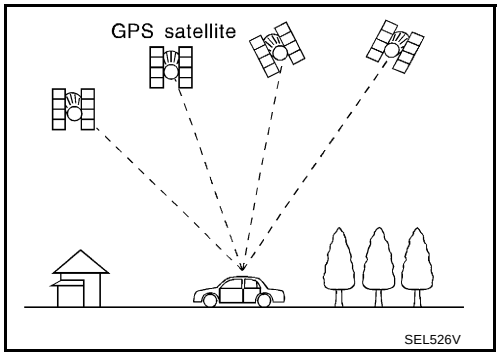
- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the vehicle mark has been repositioned.
  If there is an error in distance and/or direction, alternative routes will be shown in different 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)

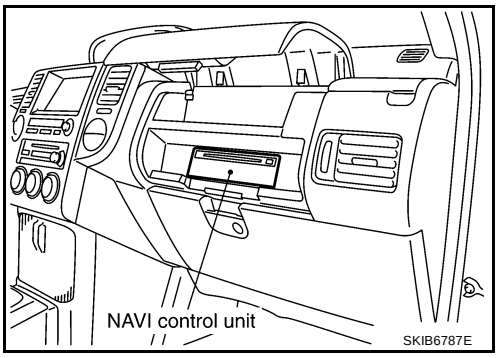
The Traffic Information broadcast allows to you to avoid delays due to traffic incidents.
Traffic jams, roadwork, closed roads around your current location, etc. are represented graphically on the map by icons depicting the nature of the event.
Incidents on the route are automatically brought to your 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

BKS000QN

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.



Map DVD-ROM

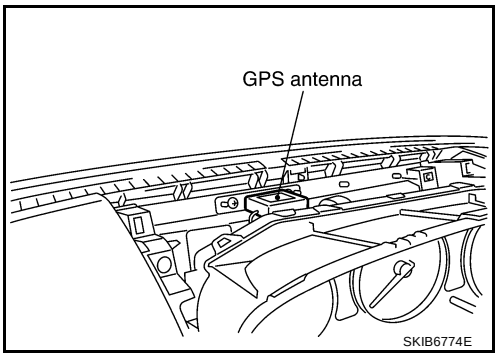
- The map DVD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve DVD-ROM map matching and route determination functions, the DVD-ROM uses an exclusive Nissan format. Therefore, the use of a DVD-ROM provided by other manufacturers cannot be used.

Gyro (Angular Speed Sensor)

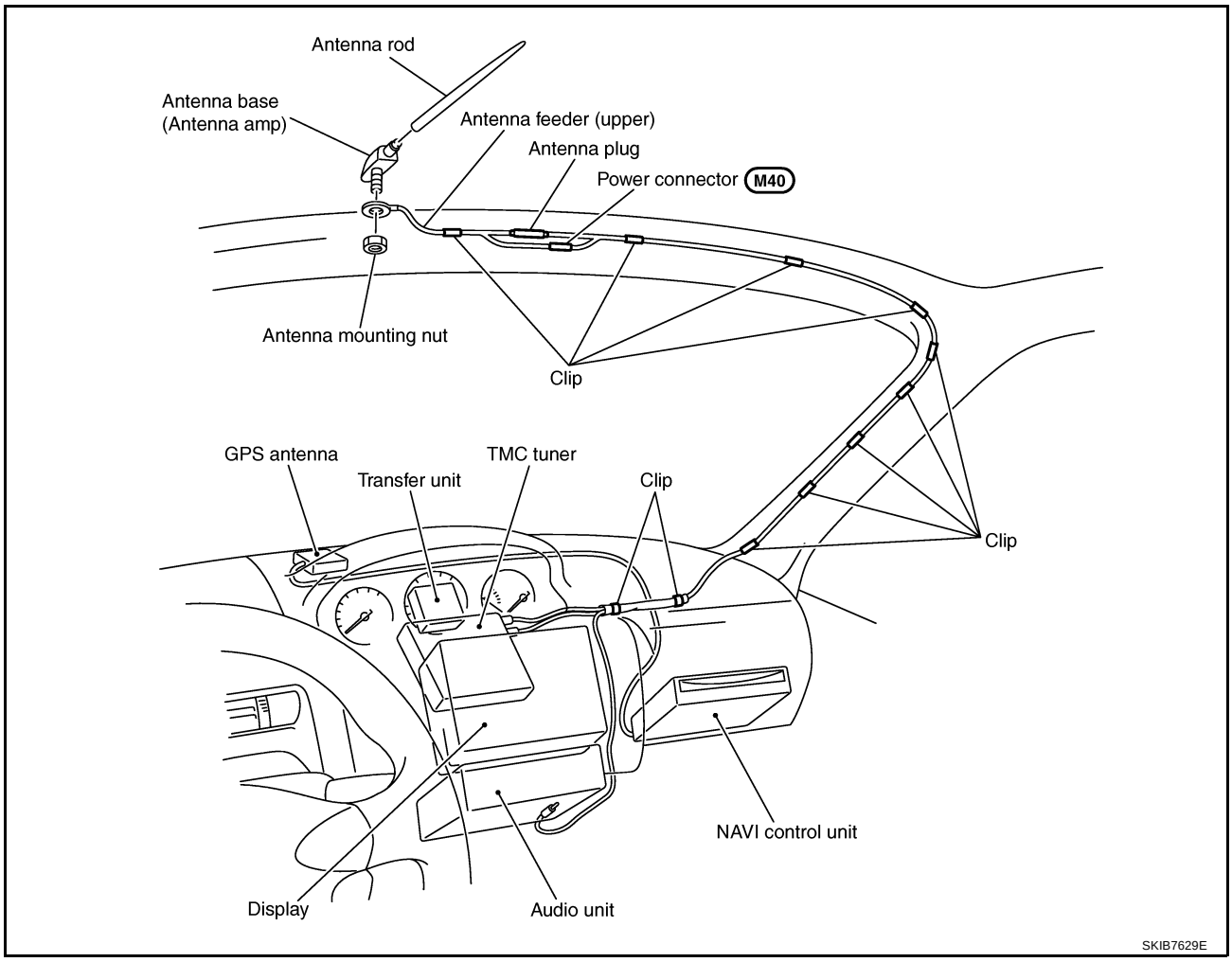
- The oscillator gyro sensor is used to detect changes in vehicle steering angle.
- The gyro is built into the navigation (NAVI) control unit.

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.

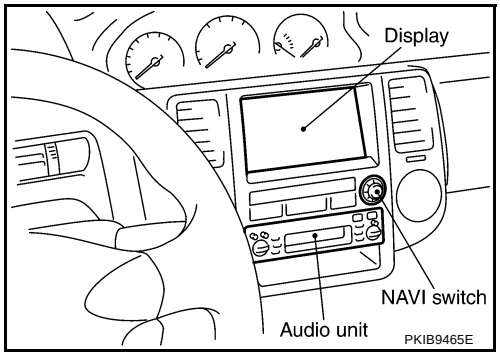


Antenna Route



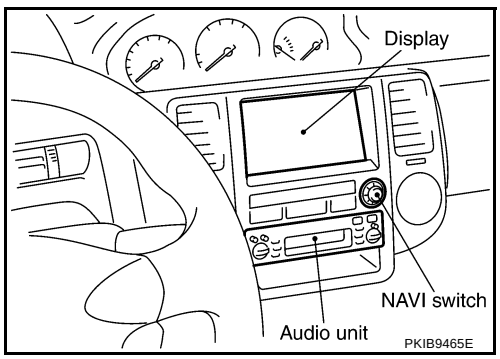
DISPLAY

- 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.



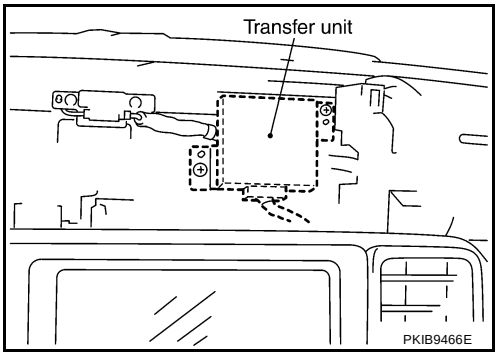
NAVI SWITCH

- 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.



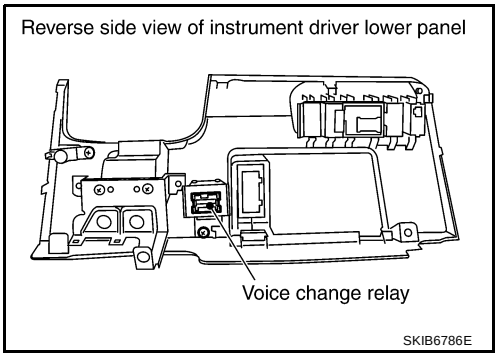
TRANSFER UNIT

- 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.



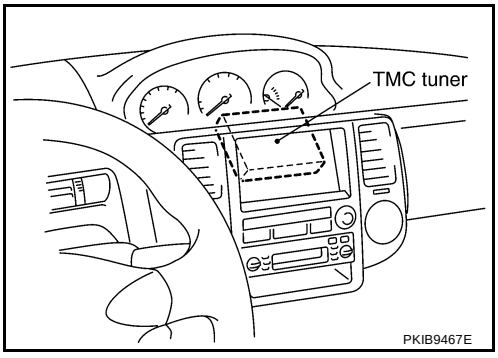
VOICE CHANGE RELAY

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.



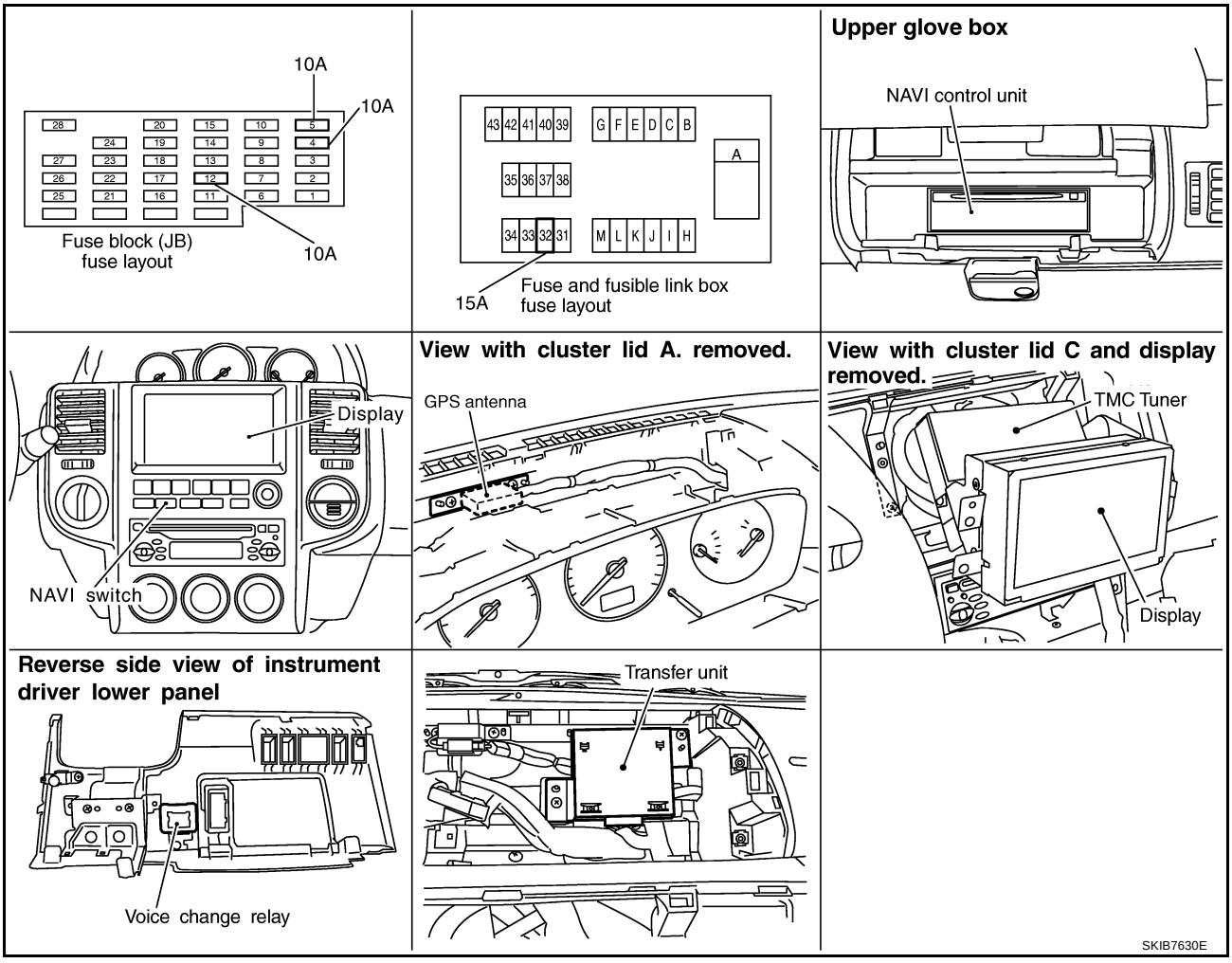
TMC TUNER

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.



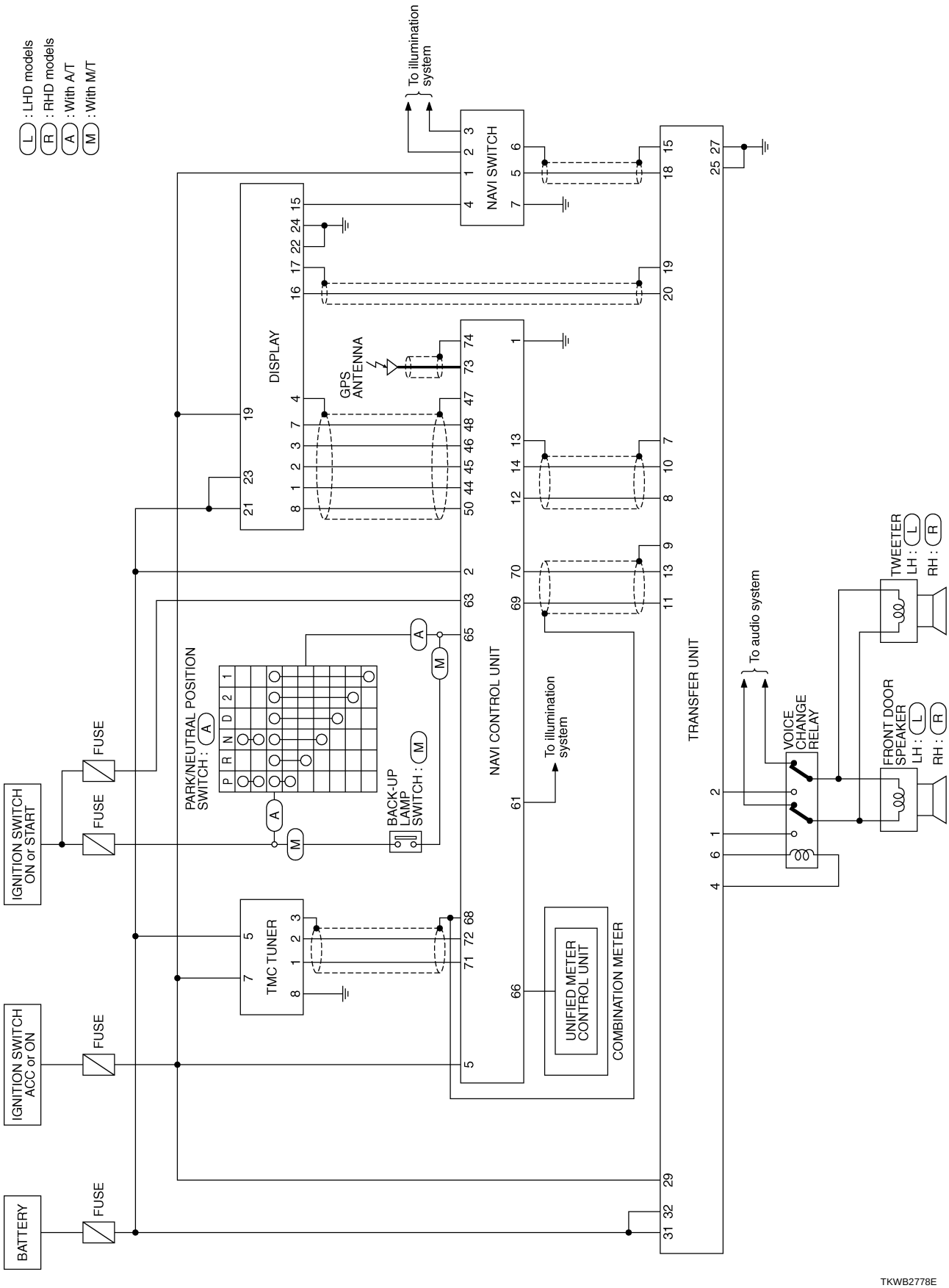
Component Parts Location

BKS000QQ



Schematic

BKS000QR

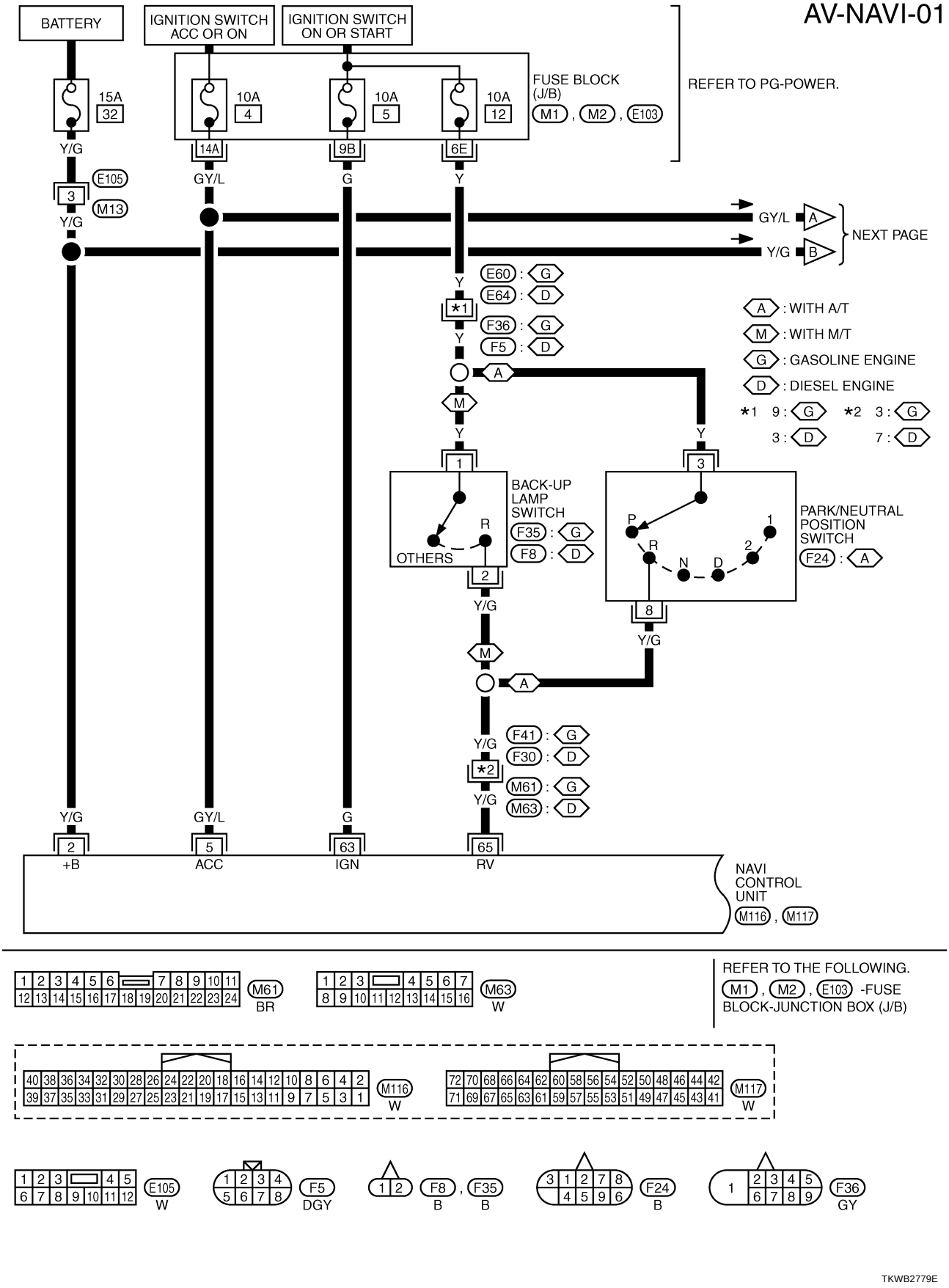


TKWB2778E

Wiring Diagram — NAVI —

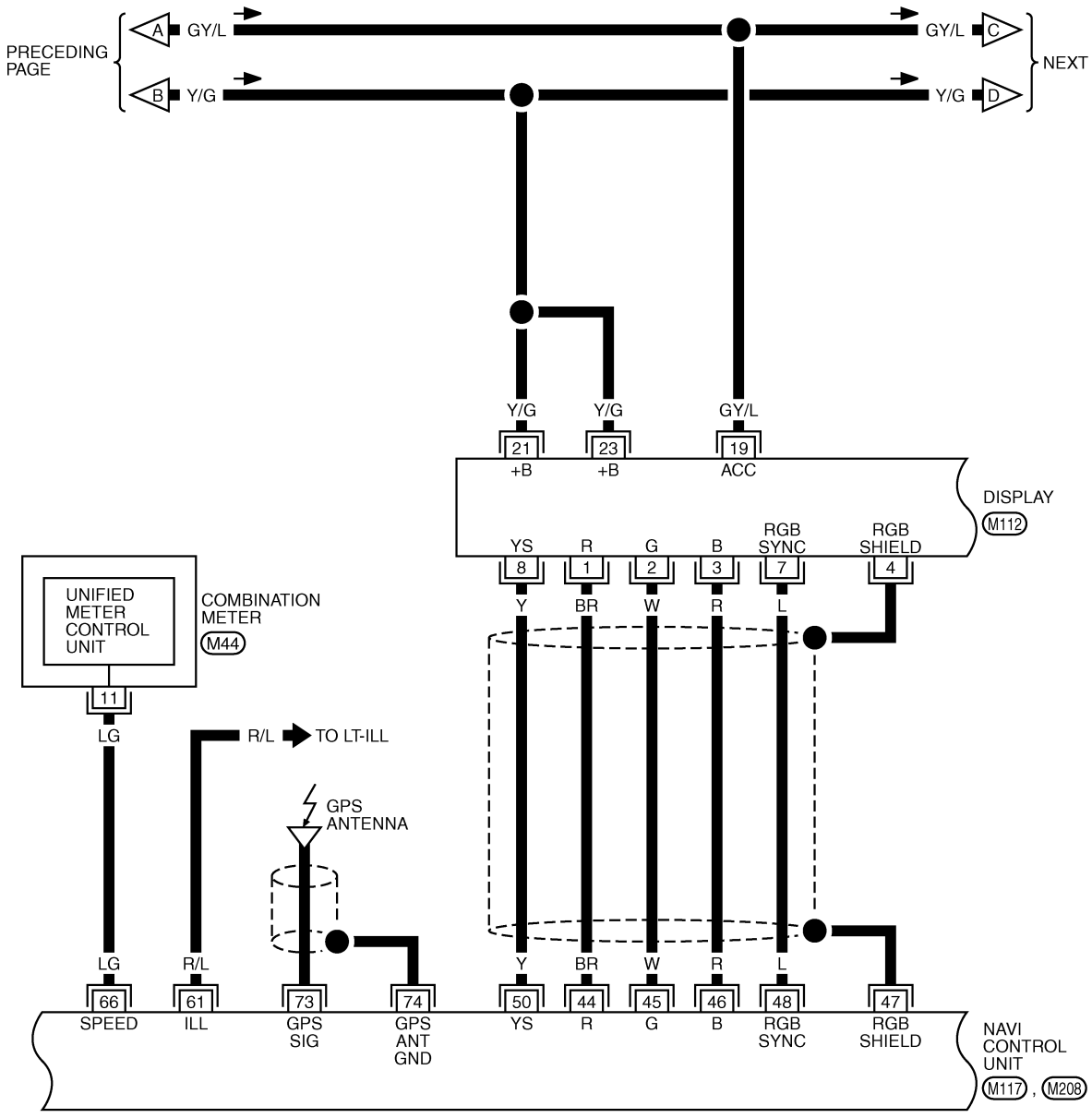
BKS000QS

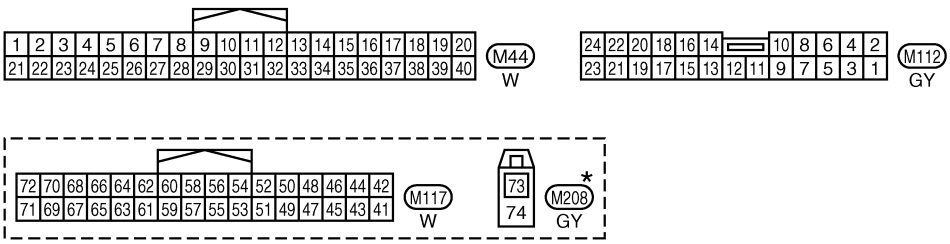
LHD MODELS



TKWB2779E

AV-NAVI-02

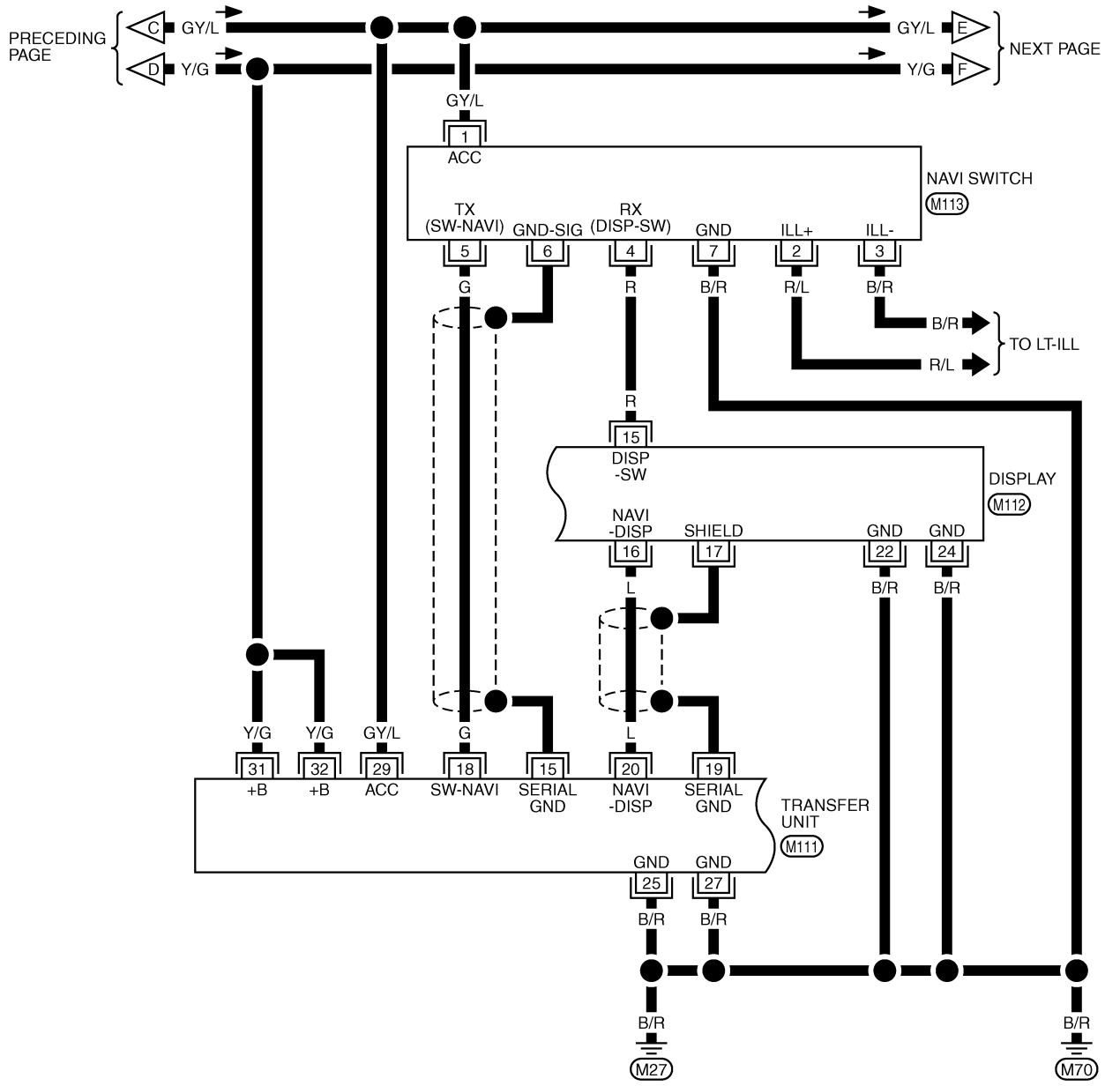


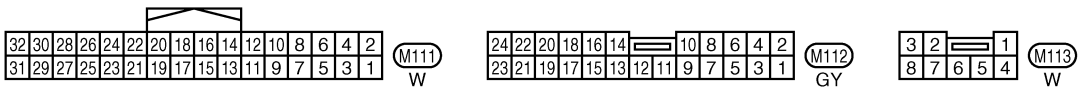


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2780E

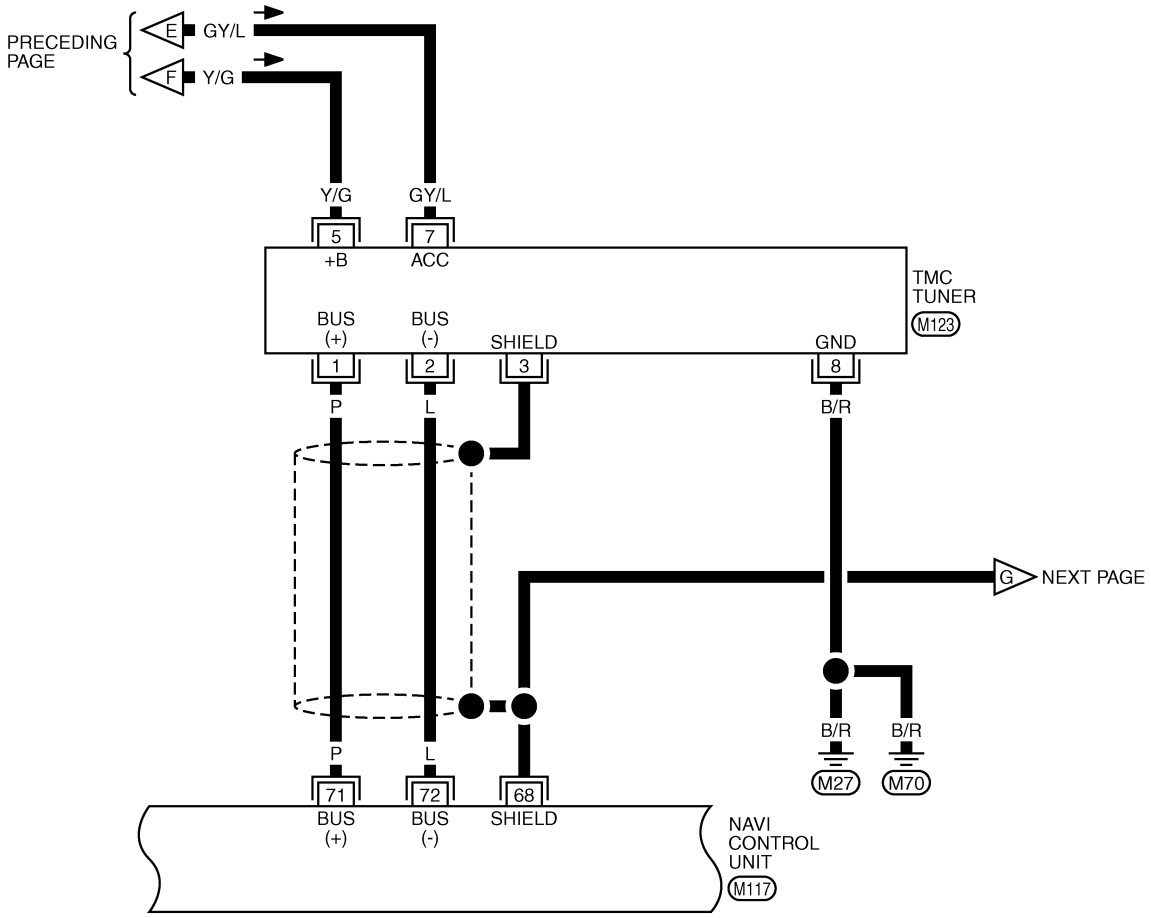
AV-NAVI-03

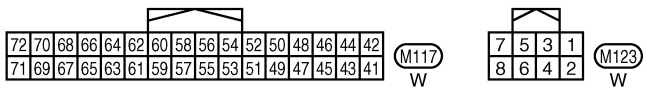




TKWB1150E

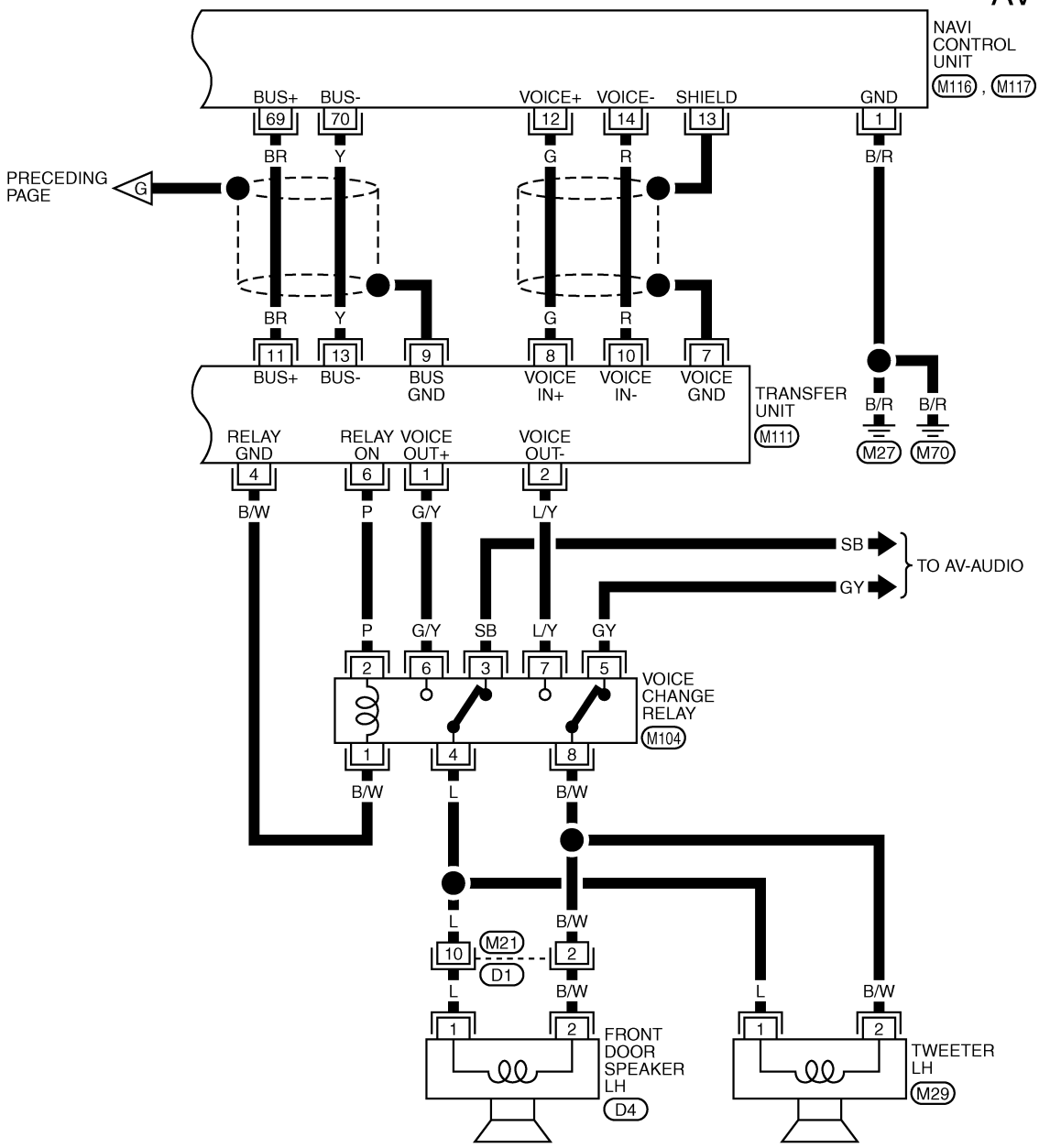
AV-NAVI-04

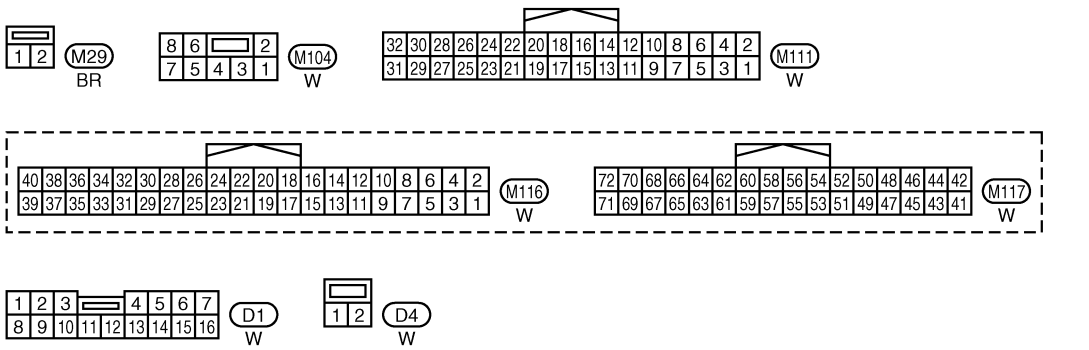




TKWB2781E

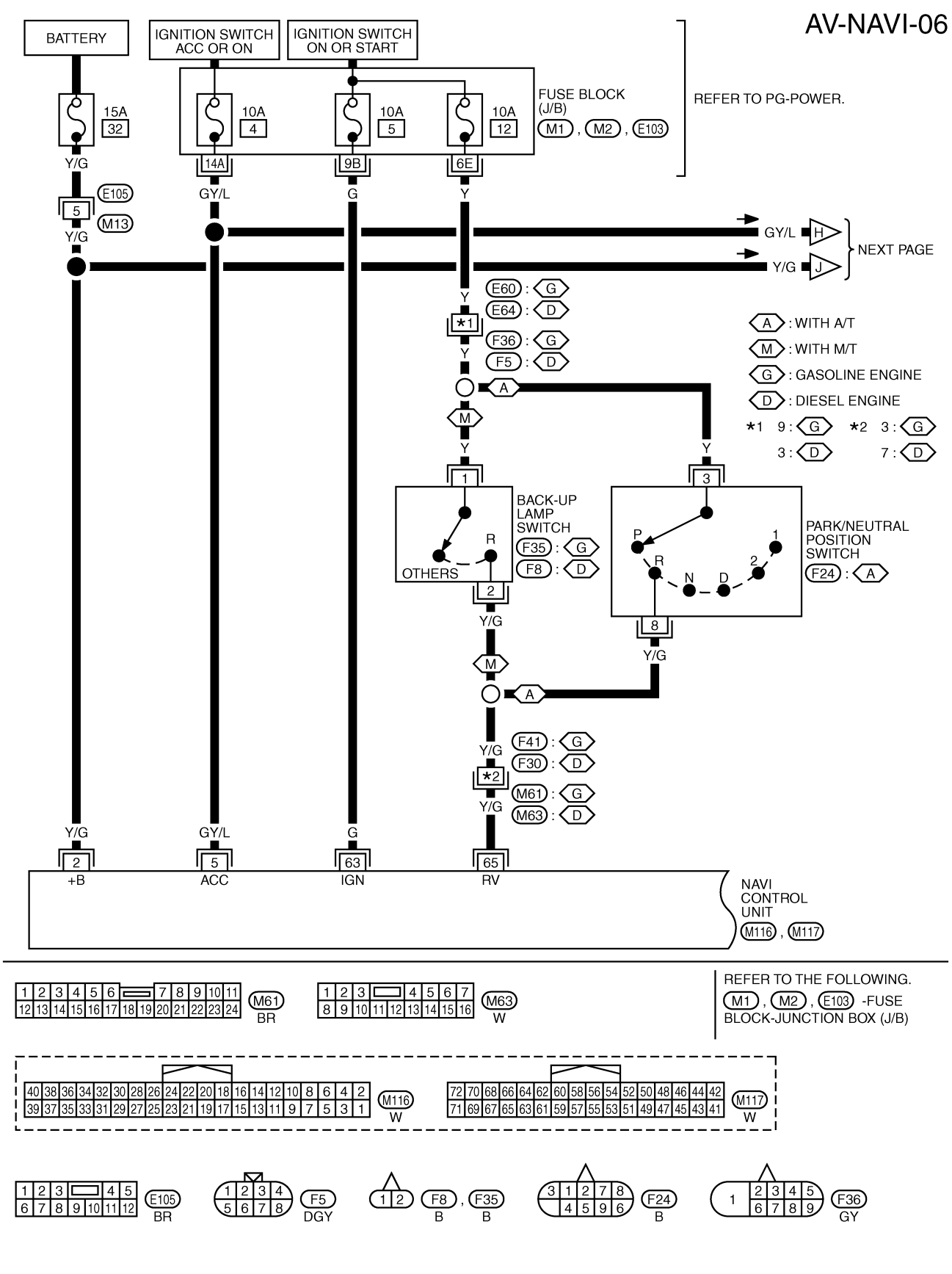
AV-NAVI-05





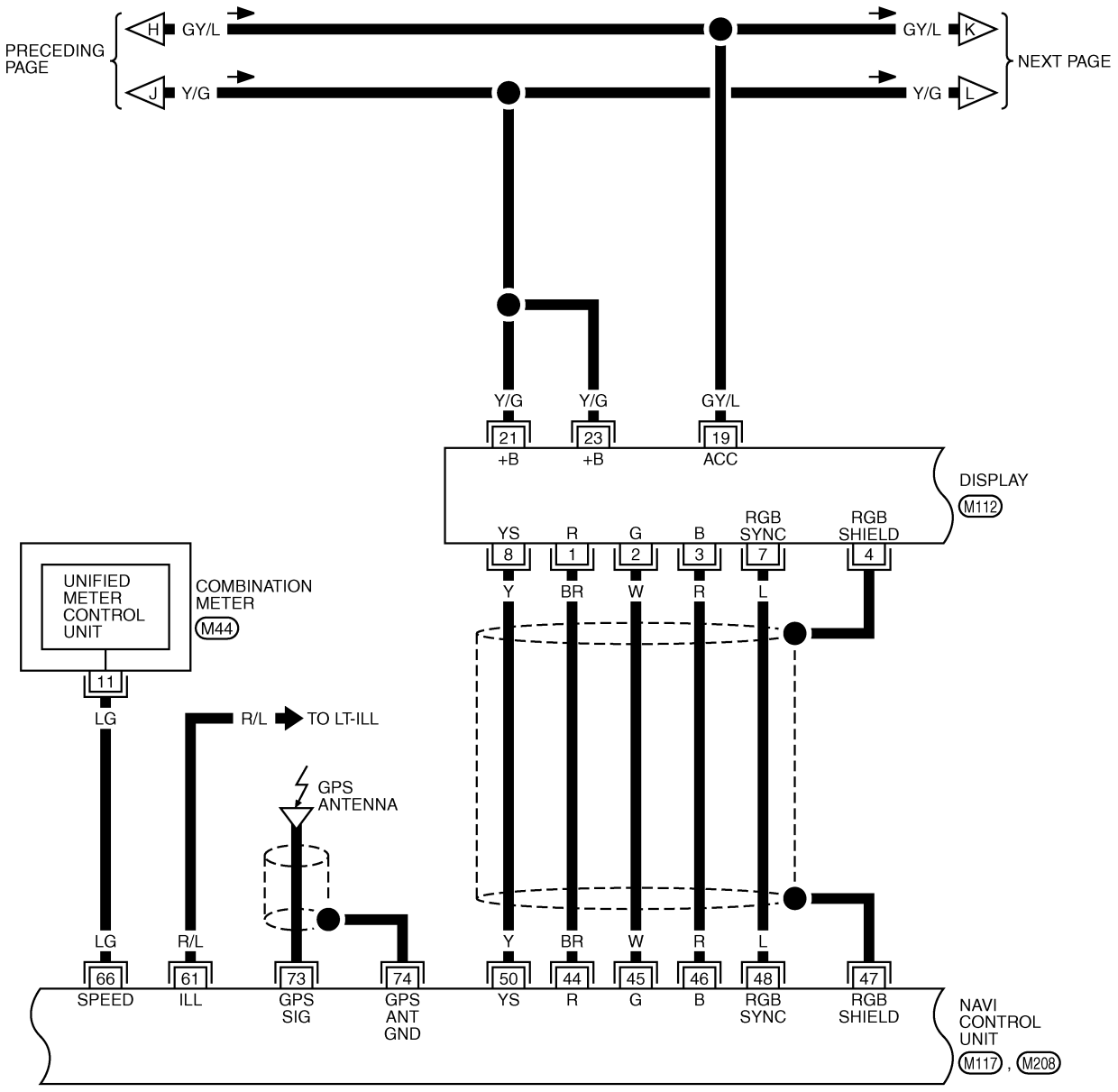
TKWB2782E

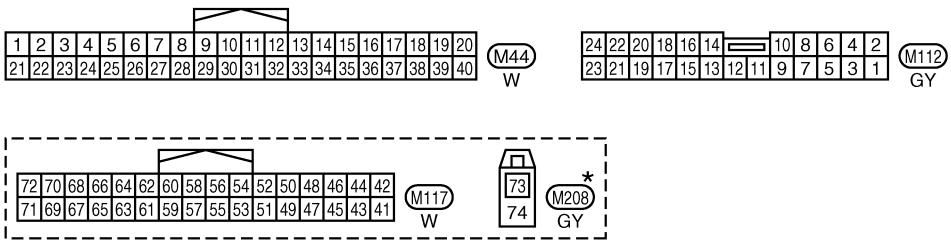
RHD MODELS



TKWB2783E

AV-NAVI-07

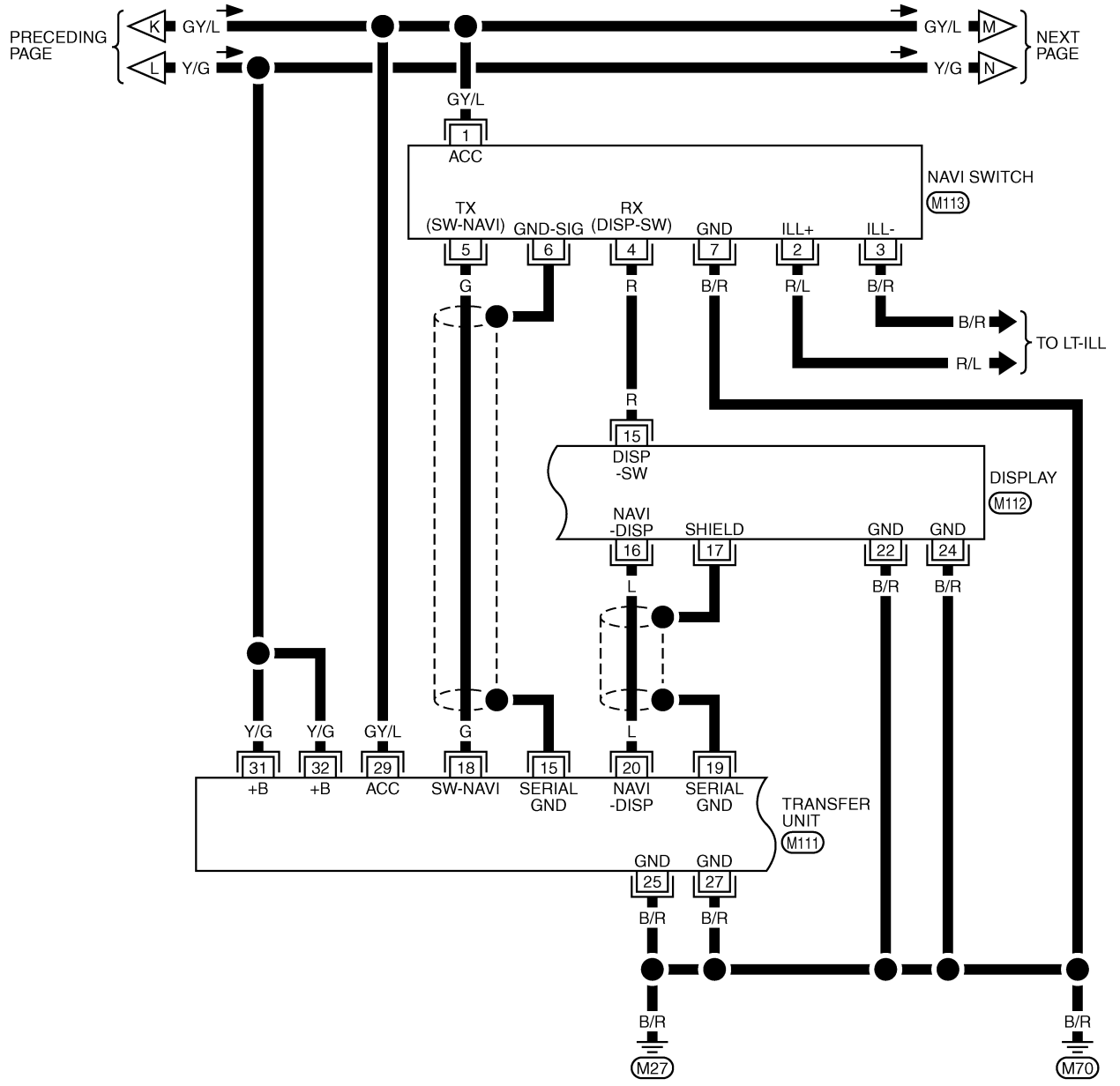


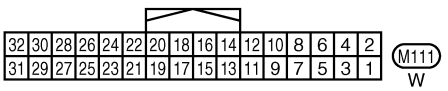


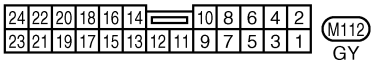
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

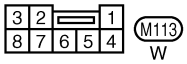
TKWB2784E

AV-NAVI-08

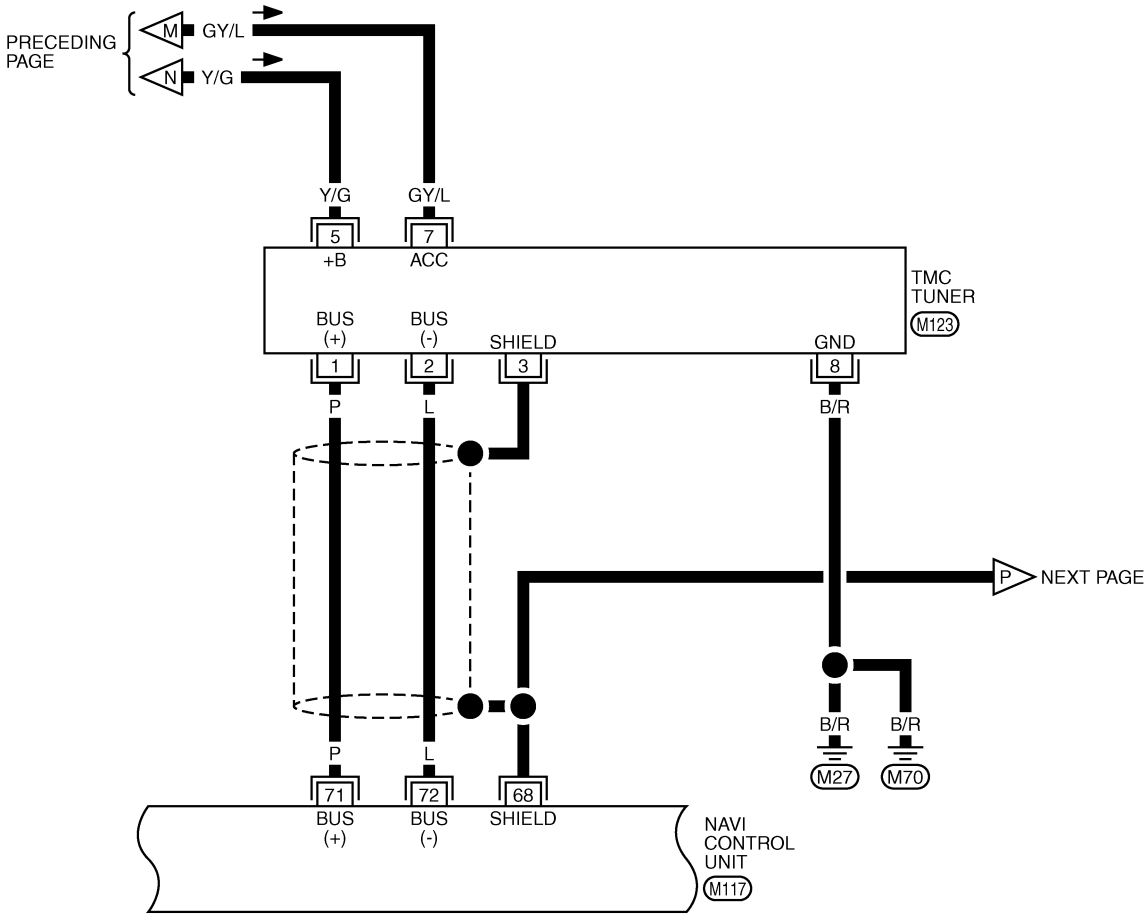


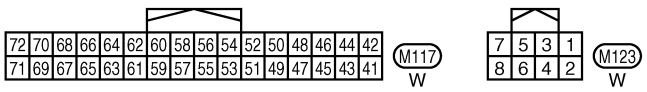






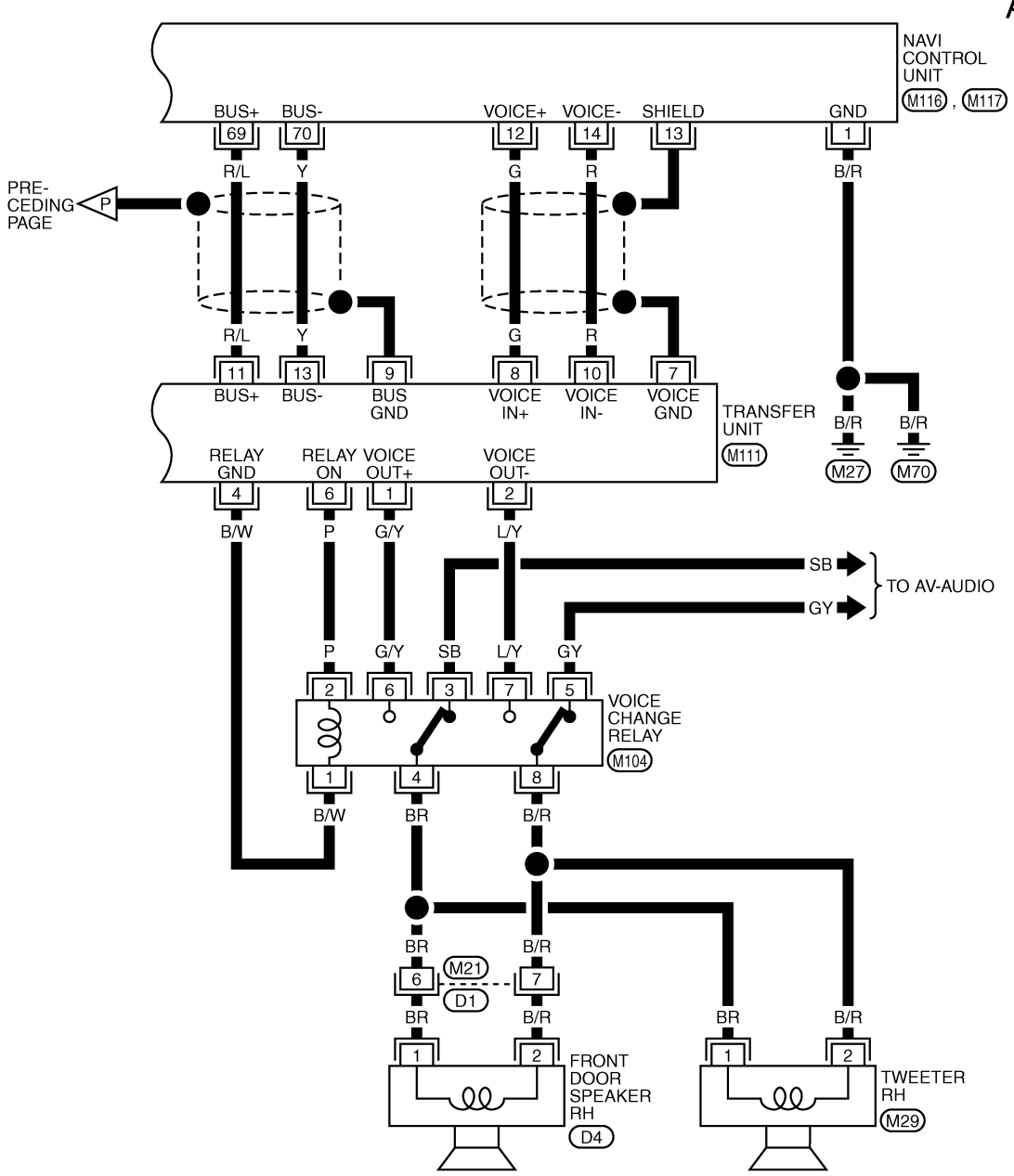
TKWB2785E

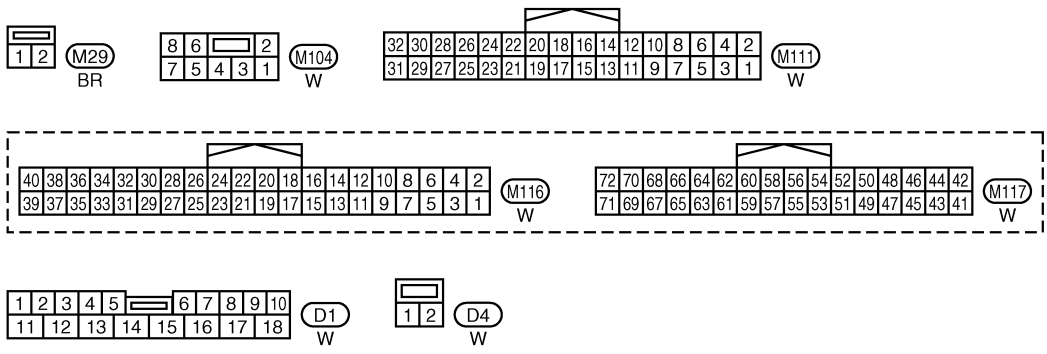

PRECEDING PAGE
M
GY/L
N
Y/G
Y/G
GY/L
5
+B
7
ACC
TMC TUNER
M123
BUS (+)
BUS (-)
SHIELD
GND
1
2
3
8
P
L
B/R
P
NEXT PAGE
B/R
B/R
M27
M70
P
L
71
72
68
BUS (+)
BUS (-)
SHIELD
NAVI CONTROL UNIT
M117


72 70 68 66 64 62 60 58 56 54 52 50 48 46 44 42
71 69 67 65 63 61 59 57 55 53 51 49 47 45 43 41
M117
W
7 5 3 1
8 6 4 2
M123
W

TKWB2786E

AV-NAVI-10

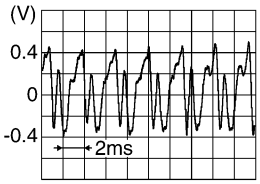
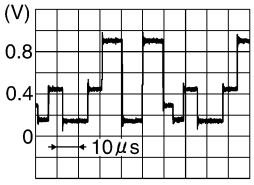
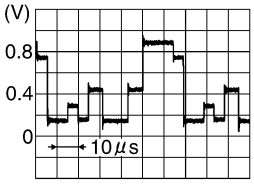
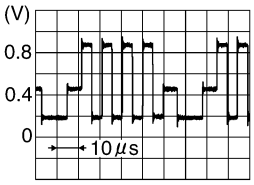
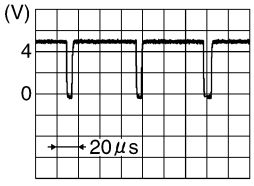


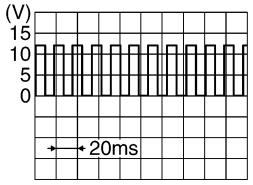
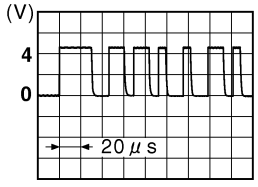
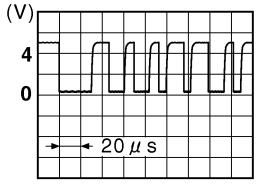
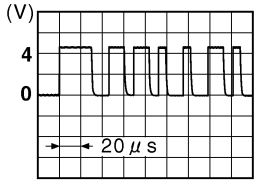
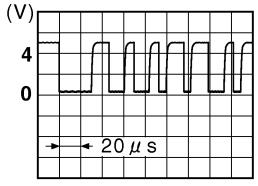


TKWB2787E

Terminals and Reference Value for NAVI Control Unit

BKS000QT

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (B/R)	Ground	Ground	—	ON	—	Approx. 0 V	—
2 (Y/G)	Ground	Battery power supply	Input	OFF	—	Battery voltage	System does not work properly.
5 (GY/L)	Ground	ACC power supply	Input	ACC	—	Battery voltage	System does not work properly.
12 (G)	14 (R)	Voice guidance signal	Output	ON	Press the “VOICE” switch.	 SKIB3597E	Only route guidance and operation guidance are not heard.
13	—	Shield	—	—	—	—	—
44 (BR)	Ground	RGB signal (R: red)	Output	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB7360E	RGB screen looks bluish.
45 (W)	Ground	RGB signal (G: green)	Output	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB7361E	RGB screen looks reddish.
46 (R)	Ground	RGB signal (B: blue)	Output	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB7362E	RGB screen looks yellowish.
47	—	Shield	—	—	—	—	—
48 (L)	Ground	RGB synchronizing signal	Output	ON	—	 SKIB3603E	RGB screen is rolling.
50 (Y)	Ground	RGB area (YS) signal	Output	ON	—	Approx. 5 V	RGB screen is not shown.
61 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch position 1st or 2nd	Approx. 12 V	Night illumination for switches does not illuminate.
					Lighting switch position OFF	Approx. 0 V	

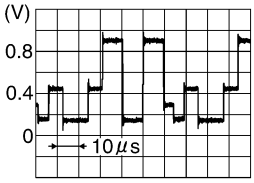
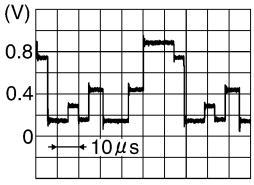
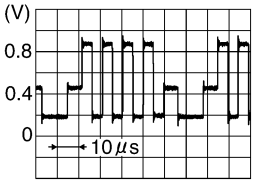
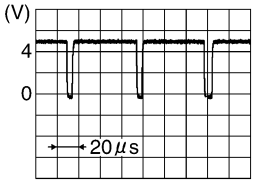
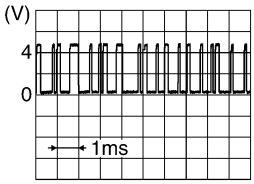
Terminal No. (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
63 (G)	Ground	IGN signal	Input	ON	—	Battery voltage.	Vehicle information setting is not possible.
65 (Y/G)	Ground	Reverse signal	Input	ON	Select R-position	Approx.12 V	The navigation current-location mark moves strangely when the vehicle is moving backwards.
					Other position	Approx. 0 V	
66 (LG)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E	Navigation current-location mark does not indicate the correct position.
68	—	Shield	—	—	—	—	—
69 (BR)*1 (R/L)*2	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E	System does not work properly.
70 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E	System does not work properly.
71 (P)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E	System does not work properly.
72 (L)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E	System does not work properly.

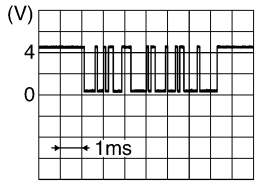
Terminal No. (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
73	Ground	GPS antenna signal	Input	ON	Connector is not connected.	Approx. 5 V	GPS correction is not possible.
74	—	Shield	—	—	—	—	—

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

Terminals and Reference Value for Display

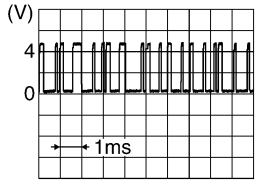
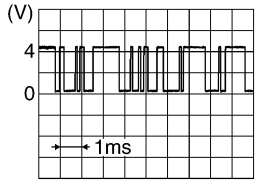
BKS000QU

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (BR)	Ground	RGB signal (R: red)	Input	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB7360E	RGB screen looks bluish.
2 (W)	Ground	RGB signal (G: green)	Input	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB7361E	RGB screen looks reddish.
3 (R)	Ground	RGB signal (B: blue)	Input	ON	Select “Color bar” of CONFIRMATION/ ADJUSTMENT function.	 SKIB7362E	RGB screen looks yellowish.
4	—	Shield	—	—	—	—	—
7 (L)	Ground	RGB synchronizing signal	Input	ON	—	 SKIB3603E	RGB screen is rolling.
8 (Y)	Ground	RGB area (YS) signal	Input	ON	—	Approx. 5 V	RGB screen is not shown.
15 (R)	Ground	Communica-tion signal (DISP-SW)	Output	ON	—	 SKIB3606E	System does not work properly.

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
16 (L)	Ground	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	OFF	—	Battery voltage	System does not work properly.
22 (B/R)	Ground	Ground	—	ON	—	Approx. 0 V	—
23 (Y/G)	Ground	Battery power supply	Input	—	—	Battery voltage	System does not work properly.
24 (B/R)	Ground	Ground	—	ON	—	Approx. 0 V	—

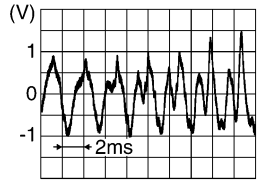
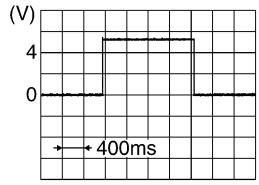
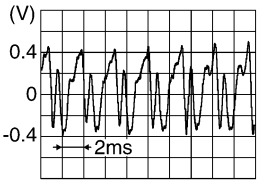
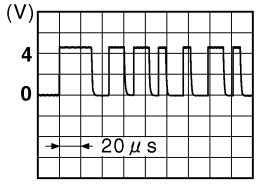
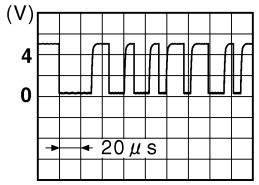
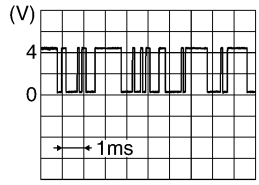
Terminals and Reference Value for NAVI Switch

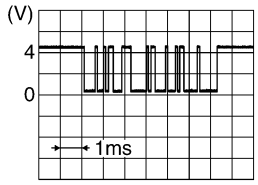
BKS000QV

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	OFF	Lighting switch position 1st or 2nd	Approx. 12 V	Night illumination for switches does not illuminate.
					Lighting switch position OFF	Approx. 0 V	
4 (R)	Ground	Communication signal (DISP-SW)	Input	ON	—	 SKIB3606E	System does not work properly.
5 (G)	Ground	Communication signal (SW-NAVI)	Output	ON	—	 SKIB3611E	System does not work properly.
6	—	Shield	—	—	—	—	—
7 (B/R)	Ground	Ground	—	ON	—	Approx. 0 V	All operations do not work.

Terminals and Reference Value for Transfer Unit

BKS000QW

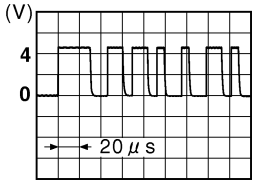
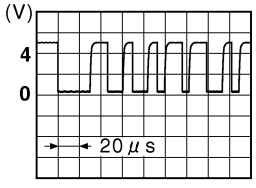
Terminal No. (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
1 (G/Y)	2 (L/Y)	Voice guidance signal	Output	ON	Press the “VOICE” switch.	 SKIB3609E	Only route guidance and operation guidance are not heard.
6 (P)	4 (B/W)	Voice change relay ON signal	Output	ON	Press the “VOICE” switch.	 SKIB3610E	Only route guidance and operation guidance are not heard.
7	—	Shield	—	—	—	—	—
8 (G)	10 (R)	Voice guidance signal	Input	ON	Press the “VOICE” switch.	 SKIB3597E	Only route guidance and operation guidance are not heard.
9	—	Shield	—	—	—	—	—
11 (BR)*1 (R/L)*2	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E	System does not work properly.
13 (Y)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E	System does not work properly.
15	—	Shield	—	—	—	—	—
18 (G)	Ground	Communication signal (SW-NAVI)	Input	ON	—	 SKIB3611E	System does not work properly.
19	—	Shield	—	—	—	—	—

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(–)			Ignition switch	Operation		
20 (L)	Ground	Communication signal (NAVI-DISP)	Output	ON	—	 SKIB3607E	System does not work properly.
25 (B/R)	Ground	Ground	—	ON	—	Approx. 0 V	—
27 (B/R)	Ground	Ground	—	ON	—	Approx. 0 V	—
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

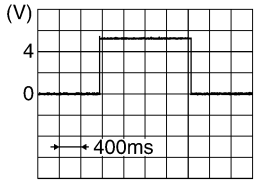
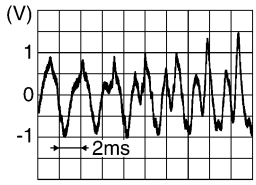
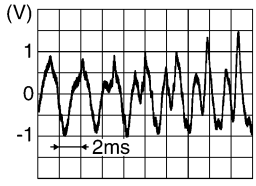
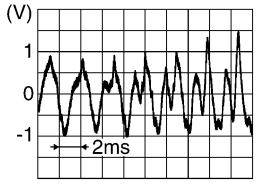
Terminals and Reference Value for TMC Tuner

BKS000QX

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (P)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
2 (L)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
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. 0 V

Terminals and Reference Value for Voice Change Relay

BKS000QY

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	Press the “VOICE” switch.	 SKIB3610E	Only route guidance and operation guidance are not heard.
3 (SB)	5 (GY)	Audio sound signal (driver side)	Input	ON	Receive audio signal.	 SKIB3609E	No sound from door speaker and tweeter (driver side).
4 (L)*1 (BR)*2	8 (B/W)*1 (B/R)*2	Voice guidance signal	Output	ON	Press the “VOICE” switch.	 SKIB3609E	Only route guidance and operation guidance are not heard.
6 (G/Y)	7 (L/Y)	Voice guidance signal	Input	ON	Press the “VOICE” switch.	 SKIB3609E	Only route guidance and operation guide are not heard.

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

Special Note for Trouble Diagnosis

BKS000TK

Prior to perform trouble diagnosis, make sure there are no corresponding description in the “Example of Symptoms Possible No Malfunction”. Refer to AV-87, "Example of Symptoms Judged Not Malfunction" .

On Board Self-Diagnosis Function

BKS000TL

DESCRIPTION

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

DIAGNOSIS ITEM

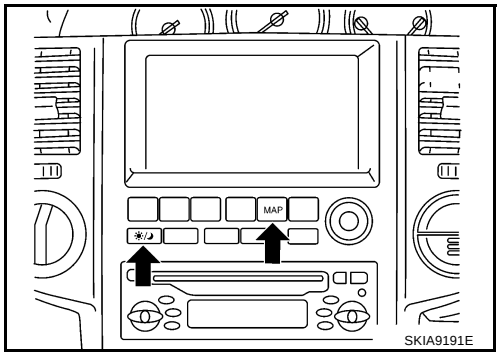
Mode			Description
Self Diagnosis			● NAVI Control unit diagnosis (DVD-ROM drive will not be diagnosed when no DVD-ROM is in it.). ● Analyzes connection between the NAVI control unit and the GPS antenna, connection between the NAVI control unit and each unit, and operation of each unit.
Confirmation/ Adjustment	Display Diagnosis		Color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle Signals		Diagnosis of signals that are input to NAVI control unit can be performed for Vehicle speed, Lights, Ignition and Reverse.
	Navigation	Steering Angle Adjustment	This mode is used to correct difference between actual turning angle of a vehicle and turning angle of the vehicle mark on the display.
		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 can immediately restore system accuracy in cases such as when distance calibration is needed because of the use of tire chains.
	Error History		Malfunctions that occurred in the past are displayed, along with the number of times each has occurred. Time and location when/where the errors occurred are also displayed.
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Feature Restriction Setting		Operations of navigation system that are performed while driving can be restricted by using this function.

Self Diagnosis Mode

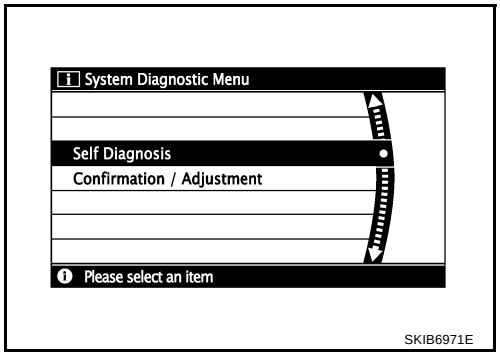
BKS000TM

OPERATION PROCEDURE

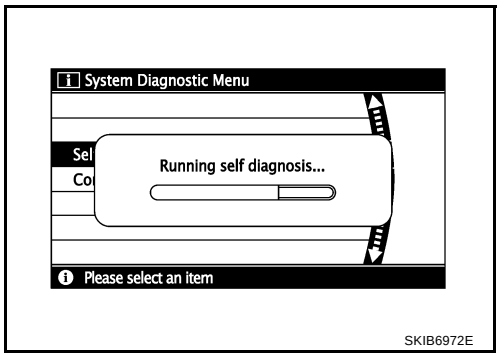
1. Start the engine.
2. Press and hold “MAP” and “☀/☽” buttons simultaneously for 5 seconds or more.
   - Shifting from current screen to previous screen is performed by pressing “BACK” button.



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

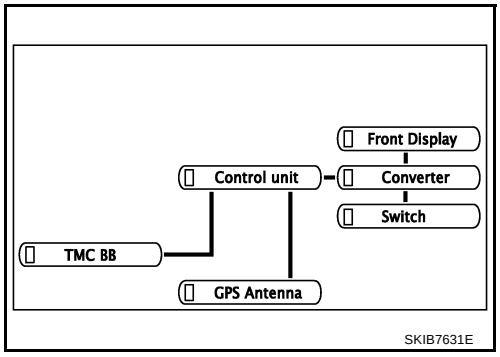


4. Perform self-diagnosis by selecting the “Self Diagnosis”.
   - Self-diagnosis screen is displayed, and then self-diagnosis starts.
   - The bar graph visible below self-diagnosis screen displays progress of the diagnosis.



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

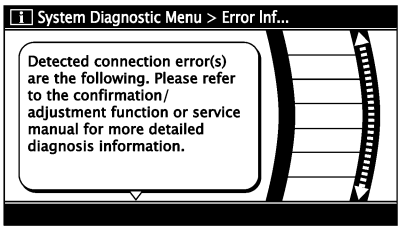
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
DVD-ROM drive undiagnosed	Gray	Green
DVD-ROM and DVD-ROM drive malfunction	Yellow	Green
Unit returned an error	Red	Green



NOTE:

- Control unit = NAVI control unit
- Converter = Transfer unit
- Switch = NAVI switch
- TMC BB = TMC tuner
- Only Control unit (NAVI control unit) is displayed in red.
- 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.

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

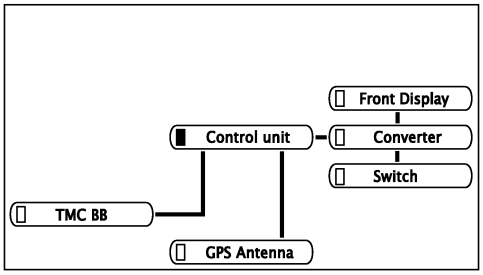
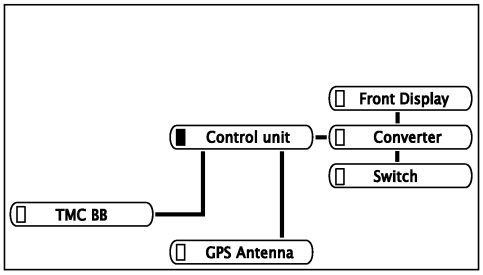
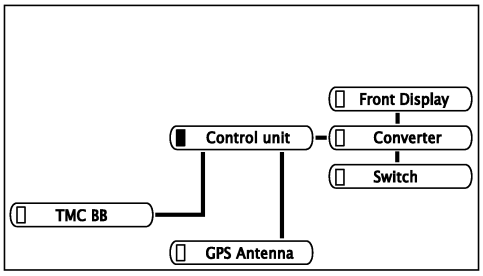


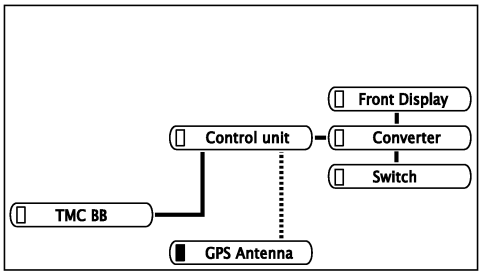
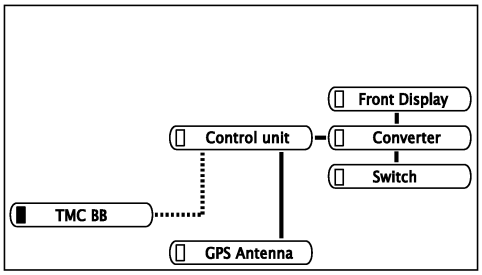
SKIB3659E

SELF-DIAGNOSIS RESULT

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

Quick Reference Table

Self-diagnosis result screen	Possible cause	Action to take
 : Red SKIB7632E	NAVI control unit malfunction is detected	Replace NAVI control unit Refer to AV-90, "Removal and Installation of NAVI Control Unit" .
 : Yellow SKIB7633E	● Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit ● There is dirt and damage on the DVD-ROM	1. Check if the inserted DVD-ROM is specified for this navigation system, and the DVD-ROM is dirty, scratched or warped. 2. If the results from the above checkup show no malfunction, insert the same DVD-ROM, and then restart self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace NAVI control unit.
 : Gray SKIB7634E	DVD-ROM not inserted is detected	Insert DVD-ROM

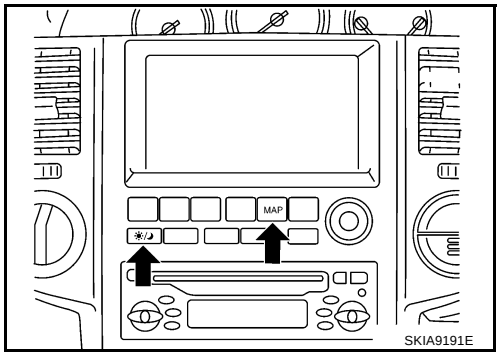
Self-diagnosis result screen	Possible cause	Action to take
	GPS antenna connection malfunction is detected	1. Check if GPS antenna feeder line is snapped or pinched. 2. If the results from the above checkup show no malfunction, replace GPS antenna, and then restart self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace NAVI control unit.
	● TMC tuner power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between NAVI control unit and TMC tuner	1. Check TMC tuner power supply and ground circuit. 2. Check communication circuit between NAVI control unit and TMC tuner. 3. If the results from the above checkup show no malfunction, replace either TMC tuner or NAVI control unit, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.

Confirmation/Adjustment Mode

BKS000TN

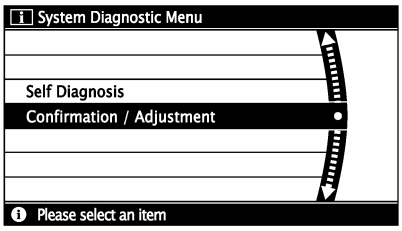
OPERATION PROCEDURE

1. Start the engine.
2. Press and hold “MAP” and “☀/☽” buttons simultaneously for 5 seconds or more.
   - Shifting from current screen to previous screen is performed by pressing “BACK” button.



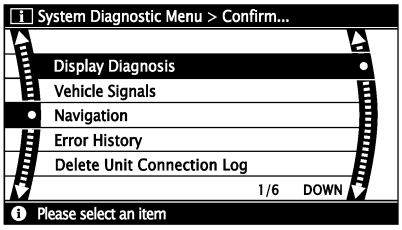
SKIA9191E

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



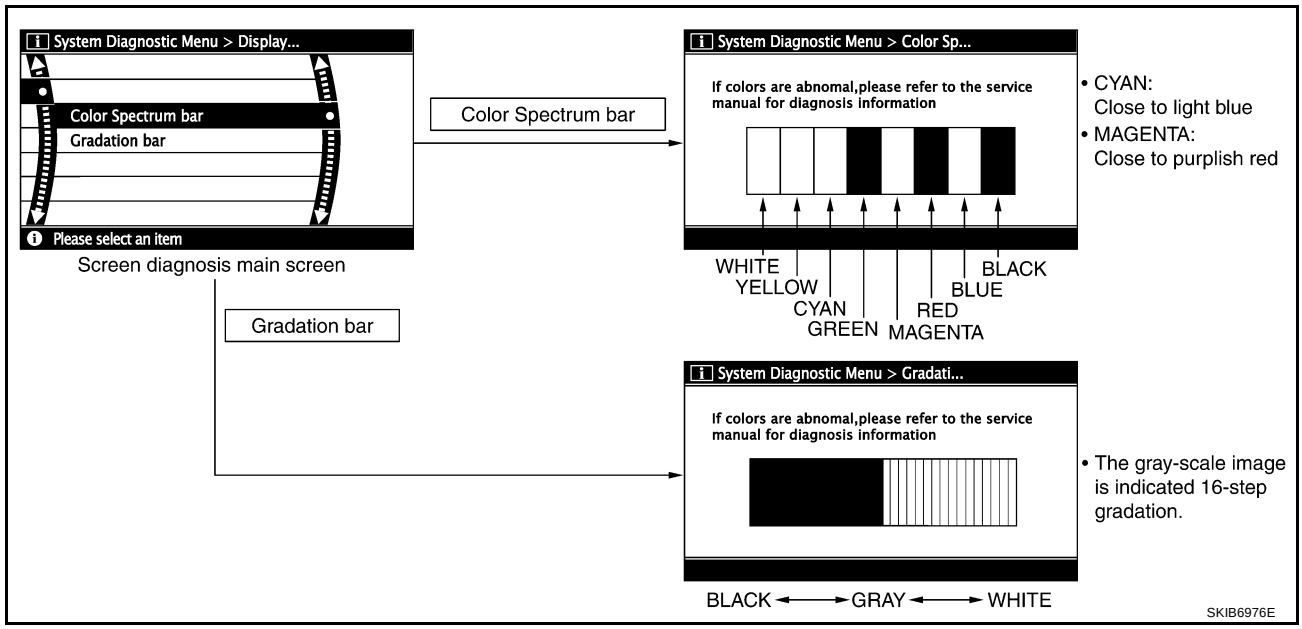
SKIB6974E

4. Each diagnosis is shown by selecting each screen switch on Confirmation/Adjustment screen.



SKIB6975E

DISPLAY DIAGNOSIS

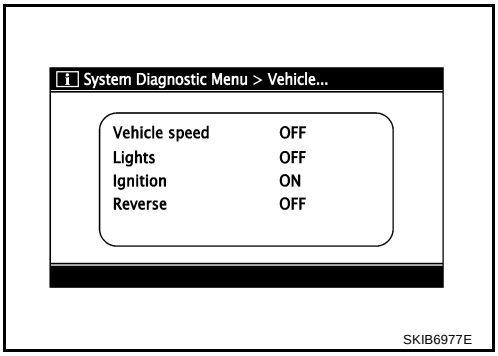


- If RGB signal is malfunctioning, the tint of the color bar display is as follows.

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

VEHICLE SIGNALS

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



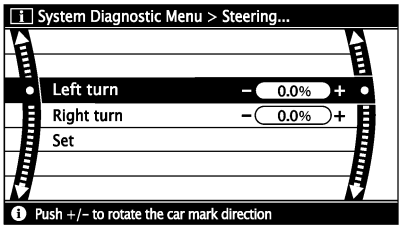
Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	When vehicle speed is more than 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 0 km/h (0 MPH)	
	—	Ignition switch in ACC position	
Lights	ON	Lighting switch ON	—
	OFF	Lighting switch OFF	
Ignition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

NOTE:
If ignition signal is NG, each vehicle signal of vehicle speed and reverse is not displayed.

NAVIGATION

Steering Angle Adjustment

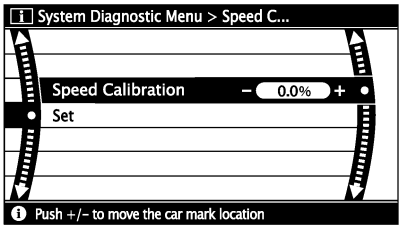
The steering angle output value detected by the gyroscope can be adjusted.



SKIB3684E

Speed Calibration

Usually the automatic distance correction function adjusts the malfunction in distance caused by the tires wearing down or the tire pressure change. If prompt adjustment is necessary when the tire chains are installed etc., perform this procedure.

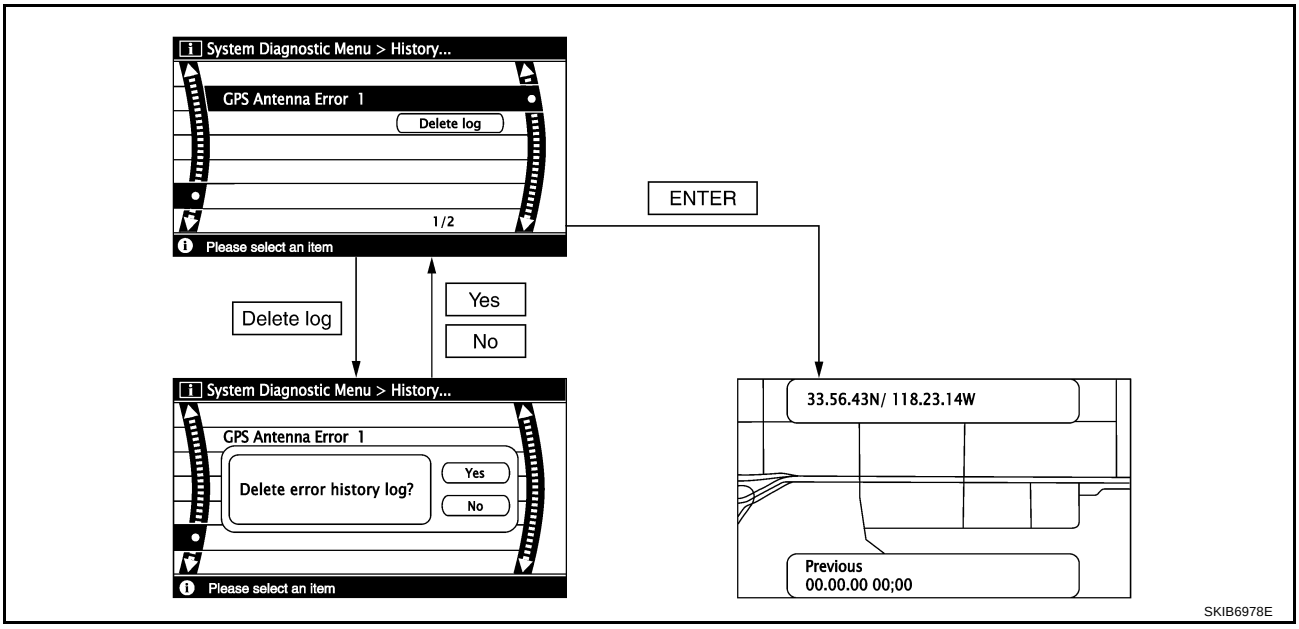


SKIB3685E

ERROR HISTORY

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 “Error History” for the past error that is not available with self-diagnosis.
“Error History” 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 not be located correctly.
- When the ignition switch is turned ON if the error is detected, the counter increases 1. Even if it is normal when the ignition switch is turned ON the next time, the counter does not decrease.
- The upper limit of the counter is 50. 51 or more is displayed as 50. It can be reset to 0 by “Delete log” switch.



Diagnosis by Error History

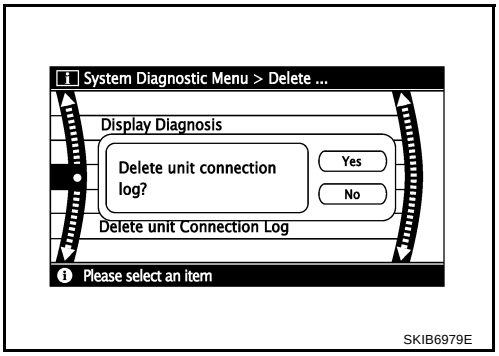
- When having a difficulty on the investigation of cause due to multiple errors with a reproducible malfunction, turn ON the ignition switch from OFF mode after making a memo of the item and number of time (or delete “Error History”). Check “Error History” again after the malfunction was reproduced, and then perform diagnosis focusing on the item of which number of time increased.
- DVD-ROM error history may be restored because DVD-ROM cannot be temporarily read. (Driving on rough road etc.) Then, erase the error history. (This is not a malfunction.) Perform service in “Action to take” if error history are repeatedly indicated again.

Error item	Possible cause	Action to take
GPS Antenna Error	GPS antenna connection malfunction is detected	1. Start self-diagnosis, and make sure of the result. 2. If any error is found, GO TO 3. If any error is not found, delete the error history and end the diagnosis. (This is not a malfunction.) 3. Check if GPS antenna feeder line is snapped or pinched. 4. If the results from the above checkup show no malfunction, replace GPS antenna, and then restart self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace NAVI control unit.
FLASH-ROM Error Of Control Unit	NAVI control unit malfunction is detected	1. Start self-diagnosis, and make sure of the result. 2. If any error is found, replace NAVI control unit. Refer to AV-90, "Removal and Installation of NAVI Control Unit" . If any error is not found, delete the error history and end the diagnosis. (This is not a malfunction.)
Connection Of Gyro		
GPS Communication Error	GPS malfunction is detected	If the symptoms such as the GPS receipt malfunction occur, intermittent malfunction caused by strong radio interference may be detected. If the malfunction always occurs, replace NAVI control unit.
Transmission error: GPS-Main CPU		
Receive error: GPS-Main CPU		
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
DVD-ROM Mechanism not Detected	● Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit ● There is dirt and damage on the DVD-ROM	1. Check if the inserted DVD-ROM is specified for this navigation system, and the DVD-ROM is dirty, scratched or warped. 2. If the results from the above checkup show no malfunction, insert the same DVD-ROM, and then restart self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace NAVI control unit.
DVD-ROM Communication Error		
DVD-ROM Mechanism Error		
DVD-ROM Focus Error		
DVD-ROM TOC Error		
DVD-ROM Disc Error		
DVD-ROM Seek Error		
DVD-ROM Error Correction Error		
DVD-ROM Read Error		
DVD-ROM Data Transfer Error		
DVD-ROM Data Error		
DVD-ROM Loading / Eject Error		
DVD-ROM Time-out		

Error item	Possible cause	Action to take
Converter Connection Error	● Transfer unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between NAVI control unit and transfer unit	1. Delete the error history, and turn OFF ignition switch. 2. Turn ON ignition switch, and make sure of the error history. 3. If the error item listed left is displayed again, GO TO 4. If the error item is not displayed, end the diagnosis. (This is not a malfunction.) 4. Check transfer unit power supply and ground circuit. 5. Check communication circuit between NAVI control unit and transfer unit. 6. If the results from the above checkup show no malfunction, replace either transfer unit or NAVI control unit, and then start self-diagnosis. 7. If self-diagnosis results still show any malfunction, replace the other unit.
RDS-TMC Error	● TMC tuner power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between NAVI control unit and TMC tuner	1. Start self-diagnosis, and make sure of the result. 2. If any error is found, GO TO 3. If any error is not found, delete the error history and end the diagnosis. (This is not a malfunction.) 3. Check TMC tuner power supply and ground circuit. 4. Check communication circuit between NAVI control unit and TMC tuner. 5. If the results from the above checkup show no malfunction, replace either TMC tuner or NAVI control unit, and then start self-diagnosis. 6. If self-diagnosis results still show any malfunction, replace the other unit.

DELETE UNIT CONNECTION LOG

Erase the connection history of unit and error history that is recorded in NAVI control unit (clear the connection history of the removed unit).

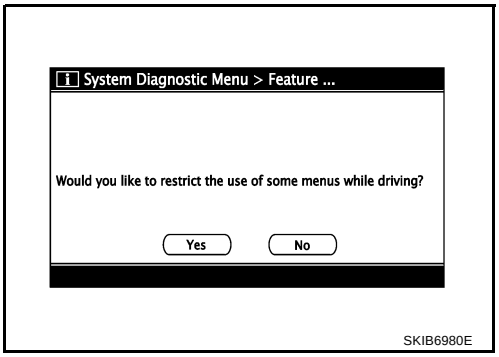


FEATURE RESTRICTION SETTING

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

CAUTION:

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



All Images Are Not Displayed

BKS000TO

Symptom: All images are not displayed. (Navigation system does not start.)

1. CHECK CONDITION

1. Turn ignition switch ON.
2. Press and hold “MAP” and “☀/☽” buttons simultaneously for 5 seconds or more.

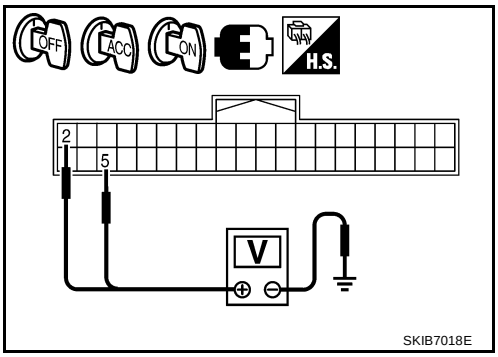
Does NAVI switch sound a beep twice?

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

2. CHECK NAVI CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

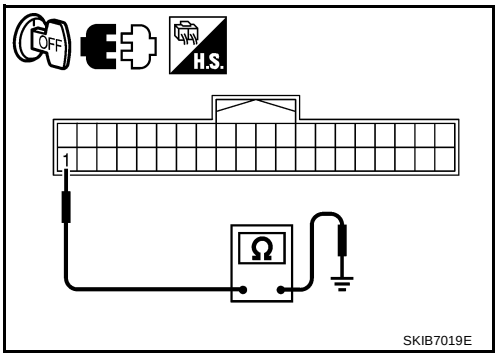
1. Check voltage between NAVI control unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M116	2	Ground	Battery voltage	Battery voltage	Battery voltage
	5		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect NAVI control unit connector.
4. Check continuity between NAVI control unit harness connector M116 terminal 1 and ground.

1 – Ground : Continuity should exist.



OK or NG

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

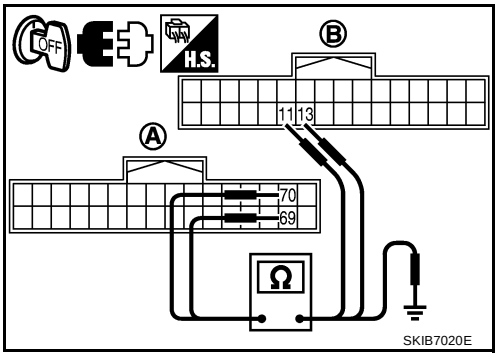
3. CHECK HARNESS

1. Disconnect NAVI control unit and transfer unit connectors.
2. Check continuity between NAVI control unit harness connector (A) M117 terminals 69, 70 and transfer unit harness connector (B) M111 terminals 11, 13.

69 – 11 : Continuity should exist.
70 – 13 : Continuity should exist.

3. Check continuity between NAVI control unit harness connector (A) M117 terminals 69, 70 and ground.

69, 70 – Ground : Continuity should not exist.



OK or NG

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

4. CHECK NAVI CONTROL UNIT AND TRANSFER UNIT

1. Replace NAVI control unit or transfer unit.
2. Turn ignition switch ON.
3. Check if an image is displayed on the screen.

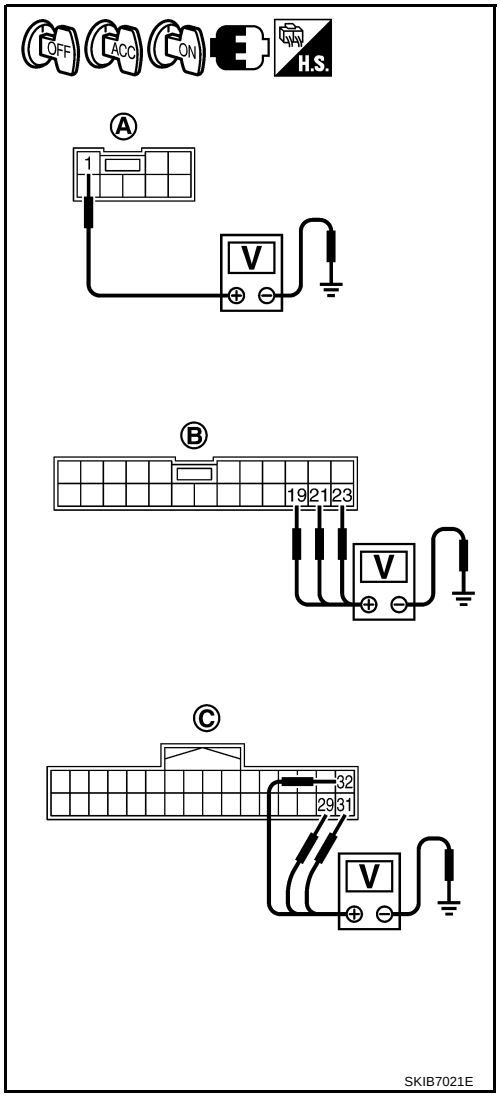
Is an image displayed on the screen?

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

5. CHECK POWER SUPPLY CIRCUIT

Check voltage between the following harness connector terminals and ground.

Unit	Terminals (+) Connector	Terminals (+) Terminal	Terminals (–)	OFF	ACC	ON
(A) NAVI switch	M113	1	Ground	0 V	Battery voltage	Battery voltage
(B) Display	M112	21, 23		Battery voltage	Battery voltage	Battery voltage
		19		0 V	Battery voltage	Battery voltage
(C) Transfer unit	M111	31, 32		Battery voltage	Battery voltage	Battery voltage
		29		0 V	Battery voltage	Battery voltage



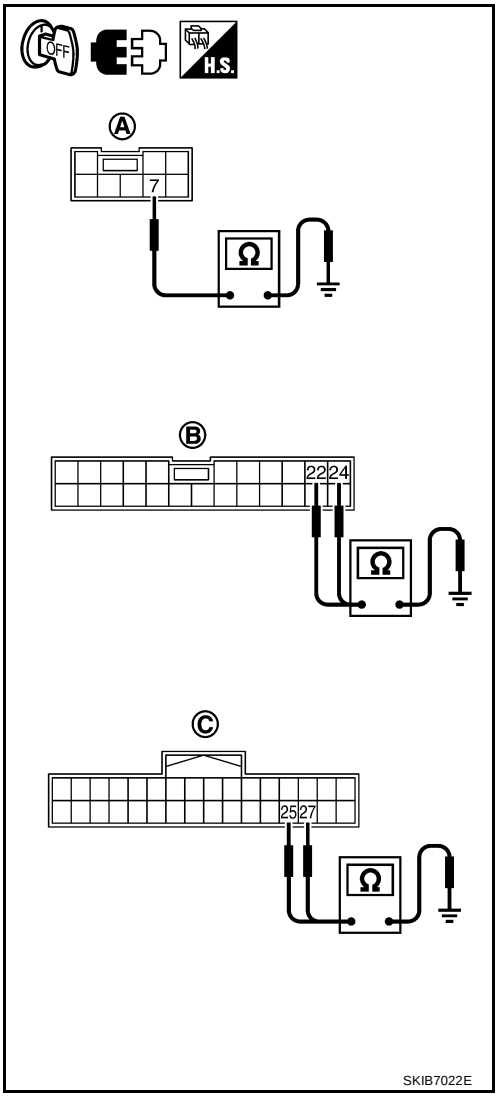
OK or NG

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

6. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect NAVI switch, display and transfer unit connectors.
3. Check continuity between the following harness connector terminals and ground.

Unit	Terminals			Continuity
	(+)		(–)	
	Connector	Terminal		
(A) NAVI switch	M113	7	Ground	Yes
(B) Display	M112	22, 24		
(C) Transfer unit	M111	25, 27		



OK or NG

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

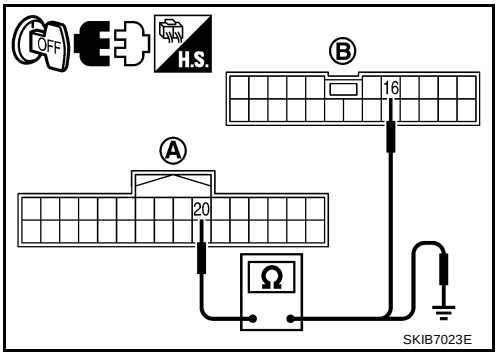
7. CHECK HARNESS

1. Check continuity between transfer unit harness connector (A) M111 terminal 20 and display harness connector (B) M112 terminal 16.

20 – 16 : Continuity should exist.

2. Check continuity between transfer unit harness connector (A) M111 terminal 20 and ground.

20 – Ground : Continuity should not exist.

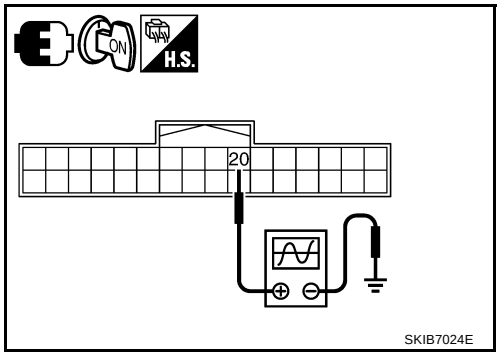


OK or NG

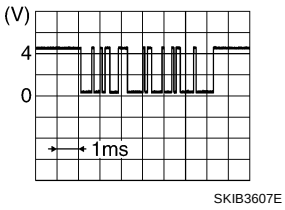
OK >> GO TO 8.
NG >> Repair harness or connector.

8. CHECK COMMUNICATION SIGNAL (NAVI-DISP)

1. Connect NAVI switch, display and transfer unit connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between transfer unit harness connector M111 terminal 20 and ground using CONSULT-II or oscilloscope.



20 – Ground:



OK or NG

OK >> GO TO 9.
NG >> Replace transfer unit.

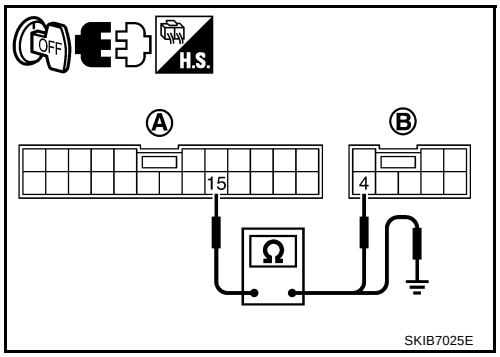
9. CHECK HARNESS

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

15 – 4 : Continuity should exist.

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

15 – Ground : Continuity should not exist.

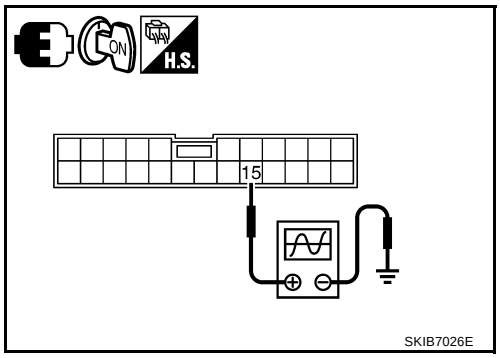


OK or NG

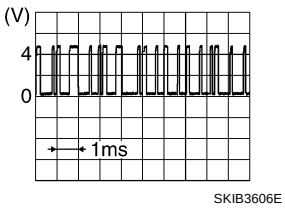
OK >> GO TO 10.
NG >> Repair harness or connector.

10. CHECK COMMUNICATION SIGNAL (DISP-SW)

1. Connect display and NAVI switch connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between display harness connector M112 terminal 15 and ground using CONSULT-II or oscilloscope.



15 – Ground:



OK or NG

OK >> GO TO 11.
NG >> Replace display.

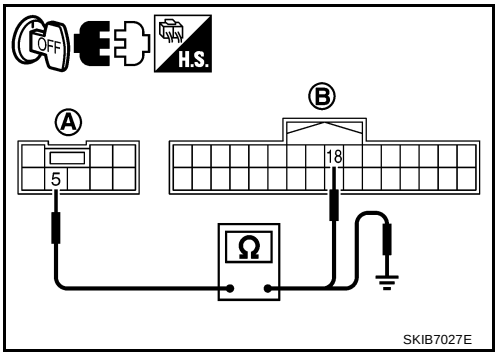
11. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI switch and transfer unit connectors.
3. Check continuity between NAVI switch harness connector (A) M113 terminal 5 and transfer unit harness connector (B) M111 terminal 18.

5 – 18 : Continuity should exist.

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

5 – Ground : Continuity should not exist.



SKIB7027E

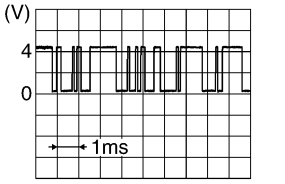
OK or NG

OK >> GO TO 12.
NG >> Repair harness or connector.

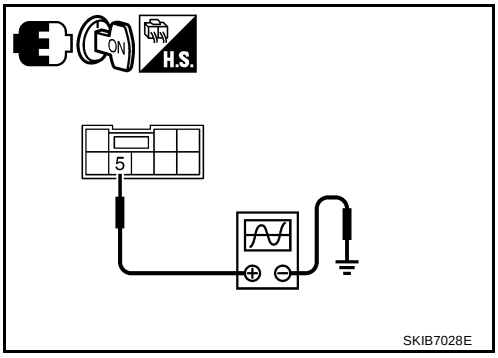
12. CHECK COMMUNICATION SIGNAL (SW-NAVI)

1. Connect NAVI switch and transfer unit connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between NAVI switch harness connector M113 terminal 5 and ground using CONSULT-II or oscilloscope.

5 – Ground:



SKIB3611E



SKIB7028E

OK or NG

OK >> GO TO 13.
NG >> Replace NAVI switch.

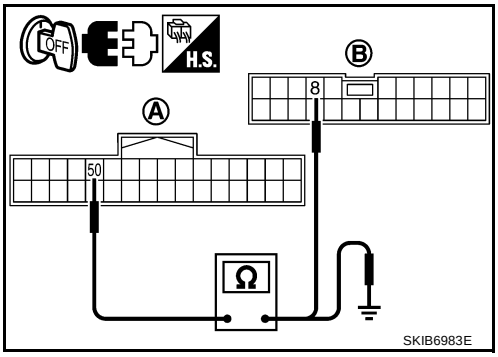
13. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display connectors.
3. Check continuity between NAVI control unit harness connector (A) M117 terminal 50 and display harness connector (B) M112 terminal 8.

50 – 8 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector (A) M117 terminal 50 and ground.

50 – Ground : Continuity should not exist.



SKIB6983E

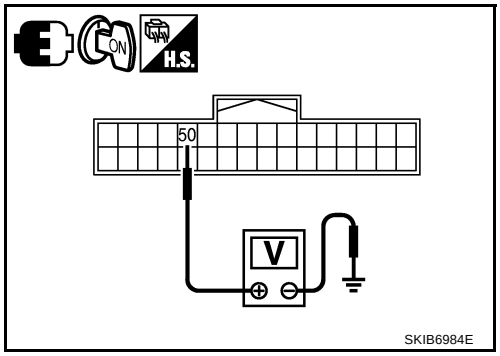
OK or NG

OK >> GO TO 14.
NG >> Repair harness or connector.

14. CHECK RGB AREA (YS) SIGNAL

1. Connect NAVI control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between NAVI control unit harness connector M117 terminal 50 and ground using CONSULT-ll or oscilloscope.

Terminal		Condition	Reference value
(+)	(–)		
50	Ground	When displaying RGB image	Approx. 5 V



OK or NG

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

Vehicle Mark Is Not Displayed Properly

BKS000TQ

Symptom: Vehicle mark is not displayed at the vehicle driving position properly.

1. NAVIGATION SYSTEM ADJUSTMENT

1. Select “Navigation” in Confirmation/Adjustment mode, and adjust items, “Steering Angle Adjustment” and “Speed Calibration”. Refer to AV-70, "NAVIGATION" .
2. Check symptom with driving.

Is any malfunction observed?

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

2. SELF-DIAGNOSIS

Start self-diagnosis, and check any malfunction related to GPS. Refer to AV-64, "Self Diagnosis Mode" .

Is any malfunction related to GPS observed?

YES >> Repair malfunctioning part by diagnostic results.
NO >> GO TO 3.

3. CHECK VEHICLE SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the vehicle speed signal and reverse signal inputting to NAVI control unit. Refer to AV-69, "VEHICLE SIGNALS" .

OK or NG

OK >> Limit of position detection capacity.
NG >>
- Check NAVI control unit vehicle speed signal circuit, and repair malfunctioning part.
- Check NAVI control unit reverse signal circuit, and repair malfunctioning part.

Tint Is Strange for The RGB Image

BKS000TR

Symptom: Tint of RGB image is strange.

1. CHECK HARNESS

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

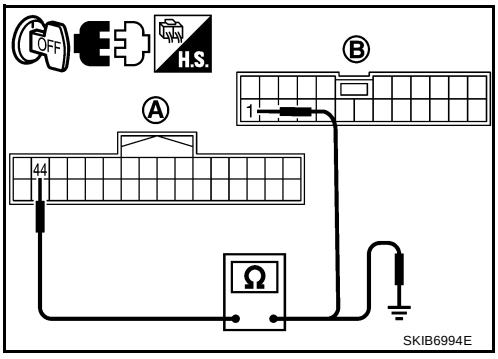
- **Light blue (Cyan) tinged screen**

Check continuity between NAVI control unit harness connector (A) M117 terminal 44 and display harness connector (B) M112 terminal 1.

44 – 1 : Continuity should exist.

Check continuity between NAVI control unit harness connector (A) M117 terminal 44 and ground.

44 – Ground : Continuity should not exist.



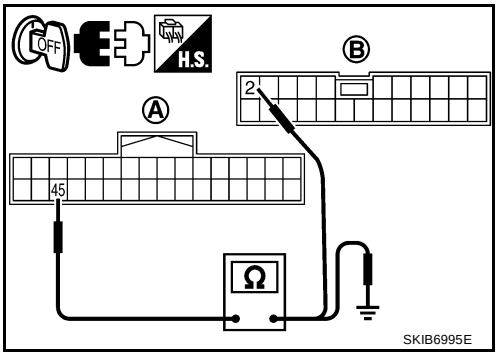
- **Purple (Magenta) tinged screen**

Check continuity between NAVI control unit harness connector (A) M117 terminal 45 and display harness connector (B) M112 terminal 2.

45 – 2 : Continuity should exist.

Check continuity between NAVI control unit harness connector (A) M117 terminal 45 and ground.

45 – Ground : Continuity should not exist.



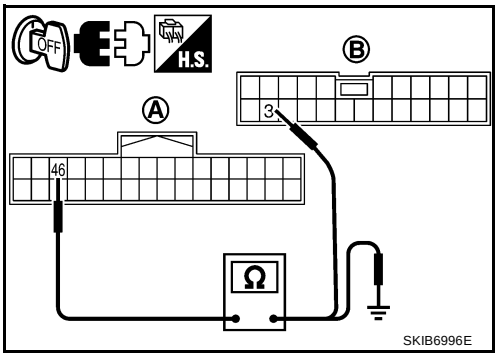
- **Yellow tinged screen**

Check continuity between NAVI control unit harness connector (A) M117 terminal 46 and display harness connector (B) M112 terminal 3.

46 – 3 : Continuity should exist.

Check continuity between NAVI control unit harness connector (A) M117 terminal 46 and ground.

46 – Ground : Continuity should not exist.



OK or NG

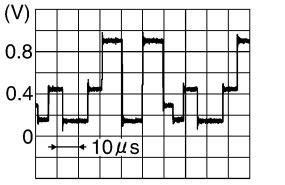
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

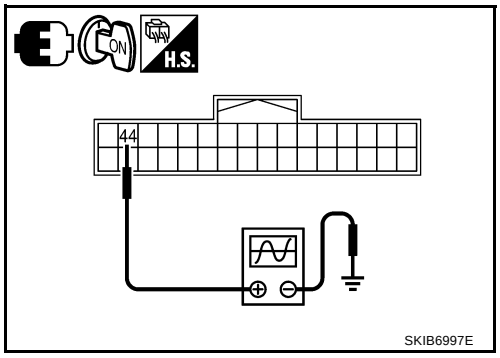
1. Connect NAVI control unit and display connectors.
2. Turn ignition switch ON.
3. Start Confirmation/Adjustment mode. Refer to AV-68, "Confirmation/Adjustment Mode" .
4. Display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen. Refer to AV-69, "DISPLAY DIAGNOSIS" .
5. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check voltage waveform between NAVI control unit harness connector M117 terminal 44 and ground using CONSULT-II or oscilloscope.

44 – Ground:



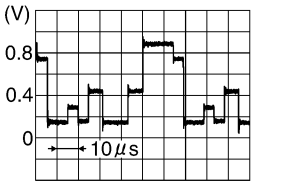
SKIB7360E



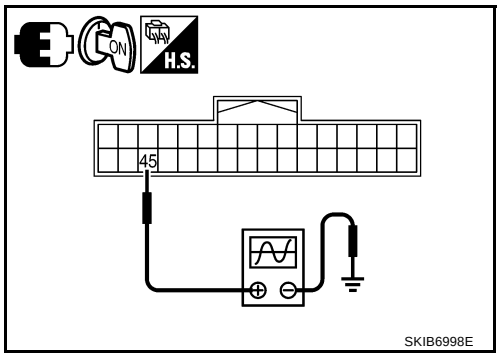
SKIB6997E

- **Purple (Magenta) tinged screen**
  Check voltage waveform between NAVI control unit harness connector M117 terminal 45 and ground using CONSULT-II or oscilloscope.

45 – Ground:



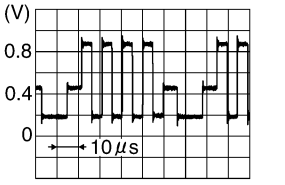
SKIB7361E



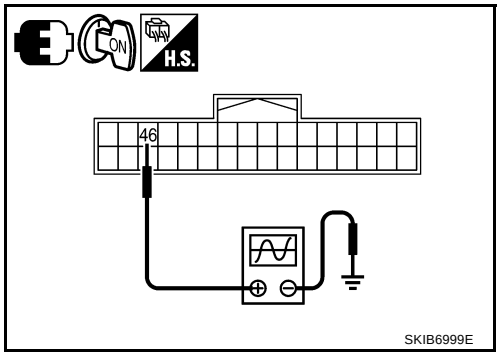
SKIB6998E

- **Yellow tinged screen**
  Check voltage waveform between NAVI control unit harness connector M117 terminal 46 and ground using CONSULT-II or oscilloscope.

46 – Ground:



SKIB7362E



SKIB6999E

OK or NG

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

RGB Image Is Rolling

BKS000TS

Symptom: RGB image such as a map screen is rolling.

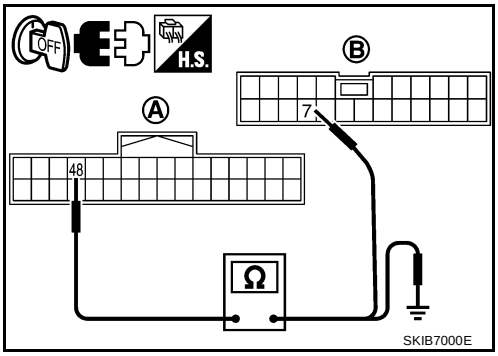
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display connectors.
3. Check continuity between NAVI control unit harness connector (A) M117 terminal 48 and display harness connector (B) M112 terminal 7.

48 – 7 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector (A) M117 terminal 48 and ground.

48 – Ground : Continuity should not exist.



SKIB7000E

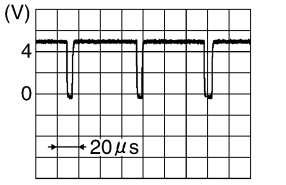
OK or NG

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

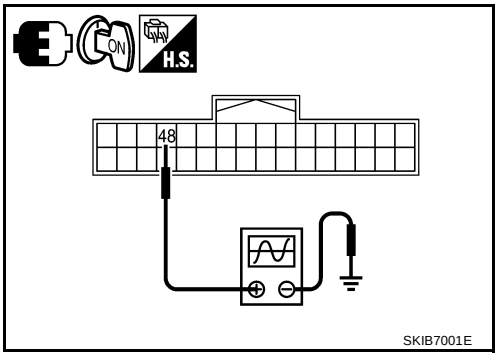
2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect NAVI control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying RGB image, check voltage waveform between NAVI control unit harness connector M117 terminal 48 and ground using CONSULT-ll or oscilloscope.

48 – Ground:



SKIB3603E



SKIB7001E

OK or NG

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

Values for All Items in the Drive Computer Screen Do Not Change

BKS000TT

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

1. CHECK NAVI CONTROL UNIT IGNITION SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the ignition signal inputting to NAVI control unit. Refer to AV-69, "VEHICLE SIGNALS" .

OK or NG

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

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

BKS000TU

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

1. CHECK NAVI CONTROL UNIT VEHICLE SPEED SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the vehicle speed signal inputting to NAVI control unit. Refer to AV-69, "VEHICLE SIGNALS" .

OK or NG

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

Voice Guidance Is Not Heard

BKS000TV

Symptom: Voice guidance does not sound at route guidance.

1. CHECK CONDITION

Turn audio system ON, and check if any sound can be heard from front door speaker (driver side).

OK or NG

OK >> GO TO 2.
NG >> Refer to AV-30, "Symptom Chart" and repair malfunctioning part.

2. CHECK CONDITION

Turn audio system ON, and check if front door speaker (driver side) is muted when pressing “VOICE” button during sounding from front door speaker (driver side).

Is front door speaker (driver side) muted?

YES >> GO TO 3.
NO >> GO TO 7.

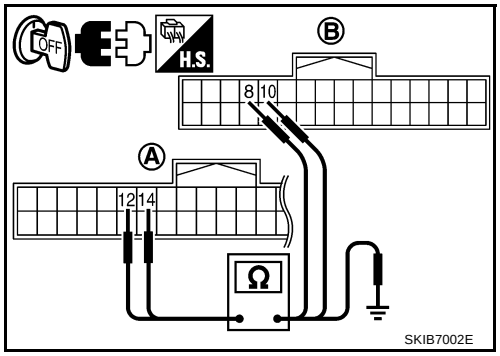
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and transfer unit connectors.
3. Check continuity between NAVI control unit harness connector (A) M116 terminals 12, 14 and transfer unit harness connector (B) M111 terminals 8, 10.

   12 – 8 : Continuity should exist.
   14 – 10 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector (A) M116 terminals 12, 14 and ground.

   12, 14 – Ground : Continuity should not exist.

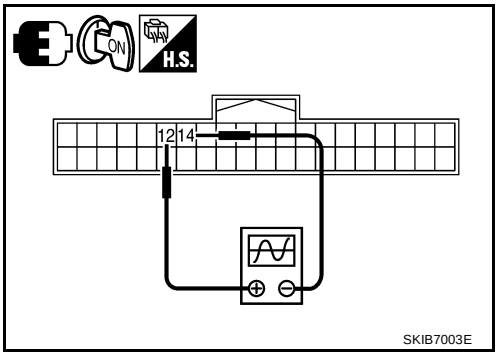


OK or NG

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

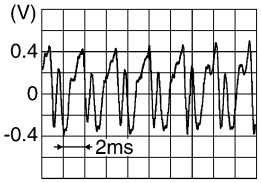
4. CHECK VOICE GUIDANCE SIGNAL

1. Connect NAVI control unit and transfer unit connectors.
2. Turn ignition switch ON.
3. When pressing “VOICE” button, check voltage waveform between NAVI control unit harness connector M116 terminals 12 and 14 using CONSULT-ll or oscilloscope.



SKIB7003E

12 – 14:



SKIB3597E

OK or NG

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

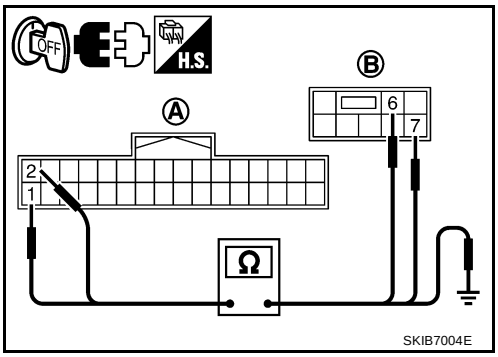
5. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect transfer unit and voice change relay connectors.
3. Check continuity between transfer unit harness connector (A) M111 terminals 1, 2 and voice change relay harness connector (B) M104 terminals 6, 7.

1 – 6 : Continuity should exist.
2 – 7 : Continuity should exist.

4. Check continuity between transfer unit harness connector (A) M111 terminals 1, 2 and ground.

1, 2 – Ground : Continuity should not exist.



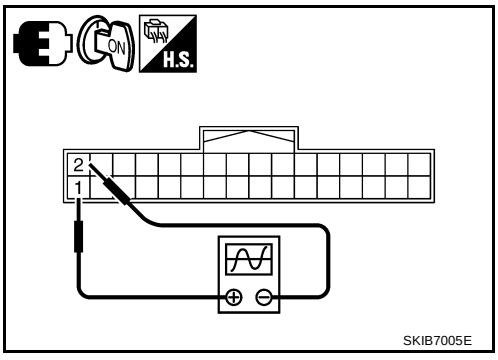
SKIB7004E

OK or NG

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

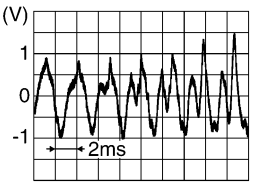
6. CHECK VOICE GUIDANCE SIGNAL

1. Connect transfer unit and voice change relay connectors.
2. Turn ignition switch ON.
3. When pressing “VOICE” button, check voltage waveform between transfer unit harness connector M111 terminals 1 and 2 using CONSULT-ll or oscilloscope.



SKIB7005E

1 – 2:



SKIB3609E

OK or NG

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

7. CHECK HARNESS

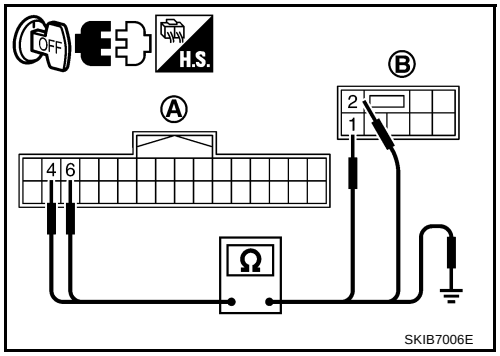
1. Turn ignition switch OFF.
2. Disconnect transfer unit and voice change relay connectors.
3. Check continuity between transfer unit harness connector (A) M111 terminals 4, 6 and voice change relay harness connector (B) M104 terminals 1, 2.

   4 – 1 : Continuity should exist.

   6 – 2 : Continuity should exist.

4. Check continuity between transfer unit harness connector (A) M111 terminal 6 and ground.

   6 – Ground : Continuity should not exist.



SKIB7006E

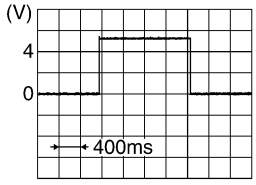
OK or NG

OK >> GO TO 8.
NG >> Repair harness or connector.

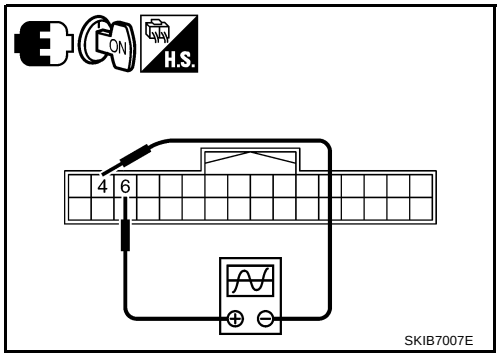
8. CHECK VOICE GUIDANCE ON SIGNAL

1. Connect transfer unit and voice change relay connectors.
2. Turn ignition switch ON.
3. When pressing “VOICE” button, check voltage waveform between transfer unit harness connector M111 terminals 6 and 4 using CONSULT-II or oscilloscope.

   6 – 4:



SKIB3610E



SKIB7007E

OK or NG

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

RDS-TMC(Traffic Information) Is Not Received

BKS000TW

1. CHECK SELF-DIAGNOSIS

Perform self-diagnosis.Refer to AV-64, "Self Diagnosis Mode" .

Is self-diagnosis result normal?

YES >> GO TO 2.
NO >> Refer to AV-66, "Quick Reference Table" .

2. CHECK CONDITION

Turn ignition switch ON, and audio unit ON.

Does audio unit receive radiobroadcast?

YES >> Replace TMC tuner.
NO >> Check antenna and antenna feeder.

Example of Symptoms Judged Not Malfunction

BKS000RL

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.	Press 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.	Press the “MAP” button.
The vehicle mark does not show up.	The display is not switched to the map screen.	Press 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 way-points.	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.

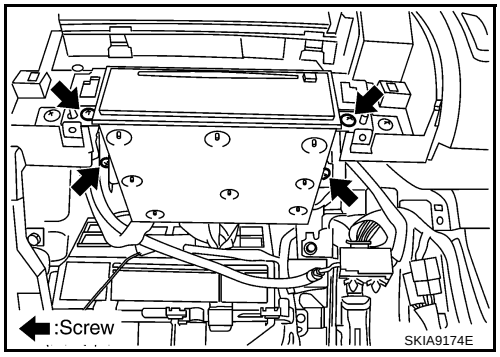
NOTE:
Except for the ordinance-designated cities and the prefectural capitals. (Applicable areas may be changed in the updated map disc.)

Removal and Installation of NAVI Control Unit

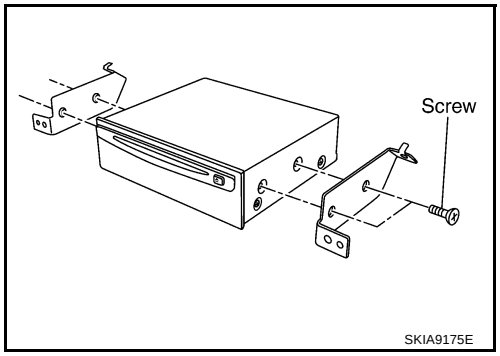
BKS000RN

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 brackets.



INSTALLATION

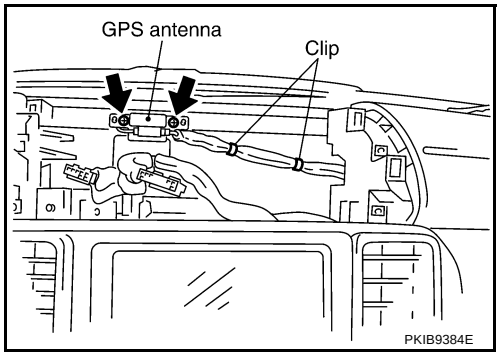
Installation is the reverse order of removal.

Removal and Installation of GPS Antenna

BKS000RO

REMOVAL

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



INSTALLATION

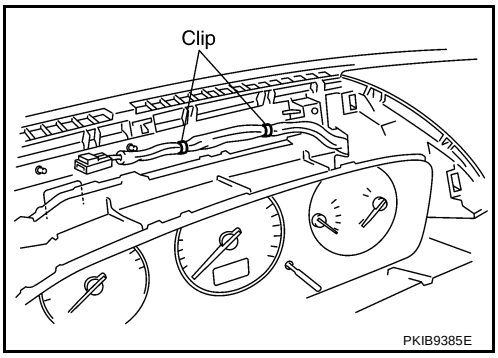
Installation is the reverse order of removal.

Removal and Installation of GPS Antenna Feeder

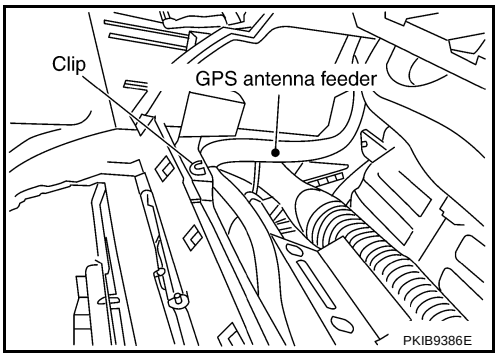
BKS000RP

REMOVAL

1. Remove combination meter. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove NAVI control unit. Refer to AV-90, "Removal and Installation of NAVI Control Unit" .
3. Remove front passenger air bag module. Refer to SRS-34, "Removal and Installation" .



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



INSTALLATION

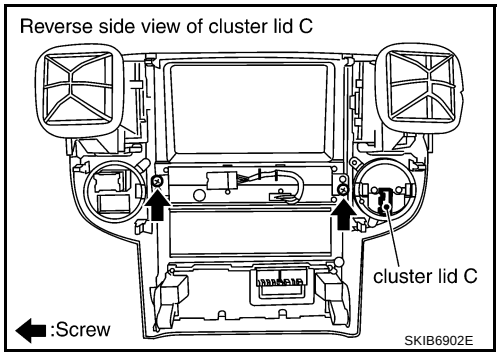
Installation is the reverse order of removal.

Removal and Installation of NAVI Switch

BKS000RQ

REMOVAL

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



INSTALLATION

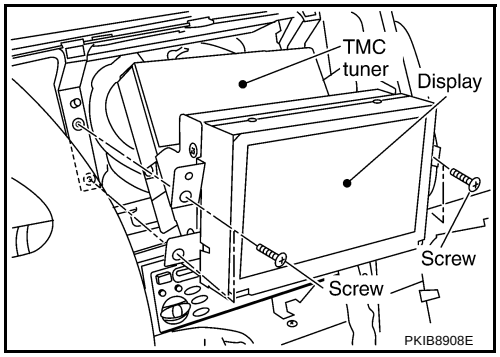
Installation is the reverse order of removal.

Removal and Installation of Display

BKS000RR

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

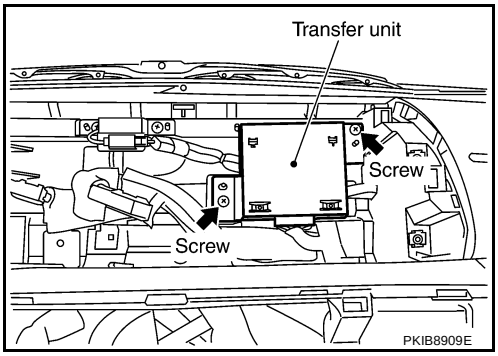
Installation is the reverse order of removal.

Removal and Installation of Transfer Unit

BKS000RS

REMOVAL

1. Remove combination meter. Refer to DI-32, "Removal and Installation for Combination Meter" .
2. Remove screws (2), and remove transfer unit.



INSTALLATION

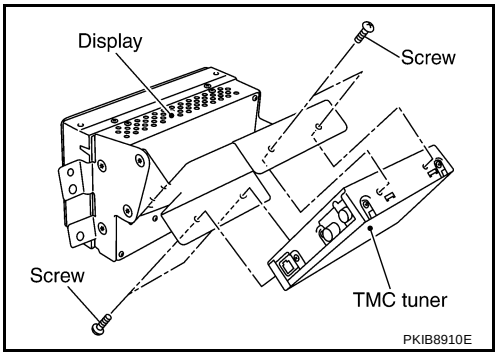
Installation is the reverse order of removal.

Removal and Installation of TMC Tuner

BKS000RT

REMOVAL

1. Remove display. Refer to AV-92, "Removal and Installation of Display" .
2. Remove screws (4), and remove TMC tuner.



INSTALLATION

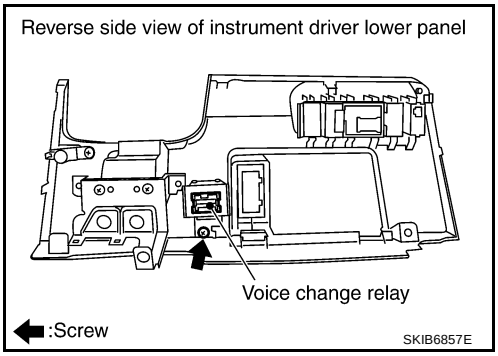
Installation is the reverse order of removal.

Removal and Installation of Voice Change Relay

BKS000RU

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.

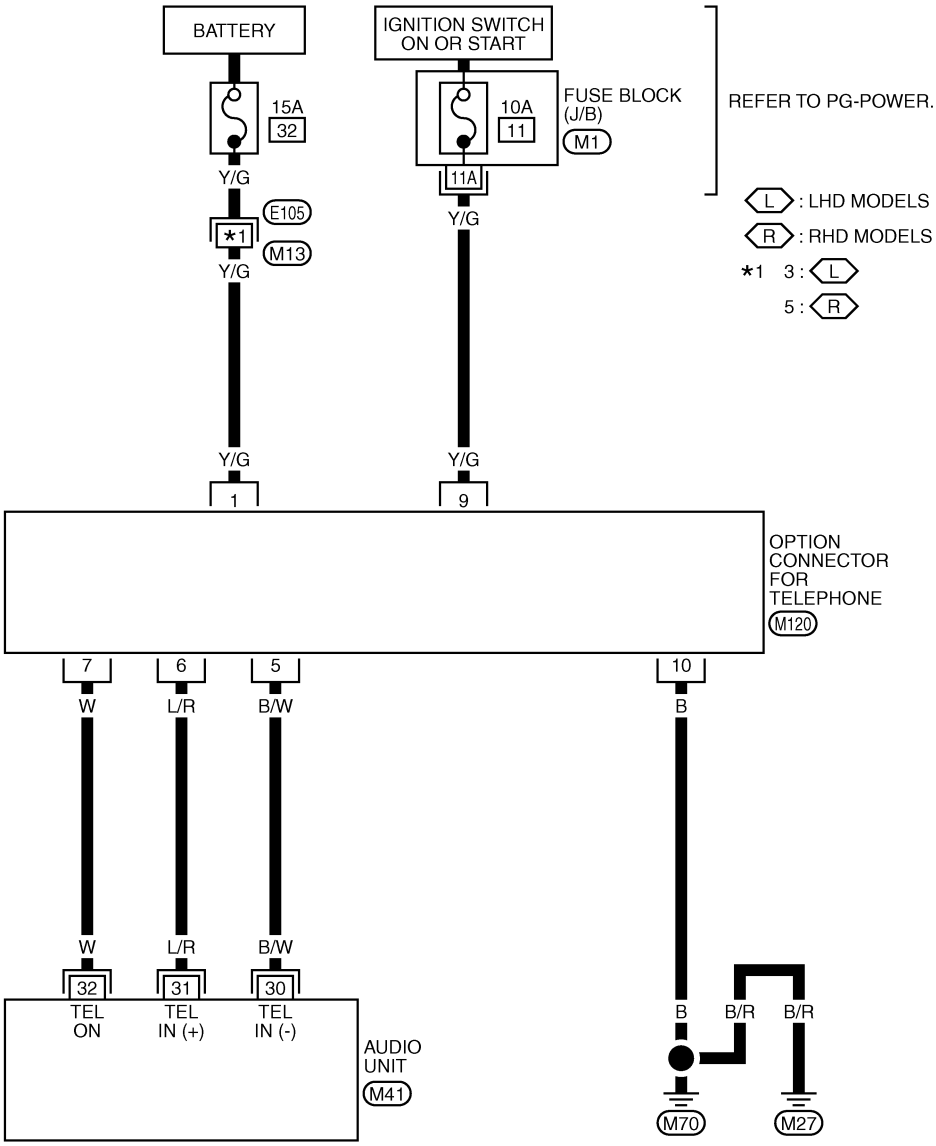
TELEPHONE (PRE WIRE)

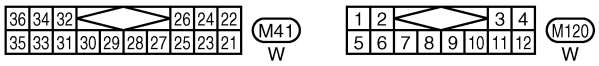
PFP:28342

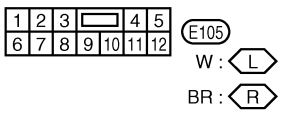
Wiring Diagram — PHONE —

BKS000RV

AV-PHONE-01







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

TKWB0102E