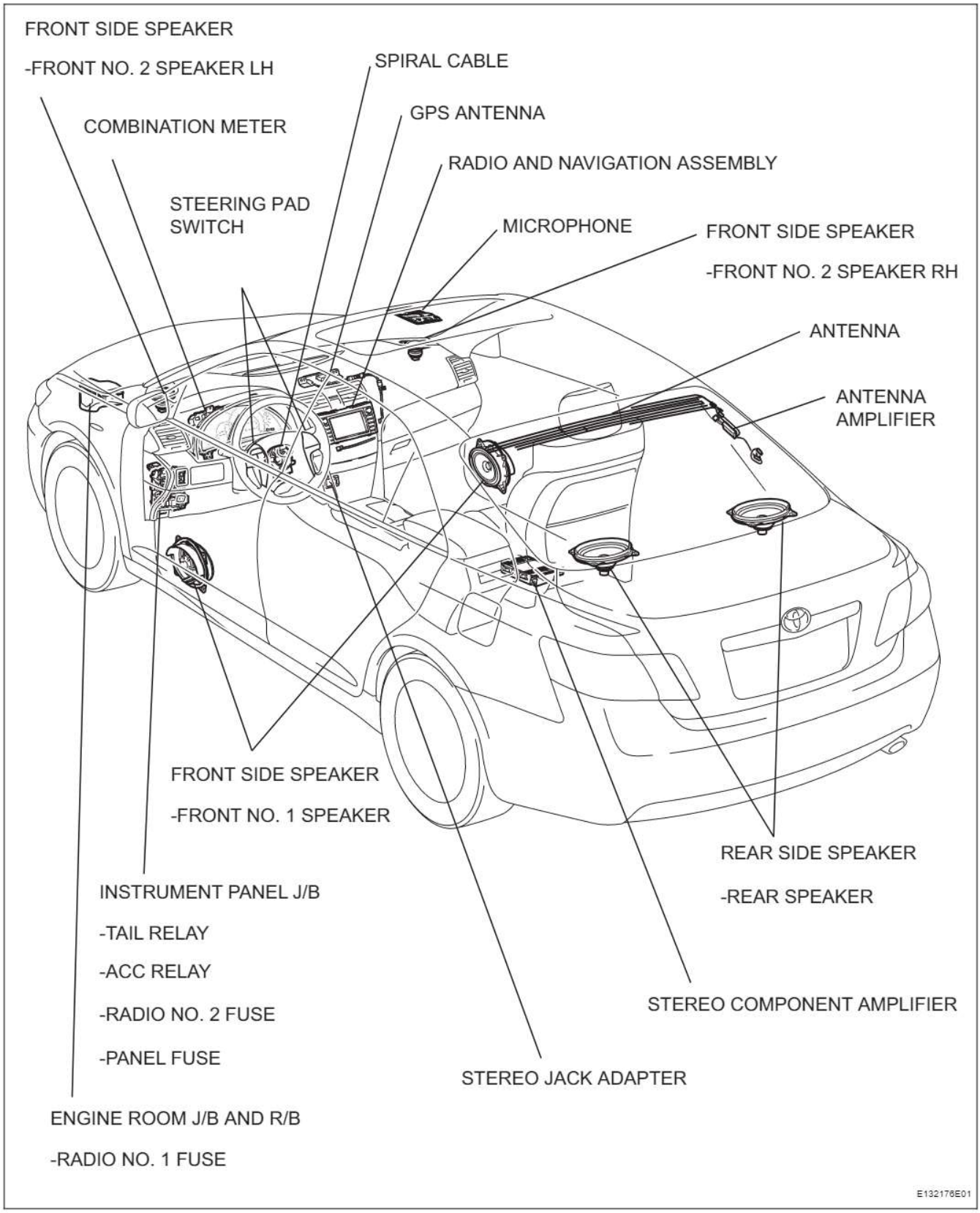
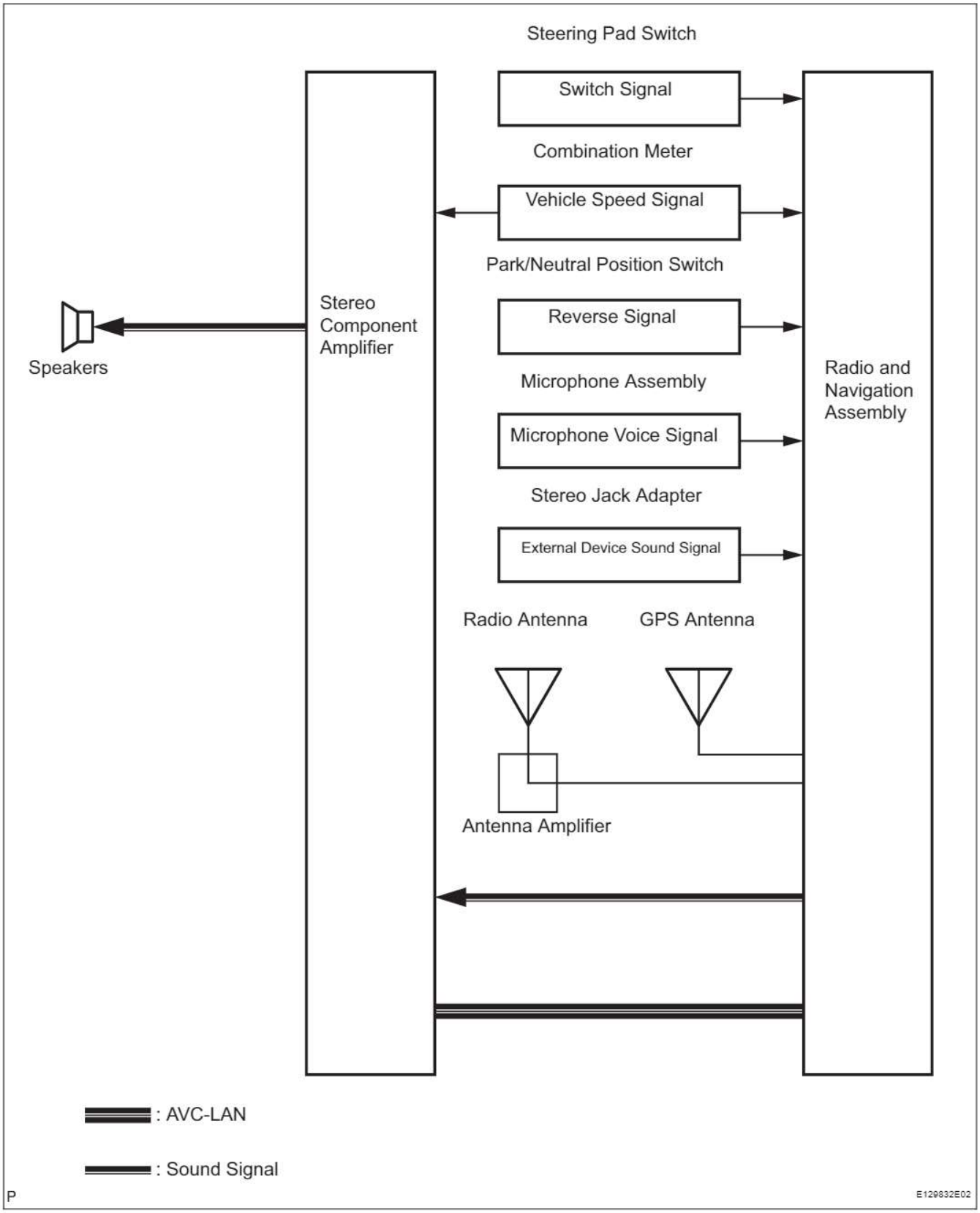
NAVIGATION SYSTEM

PARTS LOCATION



NS

SYSTEM DIAGRAM

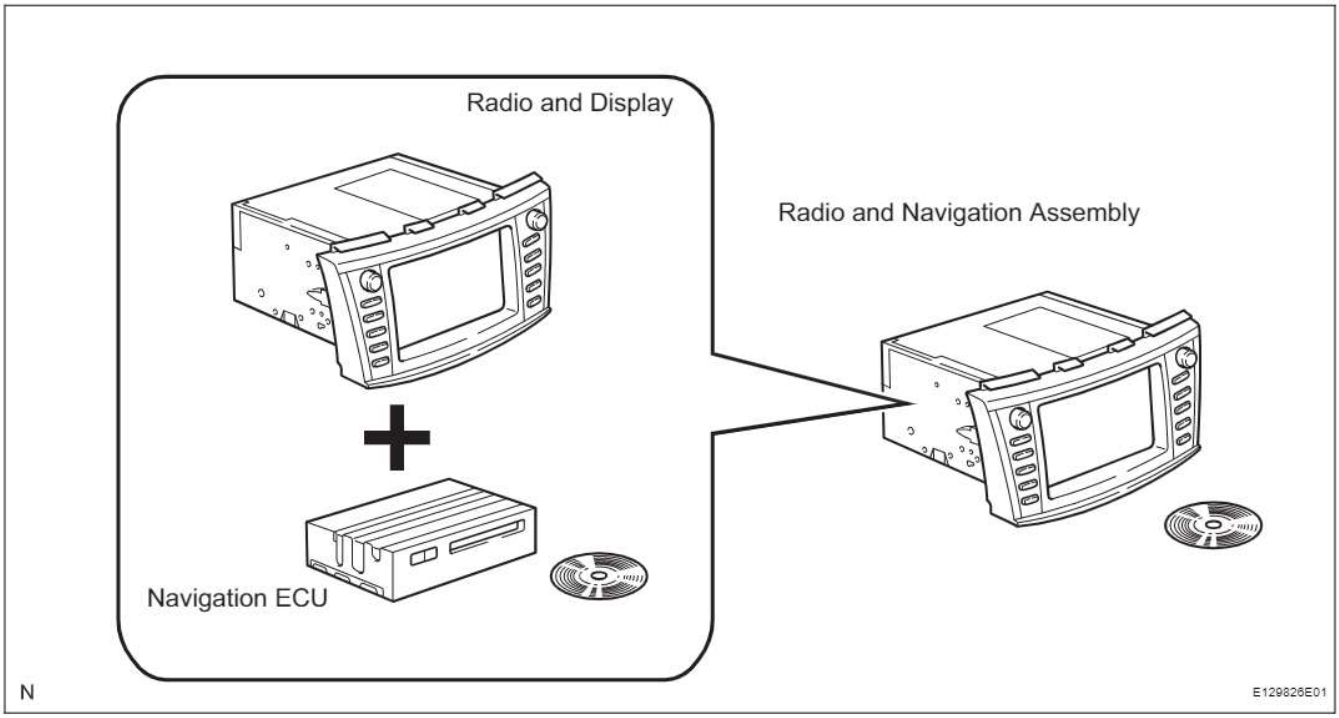


NS

SYSTEM DESCRIPTION

1. Radio and navigation assembly outline

(a) Conventionally, 2 separate devices, a "radio and display" and a "navigation ECU" are used. This model has adopted a new type, combining these devices into a single unit.

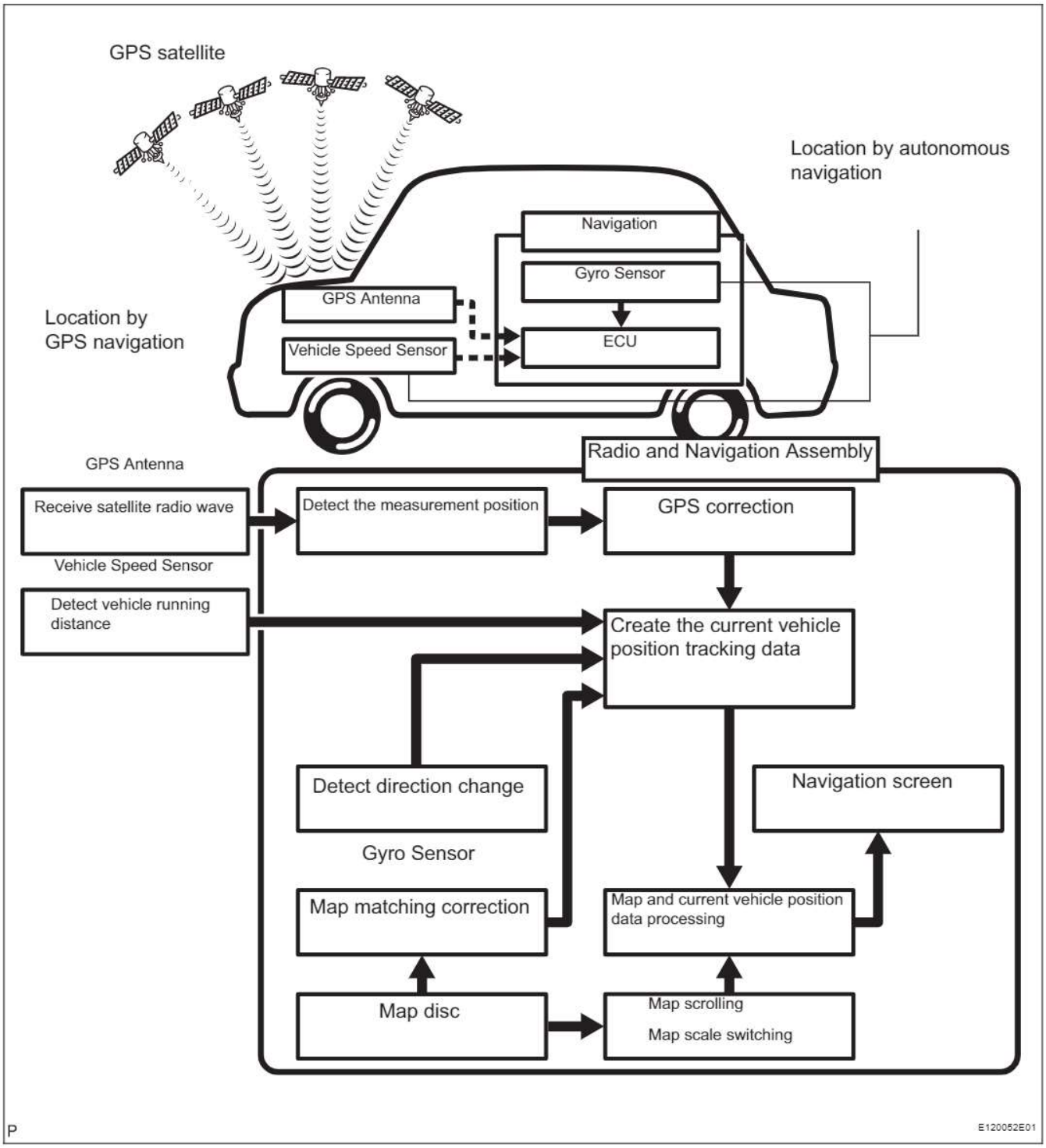


NS

2. Navigation system outline

(a) Vehicle position tracking methods

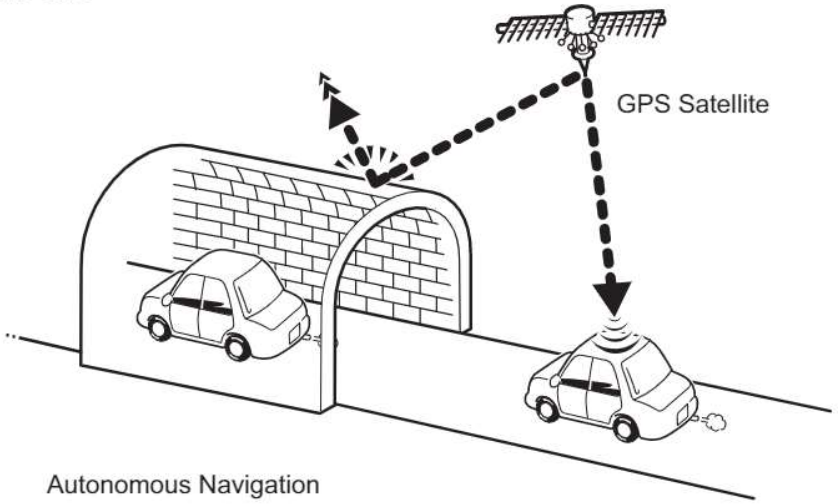
It is essential that the navigation system correctly tracks the current vehicle position and displays it on the map. There are 2 methods to track the current vehicle position: autonomous (dead reckoning) and GPS* (satellite) navigation. Both navigation methods are used in conjunction with each other.
*GPS (Global Positioning System)



Operation	Description
Vehicle Position Calculation	The radio and navigation assembly calculates the current vehicle position (direction and current position) using the direction deviation signal from the gyro sensor and the running distance signal from the vehicle speed sensor and creates the driving route.
Map Display Processing	The radio and navigation assembly displays the vehicle track on the map by processing the vehicle position data, vehicle running track, and map data from the map disc.
Map Matching	The map data from the map disc is compared to the vehicle position and running track data. Then, the vehicle position is matched with the nearest road.
GPS Correction	The vehicle position is matched to the position measured by GPS. Then, the measurement position data from the GPS unit is compared with the vehicle position and running track data. If the position is widely different, the GPS measurement position is used.
Distance Correction	The running distance signal from the vehicle speed sensor includes the error caused by tire wear and slippage between the tires and road surface. Distance correction is performed to account for this. The radio and navigation assembly automatically offsets the running distance signal to make up for the difference between it and the distance data of the map. The offset is automatically updated.

Navigation is performed even where the GPS radio wave does not reach.

- In a tunnel
- In an indoor parking lot
- Between tall buildings
- Under an overpass
- On a forest or tree-lined path



Autonomous Navigation

Autonomous Navigation and GPS Wave Navigation

P

I100028E07

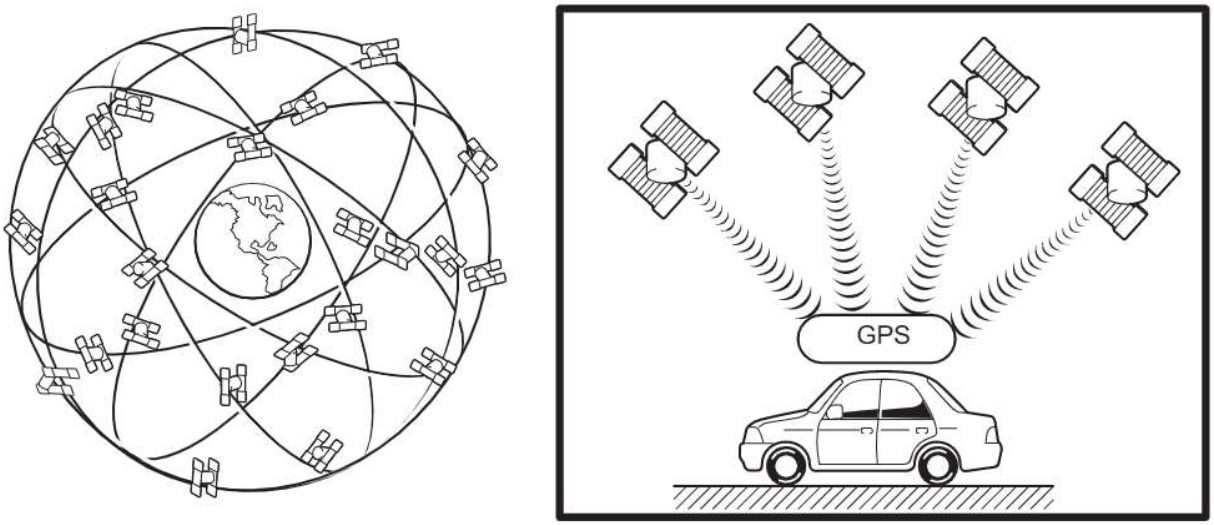
NS

HINT:
The combination of autonomous and GPS navigation makes it possible to display the vehicle position even when the vehicle is in places where the GPS radio wave cannot receive a signal. When only autonomous navigation is used, however, the mapping accuracy may slightly decline.

(b) Autonomous navigation
This method determines the relative vehicle position based on the running track determined by the gyro and vehicle speed sensors located in the radio and navigation assembly.
(1) Gyro sensor
Calculates the direction by detecting angular velocity. It is located in the radio and navigation assembly.
(2) Vehicle speed sensor
Used to calculate the vehicle running distance.

(c) GPS navigation (Satellite navigation)
This method detects the absolute vehicle position using radio waves from a GPS satellite.
* GPS satellites were launched by the U.S. Department of Defence for military purposes.

Current longitude/latitude/altitude is determined using the radio wave arrival time from four satellites.

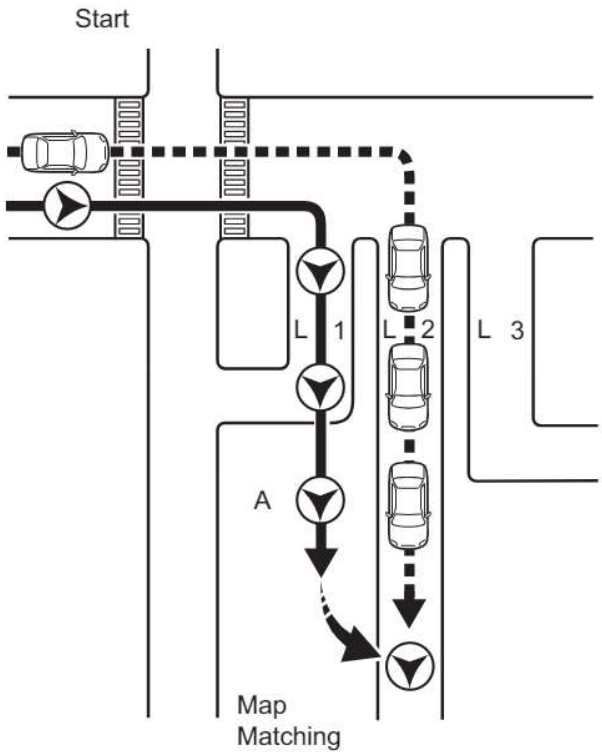


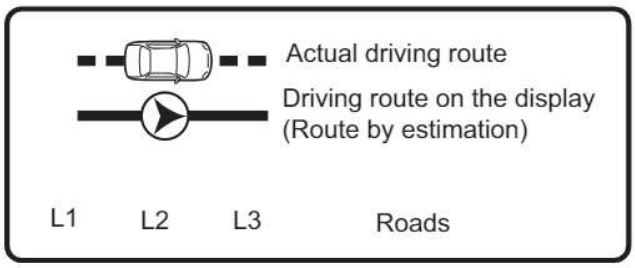
P I100029E03

Number of satellites	Measurement	Description
2 or less	Measurement impossible	Vehicle position cannot be obtained because the number of satellites is not enough.
3	2-dimensional measurement is possible	Vehicle position is obtained based on the current longitude and latitude. (This is less precise than 3-dimensional measurement.)
4	3-dimensional measurement is possible	Vehicle position is obtained based on the current longitude, latitude and altitude.

NS

(d) Map matching
The current driving route is calculated by autonomous navigation (according to the gyro sensor and vehicle speed sensor) and GPS navigation. This information is then compared with possible road shapes from the map data in the map disc and the vehicle position is set onto the most appropriate road.





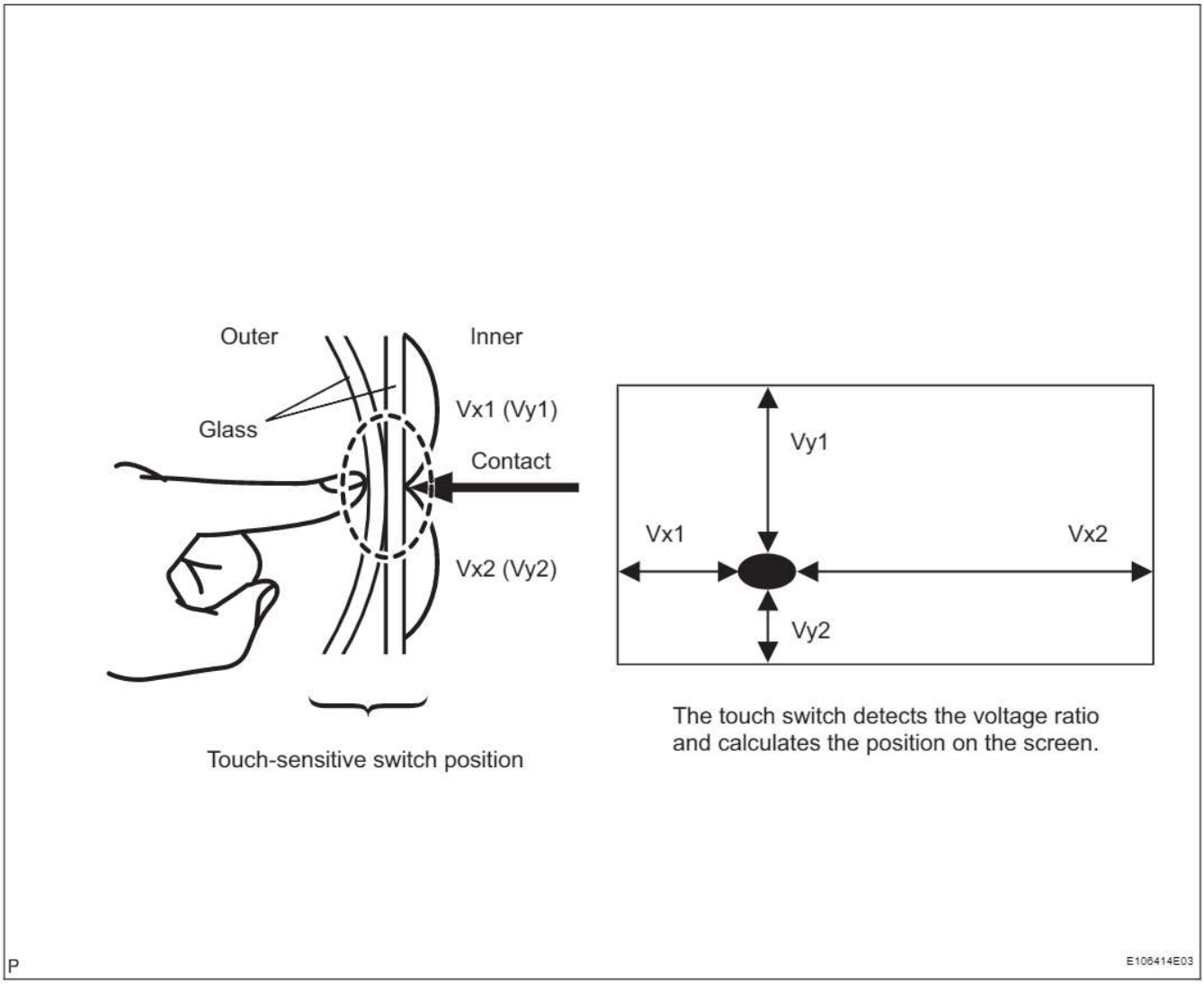
The system compares the shape of the roads L1, L2 and L3 to the estimated running track after the vehicle makes a right turn. At point A, the vehicle position differs enough from the shape of L1 that the display switches to the road L2.

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NS

(e) Touch switch
Touch switches are touch-sensitive (interactive) switches operated by touching the screen. When a switch is pressed, the outer glass bends in to contact the inner glass at the pressed position. By doing this, the voltage ratio is measured and the pressed position is detected.



3. DVD (Digital Versatile Disc) player outline (for navigation map)

(a) The radio and navigation assembly (built-in navigation ECU) uses a laser pickup to read the digital signals recorded on a DVD.
HINT:
- Do not disassemble any part of the radio and navigation assembly (built-in navigation ECU).
- Do not apply oil to the radio and navigation assembly (built-in navigation ECU).
- Do not insert anything but a DVD into the radio and navigation assembly (built-in navigation ECU).

NS

CAUTION:
Do not look directly at the laser pickup because the radio and navigation assembly (built-in navigation ECU) uses an invisible laser beam. Be sure to only operate the navigation system as instructed.

4. CD (Compact Disc) player outline

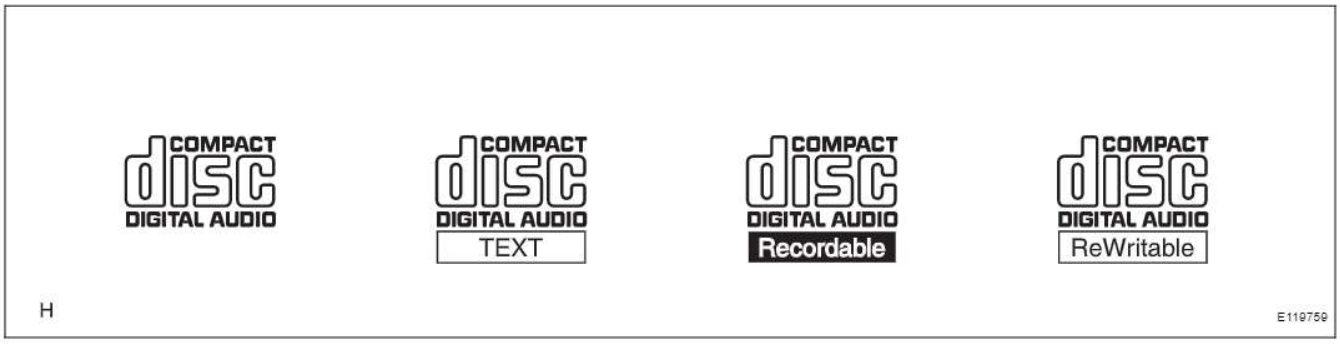
(a) A compact disc player uses a laser pickup to read digital signals recorded on a compact disc (CD). By converting the digital signals to analog, it can play music and other content.

NOTICE:
- **Do not disassemble any part of the CD player.**
- **Do not apply oil to the CD player.**
- **Do not insert anything but a CD into the CD player.**

CAUTION:
Do not look directly at the laser pickup because the CD player uses an invisible laser beam. Be sure to only operate the player as instructed.

(b) Usable discs

(1) This player can only play audio CDs, CD-Rs (CD-Recordable), and CD-RWs (CD-ReWritable) that have any of the following marks:



(c) Precautions for use of discs

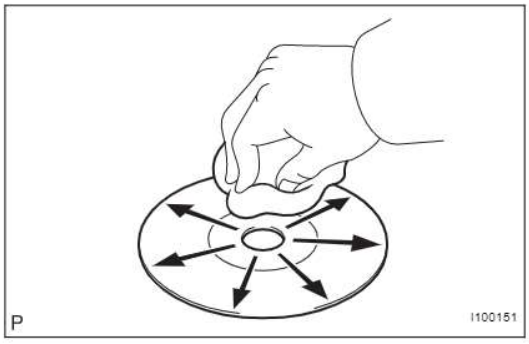
NOTICE:
- **Copy-protected CDs cannot be played.**
- **CD-Rs and CD-RWs may not be played depending on the recording conditions or characteristics of the discs, or due to damage, dirt, or deterioration caused by leaving the discs in the cabin for a long time.**
- **Unfinalized CD-Rs and CD-RWs cannot be played.**
- **DualDiscs that mate DVD recorded material on one side with CD digital audio material on the other cannot be played.**
- **Keep the discs away from dirt. Be careful not to damage the discs or leave your fingerprints on them.**
- **Hold discs by the outer edge and center hole with the label side up.**

NS

- **Leaving the disc exposed halfway out of the slot for a long time after pressing the disc eject button may cause deformation of the disc, making the disc unusable.**
- **If discs have adhesive tape, stickers, CDR labels, or any traces of such labels attached, the discs may not be ejected or player malfunctions may result.**
- **Keep the discs away from direct sunlight. (Exposure to direct sunlight may cause deformation of the disc, making the disc unusable.)**
- **Do not use odd-shaped CDs because these may cause player malfunctions.**
- **Do not use discs whose recording portion is transparent or translucent because they may not be inserted, ejected, or played normally.**

HINT:

- When it is cold or it is raining, if the windows mist up, mist and also dew may form in the player. In such a case, the CD may skip or the CD may stop in the middle of play. Ventilate or dehumidify the cabin for a while before using the player.
- The CD may skip if the player experiences strong vibrations when the vehicle is driven on rough road or similar uneven surface(s).



(d) Cleaning

NOTICE:

Do not use a lens cleaner because it may cause a malfunction in the pickup portion of the player.

(1) If dirt is on the disc surface, wipe it clean with a soft dry cloth such as an eyeglass cleaner for plastic lenses from the inside to the outside in a radial direction.

NOTICE:

- **Pressing on the disc by hand or rubbing the disc with a hard cloth may scratch the disc surface.**
- **Use of solvent such as a record spray, antistatic agent, alcohol, benzine, and thinner, or a chemical cloth may cause damage to the disc, making the disc unusable.**

5. MP3/WMA OUTLINE

(a) Playable MP3 file standards

Compatible standard	MP3 (MPEG1 LAYER3, MPEG2 LSF LAYER 3)
Compatible sampling frequency	• MPEG1 LAYER3: 32, 44.1, 48 (kHz) • MPEG2 LSF LAYER3: 16, 22.05, 24 (kHz)
Compatible bit rate	• MPEG1 LAYER3: 64, 80, 96, 112, 128, 160, 192, 224, 256, 320 (kbps) • MPEG2 LSF LAYER3: 64, 80, 96, 112, 128, 144, 160 (kbps) • Compatible with VBR
Compatible channel mode	Stereo, joint stereo, dual channel, monaural

NS

(b) Playable WMA file standards

Compatible standard	WMA Ver. 7, 8, and 9
Compatible sampling frequency	32, 44.1, 48 (kHz)
Compatible bit rate	• Ver. 7, 8: CBR48, 64, 80, 96, 128, 160, 192 (kbps) • Ver. 9: CBR48, 64, 80, 96, 128, 160, 192, 256, 320 (kbps) • Compatible with playback of channel 2 only

(c) ID3 tag and WMA tag

(1) Additional textual information called ID3 tag can be input to MP3 files. Information such as song titles and artist names can be stored.
HINT:
This player is compatible with the ID3 tags of ID3 Ver. 1.0 and 1.1, and ID3 Ver. 2.2 and 2.3. (Number of characters complies with ID3 Ver. 1.0 and 1.1.)

(2) Additional textual information called WMA tag can be input to WMA files. Information such as song titles and artist names can be stored.

(d) Usable media

(1) Only CD-ROMs, CD-Rs (CD-Recordable), and CD-RWs (CD-ReWritable) can be used to play MP3/WMA files.
NOTICE:
- **CD-Rs and CD-RWs are more easily affected by a hot and humid environment than discs used for normal audio CDs. For this reason, some CD-Rs and CD-RWs may not be played.**
- **If there are fingerprints or scratches on the disc, the disc may not be played or the CD may skip.**
- **Some CD-Rs and CD-RWs deteriorate if they are left in the cabin for a long time.**
- **Keep CD-Rs and CD-RWs in a storage case that is impenetrable to light.**

(e) Usable media format

(1) Usable media format

Disc format	CD-ROM Mode 1, CD-ROM XA Mode 2 Form 1
File format	ISO9660 Level 1 and Level 2 (Joliet, Romeo)

HINT:
- As for MP3/WMA files written in any format other than those above, the contents of the files may not be played normally or the file names or folder names may not be displayed correctly.
- This player is compatible with multi-session discs and can play CD-Rs and CD-RWs on which MP3/WMA files are added. However, only the first session can be played.
- Discs whose first session includes both music data and MP3 or WMA format data cannot be played.

NS

(2) Standard and restrictions

Maximum directory levels	8 levels
Maximum number of characters for a folder name/file name	32 characters
Maximum number of folders	192 (Including empty folders, route folders, and folders that do not contain MP3/WMA files)
Maximum number of files in a disc	255 (Including non-MP3/WMA files)

(f) File names

(1) Only files with an extension of ".mp3" or ".wma" can be recognized and played as MP3 or WMA files.

(2) Save MP3 or WMA files with an extension of ".mp3" or ".wma".

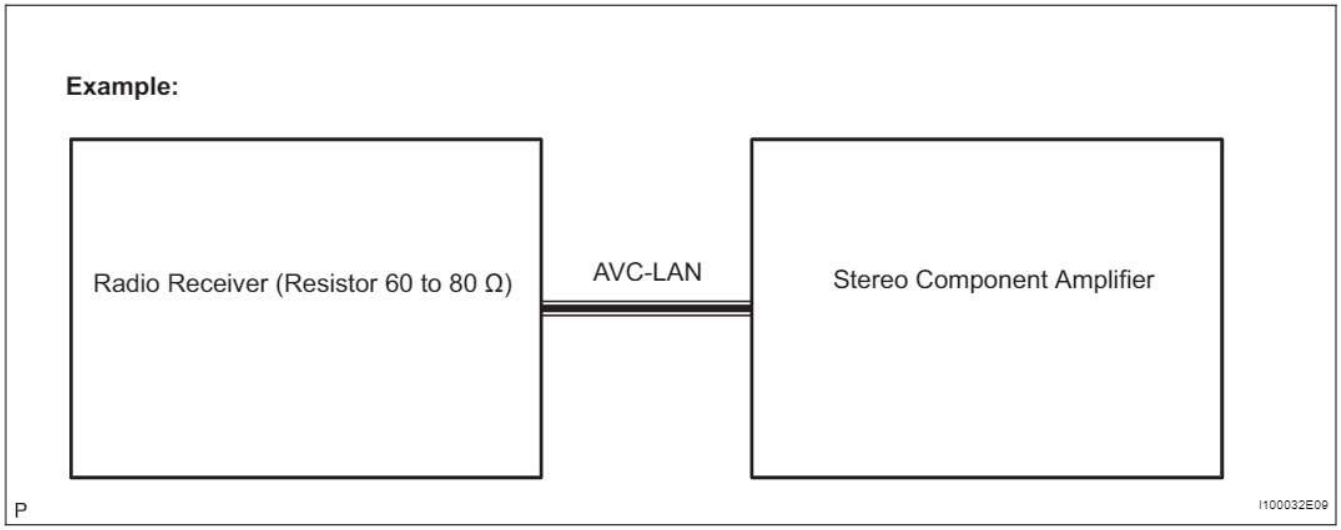
NOTICE:

If saving non-MP3 or non-WMA files with an extension of ".mp3" or ".wma", those files are wrongly recognized as MP3 or WMA files and played. A loud noise may occur and damage to the speaker may result.

6. AVC-LAN Description

(a) What is AVC-LAN?

AVC-LAN, an abbreviation for "Audio Visual Communication Local Area Network", is a united standard developed by the manufacturers in affiliation with Toyota Motor Corporation. This standard pertains to audio and visual signals as well as switch and communication signals.



NS

(b) Purpose:
Recently, car audio systems have rapidly developed and the functions have vastly changed. The conventional car audio system is being integrated with multi-media interfaces similar to those in navigation systems. At the same time, customers are demanding higher quality from their audio systems. This is merely an overview of the standardization background. The specific purposes are as follows:
(1) To solve sound problems, etc. caused by using components of different manufacturers through signal standardization.
(2) To allow each manufacturer to concentrate on developing products they do best. From this, reasonably priced products can be produced.
HINT:
- If a short to +B or short to ground is detected in the AVC-LAN circuit, communication is interrupted and the audio system will stop functioning.
- If the audio system has a navigation system installed, the multi-display unit acts as the master unit.
If the navigation system is not installed, the audio head unit acts as the master unit instead. If the radio and navigation assembly is installed, it is the master unit.
- The radio and navigation assembly contains a resistor that is necessary to enable communication on the different AVC-LAN circuits.
- The car audio system with an AVC-LAN circuit has a diagnostic function.
- Each component has a specified number (3-digit) called a physical address. Each function has a number (2-digit) called a logical address.

7. Communication system outline

(a) Components of the navigation system communicate with each other via the AVC-LAN.
(b) The radio and navigation assembly has enough resistance (60 to 80 Ω) necessary for communication.
(c) If a short circuit or open circuit occurs in the AVC-LAN circuit, communication is interrupted and the navigation system will stop functioning.

NS

8. Diagnostic function outline

(a) The audio system has a diagnostic function (the result is indicated on the master unit).
(b) A 3-digit hexadecimal component code (physical address) is allocated to each component on the AVC-LAN. Using this code, the component in the diagnostic function can be displayed.

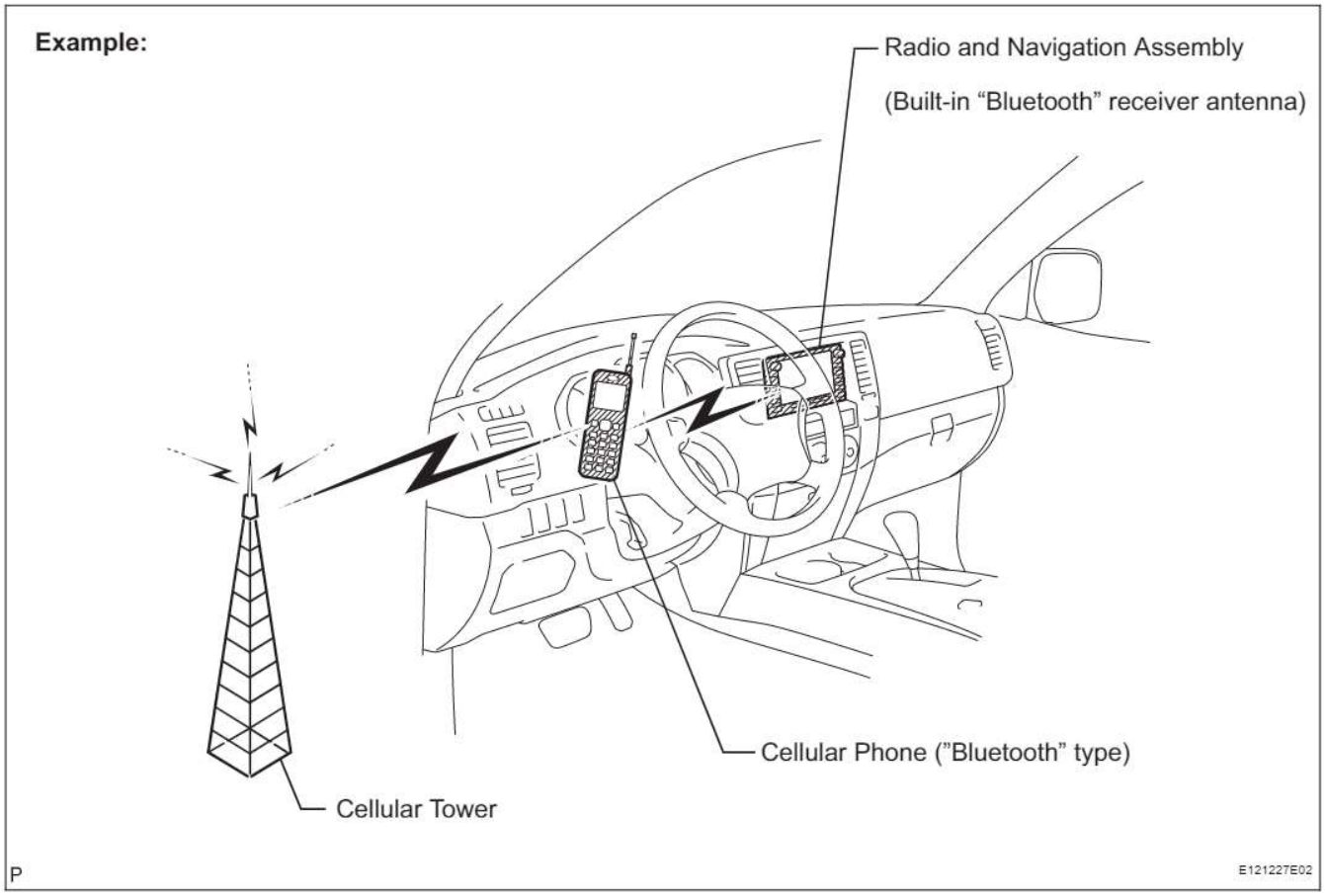


9. "Bluetooth" outline

(a) "Bluethooth" is a trademark owned by Bluetooth SIG. Inc.

(b) "Bluetooth" is a new wireless connection technology that uses the 2.4 GHz frequency band. This makes it possible to connect a cellular phone ("Bluetooth" compatible phone *1) to the radio and navigation assembly (the "Bluetooth" system is built in), and use the handsfree function of the cellular phone, even if it is in a pocket or bag. As a result, it is not necessary to use a connector attached directly to the cellular phone.

*1: Some versions of "Bluetooth" compatible cellular phones may not function.



HINT:

The communication performance of "Bluetooth" may vary depending on obstructions or radio wave conditions between communication devices, electromagnetic radiation, communication device sensitivity, or antenna capacity.

NS

HOW TO PROCEED WITH TROUBLESHOOTING

1	VEHICLE BROUGHT INTO A WORKSHOP

NEXT

2	DIAGNOSTIC QUESTIONING AND SYMPTOM CONFIRMATION

(a) Ask the customer about symptoms and confirm malfunctions.

- THE SCREEN DISPLAYS NOTHING (GO TO STEP 8, AND PROCEED TO "BLACK SCREEN")
- OTHER SYMPTOMS (GO TO STEP 3)

3	CONFIRM THE SYSTEM NORMAL CONDITION

- APPLICABLE (THIS IS NOT A MALFUNCTION)
- NOT APPLICABLE (GO TO STEP 4)

4	CHECK DTC

HINT:
If the system cannot enter the diagnostic mode, inspect the AVC-LAN and all the components that connect to the AVC-LAN for short circuits and repair or replace the problem part.

- A CODE IS OUTPUT (GO TO STEP 5)
- A CODE IS NOT OUTPUT (GO TO STEP 8)

5	DTC CLEAR

(a) Clear the DTCs and finish the diagnostic mode.
HINT:
The currently output DTCs may not indicate actual malfunctions depending on the vehicle conditions.

NS

NEXT

6	RECHECK DTC

HINT:
- If the system cannot enter the diagnostic mode, inspect the AVC-LAN and all the components that connect to the AVC-LAN for short circuits.
- Even if the malfunction symptom is not confirmed, check for diagnostic trouble codes. This is because the system stores past diagnostic trouble codes.
- Refer to the detailed description on the diagnostic screen as necessary (See page NS-30).
- Check the diagnostic trouble code and inspect the area the code indicates.

→	A CODE IS OUTPUT (GO TO STEP 7)
→	A CODE IS NOT OUTPUT (GO TO STEP 8)

7	DIAGNOSTIC TROUBLE CODE CHART

(a) Find the output code in the diagnostic trouble code chart (See page NS-52).

NEXT	GO TO STEP 10

8	PROBLEM SYMPTOMS TABLE

(a) Find the applicable symptom code in the problem symptoms table (See page NS-41).
HINT:
If the symptom does not recur and no code is output, perform the symptom reproduction method (See page IN-40).

→	THERE IS AN APPLICABLE SYMPTOM CODE IN THE TABLE (GO TO STEP 10)
→	THERE IS NO APPLICABLE SYMPTOM CODE IN THE TABLE (GO TO STEP 9)

9	CHECK THE ECU TERMINAL ARRANGEMENT BASED ON THE MALFUNCTION SYMPTOM

NEXT

10	CHECK THE CIRCUIT

(a) Adjust, repair, or replace as necessary.

NS

NEXT

11	RECHECK THE DIAGNOSTIC TROUBLE CODE

HINT:
After deleting the DTCs, recheck for diagnostic trouble codes.

NEXT

12	PERFORM CONFIRMATION TEST

NEXT

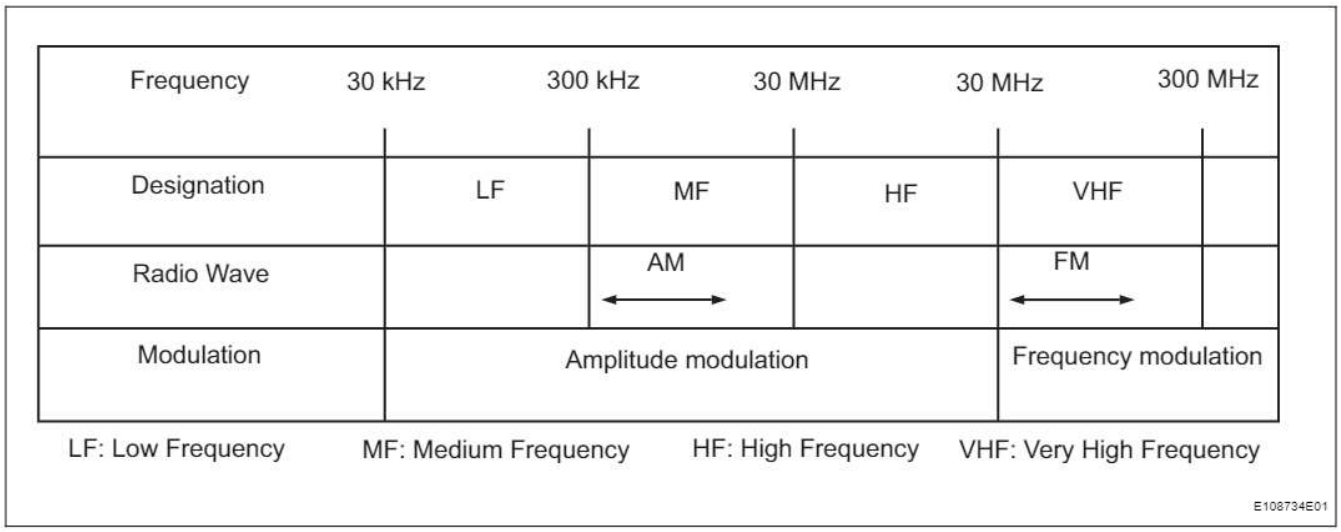
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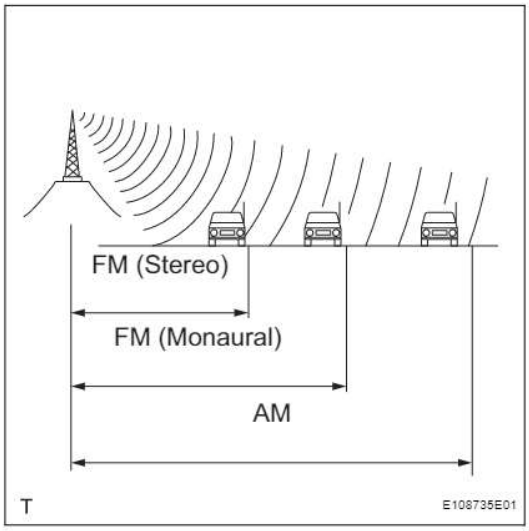
IDENTIFICATION OF NOISE SOURCE

1. Radio Description

(a) Radio frequency band

(1) Radio broadcasts use the radio frequency bands shown in the table below.





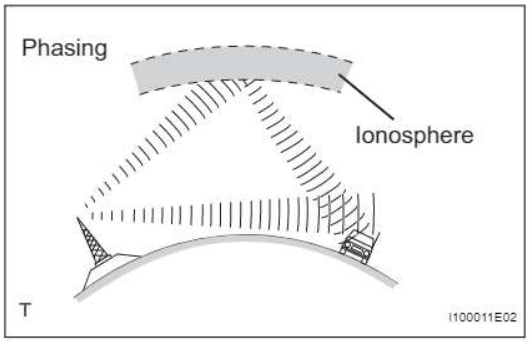
(b) Service area

(1) The service areas of AM and FM broadcasts are vastly different. Sometimes an AM broadcast can be received very clearly but an FM stereo cannot. FM stereo has the smallest service area, and is prone to pick up static and other types of interference such as noise.

(c) Radio reception problems

HINT:

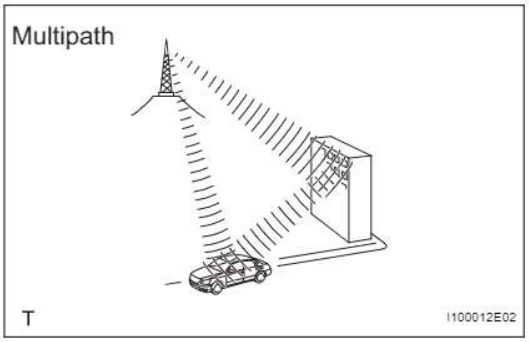
In addition to static, other problems such as "phasing", "multipath", and "fade out" exist. These problems are not caused by electrical noise, but by the radio signal propagation method itself.



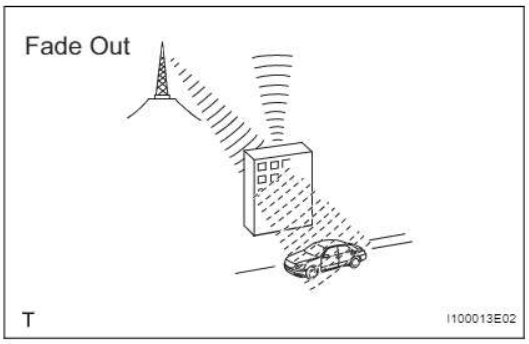
(1) Phasing

AM broadcasts are susceptible to electrical interference and another kind of interference called phasing. Occurring only at night, phasing is the interference created when a vehicle receives 2 radio wave signals from the same transmitter. One signal is reflected off the ionosphere and the other signal is received directly from the transmitter.

NS



(2) Multipath
Multipath is a type of interference created when a vehicle receives 2 radio wave signals from the same transmitter. One signal is reflected off buildings or mountains and the other signal is received directly from the transmitter.



(3) Fade out
Fade out is caused by objects (buildings, mountains, and other such large obstacles) that deflect away part of a signal, resulting in a weaker signal when the object is between the transmitter and vehicle. High frequency radio waves, such as FM broadcasts, are easily deflected by obstructions. Low frequency radio waves, such as AM broadcasts, are much more difficult to deflect.

(d) Noise problem
Technicians must have a clear understanding about each customer's noise complaint. Use the following table to diagnose noise problems.

Radio Frequency	Noise Occurrence Condition	Presumable Cause
AM	Noise occurs in a specified area	Foreign noise
AM	Noise occurs when listening to an intermittent broadcast	An identical program transmitted from multiple towers can cause noise where the signals overlap
AM	Noise occurs only at night	Music beat from a distant broadcast
FM	Noise occurs while driving in a specified area	Multipath or phasing noise resulting from a change in FM frequency

HINT:
If the noise does not match the examples above, refer to the descriptions about phasing and multipath.

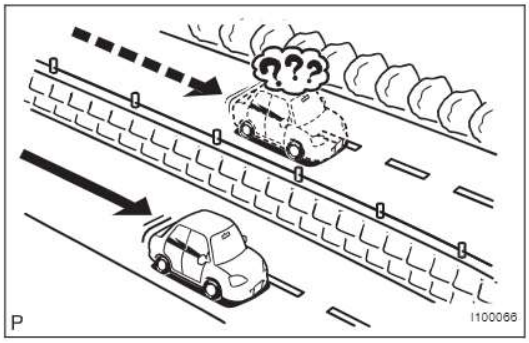
NS

SYSTEM NORMAL CONDITION CHECK

1. CHECK NORMAL CONDITION

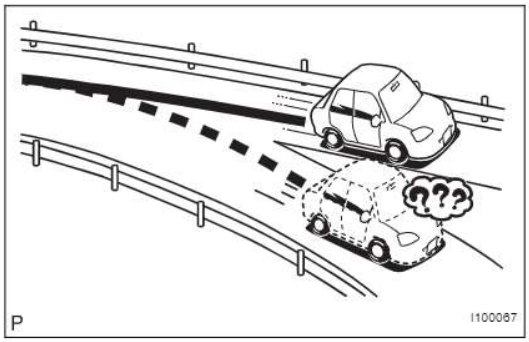
(a) If the symptom is applicable to any of the following, it is intended behavior, and not a malfunction.

Symptom	Answer
A longer route than expected is chosen.	Depending on the road conditions, the radio and navigation assembly may determine that a longer route is quicker.
Even when distance priority is high, the shortest route is not shown.	Some paths may not be advised due to safety concerns.
When the vehicle is put into motion immediately after the engine starts, the navigation system deviates from the actual position.	If the vehicle starts before the navigation system activates, the system may not react.
When running on certain types of roads, especially new roads, the vehicle position deviates from the actual position.	When the vehicle is driving on new roads not available on the map disc, the system attempts to match it to another nearby road, causing the position mark to deviate.

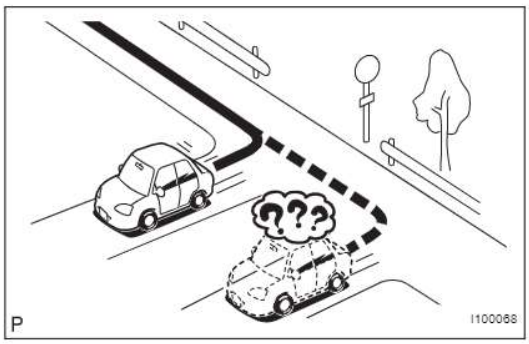


(b) The following symptoms are not a malfunction, but are caused by errors inherent in the GPS, gyro sensor, speed sensor, and radio and navigation assembly.

(1) The current position mark may be displayed on a nearby parallel road.

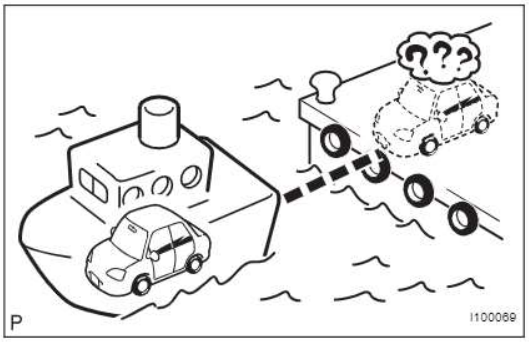


(2) Immediately after a fork in the road, the current vehicle position mark may be displayed on the wrong road.

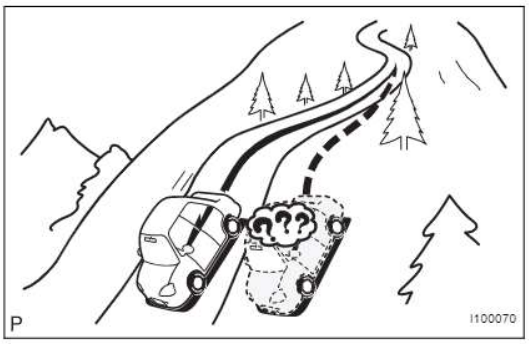


(3) When the vehicle turns right or left at an intersection, the current vehicle position mark may be displayed on a nearby parallel road.

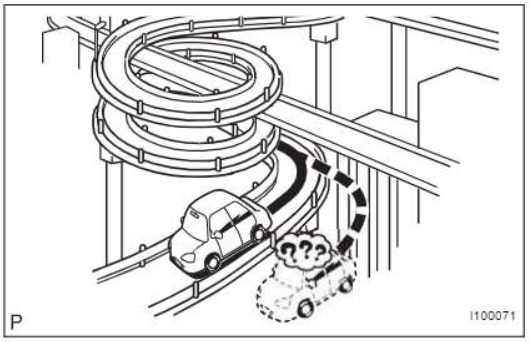
NS



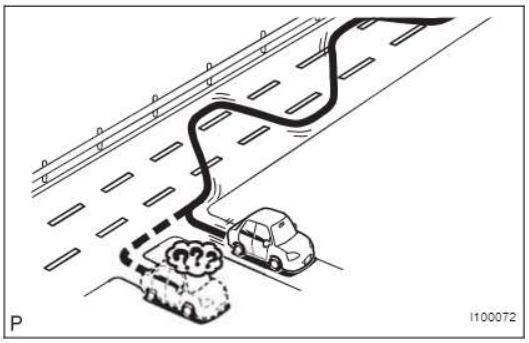
(4) When the vehicle is carried, such as on a ferry, and the vehicle itself is not running, the current vehicle position mark may be displayed in the position where the vehicle was until a measurement can be performed by GPS.



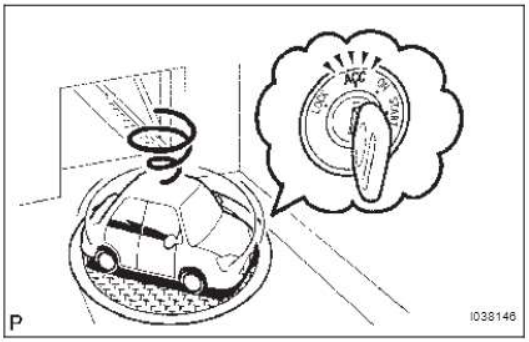
(5) When the vehicle runs on a steep hill, the current vehicle position mark may deviate from the correct position.



(6) When the vehicle makes a continuous turn of 360, 720, 1,080, etc. degrees, the current vehicle position mark may deviate from the correct position.



(7) When the vehicle moves erratically, such as constant lane changes, the current vehicle position mark may deviate from the correct position.

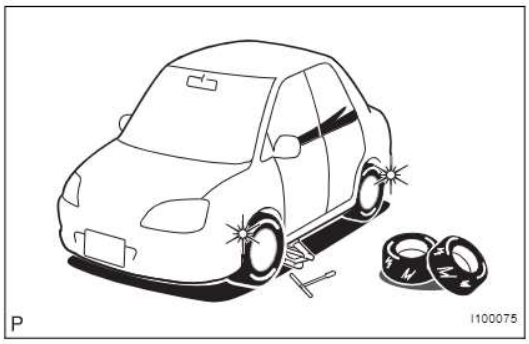


(8) When the ignition switch is turned on (ACC or IG) on a turntable before parking, the current vehicle position mark may not point in the correct direction. The same will occur when the vehicle comes out of parking.

NS



(9) When the vehicle runs on a snowy road or a mountain path with the chains installed or using a spare tire, the current vehicle position mark may deviate from the correct position.



(10)When a tire is changed, the current vehicle position mark may deviate from the correct position.
HINT:
- Diameter of the tire may change, causing a speed sensor error.
- Performing the "tire change" in calibration mode will allow the system to correct the current vehicle position faster.

NS

DISPLAY CHECK MODE

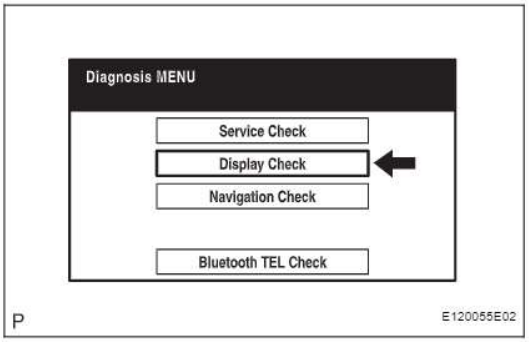
HINT:

- This mode checks the color display on the display.
- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.

1. **ENTER DIAGNOSTIC MODE (See page NS-46)**

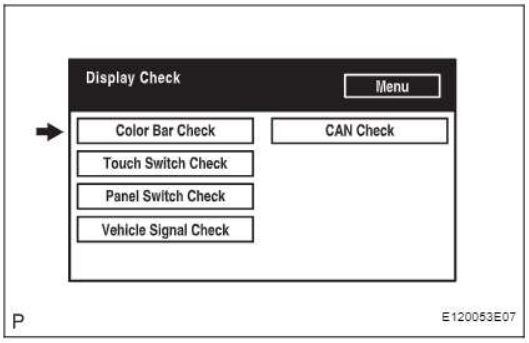
2. **DISPLAY CHECK**

   (a) Select "Display Check" from the "Diagnosis MENU" screen.



3. **COLOR BAR CHECK**

   (a) Select "Color Bar Check" from the "Display Check" screen.

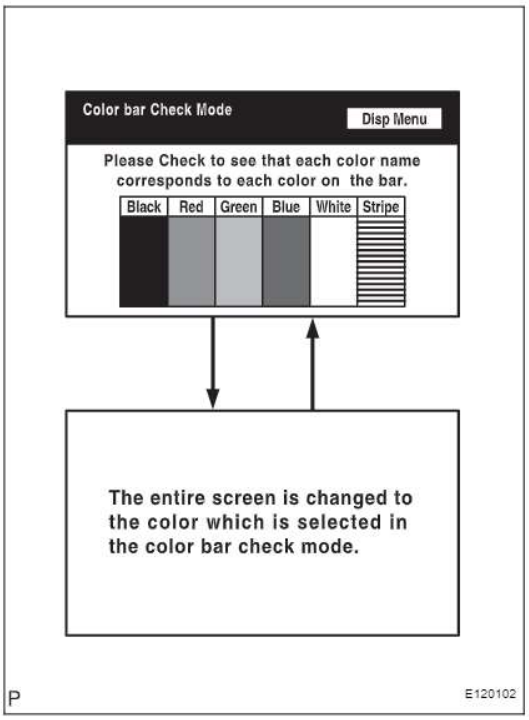


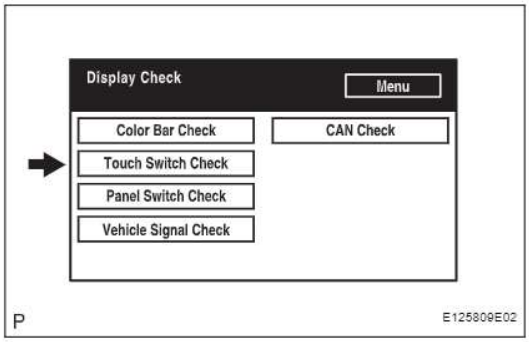
   (b) Select a color bar from the "Color Bar Check Mode" screen.

   (c) Check the display color.

   HINT:

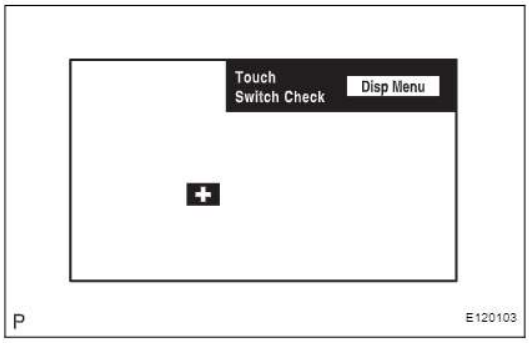
   - The entire screen turns to the color or stripe selected.
   - Touching the display will return to the "Color Bar Check" screen.



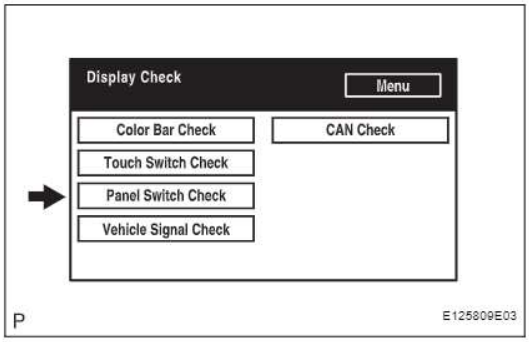


4. TOUCH SWITCH CHECK

(a) Select "Touch Switch Check" from the "Display Check" screen.

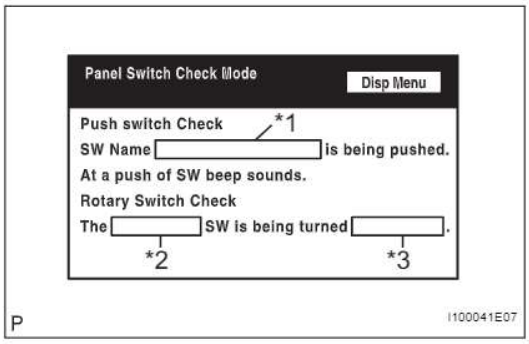


(b) Touch the display anywhere in the open area to perform the check when the "Touch Switch Check" screen is displayed.
HINT:
- A "+" mark is displayed where the display is touched.
- The "+" mark remains on the display even after the finger is removed.



5. PANEL SWITCH CHECK

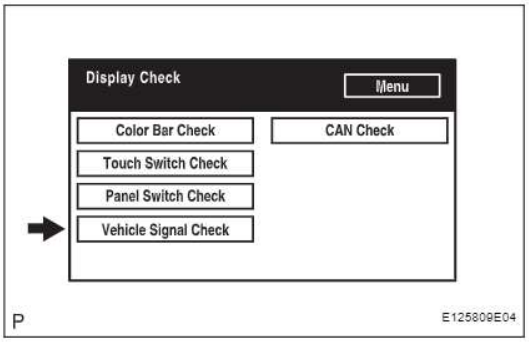
(a) Select "Panel Switch Check" from the "Display Check" screen.



(b) Operate each switch and check that the switch name and condition are correctly displayed.

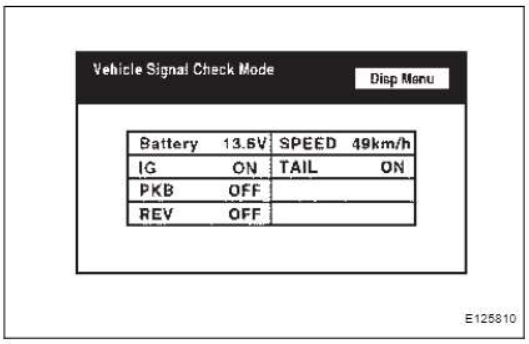
Display	Contents
Push switch name/*1	• Name of the pressed switch is displayed. • If more than one switch is pressed, "MULTIPLE" is displayed.
Rotary switch name/*2	Name of the rotary switch is displayed.
Rotary switch direction/*3	Direction of the rotary switch is displayed.

NS



6. VEHICLE SIGNAL CHECK

(a) Select "Vehicle Signal Check" from the "Display Check" screen.

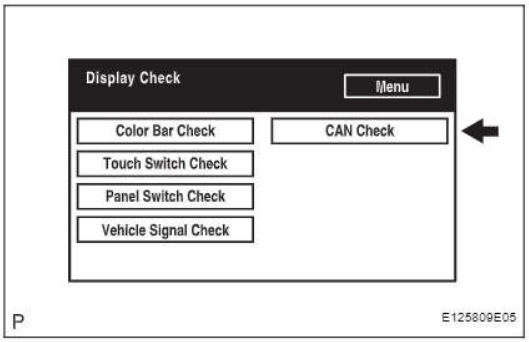


(b) When the "Vehicle Signal Check Mode" screen is displayed, check all the vehicle signal conditions.
HINT:
- Only conditions having inputs are displayed.
- This screen is updated once per second when input signals to the vehicle are changed.
- For details of this function, refer to DIAGNOSIS DISPLAY DETAILED DESCRIPTION (See page NS-30).

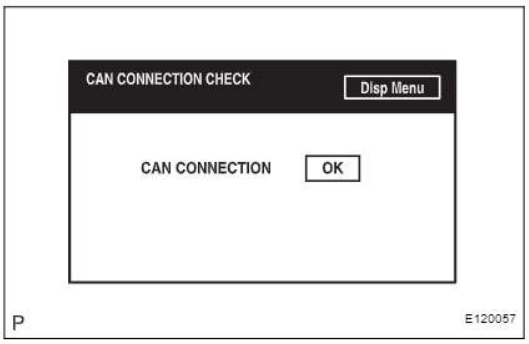
7. CAN CHECK

NOTICE:

This function operates only for the systems connected to the CAN system.



(a) Select "CAN Check" from the "Display Check" screen.



(b) Check the CAN connection check result.
HINT:
For details of this function, refer to DIAGNOSIS DISPLAY DETAILED DESCRIPTION (See page NS-30).

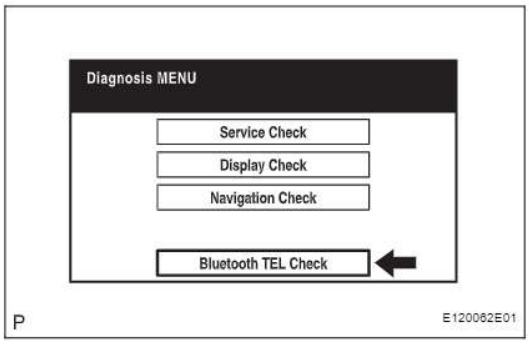
NS

BLUETOOTH TEL CHECK MODE

HINT:
Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.

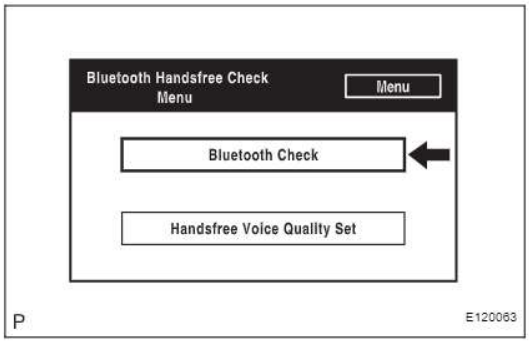
1. **ENTER DIAGNOSTIC MODE (See page NS-46)**

2. **"BLUETOOTH" TEL CHECK**

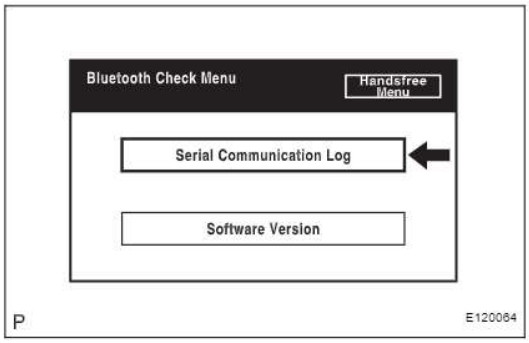


(a) Select "'Bluetooth' TEL Check" from the "Diagnosis MENU" screen.

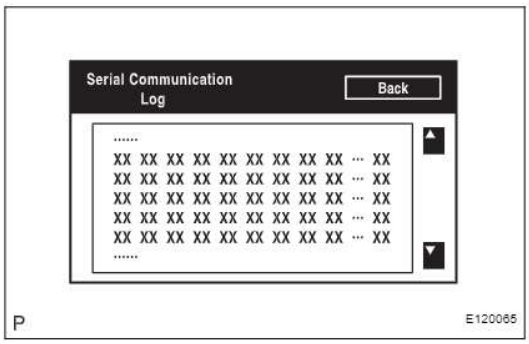
3. **"BLUETOOTH" CHECK**



(a) Select "'Bluetooth' Check" from the "'Bluetooth' Handsfree Check Menu" screen.

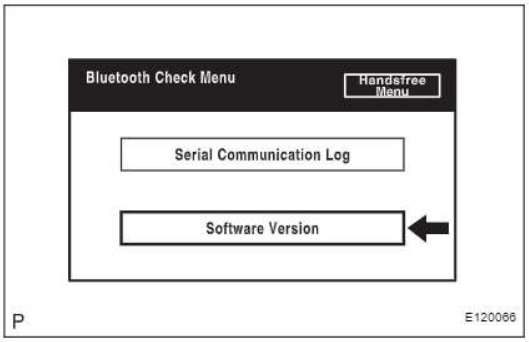


(b) Select "Serial Communication Log" from the "'Bluetooth' Check Menu" screen.

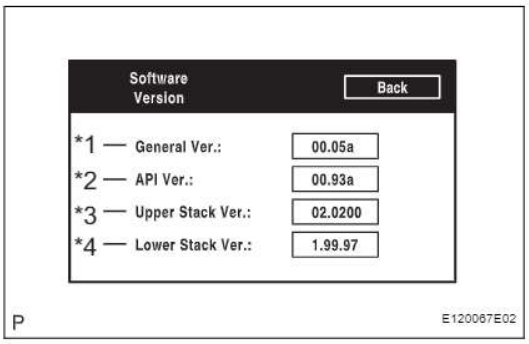


(1) The communication log data in the display ECU are displayed on this screen.
HINT:
The displayed data can be used as a reference.

NS



(c) Select "Software Version" from the "'Bluetooth' Check Menu" screen.

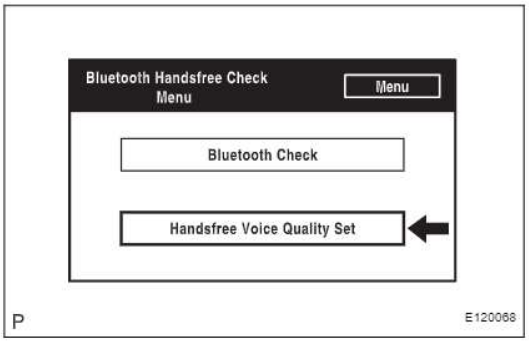


(1) Check the software version of the "Bluetooth" module.

Screen Description:

Display	Contents
General Version/*1	• General software version of "Bluetooth" module • If any of the API version, upper stack version, and low stack version is updated, the general version is upgraded.
API Version/*2	API software version is displayed.
Upper Stack Version/*3	Upper Stack version is displayed.
Lower Stack Version/*4	Lower Stack version is displayed.

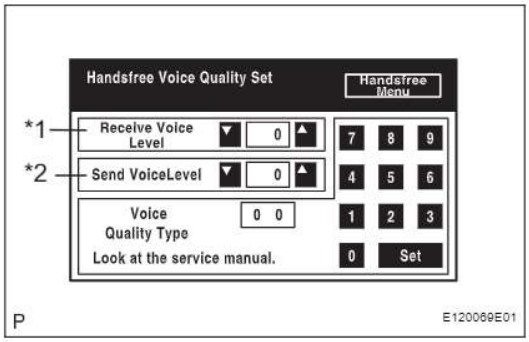
HINT:
This function is controlled by the built-in display ECU.



4. HANDSFREE VOICE QUALITY SET

(a) Select "Handsfree Voice Quality Set" from the "'Bluetooth' Handsfree Check Menu" screen.

NS



(b) Check the handsfree voice level.

Screen Description:

Display	Contents
Received voice level adjustment/*1	Setting possible for the voice level received from "Bluetooth" compatible phones.
Sent voice level adjustment/*2	Setting possible for the voice level sent to "Bluetooth" compatible phones.

HINT:
This function is controlled by the built-in display ECU.
NOTICE:
"Voice Quality Type" should not be changed.

NS

NAVIGATION CHECK MODE

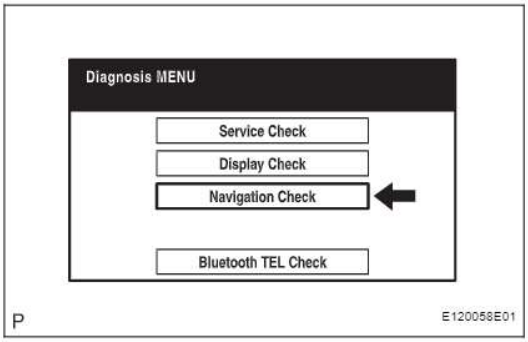
HINT:

- This mode displays GPS satellite information.
- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.

1. **ENTER DIAGNOSTIC MODE (See page NS-46)**

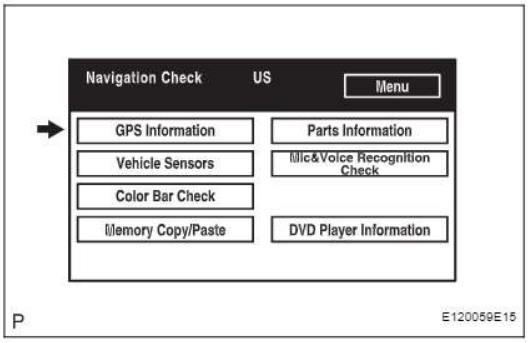
2. **NAVIGATION CHECK**

   (a) Select "Navigation Check" from the "Diagnosis MENU" screen.



3. **GPS INFORMATION**

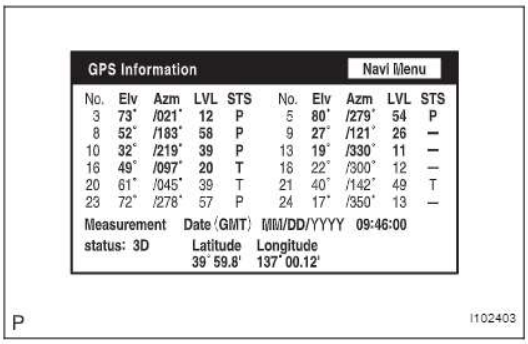
   (a) Select "GPS Information" from the "Navigation Check" screen.



   (b) When GPS information is displayed, check the GPS conditions.

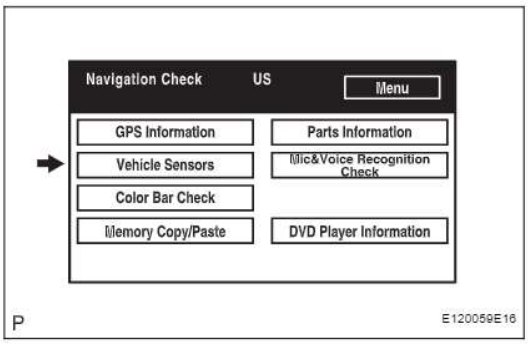
   HINT:

   - This screen is updated once per second when input signals to the vehicle are changed.
   - For details of this function, refer to DIAGNOSIS DISPLAY DETAILED DESCRIPTION (See page NS-30).

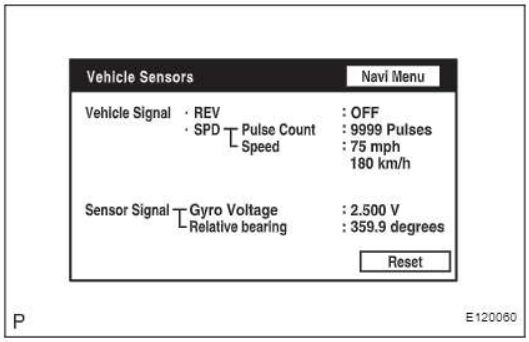


4. **VEHICLE SENSORS**

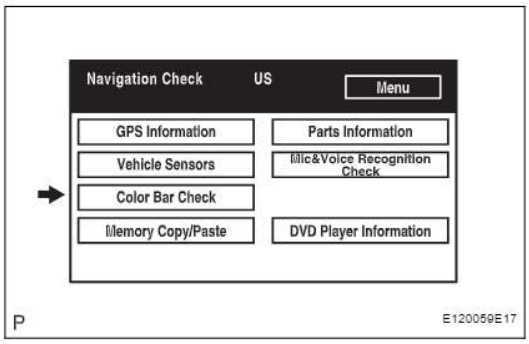
   (a) Select "Vehicle Sensors" from the "Navigation Check" screen.



NS

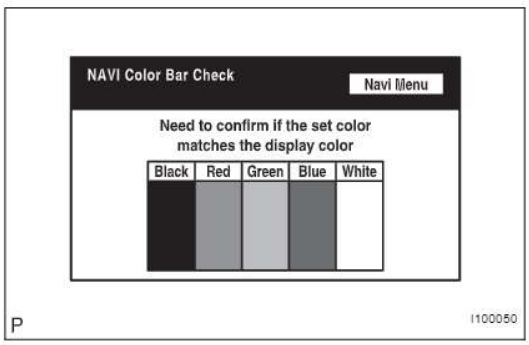


(b) Check all the signals and sensors when vehicle signal information is displayed.
HINT:
- This screen is updated once per second when input signals to the vehicle are changed.
- This screen displays vehicle signals input to the built-in navigation ECU.
- For details of this function, refer to DIAGNOSIS DISPLAY DETAILED DESCRIPTION (See page NS-30).

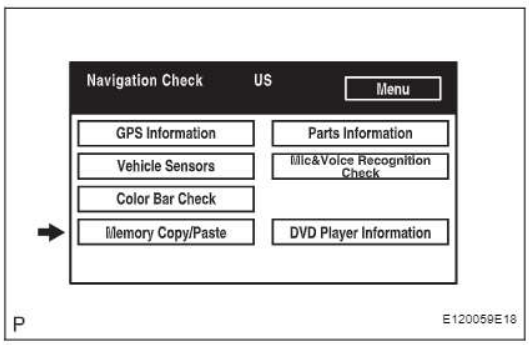


5. COLOR BAR CHECK

(a) Select "Color Bar Check" from the "Navigation Check" screen.

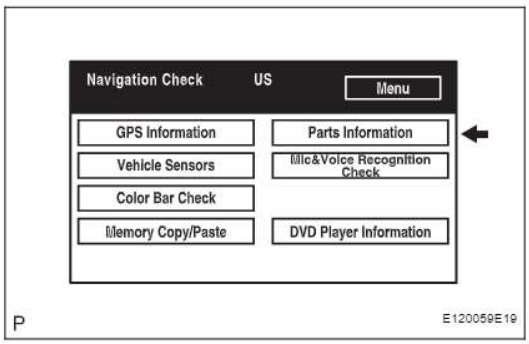


(b) Check each color of the color bar when the "NAVI Color Bar Check" screen is displayed.
HINT:
- Colors will not be displayed full-screen as in "Display Check Mode".
- This screen displays the built-in navigation ECU display color.



6. MEMORY COPY/PASTE CHECK

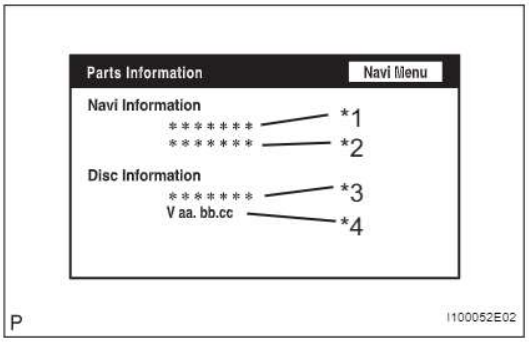
HINT:
This function cannot be used.



7. PARTS INFORMATION

(a) Select "Parts Information" from the "Navigation Check" screen.

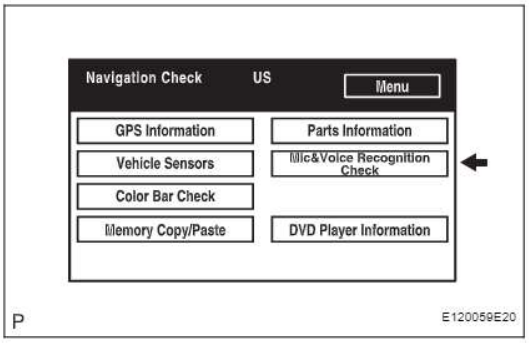
NS



(b) Check the navigation and disc information when the "Parts Information" screen is displayed.

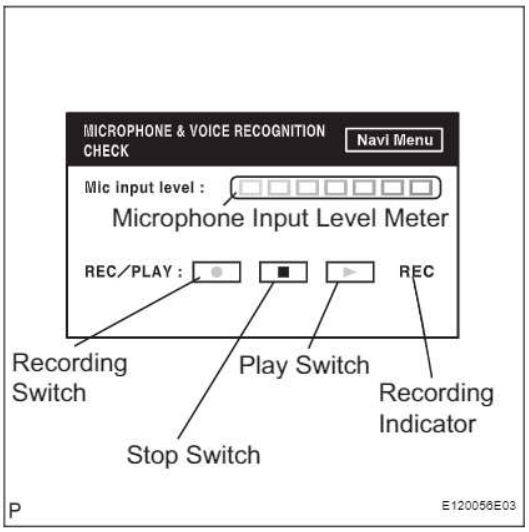
Screen Description:

Display	Contents
Navigation Manufacturer/*1	Radio and navigation assembly manufacturer is displayed.
Navigation Version/*2	Radio and navigation assembly version is displayed.
Disc Manufacturer/*3	Map disc manufacturer is displayed.
Disc Version/*4	Map disc version is displayed.



8. MIC & VOICE RECOGNITION CHECK

(a) Select "Mic & Voice Recognition Check" on the "Display Check" screen to display the "MICROPHONE & VOICE RECOGNITION CHECK" screen.



(b) When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.

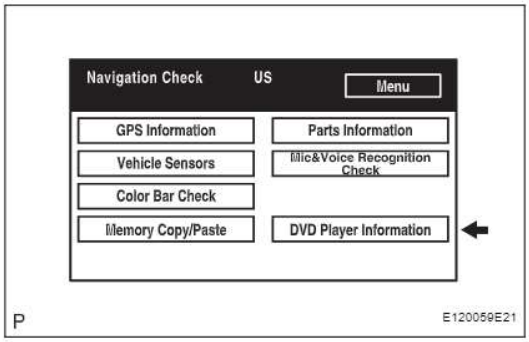
(c) Push the recording switch and perform voice recording.

(d) Check that the recording indicator remains on while recording and that the recorded voice is played normally.

HINT:

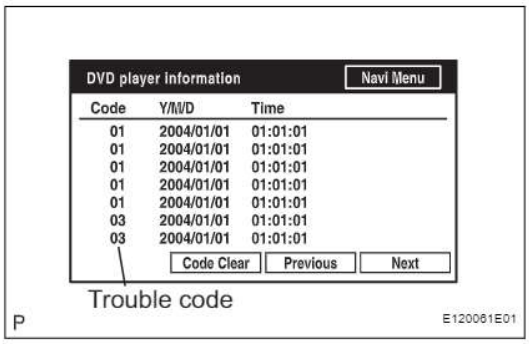
- For details of this function, refer to DIAGNOSIS DISPLAY DETAILED DESCRIPTION (See page NS-30).
- This function is controlled by the built-in navigation ECU.

NS



9. DVD PLAYER INFORMATION CHECK

(a) Select "DVD Player Information" from the "Navigation Check" screen.



(b) Check for DTCs.
HINT:
- This is a DVD player check function in the radio and navigation assembly (built-in navigation ECU).
- For details of this function, refer to DIAGNOSIS DISPLAY DETAILED DESCRIPTION (See page NS-30).

NS

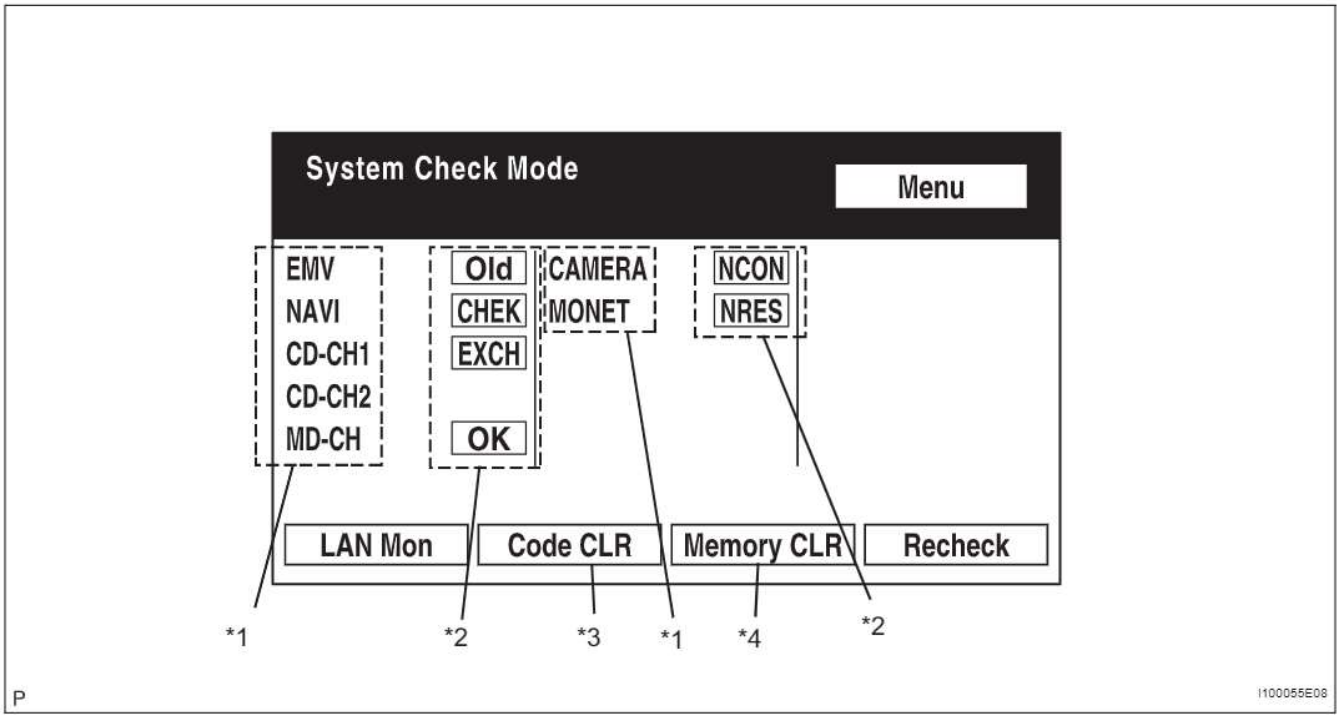
DIAGNOSIS DISPLAY DETAILED DESCRIPTION

HINT:

- This section contains a detailed description of displays within diagnostic mode.
- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.

1. SYSTEM CHECK

(a) System Check Mode Screen



(1) Device Names and Hardware Address/*1

HINT:

- Registered device names are displayed.
- If a device name is unknown to the system, its physical address is shown instead.

Address No.	Name	Address No.	Name
110	EMV	120	AVX
128	1DIN TV	140	AVN
144	G-BOOK	178	NAVI
17C	MONET	190	AUDIO H/U
1AC	CAMERA-C	1B0	Rr-TV
1C0	Rr-CONT	19D	BT-HF
1C4	PANEL	1C6	G/W
1C8	FM-M-LCD	1D8	CONT-SW
1EC	Body	118	EMVN
1F1	XM	1F2	SIRIUS
230	TV-TUNER	240	CD-CH2
250	DVD-CH	280	CAMERA
360	CD-CH1	3A0	MD-CH

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Address No.	Name	Address No.	Name
17D	TEL	440	DSP-AMP
530	ETC	1F6	RSE
1A0	DVD-P	1D6	CLOCK
238	DTV	480	AMP

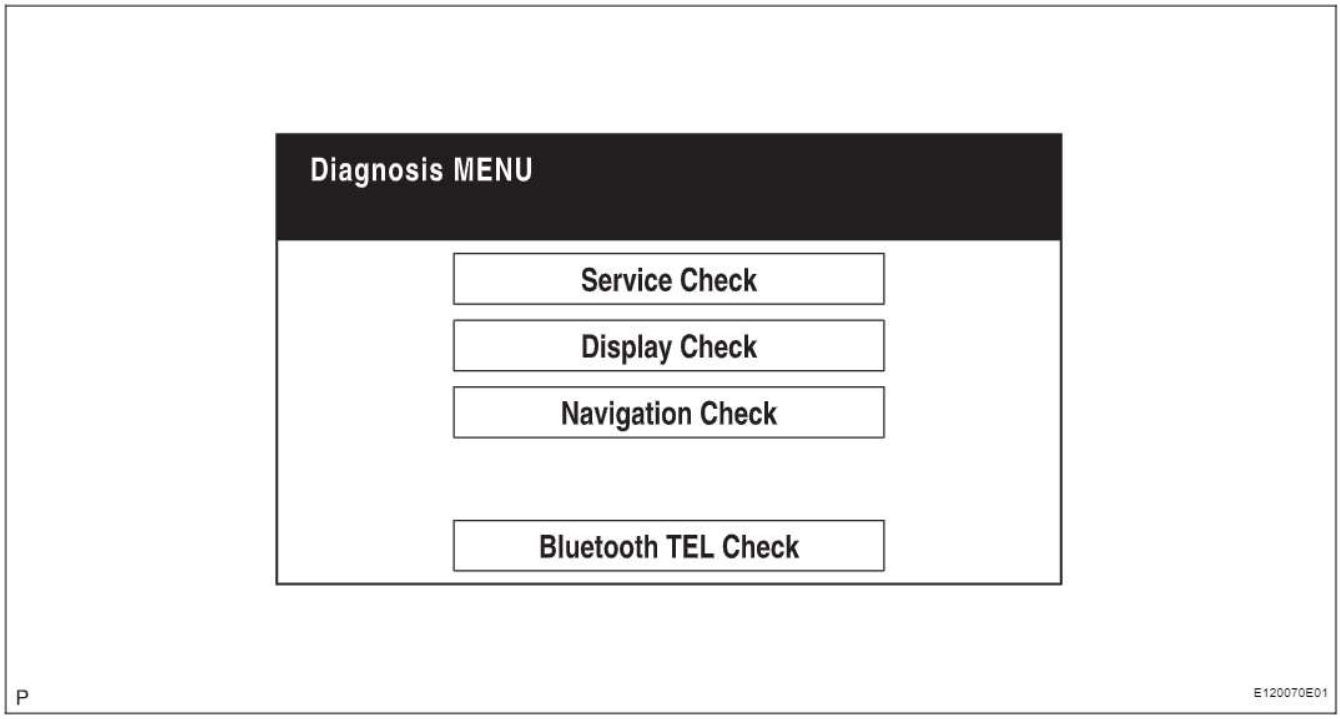
(2) Check Result/*2
HINT:
Result codes for all devices are displayed.

Result	Meaning	Action
OK	The device did not respond with a DTC (excluding communication DTCs from the AVC-LAN).	-
EXCH	The device responds with a "replace"-type DTC.	Look up the DTC in "Unit Check Mode" and replace the device.
CHEK	The device responds with a "check"-type DTC.	Look up the DTC in "Unit Check Mode".
NCON	The device was previously present, but does not respond in diagnostic mode.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.
Old	The device responds with an "old"-type DTC.	Look up the DTC in "Unit Check Mode".
NRES	The device responds in diagnostic mode, but gives no DTC information.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.

(3) Code Clear/*3
- Present DTCs are cleared.
- Press the "Code CLR" switch for 3 seconds.

(4) Memory Clear/*4
- Present and past DTCs and registered connected device names are cleared.
- Press the "Memory CLR" switch for 3 seconds.

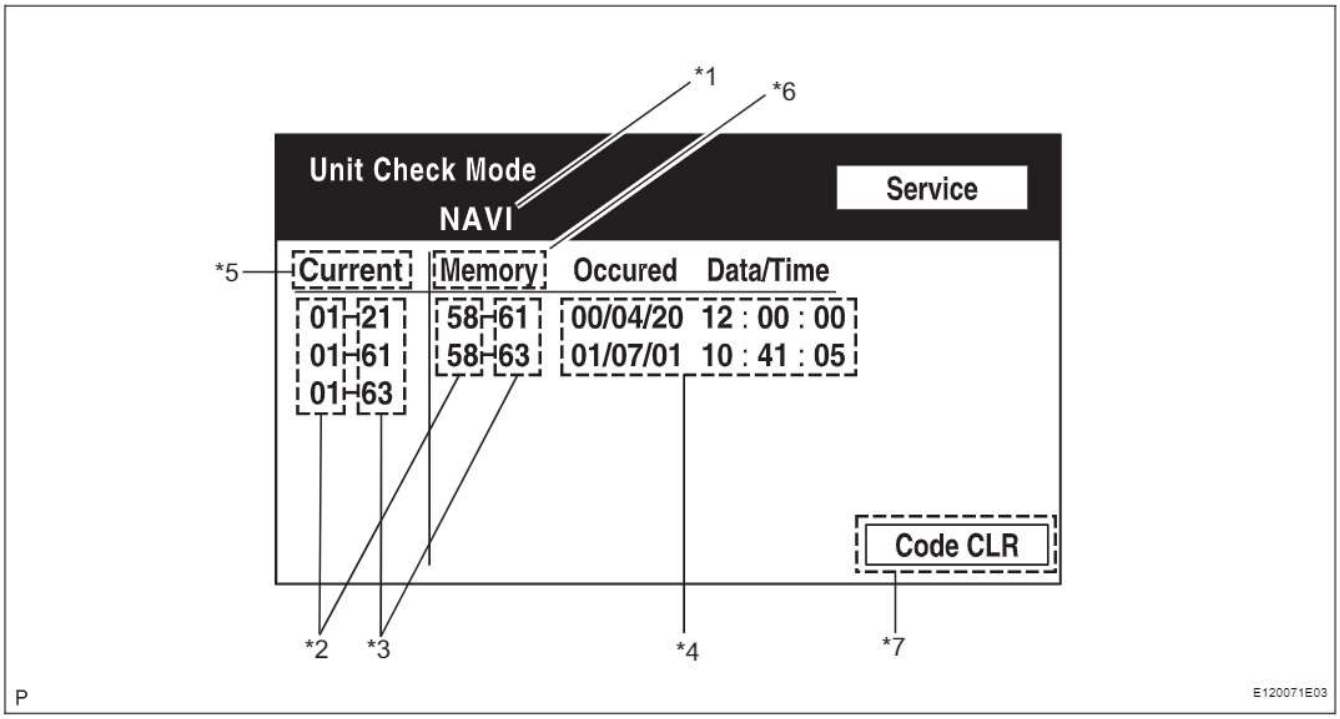
(b) Diagnosis MENU Screen



NS

HINT:
Each item is grayed out or not displayed based on the device settings.

(c) Unit Check Mode Screen

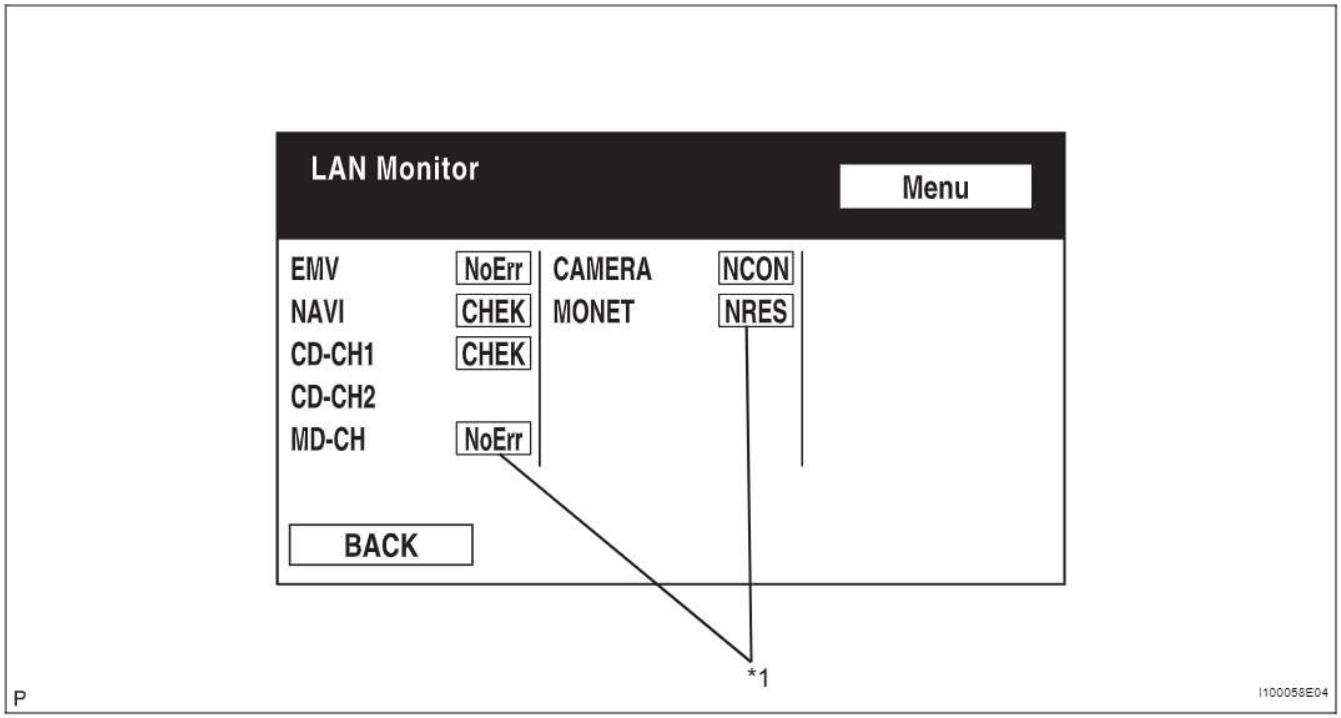


Screen Description:

Display	Contents
Device name/*1	Target device
Segment/*2	Target device logical address
DTC/*3	DTC (Diagnostic Trouble Code)
Timestamp/*4	The time and date of past DTCs are displayed. (The year is displayed in 2-digit format.)
Present code/*5	DTCs output at the service check are displayed.
Past code/*6	Diagnostic memory results and recorded DTCs are displayed.
Diagnosis clear switch/*7	Pushing this switch for 3 seconds clears the diagnostic memory data of the target device. (Both response to diagnostic system check result and the displayed data are cleared.)

NS

(d) LAN Monitor (Original) Screen

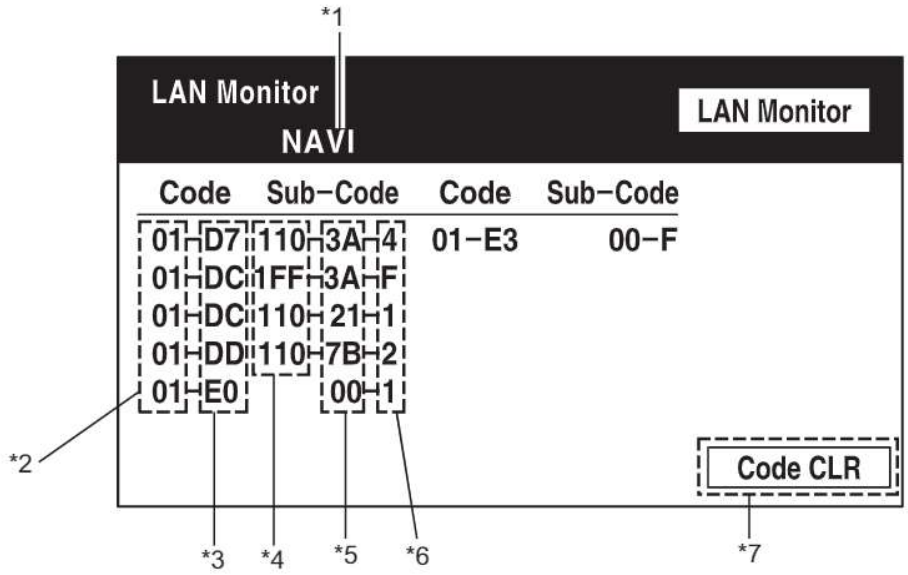


(1) Check Result/*1
HINT:
Check results of all the devices are displayed.

Result	Meaning	Action
No Err (OK)	There are no communication DTCs.	-
CHEK	The device responds with a "check"-type DTC.	Look up the DTC in "Unit Check Mode".
NCON	The device was previously present, but does not respond in diagnostic mode.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.
Old	The device responds with an "old"-type DTC.	Look up the DTC in "Unit Check Mode".
NRES	The device responds in diagnostic mode, but gives no DTC information.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.

NS

(e) LAN Monitor (Individual) Screen



P E120072E01

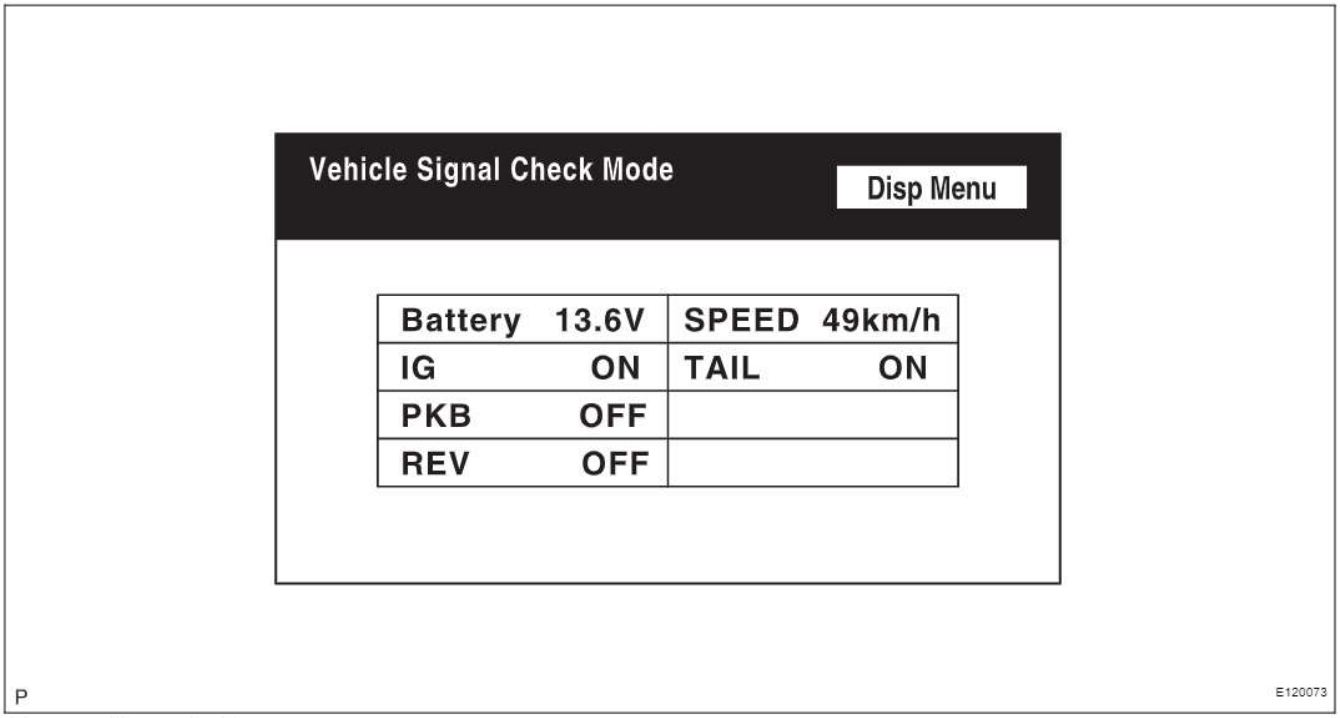
Screen Description:

Display	Contents
Device name/*1	Target device
Segment/*2	Target logical address
DTC/*3	DTC (Diagnostic Trouble Code)
Sub-code (device address)/*4	Physical address stored with DTC (If there is no address, nothing is displayed.)
Connection check No./*5	Connection check number stored with DTC
DTC occurrence/*6	Number of times the same DTC has been recorded
Diagnosis clear switch/*7	Pushing this switch for 3 seconds clears the diagnostic memory data of the target device. (Both response to diagnostic system check result and the displayed data are cleared.)

NS

2. **DISPLAY CHECK**

(a) Vehicle Signal Check Mode Screen



Screen Description:

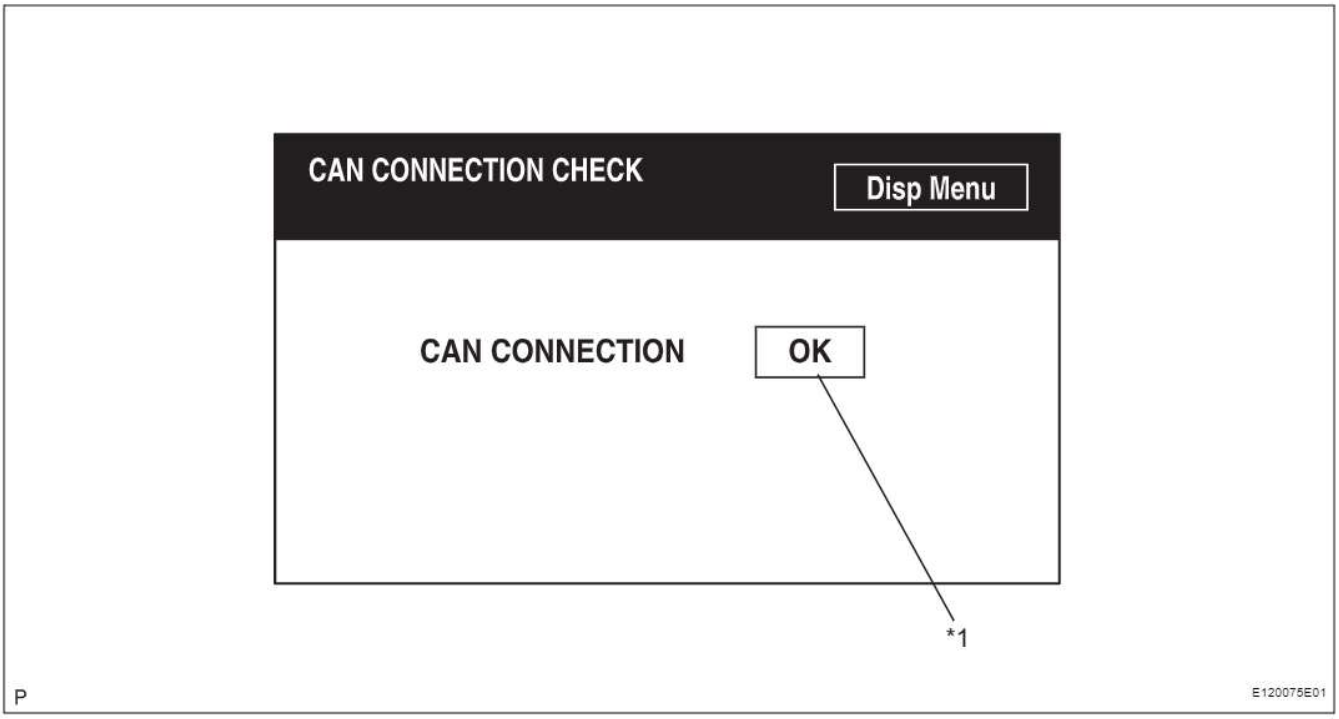
Name	Contents
Battery	Battery voltage is displayed.
PKB	Parking brake ON/OFF state is displayed.
REV	Reverse signal ON/OFF state is displayed.
IG	IG switch ON/OFF state is displayed.
TAIL	TAIL signal (Light control switch) ON/OFF state is displayed.
SPEED	Vehicle speed is displayed in km/h.

HINT:

- Only items sending a vehicle signal will be displayed.
- This screen is updated once per second when input signals to the vehicle are changed.

NS

(b) CAN Connection Check Screen



Screen Description:

Name	Contents
CAN connection check result/*1	• For systems connected to the CAN system, the results of the CAN connection check are displayed. • "NG" - The ignition switch is on (ACC or IG) and the CAN communication lines are malfunctioning or the CAN bus lines are not connected. • "OK" - The ignition switch is on (ACC or IG) and the CAN communication lines are normal. • Blank - CAN connection check is performed with the ignition switch on (ACC) or off.

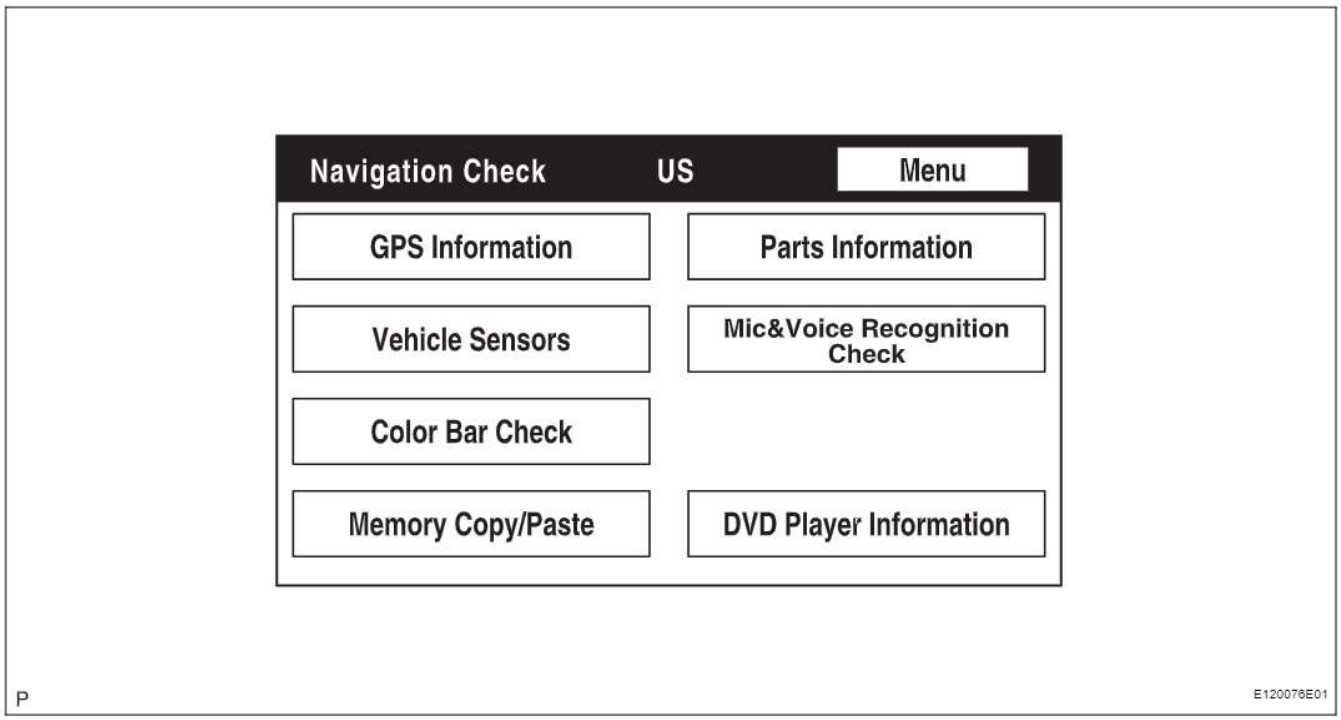
HINT:

- This function operates only for the systems connected to the CAN system.
- When the ignition switch is turned off, the bus lines are disconnected, or a malfunction occurs in the bus lines while the CAN connection check result is being displayed, the problem will be reflected on the screen in real time.

NS

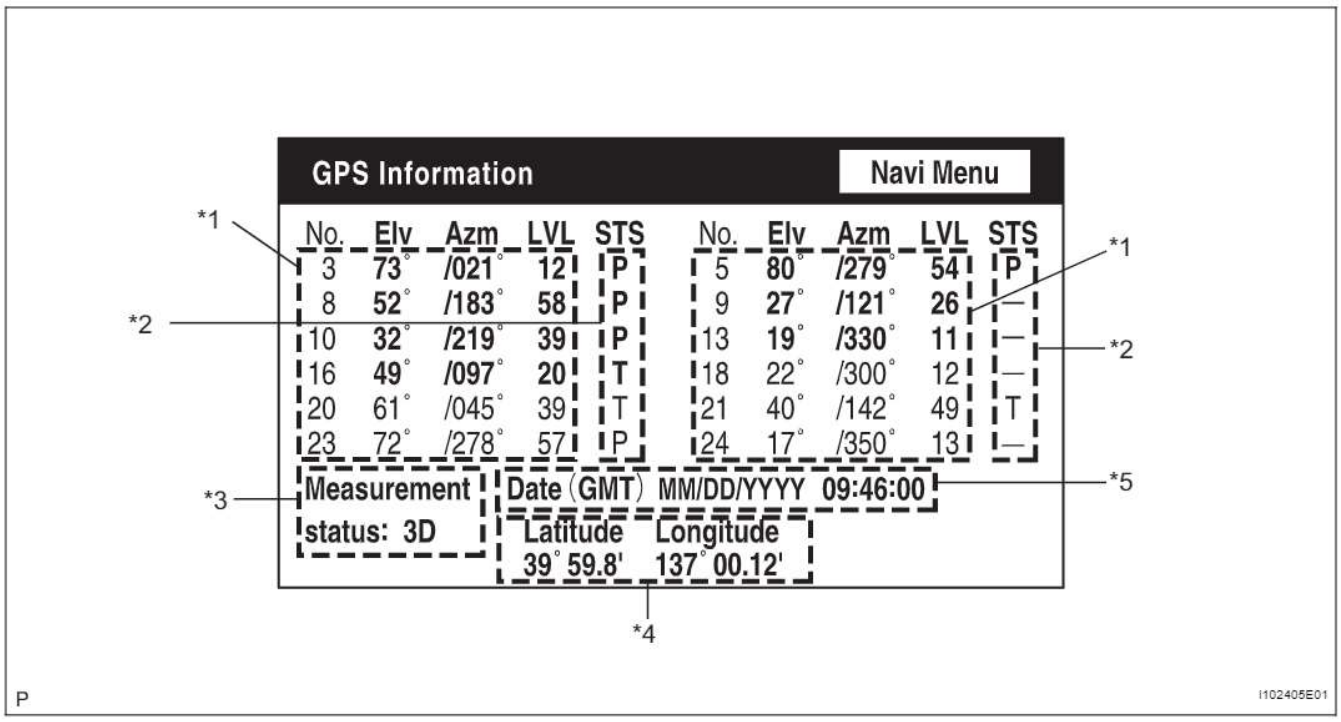
3. NAVIGATION CHECK

(a) Navigation Check Screen



HINT:
Each item is grayed out or not displayed based on the device settings.

(b) GPS Information Screen



(1) Satellite information/*1
Information from a maximum of 12 satellites is displayed on the screen. This information includes the target GPS satellite number, elevation angle, direction, and signal level.

NS

(2) Receiving condition/*2

(DENSO model):

Display	Contents
T	The system is receiving a GPS signal, but is not using it for location.
P	The system is using the GPS signal for location.
-	The system cannot receive a GPS signal.

(AISIN AW model):

Display	Contents
01H	The system cannot receive a GPS signal.
02H	The system is tracing a satellite.
03H	The system is receiving a GPS signal, but is not using it for location.
04H	The system is using the GPS signal for location.

Measurement information/*3:

Display	Contents
2D	2-dimensional location method is being used.
3D	3-dimensional location method is being used.
NG	Location data cannot be used.
Error	Reception error has occurred.
-	Any other state.

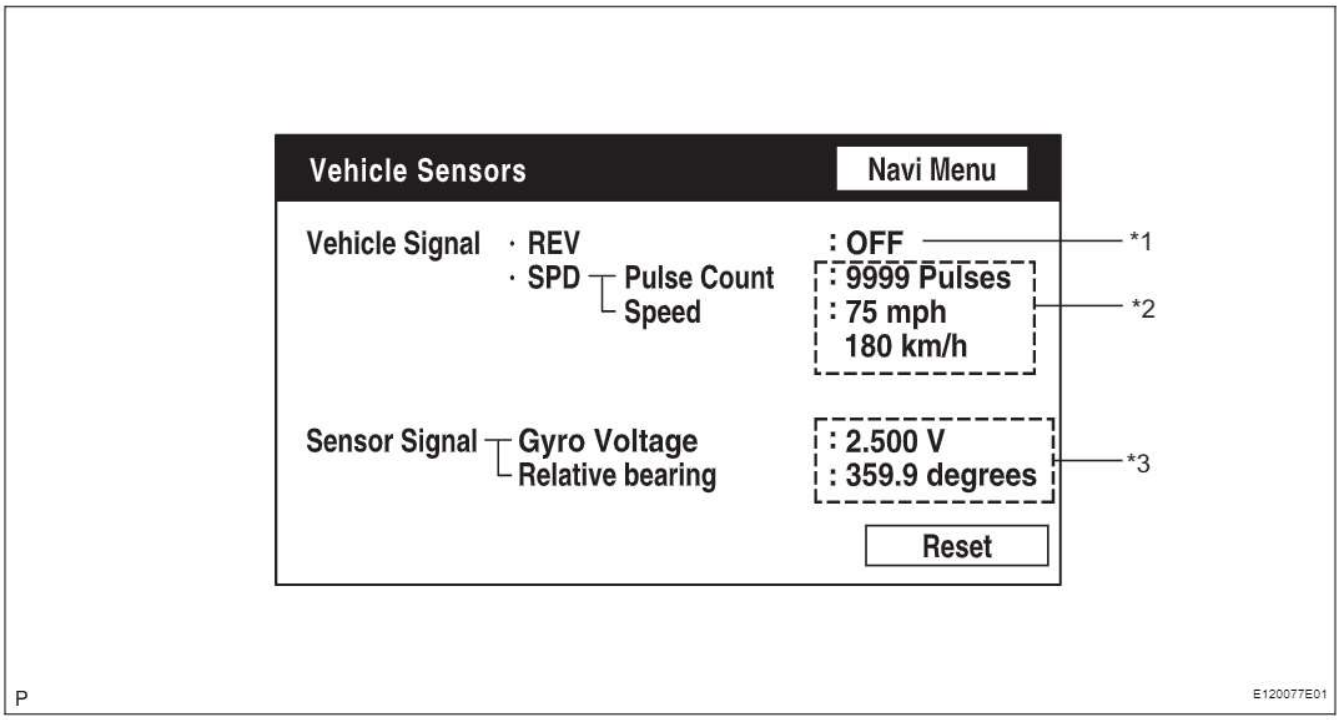
Position information/*4

Display	Contents
Position	Latitude and longitude information on the current position is displayed.

Date information/*5:

Display	Contents
Date	The date/time information obtained from GPS signal is displayed in Greenwich mean time (GMT). The last 4 digits are displayed.

(c) Vehicle Sensors Screen



NS

Vehicle signal:

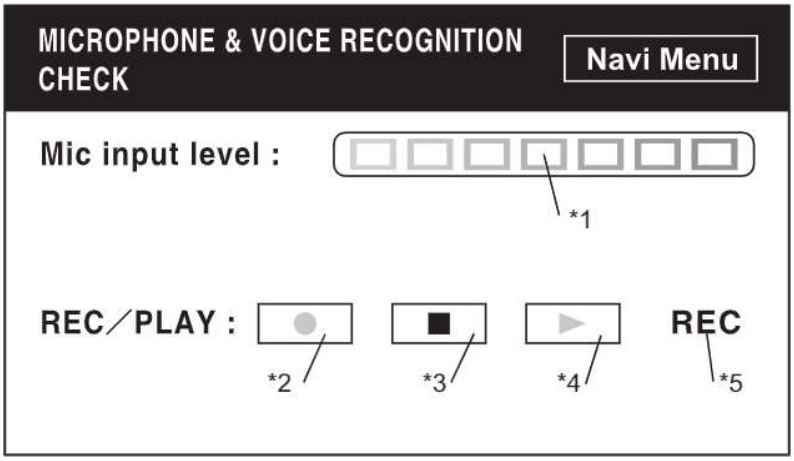
Display	Contents
REV/*1	REV signal ON/OFF state is displayed.
SPD/*2	SPD signal condition is displayed.

Sensor signal:

Display	Contents
Gyro sensor/*3	Gyro sensor output condition is displayed (when the vehicle runs straight or is stationary, the voltage is approximately 2.5 V).

HINT:
Signals are updated once per second only when vehicle sensor signals are changed.

(d) Microphone & Voice Recognition Check Screen



P E125119E01

Screen Description:

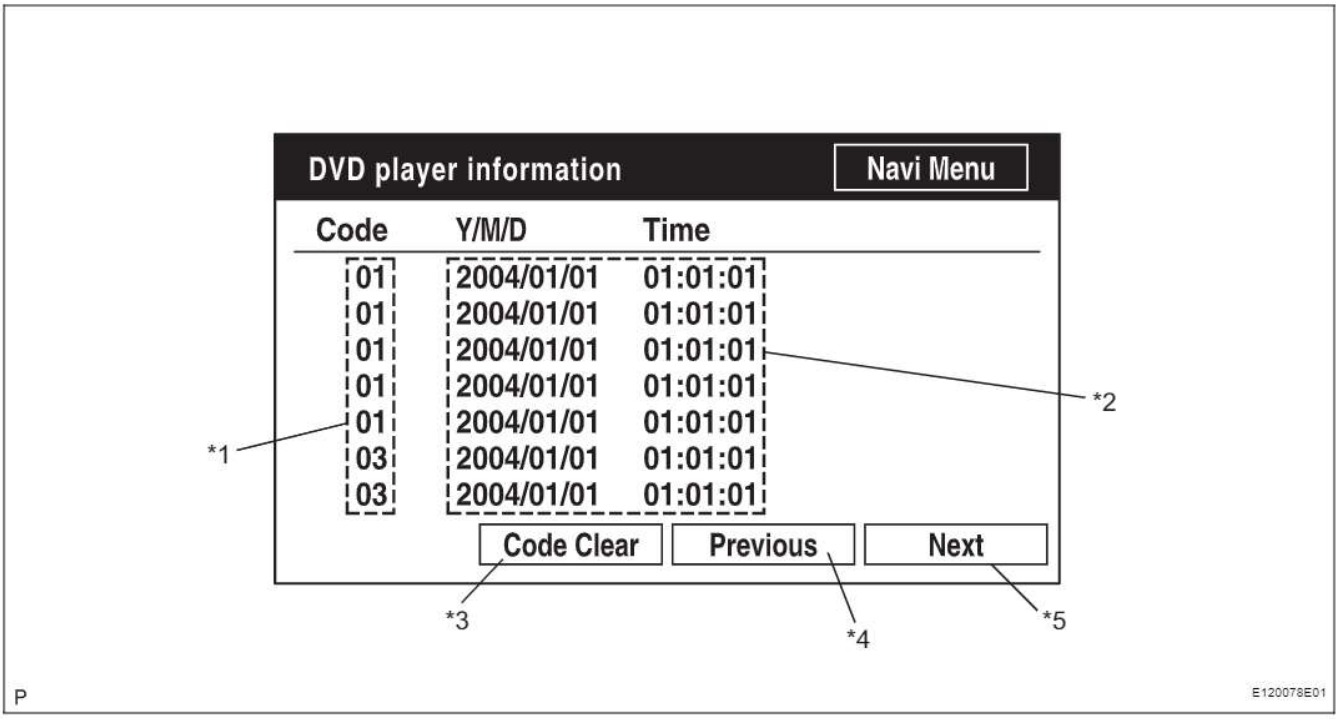
Display	Contents
Microphone input level meter/*1	Monitors the microphone input level every 100 ms and displays the results in 8 different levels.
Recording switch/*2	Starts recording.
Stop switch/*3	Stops recording.
Play switch/*4	Plays the recorded voice.
Recording indicator/*5	Comes on while recording.

HINT:

- The microphone input function is on at all times when this screen is displayed.
- While recording or playing, the switches other than the stop switch cannot be pushed.
- When no voice is recorded, the play switch cannot be pushed.
- Recording will stop after 5 seconds or by pushing the stop switch.

NS

(e) DVD Player Information Screen



Screen Description:

Display	Contents
Trouble code/*1	Each code corresponding to the malfunctions is displayed. For details, refer to "Trouble Code Description".
Occurrence time/*2	• The date (year, month, day) and time (hour, minute, second) when the trouble code was detected are displayed as a time stamp. (Greenwich mean time) • The time data to be displayed are received from the GPS receiver.
Trouble code clear switch/*3	All code data being displayed are cleared by pushing this switch for 3 seconds.
Returning switch/*4	The previous page is displayed. If the current displayed page is the first page, this switch cannot be operated.
Proceeding switch/*5	The next page is displayed. If the current displayed page is the last page, this switch cannot be operated.

Trouble Code Description:

Code	Malfunction	Countermeasure
01	Cannot be recognized	Replace radio and navigation assembly.
03	Cannot be read	Follow the inspection procedure for DTC 58-42 (See page NS-83).

HINT:
This is a DVD player check function in the radio and navigation assembly (built-in navigation ECU).

NS

PROBLEM SYMPTOMS TABLE

HINT:

- Before inspecting the suspected areas listed in the table below, check the fuse and relay.
- Before inspecting the suspected areas listed in the table below, check the DTCs.
- Methods used to verify the cause of the problem are listed in order of probability in the suspected area column.

Display function:

Symptom	Suspected area	See page
Pressing PWR switch does not turn on system.	1. Proceed to "Pressing Power Switch does not Turn on System"	NS-101
	2. Radio and navigation assembly power source circuit	NS-191
	3. AVC-LAN circuit	NS-175
	4. Radio and navigation assembly	NS-194
Black screen (No image appears on navigation/audio screen).	1. Proceed to "Black Screen"	NS-146
	2. Illumination circuit	NS-156
	3. AVC-LAN circuit	NS-175
	4. Radio and navigation assembly	NS-194
Illumination for panel switch does not come on with TAIL switch on.	1. Proceed to "Illumination for Panel Switch does not Come on with TAIL Switch ON"	NS-111
	2. Illumination circuit	NS-156
	3. Radio and navigation assembly	NS-194
Display does not dim (Night Screen) with TAIL switch on.	1. Proceed to "Display does not DIM when Light Control Switch is Turned ON"	NS-112
	2. Illumination circuit	NS-156
	3. Radio and navigation assembly	NS-194
Power does not turn off (The screen remains on).	1. Radio and navigation assembly power source circuit	NS-191
	2. Radio and navigation assembly	NS-194
Panel switches do not function.	1. Proceed to "Panel Switches do not Function"	NS-113
	2. Steering pad switch circuit	NS-151
	3. Radio and navigation assembly power source circuit	NS-191
	4. Radio and navigation assembly	NS-194
Touch panel switch does not function.	1. Proceed to "Touch Panel Switch does not Function"	NS-114
	2. Steering pad switch circuit	NS-151
	3. Radio and navigation assembly power source circuit	NS-191
	4. Radio and navigation assembly	NS-194
Display panel does not open, tilt, or tilts improperly.	1. Proceed to "Display Panel does not Open, Tilt, or Tilts Improperly"	NS-115
	2. Radio and navigation assembly power source circuit	NS-191
	3. Radio and navigation assembly	NS-194
Screen is distorted.	1. Radio and navigation assembly power source circuit	NS-191
	2. Radio and navigation assembly	NS-194
Screen flicker or color distortion.	1. Proceed to "Screen Flicker or Color Distortion"	NS-116
	2. Radio and navigation assembly power source circuit	NS-191
	3. Radio and navigation assembly	NS-194
Navigation function switches can be operated while vehicle is running.	Proceed to "Vehicle Speed Signal Circuit between Radio and Navigation Assembly and Combination Meter"	NS-147

Audio function:

Symptom	Suspected area	See page
No sound can be heard from speakers (audio is mute).	1. Proceed to "No Sound can be Heard from Speakers"	NS-102
	2. Stereo component amplifier power source circuit	AV-142
	3. Proceed to "Mute Signal Circuit between Radio and Navigation Assembly and Stereo Component Amplifier"	NS-172
	4. Proceed to "Sound Signal Circuit between Radio and Navigation Assembly and Stereo Component Amplifier"	NS-168
	5. Speaker circuit	NS-163
	6. Stereo component amplifier	AV-150
	7. Radio and navigation assembly	NS-194
Radio broadcast cannot be received or poor reception.	Proceed to "Radio Broadcast cannot be Received or Poor Reception"	NS-108
CD cannot be inserted / played or CD is ejected right after insertion.	Proceed to "CD cannot be Inserted / Played or CD is Ejected Right After Insertion"	NS-104
CD cannot be ejected.	Proceed to "CD cannot be Ejected"	NS-103
CD sound skips.	Proceed to "CD Sound Skips"	NS-106
Abnormal noise occurs.	Proceed to "Noise Occurs"	NS-99
Poor sound quality in all modes (low volume).	1. Proceed to "Poor Sound Quality in All Modes (Low Volume)"	NS-118
	2. Proceed to "Mute Signal Circuit between Radio and Navigation Assembly and Stereo Component Amplifier"	NS-172
	3. Stereo component amplifier power source circuit	AV-142
	4. Radio and navigation assembly power source circuit	NS-191
	5. Stereo component amplifier	AV-150
	6. Radio and navigation assembly	NS-194
External device sound cannot be heard or sound quality is bad (Stereo jack is used).	1. Proceed to "Sound Signal Circuit between Radio and Navigation Assembly and Stereo Jack Adapter"	NS-170
	2. Stereo jack adapter	AV-223
	3. Radio and navigation assembly	NS-194
ASL does not function.	Proceed to "Vehicle Speed Signal Circuit between Stereo Component Amplifier and Combination Meter"	AV-120

Navigation function:

Symptom	Suspected area	See page
Map disc cannot be inserted.	1. Proceed to "Map Disc cannot be Inserted"	NS-119
	2. Radio and navigation assembly power source circuit	NS-191
	3. Radio and navigation assembly	NS-194
Map disc cannot be ejected.	1. Radio and navigation assembly power source circuit	NS-191
	2. Radio and navigation assembly	NS-194
Vehicle position mark deviates.	1. Proceed to "Vehicle Position Mark Deviates Greatly"	NS-120
	2. GPS antenna	NS-210
	3. Radio and navigation assembly	NS-194
Cursor or map rotates when vehicle is stopped.	1. Proceed to "Cursor or Map Rotates When Vehicle is Stopped"	NS-122
	2. Radio and navigation assembly	NS-194
Vehicle position mark is not updated.	1. Proceed to "Vehicle Position Mark is not Updated"	NS-123
	2. Map disc	-
	3. Radio and navigation assembly	NS-194
Current position display does not appear.	1. Proceed to "Current Position Display does not Appear"	NS-124
	2. Map disc	-
	3. GPS antenna	NS-210
	4. Radio and navigation assembly	NS-194

NS

Symptom	Suspected area	See page
GPS mark is not displayed.	1. Proceed to "GPS Mark is not Displayed"	NS-125
	2. GPS antenna	NS-210
	3. Radio and navigation assembly	NS-194
Voice guidance does not function.	1. Proceed to "Voice Guidance does not Function"	NS-128
	2. Proceed to "Mute Signal Circuit between Radio and Navigation Assembly and Stereo Component Amplifier"	NS-172
	3. Navigation voice circuit	NS-180
	4. Speaker circuit	NS-163
	5. Map disc	-
	6. Radio and navigation assembly	NS-194
	7. Stereo component amplifier	AV-150
Map display incomplete.	1. Proceed to "Map Display Incomplete"	NS-131
	2. Map disc	-
	3. Radio and navigation assembly	NS-194
Route cannot be calculated.	1. Proceed to "Route cannot be Calculated"	NS-132
	2. Map disc	-
	3. Radio and navigation assembly	NS-194
Voice recognition difficulty.	1. Proceed to "Voice Recognition Difficulty"	NS-133
	2. Radio and navigation assembly	NS-194
Voice is not recognized.	1. Proceed to "Voice is not Recognized"	NS-135
	2. Proceed to "Microphone Circuit between Microphone and Radio and Navigation Assembly"	NS-182
	3. Steering pad switch circuit	NS-151
	4. Microphone	AV-232
	5. Radio and navigation assembly	NS-194
Speed signal does not change in the navigation check mode.	Proceed to "Vehicle Speed Signal Circuit between Radio and Navigation Assembly and Combination Meter"	NS-147
Reverse signal does not change in the navigation check mode.	Reverse signal circuit	NS-177

Steering pad switch function:

Symptom	Suspected area	See page
The system cannot be operated by the steering pad switch.	1. Steering pad switch circuit	NS-151
	2. Radio and navigation assembly	NS-194
Illumination for steering pad switch does not come on with TAIL switch on.	1. Illumination circuit	NS-156
	2. Radio and navigation assembly	NS-194

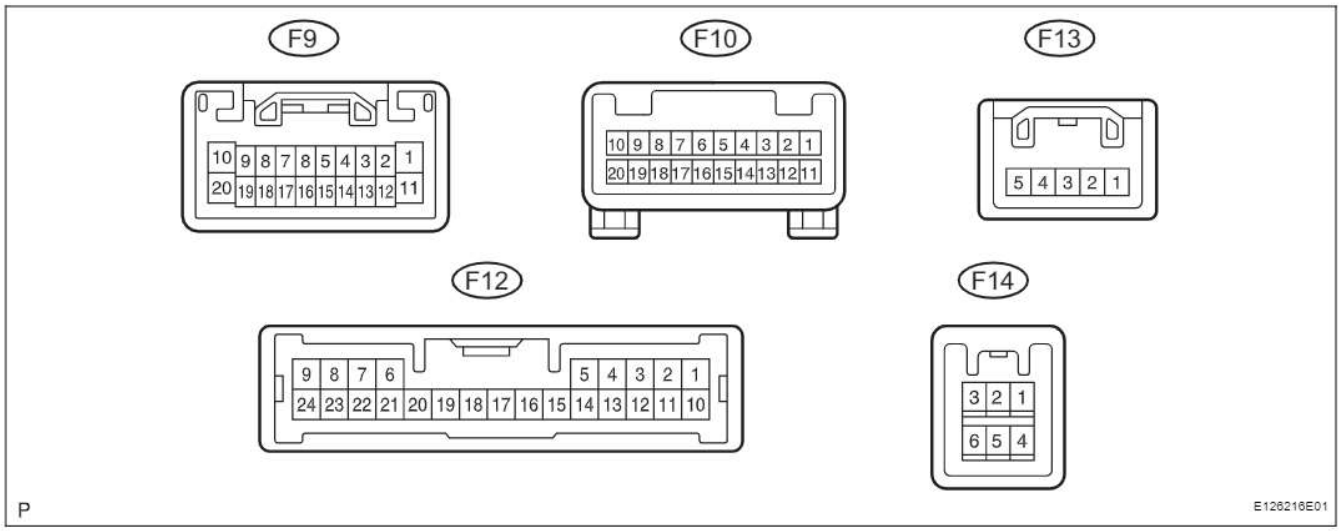
"Bluetooth" function:

Symptom	Suspected area	See page
Cellular phone registration failure, phone directory transfer failure.	Proceed to "Cellular Phone Registration Failure, Phone Directory Transfer Failure"	NS-137
Cellular phone cannot send / receive.	1. Proceed to "Cellular Phone cannot Send / Receive"	NS-139
	2. Steering pad switch circuit	NS-151
	3. Radio and navigation assembly	NS-194
Cannot call in a certain place.	Proceed to "Cannot Call in a Certain Place"	NS-141
The other caller's voice cannot be heard, is too quiet, or distorted.	1. Proceed to "The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted"	NS-142
	2. Navigation voice circuit	NS-180
	3. Radio and navigation assembly	NS-194
	4. Stereo component amplifier	AV-150

Symptom	Suspected area	See page
The other caller cannot hear your voice, or your voice is too quiet or distorted.	1. Proceed to "The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted"	NS-144
	2. Proceed to "Microphone Circuit between Microphone and Radio and Navigation Assembly"	NS-182
	3. Microphone	AV-232
	4. Radio and navigation assembly	NS-194

TERMINALS OF ECU

1. RADIO AND NAVIGATION ASSEMBLY



Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
SPD (F13-3) - GND (F9-20)	V - BR	Speed signal from combination meter	See "Vehicle Signal Check" (See page NS-22)	-
REV (F13-5) - GND (F9-20)	R - BR	Reverse signal	See "Vehicle Signal Check" (See page NS-22)	-
SWG (F10-6) - Body ground	P - Body ground	Steering pad switch ground	Always	Below 1 V
SW1 (F10-7) - SWG (F10-6)	O - P	Steering pad switch signal	No switch is pushed → SEEK+ switch pushed → SEEK- switch pushed → VOL+ switch pushed → VOL- switch pushed	4 V or more → Approx. 0.5 V → Approx. 0.9 V → Approx. 2.0 V → Approx. 3.4 V
SW2 (F10-8) - SWG (F10-6)	Y - P	Steering pad switch signal	No switch is pushed → MODE switch pushed → ON HOOK switch pushed → OFF HOOK switch pushed → VOICE switch pushed	4 V or more → Approx. 0.5 V → Approx. 0.9 V → Approx. 2.0 V → Approx. 3.4 V
IVO+ (F10-11) - GND (F9-20)	R - BR	Voice guidance signal	Voice guidance is playing	A waveform synchronized with sounds is output
IVO- (F10-12) - GND (F9-20)	G - BR	Voice guidance signal	Voice guidance is playing	A waveform synchronized with sounds is output
SLD1 (F10-13) - Body ground	Shielded - Body ground	Voice sound signal shielded ground	Always	Below 1 V
B (F9-1) - GND (F9-20)	L-Y - BR	Battery	Always	10 to 14 V
ILL+ (F9-2) - GND (F9-20)	G - BR	Illumination signal	Turn ignition switch on (IG) Light control switch OFF → TAIL or ON	Below 1V → 10 to 14 V
ATX+ (F9-5) - GND (F9-20)	R - BR	AVC-LAN communication signal	Turn ignition switch on (ACC)	2 to 3 V
MUTE (F9-7) - GND (F9-20)	O - BR	Mute signal	Audio system is playing → Changing	Above 3.5 V → Below 1 V
R+ (F9-8) - GND (F9-20)	R - BR	Sound signal (Right)	Audio system is playing	A waveform synchronized with sounds is output

NS

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
L+ (F9-9) - GND (F9-20)	B - BR	Sound signal (Left)	Audio system is playing	A waveform synchronized with sounds is output
SLD (F9-10) - Body ground	Shielded - Body ground	Shielded ground	Always	Below 1 V
ACC (F9-11) - GND (F9-20)	GR - BR	Accessory (ON)	Turn ignition switch off → on (ACC or IG)	Below 1 V → 10 to 14 V
ILL- (F9-12) - GND (F9-20)	W-B - BR	Illumination signal	Turn ignition switch on (IG) Light control switch OFF → TAIL or ON	Below 1 V →10 to 14 V
ANT (F9-13) - GND (F9-20)	O - BR	Power source of antenna	Radio switch ON and AM or FM	10 to 14 V
ATX- (F9-15) - GND (F9-20)	G - BR	AVC-LAN communication signal	Turn ignition switch on (ACC)	2 to 3 V
R- (F9-18) - GND (F9-20)	G - BR	Sound signal (Right)	Audio system is playing	A waveform synchronized with sounds is output
L- (F9-19) - GND (F9-20)	W - BR	Sound signal (Left)	Audio system is playing	A waveform synchronized with sounds is output
GND (F9-20) - Body ground	BR - Body ground	Ground	Always	Below 1 V
MIC- (F12-9) - Body ground	R - Body ground	Microphone voice signal	See "Microphone Check" (See page NS-27)	-
TSW- (F12-12) - GND (F9 -20)	P - BR	Telephone relation switch signal	Always	Below 1 V
MACC (F12-17) - GND (F9-20)	LG - BR	Microphone AMP power supply	Turn ignition switch off → on (IG)	Below 1 V → 5 V
SGND (F12-18) - GND (F9-20)	P - BR	Ground	Always	Below 1 V
MIC+ (F12-19) - GND (F9-20)	G - BR	Microphone voice signal	See "Microphone Check" (See page NS-27)	-
VAR+ (F14-2) - GND (F9-20)	G - BR	Sound signal (Right)	External device is playing (When stereo jack is used)	A waveform synchronized with sounds is output
VAL+ (F14-3) - GND (F9-20)	R - BR	Sound signal (Left)	External device is playing (When stereo jack is used)	A waveform synchronized with sound is output
VA- (F14-5) - Body ground	BR - Body ground	Shielded ground	Always	Below 1 V
ADPG (F14 - 6) - GND (F9-20)	G - BR	External device connection detection signal	External device is connected	Below 1 V

2. STEREO COMPONENT AMPLIFIER (See page AV-15)

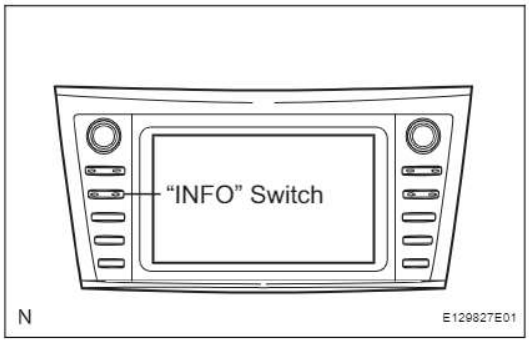
DTC CHECK / CLEAR

HINT:

- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.
- If the system cannot enter the diagnostic mode, inspect all AVC-LAN communication components and repair or replace problem parts (See page NS-175).
- After the ignition switch is turned on (IG), check that the map is displayed before starting the diagnostic mode. Otherwise, some items cannot be checked.

1. START DIAGNOSTIC MODE

(a) There are 2 methods to start diagnostic mode. Start the mode by using one of them.

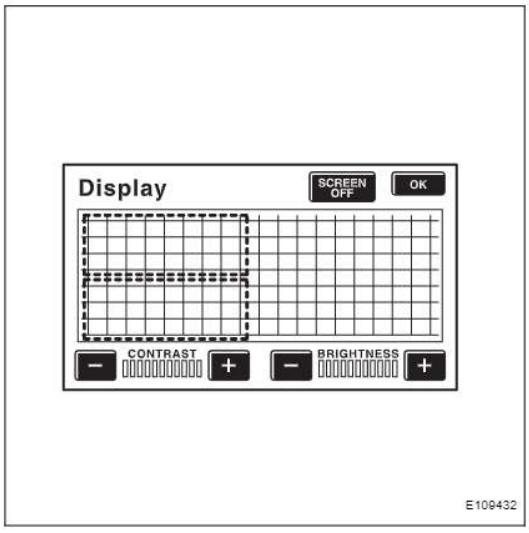


(b) Method 1

(1) Start the engine.

(2) While pressing and holding the "INFO" switch, operate the light control switch: OFF → Turn ON → Turn OFF → Turn ON → Turn OFF → Turn ON → Turn OFF.

(3) The diagnostic mode starts and the "System Check Mode" screen will be displayed. Service inspection starts automatically and the result will be displayed.



(c) Method 2

(1) Start the engine.

(2) Switch to the "Display Check" screen.

(3) From the display quality adjustment screen, touch the corners of the screen in the following order: upper left → lower left → upper left → lower left → upper left → lower left.

(4) The diagnostic mode starts and the "System Check Mode" screen will be displayed. Service inspection starts automatically and the result will be displayed.

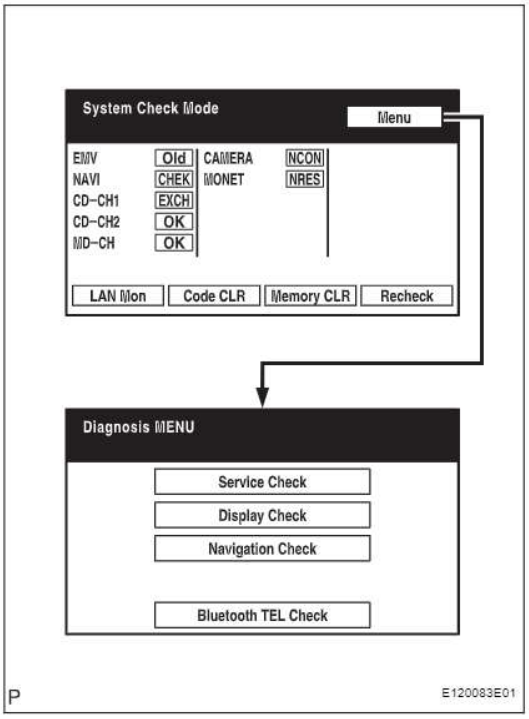
2. FINISH DIAGNOSTIC MODE

(a) There are 2 methods to end diagnostic mode. Use one of them.

(1) Turn the ignition switch off.

(2) Press and hold the "DISP" switch for 3 seconds.

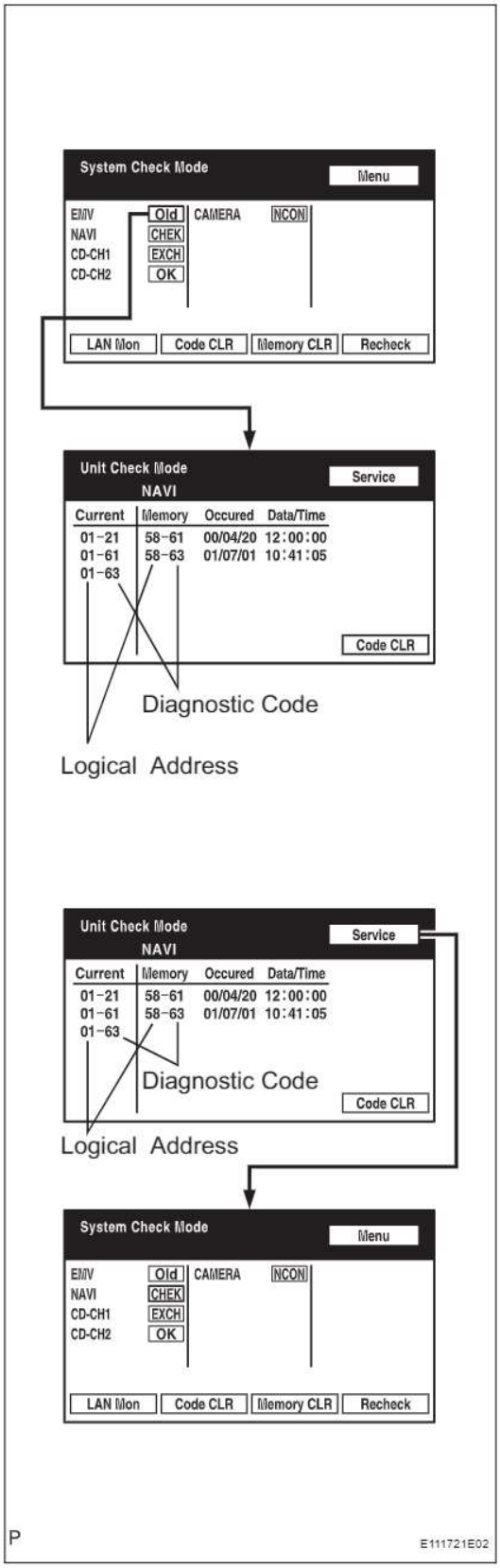
NS



3. DIAGNOSIS MENU

(a) The "Diagnosis MENU" screen will be displayed by pressing the "Menu" switch on the "System Check Mode" screen.

NS



4. CHECK DTC

(a) Read the system check result.

(1) If the check result is "EXCH", "CHEK" or "Old", touch the displayed check result to view the results on the "Unit Check Mode" screen and record them.

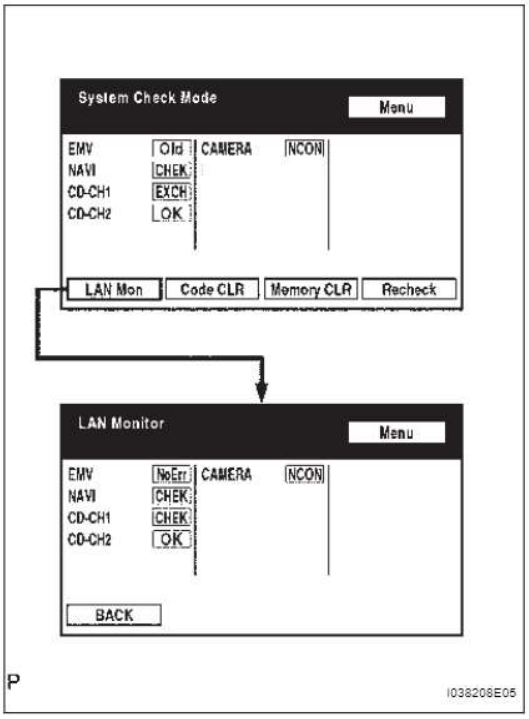
HINT:

- If all check results are "OK", go to communication DTC check.
- If a device name is not known, its physical address is displayed.

HINT:

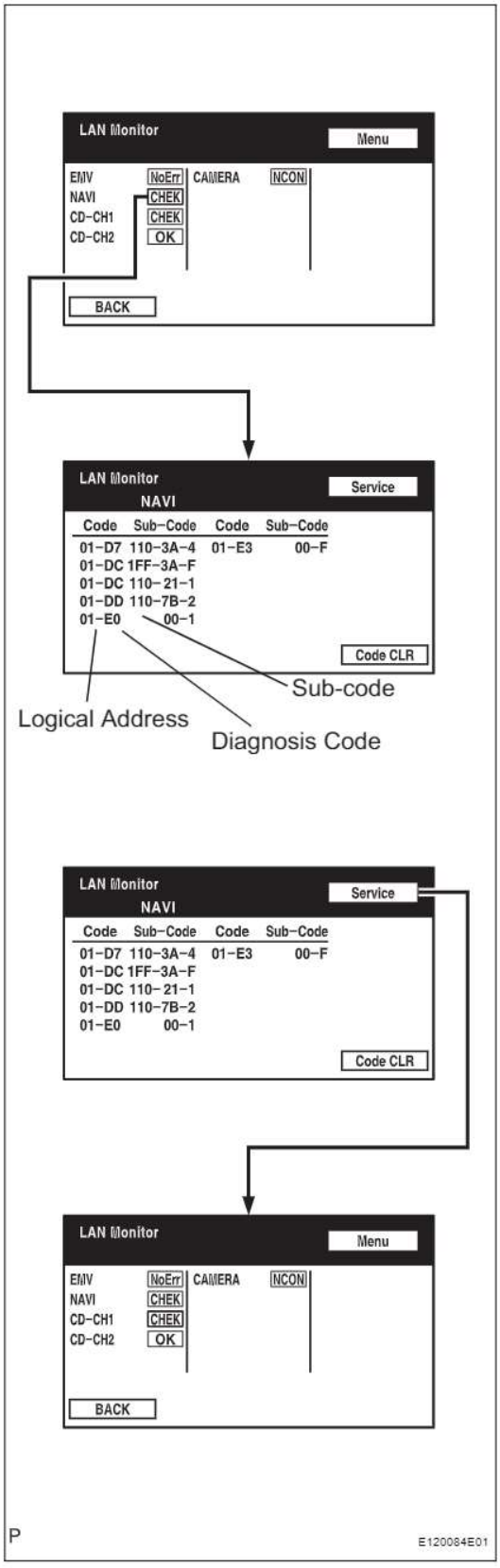
When proceeding to view the results of another device, press the "Service" switch to return to the "System Check Mode" screen. Repeat this step.

NS



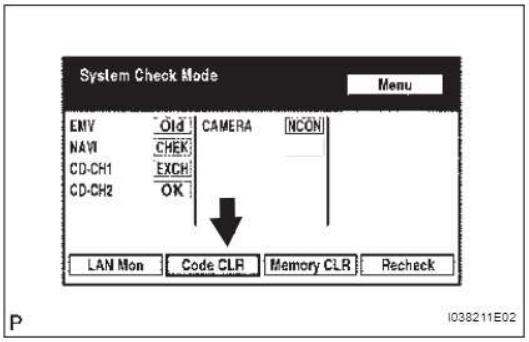
(b) Read the communication diagnostic check result.
(1) Return to the "System Check Mode" screen, and press the "LAN Mon" switch to enter the "LAN Monitor" screen.

NS



(2) If the check result is "CHEK" or "Old", touch the displayed check result to view the results on the individual communication diagnostic screen and record them.
HINT:
- If all check results are "No Err", the system judges that no DTC exists.
- The sub-code (relevant device) will be indicated by its physical address.
- When proceeding to view the results of another device, press the "Service" switch to return to the original "LAN Monitor" screen. Repeat this step.

NS

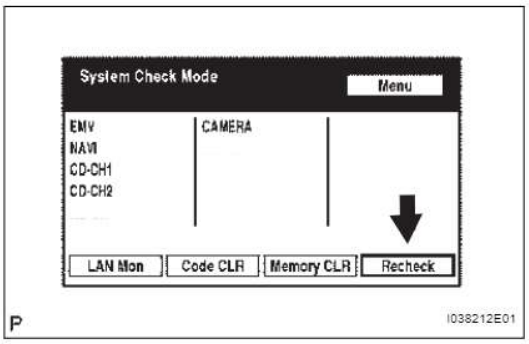


5. DTC CLEAR/RECHECK

(a) Clear DTC

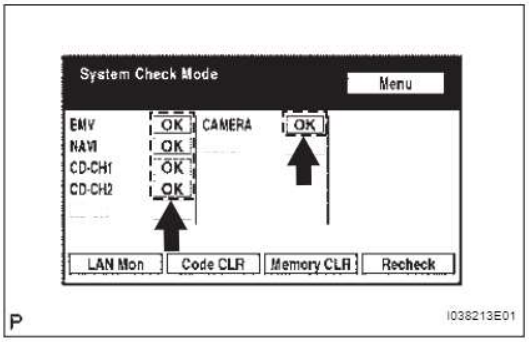
(1) Press the "Code CLR" switch for 3 seconds.

(2) The check results are cleared.

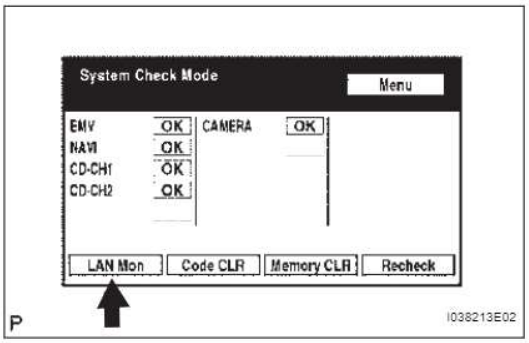


(b) Recheck

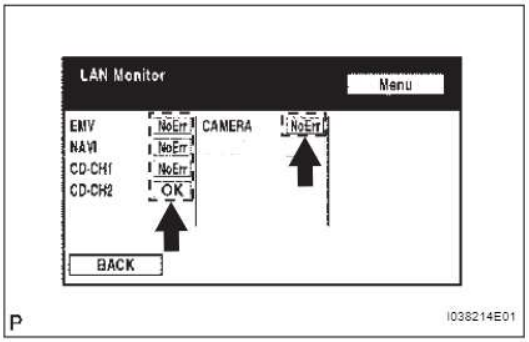
(1) Press the "Recheck" switch.



(2) Confirm that all diagnostic codes are "OK" when the check results are displayed. If a code other than "OK" is displayed, troubleshoot again.



(3) Press the "LAN Mon" switch to change to the "LAN Monitor" screen.



(4) Confirm that all diagnostic codes are "No Err". If a code other than "No Err" is displayed, troubleshoot again.

NS

DIAGNOSTIC TROUBLE CODE CHART

COMMUNICATION DIAGNOSIS:

DTC No.	Detection Item	Trouble Area	See page
01-21	ROM Error	Radio and navigation assembly	NS-56
01-22	RAM Error	Radio and navigation assembly	NS-56
01-D5	Absence of Registration Unit	1. Power source circuit of the component shown by the sub-code 2. AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code 3. Component shown by the sub-code	NS-57
01-D6	No Master	1. Radio and navigation assembly power source circuit 2. Power source circuit of the component which has stored this code 3. AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code 4. Component which has stored this code 5. Radio and navigation assembly	NS-59
01-D7	Connection Check Error	1. Radio and navigation assembly power source circuit 2. Power source circuit of the component which has stored this code 3. AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code 4. Component which has stored this code 5. Radio and navigation assembly	NS-59
01-D8	No Response for Connection Check	1. Power source circuit of the component shown by the sub-code 2. AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code 3. Component shown by the sub-code	NS-57
01-D9	Last Mode Error	1. Power source circuit of the component shown by the sub-code 2. AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code 3. Component shown by the sub-code	NS-57
01-DA	No Response Against ON / OFF Command	1. Power source circuit of the component shown by the sub-code 2. AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code 3. Component shown by the sub-code	NS-57

DTC No.	Detection Item	Trouble Area	See page
01-DB	Mode Status Error	1. Power source circuit of the component shown by the sub-code 2. AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code 3. Component shown by the sub-code	NS-57
01-DC	Transmission Error	If the same sub-code is recorded in other components, check harness for power supply and communication system of all components shown by code	NS-63
01-DD	Master Reset	1. Radio and navigation assembly power source circuit 2. AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code 3. Radio and navigation assembly 4. Component which has stored this code	NS-66
01-DE	Slave Reset	1. Power source circuit of the component shown by the sub-code 2. AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code 3. Component shown by the sub-code	NS-57
01-DF	Master Error	1. Radio and navigation assembly power source circuit 2. AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code 3. AVC-LAN circuit between the master unit and the sub-master unit (radio receiver) 4. Radio and navigation assembly 5. Component which has stored this code	NS-70
01-E0	Registration Complete Indication Error	-	NS-74
01-E1	Voice Processing Device ON Error	1. Radio and navigation assembly power source circuit 2. AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code 3. Radio and navigation assembly 4. Component which has stored this code	NS-66
01-E2	ON / OFF Indication Parameter Error	Radio and navigation assembly	NS-75
01-E3	Registration Demand Transmission	-	NS-74
01-E4	Multiple Frame Incomplete	-	NS-74

NS

SW:

DTC No.	Detection Item	Trouble Area	See page
21-10	Panel Switch Error	Radio and navigation assembly	NS-76

DTC No.	Detection Item	Trouble Area	See page
21-11	Touch Switch Error	Radio and navigation assembly	NS-76

SW WITH NAME:

DTC No.	Detection Item	Trouble Area	See page
23-10	Panel Switch Error	Radio and navigation assembly	NS-76
23-11	Touch Switch Error	Radio and navigation assembly	NS-76

SW CONVERTING:

DTC No.	Detection Item	Trouble Area	See page
24-10	Panel Switch Error	Radio and navigation assembly	NS-76
24-11	Touch Switch Error	Radio and navigation assembly	NS-76

COMMAND SW:

DTC No.	Detection Item	Trouble Area	See page
25-10	Panel Switch Error	Radio and navigation assembly	NS-76
25-11	Touch Switch Error	Radio and navigation assembly	NS-76

FRONT MONITOR:

DTC No.	Detection Item	Trouble Area	See page
34-10	Error in Picture Circuit	Radio and navigation assembly	NS-77
34-11	No Current in Back-light	Radio and navigation assembly	NS-77
34-12	Excess Current in Back-light	Radio and navigation assembly	NS-77

TELEPHONE:

DTC No.	Detection Item	Trouble Area	See page
57-47	Bluetooth Module Initialization Failed	Radio and navigation assembly	NS-78

NAVI:

DTC No.	Detection Item	Trouble Area	See page
58-10	Gyro Error	1. Gyro sensor 2. Radio and navigation assembly	NS-79
58-11	GPS Receiver Error	Radio and navigation assembly	NS-81
58-40	GPS Antenna Error	1. Wire harness 2. GPS antenna 3. Radio and navigation assembly	NS-82
58-41	GPS Antenna Power Source Error	1. Wire harness 2. GPS antenna 3. Radio and navigation assembly	NS-82
58-42	Map Disc Read Error	1. Map Disc 2. Radio and navigation assembly	NS-83
58-43	SPD Signal Error	1. Speed signal circuit 2. Radio and navigation assembly	NS-85
58-44	Player Error	Radio and navigation assembly	NS-86
58-45	High Temperature	Radio and navigation assembly	NS-87

IN-DASH CD CHANGER:

DTC No.	Detection Item	Trouble Area	See page
63-10	CD Changer Mechanical Error	Radio and navigation assembly	NS-88
63-11	CD Insertion and Ejection Error	Radio and navigation assembly	NS-88
63-12	CD Reading Abnormal	Radio and navigation assembly	NS-88
63-41	Wrong Disc	1. CD 2. Radio and navigation assembly	NS-89
63-42	Disc cannot be Read	1. CD 2. Radio and navigation assembly	NS-89

DTC No.	Detection Item	Trouble Area	See page
63-43	CD-ROM Abnormal	1. CD 2. Radio and navigation assembly	NS-91
63-44	CD Abnormal	Radio and navigation assembly	NS-92
63-45	Eject Error	Radio and navigation assembly	NS-93
63-46	Scratched / Reversed Disc	1. CD 2. Radio and navigation assembly	NS-94
63-47	High Temperature	Radio and navigation assembly	NS-96
63-48	Excess Current	Radio and navigation assembly	NS-92
63-50	Tray Insertion / Ejection Error	Radio and navigation assembly	NS-92
63-51	Elevator Error	Radio and navigation assembly	NS-93
63-52	Clamp Error	Radio and navigation assembly	NS-93
63-78	DSP Error	-	NS-97
63-7D	Disc cannot be Played	1. CD 2. Radio and navigation assembly	NS-98
63-7E	No Playable Files	1. CD 2. Radio and navigation assembly	NS-98
63-7F	Copyright Protection Error	1. CD 2. Radio and navigation assembly	NS-98

GPS:

DTC No.	Detection Item	Trouble Area	See page
80-10	Gyro Error	1. Gyro sensor 2. Radio and navigation assembly	NS-79
80-11	GPS Receiver Error	Radio and navigation assembly	NS-81
80-40	GPS Antenna Error	1. Wire harness 2. GPS antenna 3. Radio and navigation assembly	NS-82
80-41	GPS Antenna Power Source Error	1. Wire harness 2. GPS antenna 3. Radio and navigation assembly	NS-82
80-42	Map Disc Read Error	1. Map disc 2. Radio and navigation assembly	NS-83
80-43	SPD Signal Error	1. Speed signal circuit 2. Radio and navigation assembly	NS-85
80-44	Player Error	Radio and navigation assembly	NS-86
80-45	High Temperature	Radio and navigation assembly	NS-87

DTC	01-21	ROM Error

DTC	01-22	RAM Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-21	A malfunction exists in ROM.	Radio and navigation assembly
01-22	A malfunction exists in RAM.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	REPLACE RADIO AND NAVIGATION ASSEMBLY

NEXT

END

NS

DTC	01-D5	Absence of Registration Unit
DTC	01-D8	No Response for Connection Check
DTC	01-D9	Last Mode Error
DTC	01-DA	No Response Against ON / OFF Command
DTC	01-DB	Mode Status Error
DTC	01-DE	Slave Reset

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-D5 *1, *4	• A component shown by the sub-code is (was) disconnected from the system when turning the ignition switch on (ACC or IG). • The communication condition with the device that the code shows cannot be obtained when the engine starts.	• Power source circuit of the component shown by the sub-code • AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code • Component shown by the sub-code
01-D8 *2, *4	A component shown by the sub-code is (was) disconnected from the system after engine start.	
01-D9 *1, *4	The device that had functioned before the engine stopped is (was) disconnected from the system when turning the ignition switch is on (ACC or IG).	
01-DA *4	• No response is identified when changing mode. • Detected when sound and image do not change by switch operation.	
01-DB *1, *4	A dual alarm is detected.	
01-DE *3, *4	A slave device has been disconnected after engine start.	

HINT:

- *1: Even if no fault is present, this trouble code may be stored depending on the battery condition or engine start voltage.
- *2: If the power connector is disconnected after the engine starts, this code is stored after 180 seconds.
- *3: This code may be stored if the engine is started and then the ignition switch is turned to the START position again. (Key type ignition switch only)
- *4: If it is reported that the device does not exist during verification, check the power source circuit and AVC-LAN circuit for the device.

NOTICE:

- **Before starting troubleshooting, be sure to clear DTCs to erase codes stored due to the reasons described in the HINT above. Then, check for DTCs and troubleshoot according to the output DTCs.**
- **The radio and navigation assembly is the master unit.**
- **Be sure to clear and recheck DTCs after the inspection is completed to confirm that no DTCs are output.**

NS

INSPECTION PROCEDURE

NOTICE:

Be sure to read DESCRIPTION before performing the following procedures.

1	CHECK "RADIO AND NAVIGATION ASSEMBLY COMMUNICATION ERROR" IN FLOW CHART

Refer to the radio and navigation assembly communication error (See page NS-188).

NEXT

END

DTC	01-D6	No Master

DTC	01-D7	Connection Check Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-D6 *1	When either of the following conditions is met: • The component which has stored the code has (had) been disconnected when the ignition switch is turned on (ACC or IG). • The master device has (had) been disconnected when this code is stored.	• Radio and navigation assembly power source circuit • Power source circuit of the component which has stored this code • AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code • Component which has stored this code • Radio and navigation assembly
01-D7 *2	When either of the following conditions is met: • The component which has stored the code has (had) been disconnected after the engine starts (started). • The master device has (had) been disconnected when this code is (was) stored.	

HINT:
- *1: Even if no fault is present, this trouble code may be stored depending on the battery condition or engine start voltage.
- *2: When 210 seconds have elapsed after disconnecting the power supply connector of the master component with the ignition switch on (ACC or IG), this code is stored.

NOTICE:
- **Before starting troubleshooting, be sure to clear DTCs to erase codes stored due to the reasons described in the HINT above. Then, check for DTCs and troubleshoot according to the output DTCs.**
- **The radio and navigation assembly is the master unit.**
- **Be sure to clear and recheck DTCs after the inspection is completed to confirm that no DTCs are output.**

INSPECTION PROCEDURE

NOTICE:
Be sure to read DESCRIPTION before performing the following procedures.

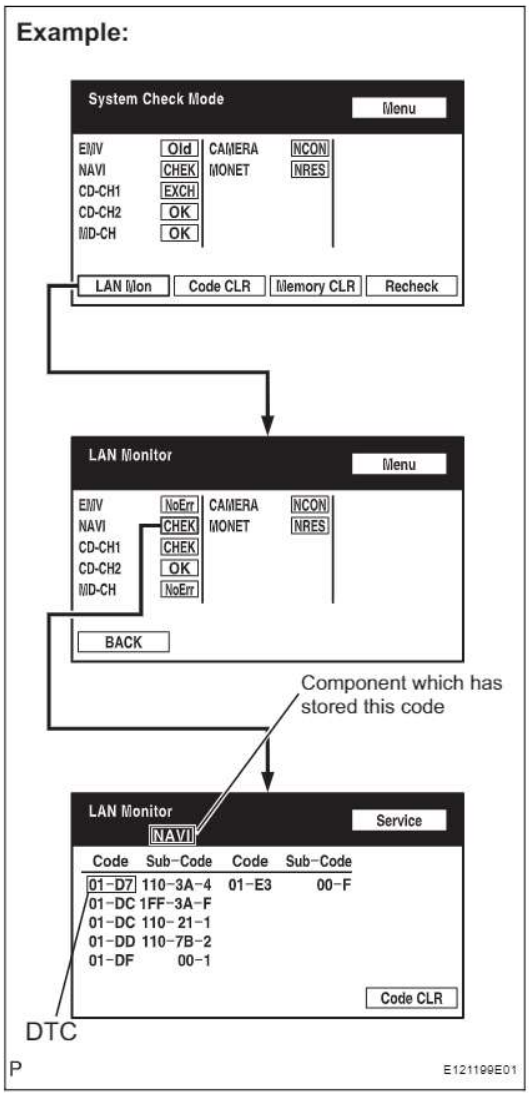
1	CHECK RADIO AND NAVIGATION ASSEMBLY POWER SOURCE CIRCUIT

Refer to the radio and navigation assembly power source circuit (See page NS-191).
If the power source circuit is operating normally, proceed to the next step.

NEXT

NS

2 IDENTIFY THE COMPONENT WHICH HAS STORED THIS CODE



(a) Enter the diagnostic mode.
(b) Press the "LAN Mon" switch to change to "LAN Monitor" mode.
(c) Identify the component which has stored this code.

Component Table:

Display	Component
DSP-AMP	Stereo component amplifier

HINT:
"NAVI" is the component which has stored this code in the example shown in the illustration.

NEXT

3 CHECK POWER SOURCE CIRCUIT OF COMPONENT WHICH HAS STORED THIS CODE

(a) Inspect the power source circuit of the component which has stored this code.
If the power source circuit is operating normally, proceed to the next step.

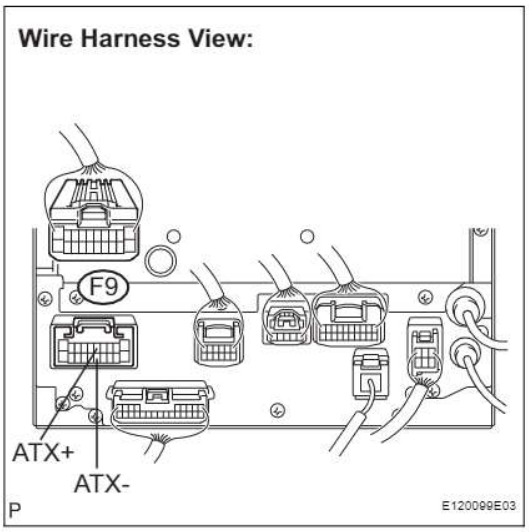
Component Table:

Component	Proceed to
Stereo component amplifier (DSP-AMP)	Stereo component amplifier power source circuit (See page AV-142)

NEXT

NS

4	CHECK RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
ATX+ (F9-5) - ATX- (F9-15)	Always	60 to 80 Ω

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

5	CHECK HARNESS AND CONNECTOR

HINT:
For details of the connectors, refer to "TERMINALS OF ECU" (See page NS-45).

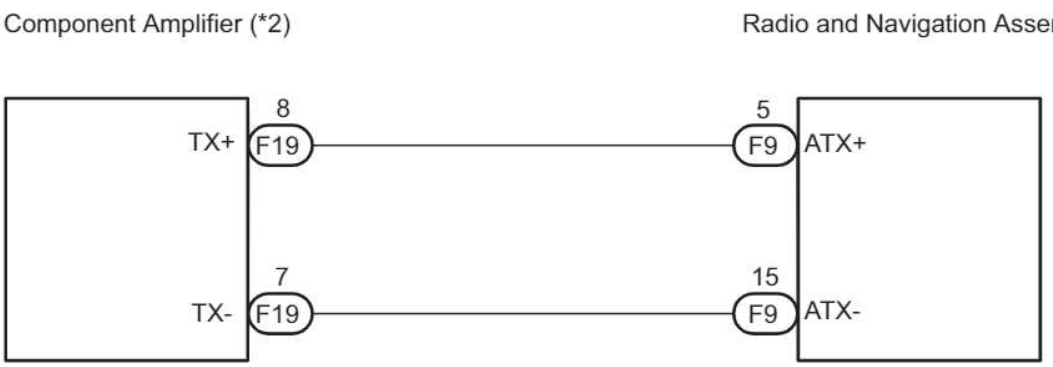
(a) Referring to the AVC-LAN wiring diagram below, check the AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code.
  (1) Disconnect all connectors between the radio and navigation assembly and the component which has stored this code.
  (2) Check for an open or short in the AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code.

OK:

There is no open or short circuit.

NS

AVC-LAN WIRING DIAGRAM



NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

6	REPLACE COMPONENT WHICH HAS STORED THIS CODE

(a) Replace the component which has stored this code with a normal one and check if the same problem occurs again.
OK:
Same problem does not occur.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

END

NS

DTC 01-DC Transmission Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-DC *1	Transmission to component shown by sub-code failed. (Detecting this DTC does not always mean actual failure.)	If the same sub-code is recorded in other components, check harness for power supply and communication system of all components shown by code

HINT:
*1: This code may be stored if the engine is started, idled for 60 seconds and then the ignition switch is turned to the START position again. (Key type ignition switch only)

NOTICE:

- **Before starting troubleshooting, be sure to clear DTCs to erase codes stored due to the reasons described in the HINT above. Then, check for DTCs and troubleshoot according to the output DTCs.**
- **The radio and navigation assembly is the master unit.**
- **Be sure to clear and recheck DTCs after the inspection is completed to confirm that no DTCs are output.**

INSPECTION PROCEDURE

NOTICE:
Be sure to read DESCRIPTION before performing the following procedures.

1 CHECK FOR DTC OF OTHER COMPONENTS

(a) Check if the component shown by the sub-code is displayed in the check result of the other components.
(1) Check if "01-DC" is output for the other components.
(2) If "01-DC" is output for any other components, check if the same physical address is displayed.
HINT:
For the list of the components shown by sub-codes, refer to the table in step 2.
Result

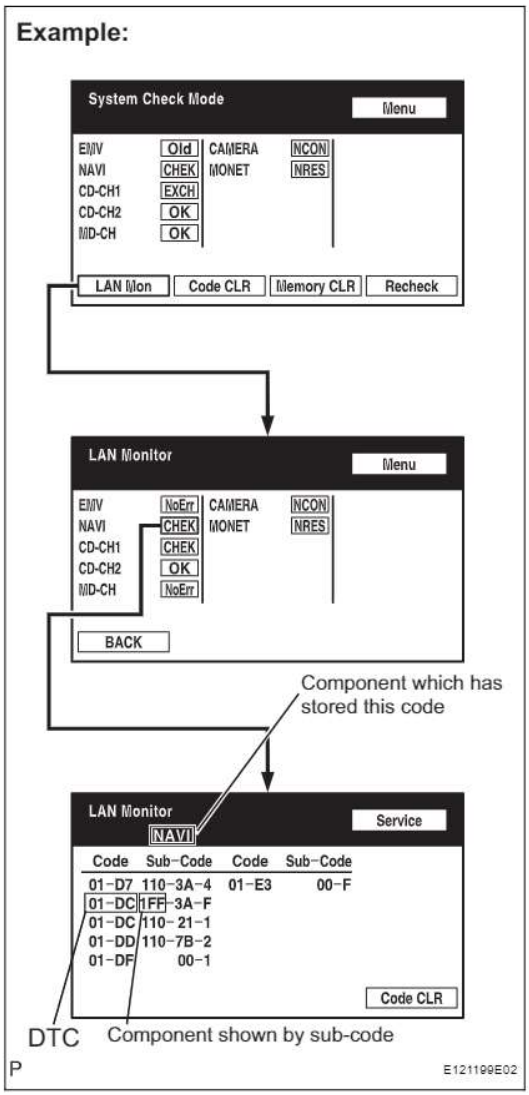
Result	Proceed to
"01-DC" is output and the same physical address is displayed	A
"01-DC" is not output or the same physical address is not displayed	B

B → Go to step 4

A

NS

2 IDENTIFY THE COMPONENT WHICH HAS STORED THIS CODE



(a) Enter the diagnostic mode.
(b) Press the "LAN Mon" switch to change to "LAN Monitor" mode.
(c) Identify the component which has stored this code.

Component Table:

Display	Component
DSP-AMP (440)	Stereo component amplifier
AVN (140)	Radio and navigation assembly

HINT:
"NAVI" is the component which has stored this code in the example shown in the illustration.

NEXT

3 CHECK COMPONENT WHICH HAS STORED THIS CODE

(a) Select the component which has stored this code.

Component Table:

Component	Proceed to
Radio and navigation assembly (AVN)	Radio and navigation assembly communication error (See page NS-188)
Stereo component amplifier (DSP-AMP)	Stereo component amplifier communication error (See page NS-185)

NEXT

END

4	CLEAR DTC

(a) Clear the DTCs (See page NS-46).
HINT:
If "01-DC" is output for only one component, this may not indicate a malfunction.

NEXT

5	RECHECK DTC

(a) Recheck for DTCs and check if the same trouble occurs again.

OK:
Malfunction disappears.

NG → **Go to step 3**

OK

END

DTC	01-DD	Master Reset

DTC	01-E1	Voice Processing Device ON Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-DD *1	The device that should be the master has been disconnected after the engine starts.	• Radio and navigation assembly power source circuit • AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code • Radio and navigation assembly • Component which has stored this code
01-E1 *2	The AMP device records that the AMP output does not function even while the source device is operating.	

HINT:

- *1: This code may be stored if the engine is started and the ignition switch is turned to the START position again. (Key type ignition switch only)
- *2: Even if no fault is present, this trouble code may be stored depending on the battery condition or engine start voltage.

NOTICE:

- **Before starting troubleshooting, be sure to clear DTCs to erase codes stored due to the reasons described in the HINT above. Then, check for DTCs and troubleshoot according to the output DTCs.**
- **The radio and navigation assembly is the master unit.**
- **Be sure to clear and recheck DTCs after the inspection is completed to confirm that no DTCs are output.**

INSPECTION PROCEDURE

NOTICE:

Be sure to read DESCRIPTION before performing the following procedures.

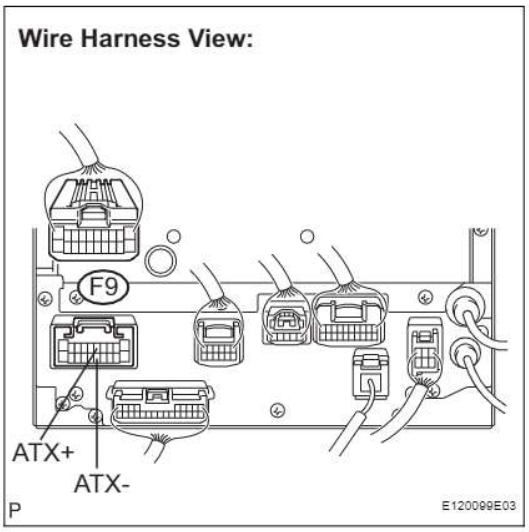
1	CHECK RADIO AND NAVIGATION ASSEMBLY POWER SOURCE CIRCUIT

Refer to the radio and navigation assembly power source circuit (See page NS-191).
If the power source circuit is operating normally, proceed to the next step.

NEXT

NS

2	INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

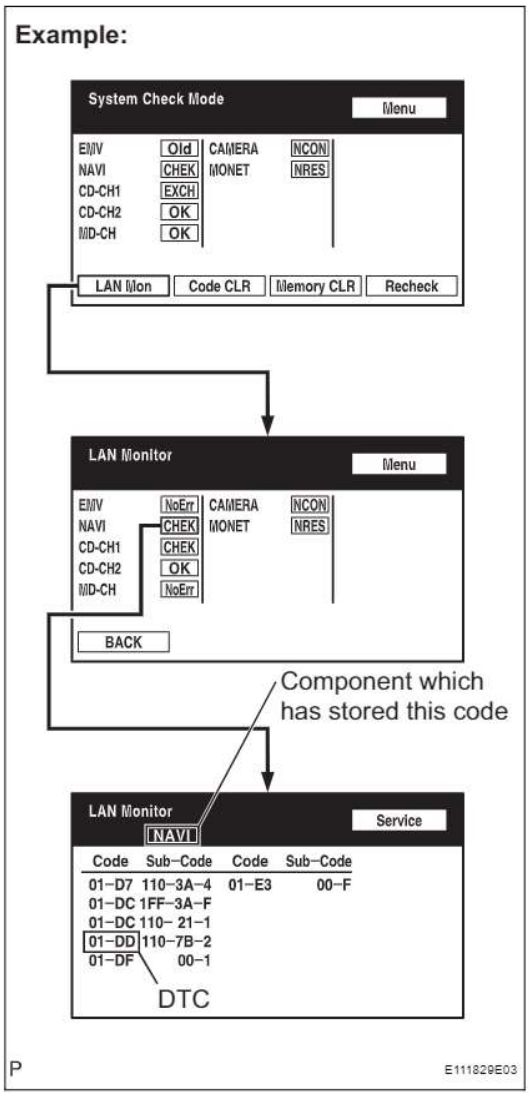
Tester connection	Condition	Specified condition
ATX+ (F9-5) - ATX- (F9-15)	Always	60 to 80 Ω

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

OK

NS

3 IDENTIFY THE COMPONENT WHICH HAS STORED THIS CODE



(a) Enter the diagnostic mode.
(b) Press the "LAN Mon" switch to change to "LAN Monitor" mode.
(c) Identify the component which has stored this code.

Component Table:

Display	Component
DSP-AMP	Stereo component amplifier

HINT:
"NAVI" is the component which has stored this code in the example shown in the illustration.

NEXT

4 CHECK HARNESS AND CONNECTOR

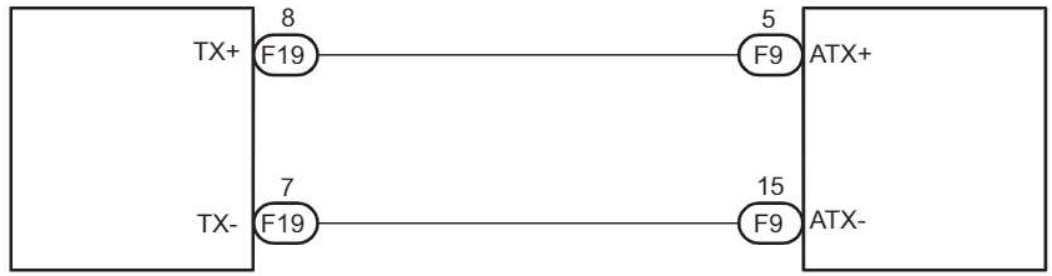
HINT:
For details of the connectors, refer to "TERMINALS OF ECU" (See page NS-45).

(a) Referring to the AVC-LAN wiring diagram below, check the AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code.
  (1) Disconnect all connectors between the radio and navigation assembly and the component which has stored this code.
  (2) Check for an open or short in the AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code.

NS

OK:
There is no open or short circuit.

AVC-LAN WIRING DIAGRAM



*1: Master Unit

*2: Slave Unit

P E111831E09

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5	REPLACE RADIO AND NAVIGATION ASSEMBLY

(a) Replace the radio and navigation assembly with a normal one and check if the same problem occurs again.
OK:
Same problem does not occur.

NG → **REPLACE COMPONENT WHICH HAS STORED THIS CODE**

OK

END

NS

DTC	01-DF	Master Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-DF *1	• The device with a display fails and the master is switched to the audio device. • A communication error between the sub-master (radio receiver) and master occurs.	• Radio and navigation assembly power source circuit • AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code • AVC-LAN circuit between the radio and navigation assembly and the radio receiver • Radio and navigation assembly • Component which has stored this code

HINT:
*1: When 210 seconds have elapsed after disconnecting the power supply connector of the master component with the ignition switch on (ACC or IG), this code is stored.

NOTICE:

- **Before starting troubleshooting, be sure to clear DTCs to erase codes stored due to the reasons described in the HINT above. Then, check for DTCs and troubleshoot according to the output DTCs.**
- **The radio and navigation assembly is the master unit.**
- **Be sure to clear and recheck DTCs after the inspection is completed to confirm that no DTCs are output.**

INSPECTION PROCEDURE

NOTICE:

Be sure to read DESCRIPTION before performing the following procedures.

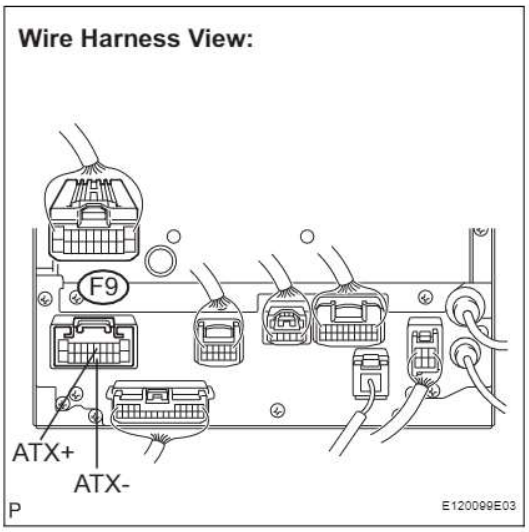
1	CHECK RADIO AND NAVIGATION ASSEMBLY POWER SOURCE CIRCUIT

Refer to the radio and navigation assembly power source circuit (See page NS-191).
If the power source circuit is operating normally, proceed to the next step.

NEXT

NS

2	INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector.
(b) Measure the resistance according to the value(s) in the table below.

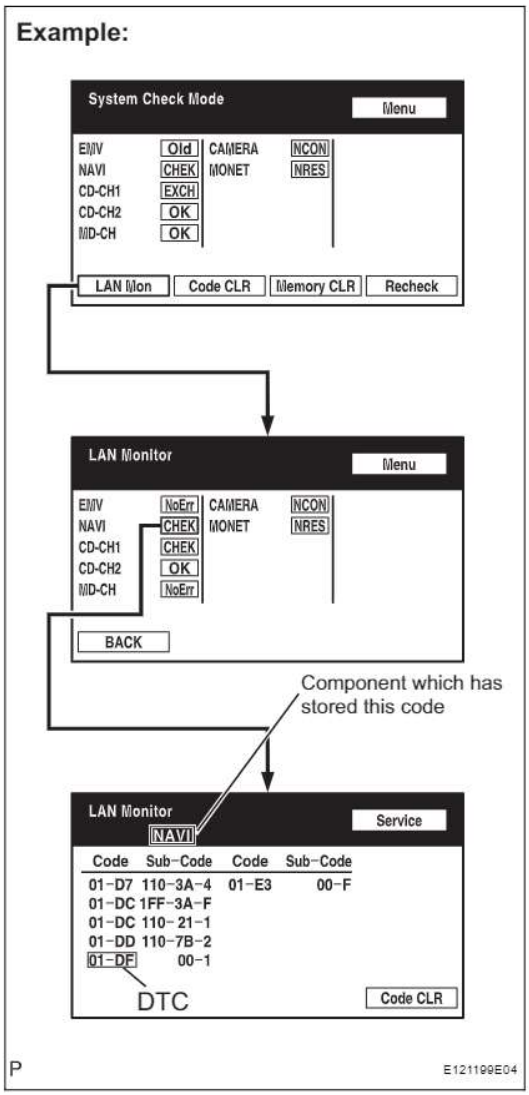
Standard resistance

Tester connection	Condition	Specified condition
ATX+ (F9-5) - ATX- (F9-15)	Always	60 to 80 Ω

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

OK

3 IDENTIFY THE COMPONENT WHICH HAS STORED THIS CODE



(a) Enter the diagnostic mode.
(b) Press the "LAN Mon" switch to change to "LAN Monitor" mode.
(c) Identify the component which has stored this code.

Component Table:

Display	Component
DSP-AMP	Stereo component amplifier

HINT:
"NAVI" is the component which has stored this code in the example shown in the illustration.

NEXT

4 CHECK HARNESS AND CONNECTOR

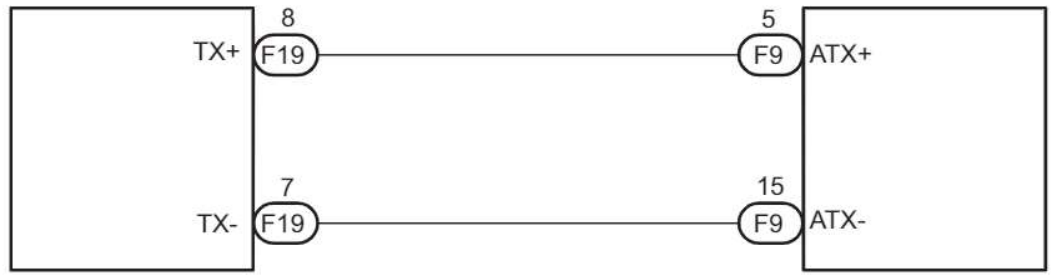
HINT:
For details of the connectors, refer to "TERMINALS OF ECU" (See page NS-45).

(a) Referring to the AVC-LAN wiring diagram below, check the AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code.
  (1) Disconnect all connectors between the radio and navigation assembly and the component which has stored this code.
  (2) Check for an open or short in the AVC-LAN circuit between the radio and navigation assembly and the component which has stored this code.

NS

OK:
There is no open or short circuit.

AVC-LAN WIRING DIAGRAM



*1: Master Unit

*2: Slave Unit

P E111831E09

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5	REPLACE RADIO AND NAVIGATION ASSEMBLY

(a) Replace the radio and navigation assembly with a normal one and check if the same problem occurs again.
OK:
Same problem does not occur.

NG → **REPLACE COMPONENT WHICH HAS STORED THIS CODE**

OK

END

NS

DTC	01-E0	Registration Complete Indication Error

DTC	01-E3	Registration Demand Transmission

DTC	01-E4	Multiple Frame Incomplete

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-E0	"Registration complete" signal from the master device cannot be received.	-
01-E3	The registration demand signal from the slave device is output. Or the registration demand signal is output by receiving connection confirmation signal from the sub-master device.	-
01-E4	The multiple frame transmission is incomplete.	-

HINT:
Even if no fault is present, this trouble code may be stored depending on the battery condition or engine start voltage.

INSPECTION PROCEDURE

HINT:
- After the inspection is completed, clear the DTCs.
- These DTCs do not indicate a malfunction.

NS

DTC	01-E2	ON / OFF Indication Parameter Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
01-E2	The signal for ON/OFF control from the master device has a problem.	Radio and navigation assembly

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	REPLACE RADIO AND NAVIGATION ASSEMBLY

NEXT

END

DTC	21-10	Panel Switch Error
DTC	21-11	Touch Switch Error
DTC	23-10	Panel Switch Error
DTC	23-11	Touch Switch Error
DTC	24-10	Panel Switch Error
DTC	24-11	Touch Switch Error
DTC	25-10	Panel Switch Error
DTC	25-11	Touch Switch Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
21-10	The panel switch detection circuit has a problem.	Radio and navigation assembly
21-11	The touch panel switch has a problem.	
23-10	The panel switch detection circuit has a problem.	
23-11	The touch panel switch has a problem.	
24-10	The panel switch detection circuit has a problem.	
24-11	The touch panel switch has a problem.	
25-10	The panel switch detection circuit has a problem.	
25-11	The touch panel switch has a problem.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	REPLACE RADIO AND NAVIGATION ASSEMBLY

NEXT

END

NS

DTC	34-10	Error in Picture Circuit

DTC	34-11	No Current in Back-light

DTC	34-12	Excess Current in Back-light

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
34-10	Error in power supply system for picture circuit	Radio and navigation assembly
34-11	Decline in power output from inverter circuit for back-light	
34-12	Excess power output from inverter circuit for back-light	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	REPLACE RADIO AND NAVIGATION ASSEMBLY

NEXT

END

DTC	57-47	Bluetooth Module Initialization Failed

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
57-47	• "Bluetooth" module is not installed. • Problem with "Bluetooth" module • Problem in communication line to "Bluetooth" module	Radio and navigation assembly

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	REPLACE RADIO AND NAVIGATION ASSEMBLY

NEXT

END

NS

DTC	58-10	Gyro Error

DTC	80-10	Gyro Error

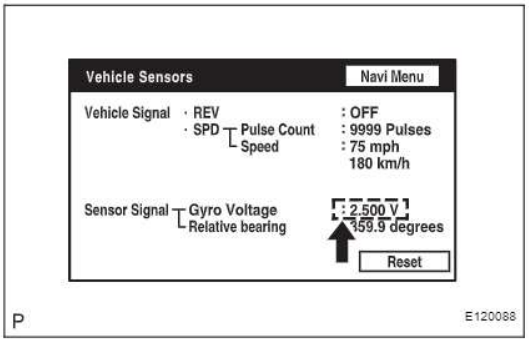
DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
58-10	Ground short, power supply short, or open circuit in the gyro signal	• Gyro sensor • Radio and navigation assembly
80-10	Ground short, power supply short, or open circuit in the gyro signal	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)



(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-27).
(b) Check the gyro voltage.
Standard voltage:
0.1 to 4.5 V

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

2	CLEAR DTC

(a) Clear the DTCs (See page NS-46).

NEXT

3	RECHECK DTC

(a) Recheck for DTCs and check if the same trouble occurs again.
HINT:
If DTCs are detected frequently, replace the radio and navigation assembly.
OK:
Malfunction disappears.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NS

OK

END

DTC	58-11	GPS Receiver Error

DTC	80-11	GPS Receiver Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
58-11	• RTC, ROM, and RAM of the GPS receiver and TCXO error • GPS receiver is failed.	Radio and navigation assembly
80-11	• RTC, ROM, and RAM of the GPS receiver and TCXO error • GPS receiver is failed.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	REPLACE RADIO AND NAVIGATION ASSEMBLY

NEXT

END

DTC	58-40	GPS Antenna Error
DTC	58-41	GPS Antenna Power Source Error
DTC	80-40	GPS Antenna Error
DTC	80-41	GPS Antenna Power Source Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
58-40	GPS antenna error	• Wire harness • GPS antenna • Radio and navigation assembly
58-41	Error of the power source to the GPS antenna	
80-40	GPS antenna error	
80-41	Error of the power source to the GPS antenna	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CHECK HARNESS AND CONNECTOR (GPS ANTENNA - RADIO AND NAVIGATION ASSEMBLY)

(a) Check that the GPS antenna cord is securely connected to the radio and navigation assembly connector.
OK:
The cord is securely connected.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ↓

2	REPLACE GPS ANTENNA

(a) Replace the GPS antenna with a normal one and check if the same problem occurs again.
(1) Clear the DTCs (See page NS-46).
(2) Recheck for DTCs and check if the same trouble occurs again.
OK:
Same problem does not occur.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK ↓

END

DTC	58-42	Map Disc Read Error

DTC	80-42	Map Disc Read Error

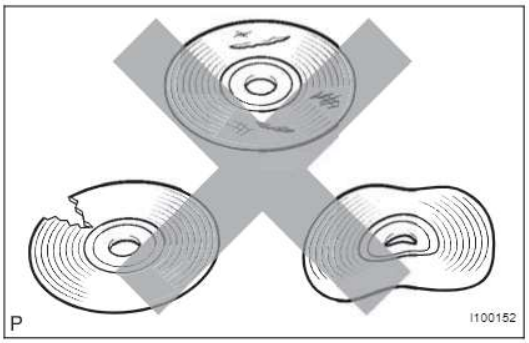
DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
58-42	• Player error • Scratches or dirt on the disc • Access to an invalid address due to software error	• Map disc • Radio and navigation assembly
80-42	• Player error • Scratches or dirt on the disc • Access to an invalid address due to software error	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1 CHECK MAP DISC

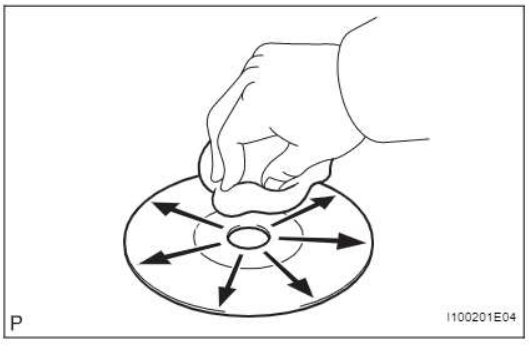


(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on the map disc.

NG → **Go to step 4**

OK

2 DISC CLEANING



(a) Disc cleaning
(1) If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.

NEXT

3 DTC CLEAR AND RECHECK

(a) Clear the DTCs (See page NS-46).

(b) Recheck for DTCs and check if the same trouble occurs again.
OK:
Same problem does not occur.

OK → END

NG

4	REPLACE MAP DISC

(a) Replace the map disc.
(b) Clear the DTCs and recheck for DTCs.
(c) Check if the same trouble occurs again.
OK:
Same problem does not occur.

OK → END

NG

REPLACE RADIO AND NAVIGATION ASSEMBLY

DTC	58-43	SPD Signal Error

DTC	80-43	SPD Signal Error

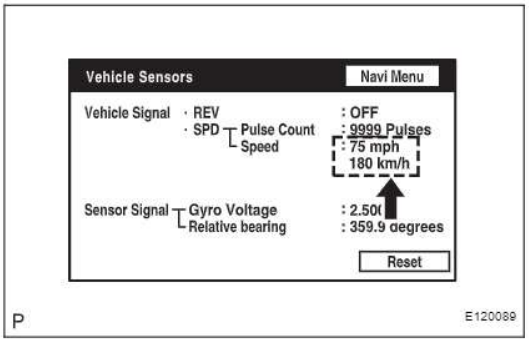
DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
58-43	A difference between the GPS speed and SPD pulse is detected.	• Speed signal circuit • Radio and navigation assembly
80-43	A difference between the GPS speed and SPD pulse is detected.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1 CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)



(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-27).
(b) While driving the vehicle, compare the "SPD" indicator to the reading on the speedometer. Check if these readings are almost equal.
OK:
The readings are almost equal.

OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NG

2 PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Refer to "Speed signal does not change in the navigation check mode" in the problem symptoms table (See page NS-41).

NEXT

END

NS

DTC	58-44	Player Error

DTC	80-44	Player Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
58-44	Map player error is detected.	Radio and navigation assembly
80-44	Map player error is detected.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Check if a disc can be inserted or ejected normally.
OK:
A disc can be inserted or ejected normally.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

2	DTC CLEAR AND RECHECK

(a) Clear the DTCs (See page NS-46).
(b) Recheck for DTCs and check if the same trouble occurs again.
OK:
Same problem does not occur.

OK → **END**

NG

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

DTC	58-45	High Temperature

DTC	80-45	High Temperature

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
58-45	High map disc player temperature is detected (Over 80°C).	Radio and navigation assembly
80-45	High map disc player temperature is detected (Over 80°C).	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Park the vehicle in a cool place.
(b) Check that the temperature of the radio and navigation assembly has becomes sufficiently low, then start the engine to verify the malfunction symptom.
OK:
Same problem does not occur.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

END

NS

DTC	63-10	CD Changer Mechanical Error

DTC	63-11	CD Insertion and Ejection Error

DTC	63-12	CD Reading Abnormal

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-10	A mechanical error in the CD changer is detected while the CD is not being inserted or ejected.	Radio and navigation assembly
63-11	CD insertion or ejection is failed.	
63-12	CD read problem occurs.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	REPLACE RADIO AND NAVIGATION ASSEMBLY

NEXT

END

NS

DTC	63-41	Wrong Disc

DTC	63-42	Disc cannot be Read

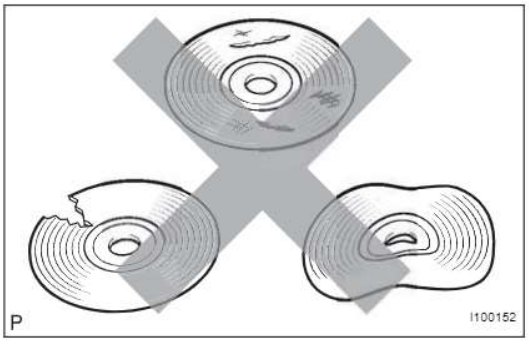
DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-41	An unsuitable disc is inserted.	• CD • Radio and navigation assembly
63-42	The disc cannot be read.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1 CHECK DISC

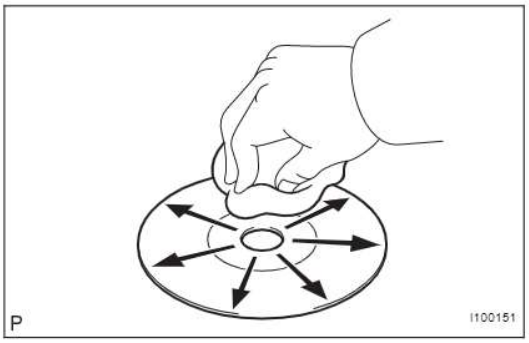


(a) Check that the disc is not deformed or cracked.
OK:
No deformations or cracks on the disc.

NG → **CHANGE DISC**

OK

2 DISC CLEANING



(a) Disc cleaning
(1) If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.

NEXT

3 CLEAR DTC

(a) Clear the DTCs (See page NS-46).

NEXT

4	RECHECK DTC

(a) Recheck for DTCs and check if the same trouble occurs again.
OK:
Malfunction disappears.

OK → END

NG

5	REPLACE DISC WITH ANOTHER AND RECHECK

(a) Replace the disc with another and recheck.
(1) Replace the disc with another normal one.
(2) Clear the DTCs (See page NS-46).
(3) Recheck for DTCs and check if the same trouble occurs again.
OK:
Malfunction disappears.

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

OK

END

NS

DTC	63-43	CD-ROM Abnormal

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-43	CD-ROM operation is abnormal.	• CD • Radio and navigation assembly

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1 CHECK IF A PROPER CD IS INSERTED

(a) Make sure that the CD is an audio CD or a CD with an MP3 or WMA file, and that it is not deformed, flawed, stained, burred, or otherwise defective.
OK:
Normal CD
HINT:
- Translucent or uniquely-shaped CDs cannot be played.
- CD with adhesive paper labels should not be played.
- Commercial audio CDs can be played.
- CD-DA files on CD-ROMs, CD-Rs, and CD-RWs can be played.
- MP3 and WMA files on CD-ROMs, CD-Rs, and CD-RWs can be played.
- For details on playable CDs, refer to the Owner's Manual.

NG → **CD IS FAULTY**

OK ↓

2 REPLACE CD WITH ANOTHER AND RECHECK

(a) Replace the CD with another and recheck.
(1) Replace the CD with another normal one.
(2) Clear the DTCs (See page NS-46).
(3) Recheck for DTCs and check if the same trouble occurs again.
OK:
Malfunction disappears.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK ↓

END

DTC	63-44	CD Abnormal

DTC	63-48	Excess Current

DTC	63-50	Tray Insertion / Ejection Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-44	Operation error in the CD mechanism	Radio and navigation assembly
63-48	Excess current is present in the CD changer.	
63-50	Malfunction in insertion/ejection system	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CLEAR DTC

(a) Clear the DTCs (See page NS-46).

NEXT

2	RECHECK DTC

(a) Recheck for DTCs and check if the same trouble occurs again.
HINT:
If DTCs are detected frequently, replace the radio and navigation assembly.
OK:
Malfunction disappears.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

END

NS

DTC	63-45	Eject Error

DTC	63-51	Elevator Error

DTC	63-52	Clamp Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-45	Magazine cannot be ejected.	Radio and navigation assembly
63-51	Mechanical error occurs during elevator operation.	
63-52	Error occurs in CD changer clamp.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Check if a disc can be changed, inserted, or ejected normally.
OK:
Malfunction disappears.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK ↓

END

NS

DTC	63-46	Scratched / Reversed Disc

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-46	Scratches or dirt is found on CD surface or CD is set upside down.	• CD • Radio and navigation assembly

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

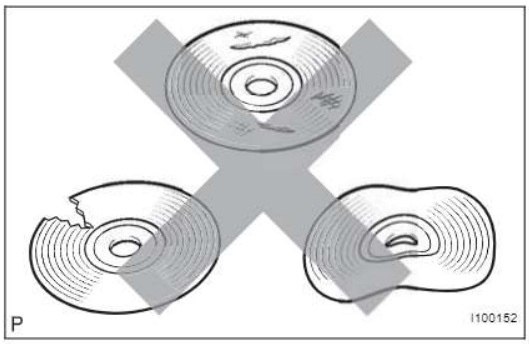
1 CHECK THAT CD IS INSERTED PROPERLY

(a) Check that the CD is not inserted upside down.
OK:
CD is properly inserted.

NG → **INSERT CD PROPERLY**

OK

2 CHECK DISC

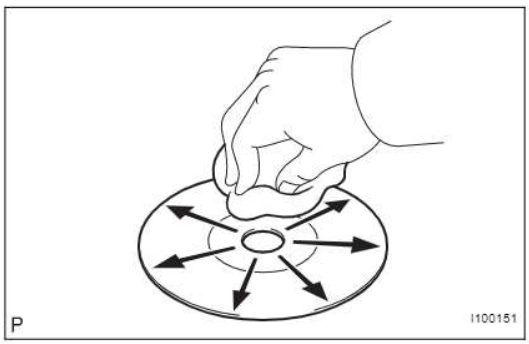


(a) Check that the disc is not deformed or cracked.
OK:
No deformations or cracks on the disc.

NG → **CHANGE DISC**

OK

3 DISC CLEANING



(a) Disc cleaning
(1) If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.

NEXT

NS

4	CLEAR DTC

(a) Clear the DTCs (See page NS-46).

NEXT

5	RECHECK DTC

(a) Recheck for DTCs and check if the same trouble occurs again.
OK:
Malfunction disappears.

OK → END

NG

6	REPLACE DISC WITH ANOTHER AND RECHECK

(a) Replace the disc with another and recheck.
(1) Replace the disc with another normal one.
(2) Clear the DTCs (See page NS-46).
(3) Recheck for DTCs and check if the same trouble occurs again.
OK:
Malfunction disappears.

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

OK

END

NS

DTC	63-47	High Temperature

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-47	Sensor detects that CD unit temperature is high (Over 80°C).	Radio and navigation assembly

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Park the vehicle in a cool place.
(b) Check that the temperature of the radio and navigation assembly becomes sufficiently low, then start the engine. Check that the malfunction disappears.
OK:
Malfunction disappears.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

END

DTC	63-78	DSP Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-78	An error occurs during the decode process (MP3/ WMA).	-

INSPECTION PROCEDURE

HINT:
After the inspection completed, clear the DTCs.
NOTICE:
- **This code may be output even if there is no malfunction.**
- **If this code is output frequently, replace the radio and navigation assembly.**

1	CLEAR DTC

(a) Clear the DTCs (See page NS-46).
HINT:
These DTCs do not indicate a malfunction.

NEXT

2	RECHECK DTC

(a) Recheck for DTCs and check if the same trouble occurs again.
OK:
Malfunction disappears.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

END

NS

DTC	63-7D	Disc cannot be Played

DTC	63-7E	No Playable Files

DTC	63-7F	Copyright Protection Error

DESCRIPTION

DTC No.	DTC Detection Condition	Trouble Area
63-7D	• An incompatible MP3/WMA file is used. • Although the file has an extension of ".mp3" or ".wma", the header information cannot be read.	• CD • Radio and navigation assembly
63-7E	• A disc with no music data is used. • Playable files are not on the disc (MP3/WMA).	
63-7F	A copy-protected file, which cannot be played, is used.	

INSPECTION PROCEDURE

HINT:
After the inspection is completed, clear the DTCs.

1	CHANGE DISC

(a) Insert a disc with a playable file and check if the disc can be played correctly.
HINT:
For details on playable files and discs, refer to the Owner's Manual.
OK:
The disc can be played correctly.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK →

DISC IS FAULTY

NS

Noise Occurs

INSPECTION PROCEDURE

1 NOISE CONDITION

(a) Check from which direction the noise comes (front left or right, or rear left or right).
(1) Check from which direction the noise comes.
OK:
The location of the noise source can be determined.

NG → **Go to step 3**

OK ↓

2 CHECK SPEAKERS

(a) Check the installation conditions of the speaker units that are located near the noise source and that there are no cracks, scratches, deformation, or other failures.

Result

Condition	Proceed to
A speaker is installed incorrectly	A
Foreign objects are in the speaker	B
A speaker cone paper is broken	C
No malfunction is found	D

A → **REINSTALL SPEAKER**

B → **REMOVE FOREIGN OBJECT**

C → **REPLACE SPEAKER**

D ↓

3 CHECK NOISE CONDITIONS

(a) Check the noise condition.
HINT:
The radio has a noise prevention function to reduce noise when listening to the radio. If a loud noise occurs, check whether the ground at the antenna mounting base and the noise prevention unit are installed and wired correctly.

Conditions under which noise occurs	Noise source
Noise increases when the accelerator pedal is depressed, but stops when the engine is stopped.	Generator
Noise occurs during A/C or heater operation.	Blower motor
Noise occurs when the vehicle accelerates rapidly on an unpaved road or after the ignition switch is turned on (IG or ACC).	Fuel pump

NS

Conditions under which noise occurs	Noise source
Noise occurs when the horn switch is pressed and released or when pressed and held.	Horn
Noise occurs synchronously with the blink of the turn signal.	Flasher
Noise occurs during window washer operation.	Washer
Noise occurs while the engine is running, and continues even after the engine is stopped.	Water temperature sensor
Noise occurs during wiper operation.	Wiper
Noise occurs when the brake pedal is depressed.	Stop light switch
Others	Static electricity

HINT:

- In the chart's left column, find the situation that matches the customer's complaint. Then, in the right column, find the part that is causing the noise. Check the noise filter on or for the part.
- To save time and avoid a misdiagnosis, first make sure that the noise is not coming from outside the vehicle.
- Noise should be removed in descending order of loudness.
- Setting the radio to a frequency where no signal is received may make recognition of the noise problem easier.

OK:

The noise source cannot be determined.

NG → **REPAIR OR REPLACE NOISE SOURCE**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Pressing Power Switch does not Turn on System

INSPECTION PROCEDURE

1	CHECK CABIN

(a) Check that conditions in the cabin are not likely to cause condensation.
HINT:
This problem occurs when the cabin is humid and the temperature rapidly changes. This condition may produce condensation, resulting in a short circuit.
OK:
Condensation is not likely to occur.

NG → DRY CABIN AND RECHECK CONDITIONS

OK

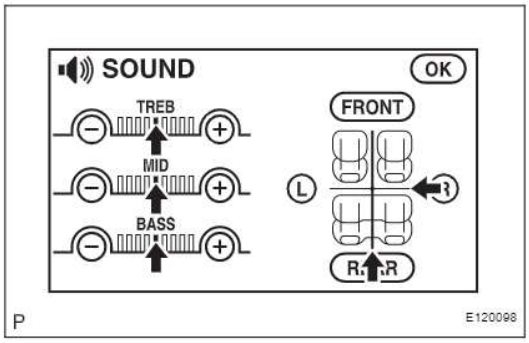
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

No Sound can be Heard from Speakers

INSPECTION PROCEDURE

1	CHECK AUDIO SETTINGS



(a) Enter the sound adjustment screen by pressing the "SOUND" switch on the AUDIO display.
(b) Set volume, fader, and balance to the initial values and check that sound is normal.
OK:
Audio system returns to normal.
HINT:
Sound quality adjustment items vary depending on the type of the amplifier.

OK → **END**

NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

CD cannot be Ejected

INSPECTION PROCEDURE

1	CHECK OPERATION

(a) Press the disc eject switch of the radio receiver for 5 seconds or more and check that the CD is ejected.
OK:
CD is ejected.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK ↓

2	REPLACE CD WITH ANOTHER AND RECHECK

(a) Insert another CD and check if it is ejected.
OK:
CD is ejected.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK ↓

CD IS FAULTY

NS

CD cannot be Inserted / Played or CD is Ejected Right After Insertion

INSPECTION PROCEDURE

1 CHECK IF A PROPER CD IS INSERTED

(a) Make sure that the CD is an audio CD or a CD with an MP3 or WMA file, and that it is not deformed, flawed, stained, burred, or otherwise defective.
OK:
Normal CD
HINT:
- Translucent or uniquely-shaped CDs cannot be played.
- Commercial audio CDs can be played.
- CD-DA files on CD-ROMs, CD-Rs, and CD-RWs can be played.
- MP3 and WMA files on CD-ROMs, CD-Rs and CD-RWs can be played.
- For details on playable CDs, refer to the Owner's Manual.

NG → **CD IS FAULTY**

OK

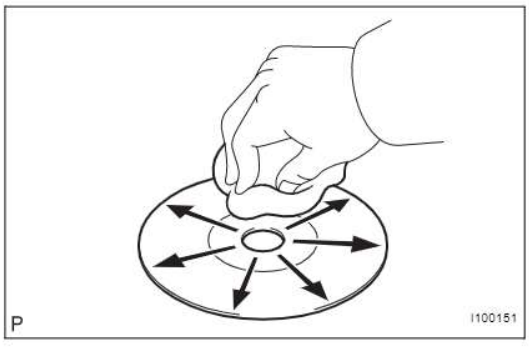
2 CHECK THAT CD IS INSERTED PROPERLY

(a) Check whether or not the CD is inserted upside down.
OK:
CD is properly inserted.

NG → **SET CD PROPERLY**

OK

3 CHECK CD



(a) Clean the disc by wiping it with a soft cloth from the inside to the outside in a radial direction.
OK:
Malfunction disappears.
NOTICE:
Do not use a conventional record cleaner or antistatic preservative.

OK → **CD WAS DIRTY**

NG

NS

4	REPLACE CD WITH ANOTHER AND RECHECK

(a) Replace the CD with a normal one and check that the malfunction disappears.
OK:
Malfunction disappears.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

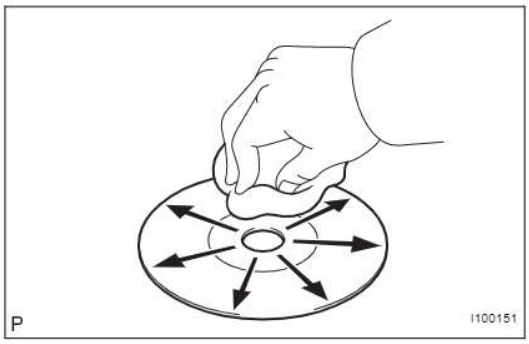
OK

CD IS FAULTY

CD Sound Skips

INSPECTION PROCEDURE

1 CHECK CD

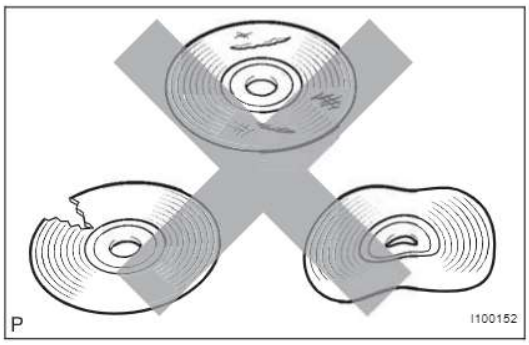


(a) Check the CD.
OK:
The CD is clean.
HINT:
If dirt is on the CD surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.

NG → **CLEAN CD**

OK

2 CHECK CD



(a) Check that the CD is not deformed or cracked.
OK:
No deformation or cracks on the CD.

NG → **CD IS FAULTY**

OK

3 CHECK OPERATION OF ANOTHER CD

(a) Check using another CD.
(1) Check if the problem recurs using another CD.
OK:
The problem does not occur.

OK → **CD IS FAULTY**

NG

4 CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Check the radio and navigation assembly installation condition.
(1) Check that the radio and navigation assembly is properly installed.

NS

OK:
Radio and navigation assembly is properly installed.

NG → REINSTALL RADIO AND NAVIGATION ASSEMBLY

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

Radio Broadcast cannot be Received or Poor Reception

INSPECTION PROCEDURE

1 CHECK RADIO AND NAVIGATION ASSEMBLY

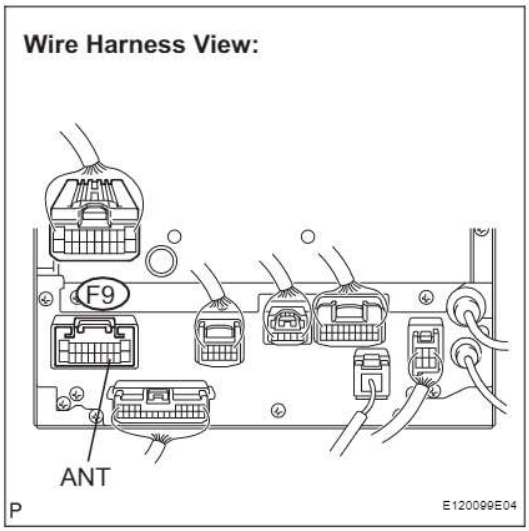
(a) Check the radio's automatic station search function.
(1) Check the radio's automatic station search function by activating it.
OK:
The radio's automatic station search function works properly.

OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NG

2 INSPECT RADIO AND NAVIGATION ASSEMBLY

Wire Harness View:



(a) Disconnect the radio and navigation assembly connector F9.
(b) Measure the voltage according to the value(s) in the table below.
Standard voltage

Tester connection	Condition	Specified condition
ANT - Body ground	Ignition SW on (IG) Radio SW ON	10 to 14 V

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

3 CHECK OPTIONAL COMPONENTS

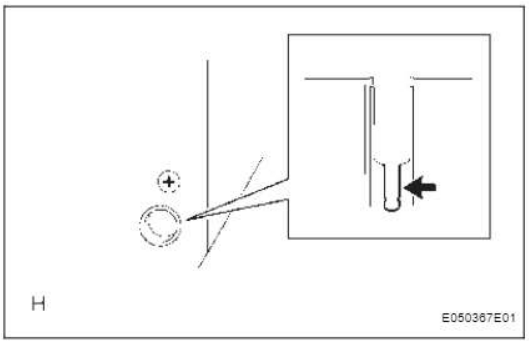
(a) Check optional components (sun-shade film, telephone antenna, etc.).
(1) Check if any optional components, such as sunshade film or telephone antenna that may decrease reception capacity, are installed.
OK:
Optional components are installed.
NOTICE:
Do not remove any optional components installed by the customer without his or her consent.

NS

OK → REMOVE AND RECHECK OPTIONAL COMPONENTS (SEE NOTICE ABOVE)

NG

4 CHECK RADIO AND NAVIGATION ASSEMBLY

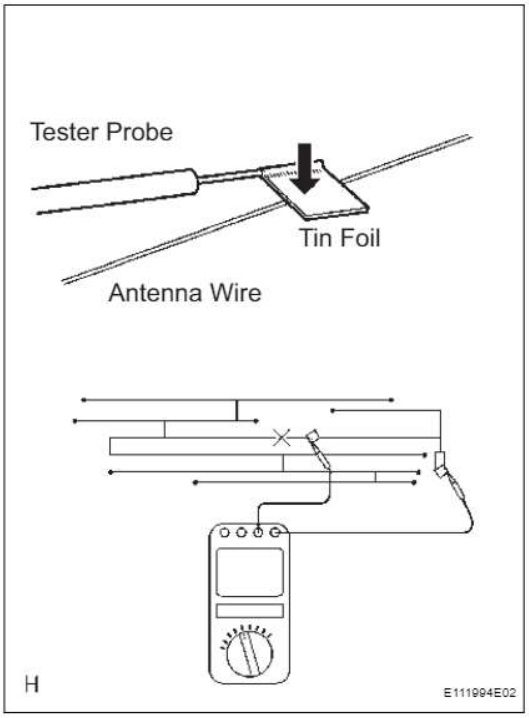


(a) Preparation for check
(1) Remove the antenna plug from the radio and navigation assembly.
(b) Check for noise
(1) Turn the ignition switch on (ACC) with the radio and navigation assembly connector connected.
(2) Turn the radio on and put into AM mode.
(3) Place a screwdriver, thin wire, or other metal object on the radio receiver's antenna jack and check that noise can be heard from the speaker.
OK:
Noise occurs.

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

OK

5 CHECK GLASS ANTENNA



(a) Check for continuity of the antenna.
HINT:
Check for continuity at the center of each antenna wire as shown in the illustration.
NOTICE:
When cleaning the glass, wipe it in the direction of the wire with a soft dry cloth. Take care not to damage the wire. Do not use detergents or glass cleaners with abrasive ingredients. When measuring voltage, wrap a piece of tin foil around the tip of the negative probe and press the foil against the wire with your finger, as shown in the illustration.
OK:
There is continuity in the antenna.

NG → REPAIR GLASS ANTENNA

NS

OK

6	REPLACE ANTENNA AMPLIFIER

(a) Replace the antenna amplifier and check that it operates normally.
OK:
The antenna amplifier operates normally.

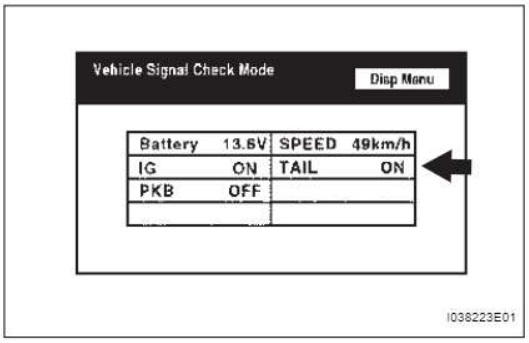
OK → END

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

Illumination for Panel Switch does not Come on with Tail Switch ON

INSPECTION PROCEDURE

1 CHECK VEHICLE SIGNAL (DISPLAY CHECK MODE)



(a) Enter the "Display Check" mode (Vehicle Signal Check Mode) (See page NS-22).

(b) Check that the display changes between ON and OFF according to the light control switch operation.

OK

Light Control Switch	Display
TAIL or ON	ON
OFF	OFF

HINT:
This display is updated once per second. As a result, it is normal for the display to lag behind the actual change in the switch.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

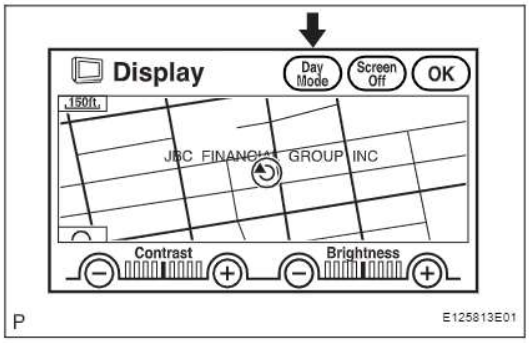
REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Display does not Dim when Light Control Switch is Turned ON

INSPECTION PROCEDURE

1 CHECK IMAGE QUALITY SETTING



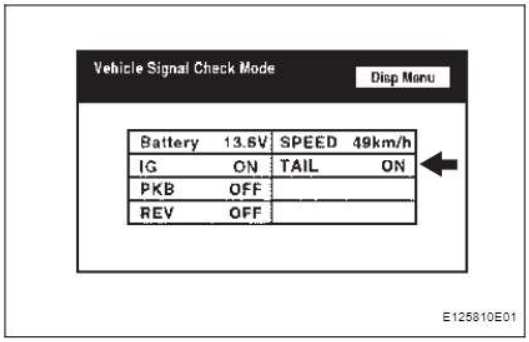
(a) Enter the display adjustment screen by pressing the "DISP" switch.
(b) Turn the light control switch to the TAIL position.
(c) Check if "DAY MODE" on the display adjustment is ON.
OK:
"DAY MODE" is ON.

NG → **Go to step 2**

OK

TURN "DAY MODE" SETTING OFF

2 CHECK VEHICLE SIGNAL (DISPLAY CHECK MODE)



(a) Enter the "Display Check" mode (Vehicle Signal Check) (See page NS-22).
(b) Check that the display changes between ON and OFF according to the light control switch operation.
OK

Light Control Switch	Display
TAIL or ON	ON
OFF	OFF

HINT:
The display is updated once per second. It is normal for the display to lag behind the actual switch operation.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Panel Switches do not Function

INSPECTION PROCEDURE

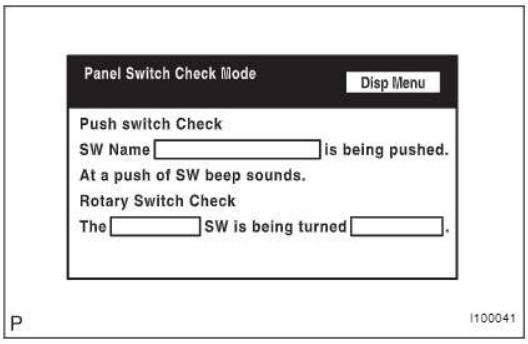
1 CHECK PANEL SWITCH

(a) Check for foreign matter around the switches that might prevent operation.
OK:
No foreign matter is found.

NG → **REMOVE ANY FOREIGN MATTER FOUND**

OK

2 CHECK PANEL SWITCH (DISPLAY CHECK MODE)



(a) Enter the "Display Check" mode (Panel Switch Check) (See page NS-22).
(b) Operate the abnormal switch and check if the switch name and status are correctly displayed.
OK:
The switch name and status are correctly displayed as operated.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Touch Panel Switch does not Function

INSPECTION PROCEDURE

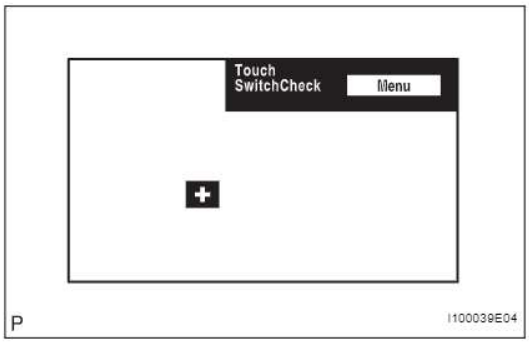
1	CHECK TOUCH PANEL

(a) Check for foreign matter on the display.
OK:
The display is clean.

NG → **CLEAN DISPLAY AND RECHECK TOUCH PANEL**

OK

2	CHECK TOUCH SWITCH (DISPLAY CHECK MODE)



(a) Enter the "Display Check" mode (Touch Switch Check) (See page NS-22).
(b) Touch the display in the area where the switch malfunction occurs.
OK:
A "+" mark appears at the touched position.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

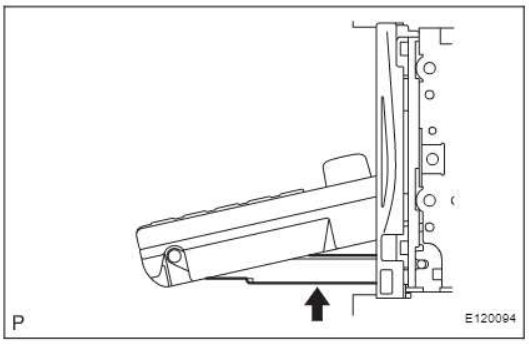
REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Display Panel does not Open, Tilt or Tilts Improperly

INSPECTION PROCEDURE

1 CHECK RADIO AND NAVIGATION ASSEMBLY



(a) Check for foreign matter or obstructions caught in the moving parts of the panel.
OK:
No obstruction or foreign matter found.

NG → **REMOVE ANY OBSTRUCTION OR FOREIGN MATTER FOUND**

OK

2 CHECK OPERATION

(a) Check if the navigation and audio systems function properly.
OK:
Navigation and audio systems function properly.

OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NG

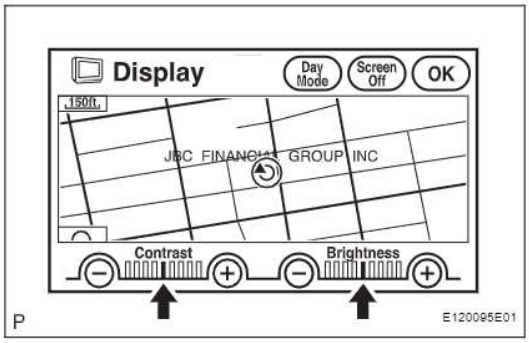
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

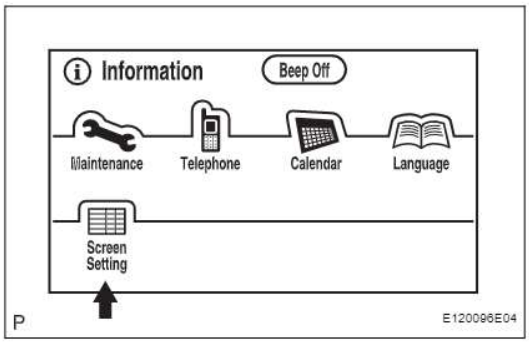
Screen Flicker or Color Distortion

INSPECTION PROCEDURE

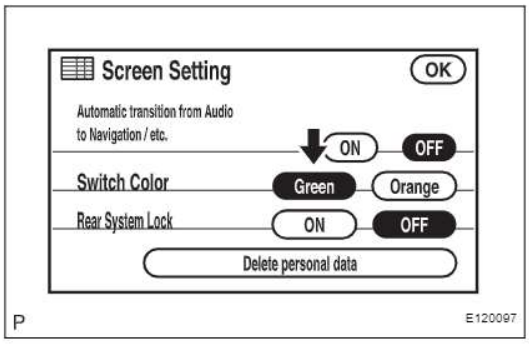
1 CHECK DISPLAY SETTING



(a) Enter the display adjustment screen by pressing the "DISPLAY" switch.
(b) Reset display settings (contrast, brightness) and check that the screen appears normal.



(c) Press the "INFO" switch and then select "Screen Setting."



(d) Set the "Switch Color" to "Green" (initial setting) and check if the display returns to normal.
OK:
Returns to normal.

NG → **Go to step 2**

OK

END

2 CHECK CABIN

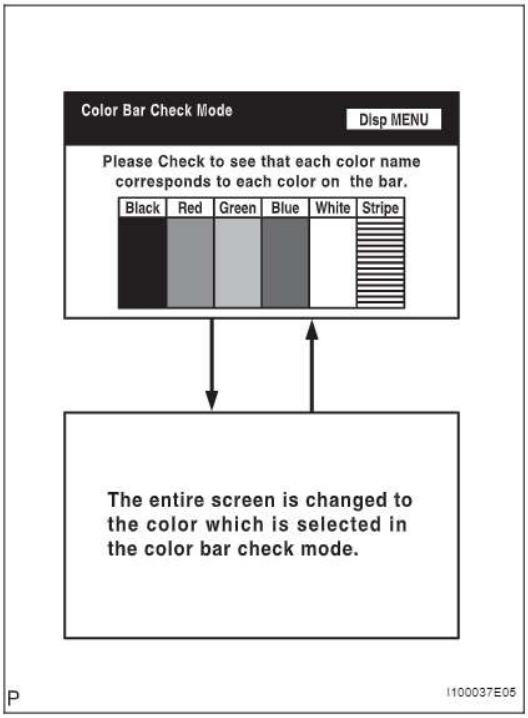
(a) Check that the cabin temperature is warmer than -20°C (-4.0°F).
OK:
Cabin is warmer than -20°C (-4.0°F).

NG → **HEAT CABIN AND RECHECK TEMPERATURE**

NS

OK

3	CHECK COLOR BAR (DISPLAY CHECK MODE)

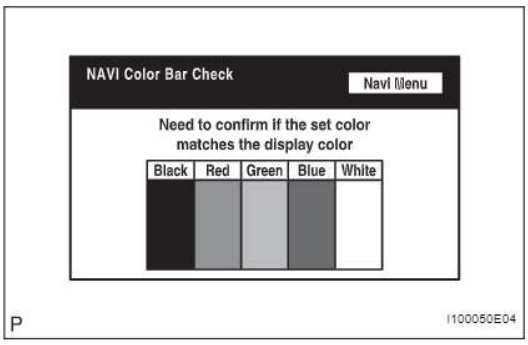


(a) Enter the "Display Check" mode (Color Bar Check) (See page NS-22).
(b) Check that the color bars match the displayed names.
OK:
Color bars match the displayed names.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

4	CHECK NAVI COLOR BAR (NAVIGATION CHECK MODE)



(a) Enter the "Navigation Check" mode (NAVI Color Bar Check) (See page NS-27).
(b) Check that the color bars match the displayed names.
OK:
Color bars match the displayed names.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

NS **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

Poor Sound Quality in All Modes (Low Volume)

INSPECTION PROCEDURE

1	CHECK AUDIO SETTINGS

(a) Set "BASS", "MID" and "TREB" to the initial values and check that sound is normal.
OK:
Malfunction disappears.

OK → END

NG

2	COMPARE WITH ANOTHER VEHICLE OF SAME MODEL

(a) Compare with another vehicle of the same model.
(1) Compare with another vehicle of the same model which does not have trouble to see if there is any difference in the sound quality.
OK:
No difference is found.

OK → END

NG

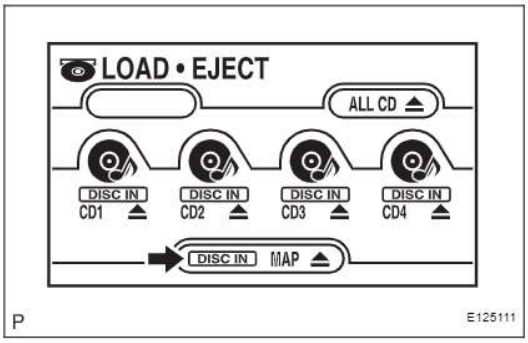
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

MAP Disc cannot be Inserted

INSPECTION PROCEDURE

1 CHECK RADIO AND NAVIGATION ASSEMBLY

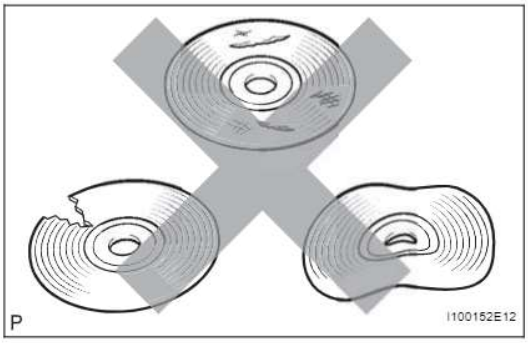


(a) Check if a disc is inserted into the MAP disc slot.
(1) Check if "DISC IN" is displayed.
OK:
"DISC IN" is displayed.

NG → **EJECT DISC**

OK

2 CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

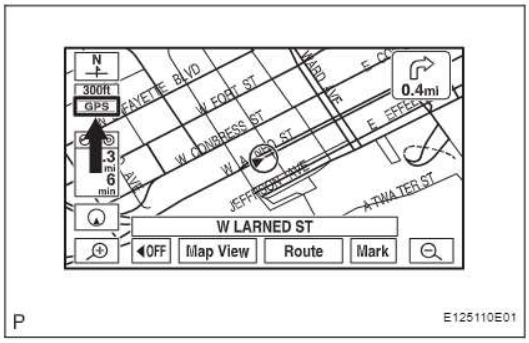
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Vehicle Position Mark Deviates Greatly

INSPECTION PROCEDURE

1 CHECK GPS MARK

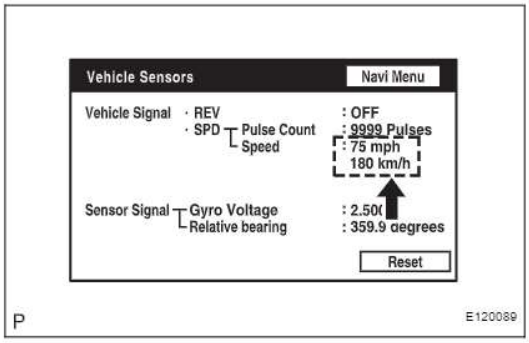


(a) Check that the GPS mark is displayed.
OK:
GPS mark is displayed.

NG → **GO TO "GPS MARK IS NOT DISPLAYED" IN PROBLEM SYMPTOMS TABLE**

OK

2 CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)

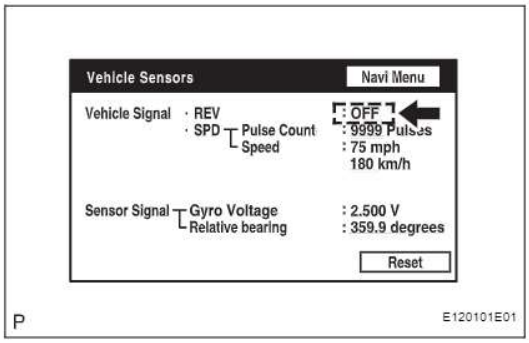


(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-27).
(b) While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check that these readings are almost equal.
OK:
The readings are almost equal.

NG → **GO TO "SPEED SIGNAL DOES NOT CHANGE IN NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE**

OK

3 CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)



(a) Check that the display changes between ON and OFF according to the shift lever operation.
OK

Shift Lever Position	Display
Except Reverse	OFF
Reverse	ON

HINT:
The display is updated once per second. It is normal for the display to lag behind the actual switch operation.

NG → **GO TO "REVERSE SIGNAL DOES NOT CHANGE IN NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE**

NS

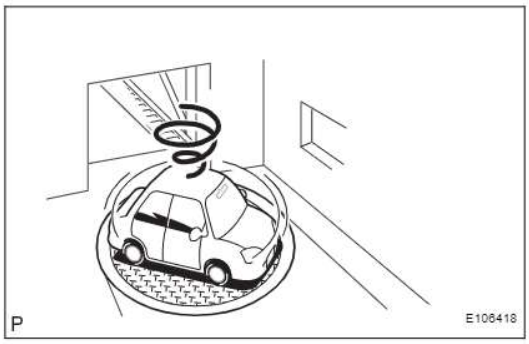
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Cursor or MAP Rotates when Vehicle Stopped

INSPECTION PROCEDURE

1	CHECK CONDITION



(a) Check with the customer if the vehicle has been turned by a turntable.
OK:
Vehicle has not been turned by turntable.
HINT:
If the vehicle is turned on a turntable with the ignition switch on (IG), the system may store the angular velocity. As a result, the vehicle position cursor may deviate.

NG → **TURN IGNITION SWITCH ON (IG) WHEN VEHICLE IS COMPLETELY STOPPED**

OK

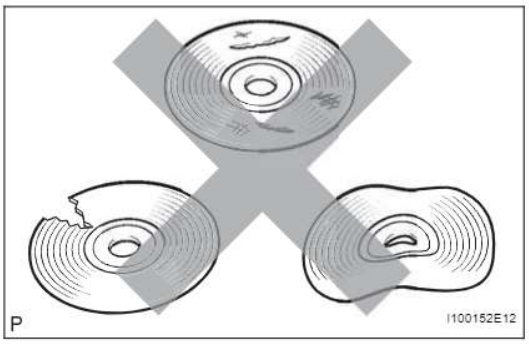
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Vehicle Position Mark is not Updated

INSPECTION PROCEDURE

1 CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

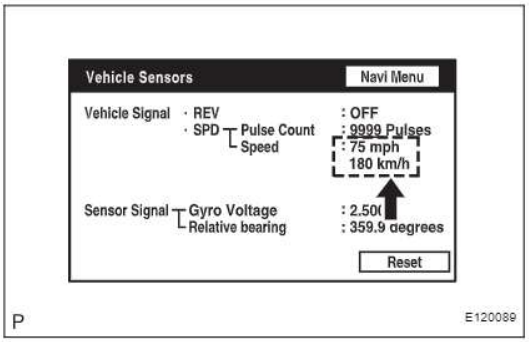
2 CHECK NAVIGATION DISPLAY

(a) Check if a touch scroll can be performed on the map display.
OK:
Touch scroll can be performed.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

3 CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)



(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-27).
(b) While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check if these readings are almost equal.
OK:
The readings are almost equal.

NG → **GO TO "SPEED SIGNAL DOES NOT CHANGE IN NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE**

NS

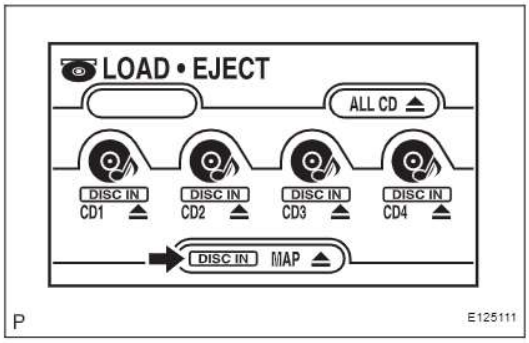
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Current Position Display does not Appear

INSPECTION PROCEDURE

1 CHECK RADIO AND NAVIGATION ASSEMBLY

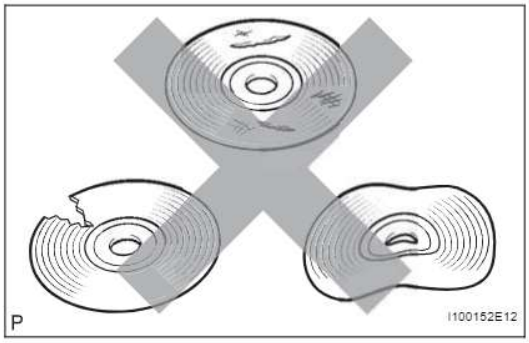


(a) Check if a map disc is inserted into the map disc slot.
OK:
A map disc is inserted.

NG → **INSERT MAP DISC IN MAP SIDE SLOT**

OK

2 CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

GPS Mark is not Displayed

INSPECTION PROCEDURE

1 CHECK CABIN

(a) Check the cabin for any object that might interrupt radio reception on the instrument panel. If such an object exists, remove it and check if the GPS mark reappears.
HINT:
The GPS uses extremely faint radio waves originating from satellites. If the signal is interrupted by obstructions or other radio waves, the GPS may not be able to properly receive the signal.
OK:
Mark appears.

NG → **Go to step 2**

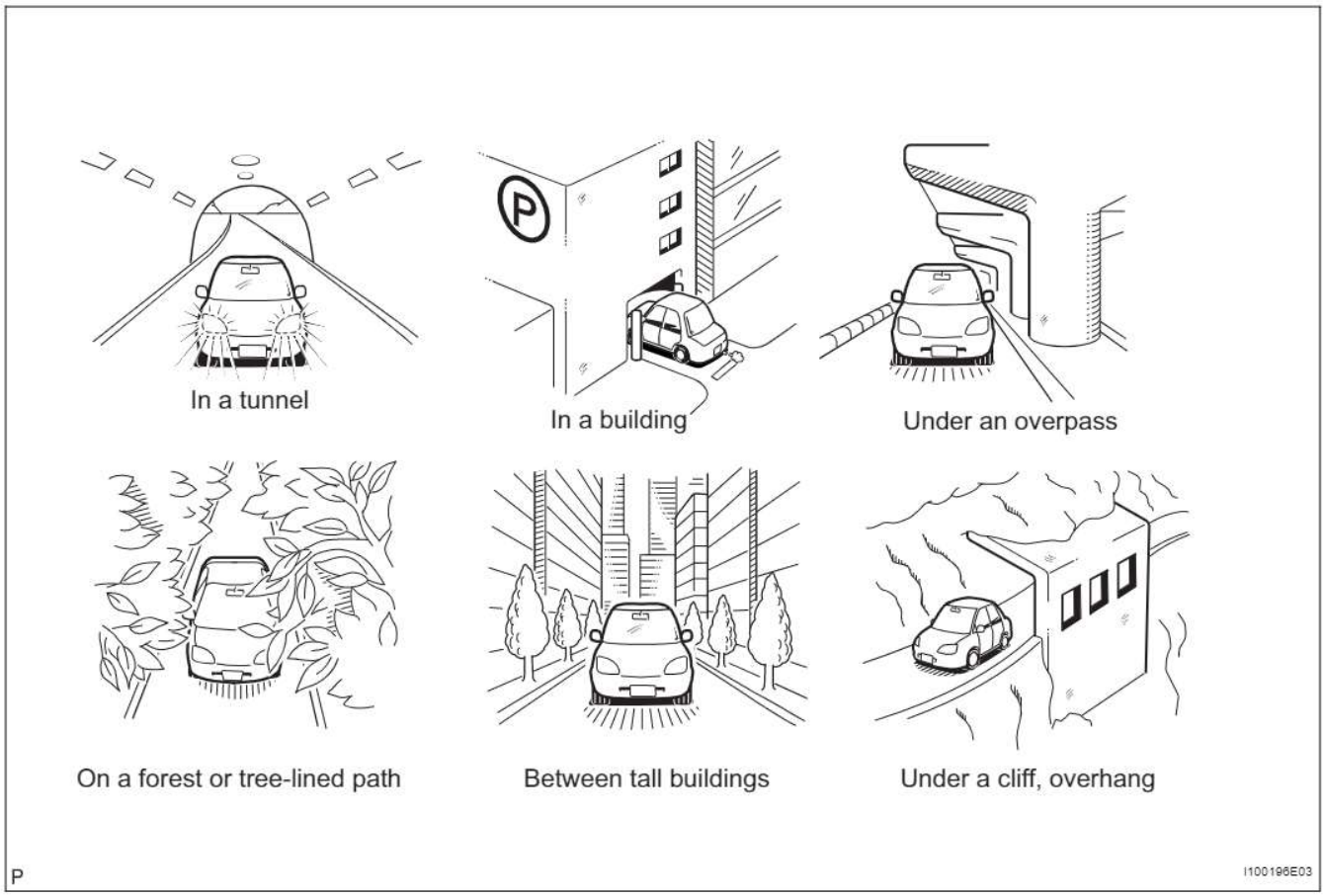
OK

NORMAL OPERATION

2 CHECK SURROUNDINGS

(a) Check if the vehicle is in a location where GPS signal reception is poor. If the vehicle is in such a place, relocate the vehicle and check if the GPS mark reappears.
HINT:
The GPS uses 24 satellites in 6 orbits. At any point in time, 4 satellites should be able to pinpoint your vehicle. However, GPS signals may not reach the vehicle due to influence from the surroundings, vehicle direction, and time. For illustrated examples, see below.

NS



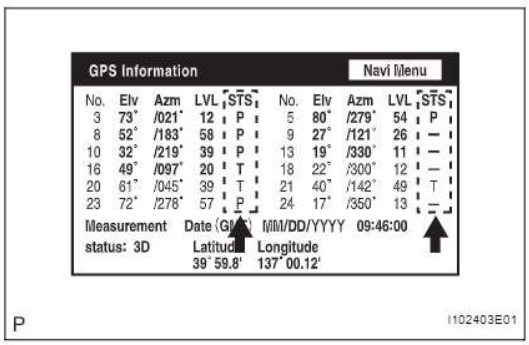
OK:
GPS mark is displayed.

NG → **Go to step 3**

OK

SYSTEM RETURNS TO NORMAL

3 CHECK GPS INFORMATION (NAVIGATION CHECK MODE)



(a) Enter the "Navigation Check" mode (GPS Information) (See page NS-27).
(b) Check how many of the following codes appear in the "STS" column.
For DENSO Made:
T, P
For AISIN AW Made:
08H, 04H
OK:
At least 3 codes appear.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

NS

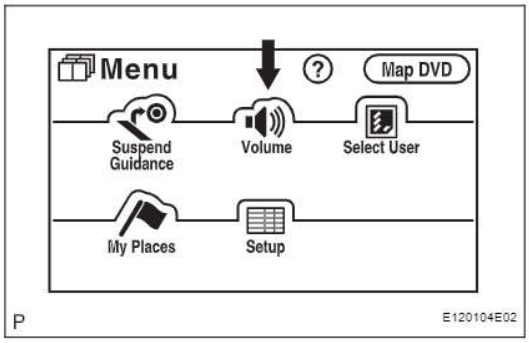
OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

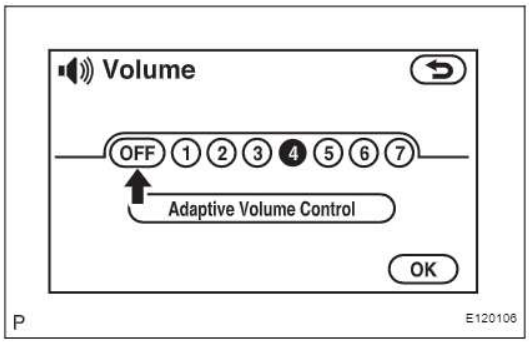
Voice Guidance does not Function

INSPECTION PROCEDURE

1 CHECK NAVIGATION SETTING



(a) Enter the "Menu" screen by pressing the "MENU" switch.
(b) Select "Volume".

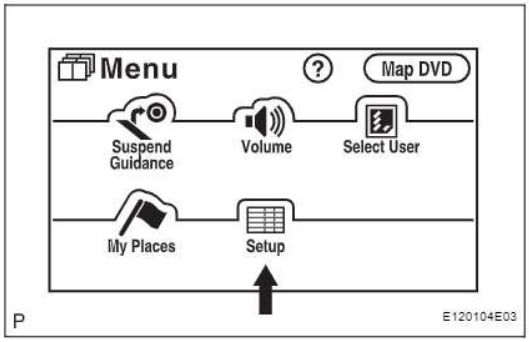


(c) Check that "OFF" is not selected.
OK:
"OFF" is not selected.

NG → **TURN VOICE GUIDANCE VOLUME UP TO 4 USING VOICE ADJUSTMENT SWITCHES**

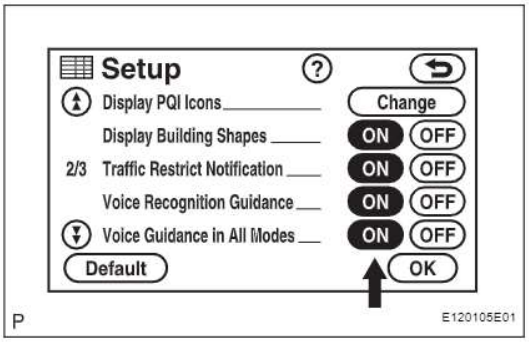
OK

2 CHECK NAVIGATION SETTING



(a) Enter the "Menu" screen by pressing the "MENU" switch.
(b) Select "Set up".

NS

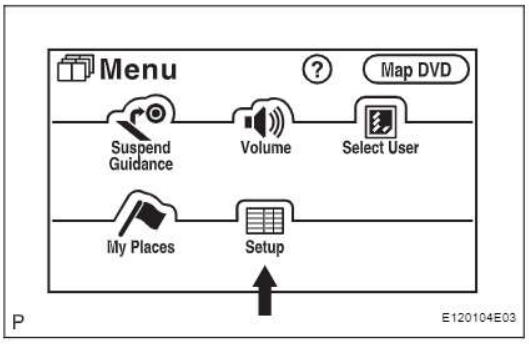


(c) Check that "Voice Guidance in All Modes" is not OFF.
OK:
Voice guidance in all modes is not OFF.

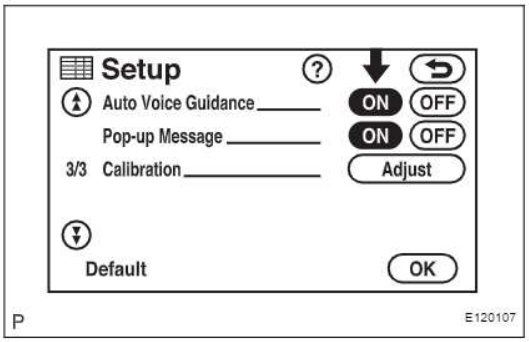
NG → **TURN VOICE GUIDANCE IN ALL MODES "ON"**

OK

3	CHECK NAVIGATION SETTING



(a) Enter the "Menu" screen by pressing the "MENU" switch.
(b) Select "Setup".

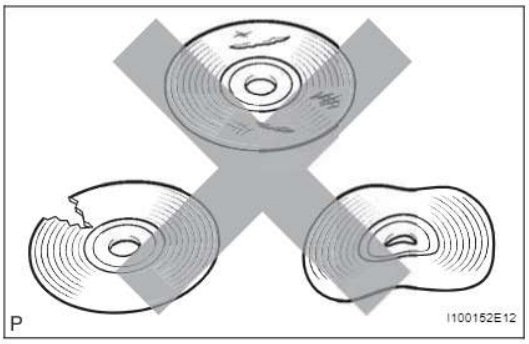


(c) Check that "Auto Voice Guidance" is not OFF.
OK:
Auto voice guidance is not OFF.

NG → **TURN AUTO VOICE GUIDANCE "ON"**

OK

4	CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

NS

OK

5	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Check that audio sound can be heard from the driver side speaker.
OK:
Audio sound can be heard.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

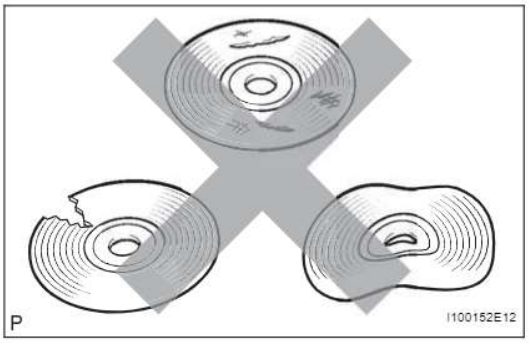
OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

MAP Display Incomplete

INSPECTION PROCEDURE

1 CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

2 CHECK NAVIGATION DISPLAY

(a) Check that displays other than the navigation display are complete.
OK:
No other incomplete displays are found.

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

NG

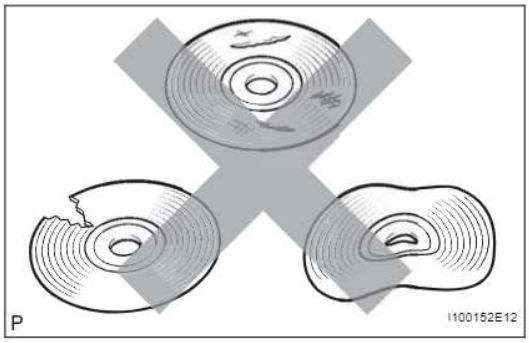
REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Route cannot be Calculated

INSPECTION PROCEDURE

1 CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

2 SET DESTINATION

(a) Set another destination and check if the system can calculate the route correctly.
OK:
Route can be correctly calculated.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

NORMAL OPERATION

NS

Voice Recognition Difficulty

INSPECTION PROCEDURE

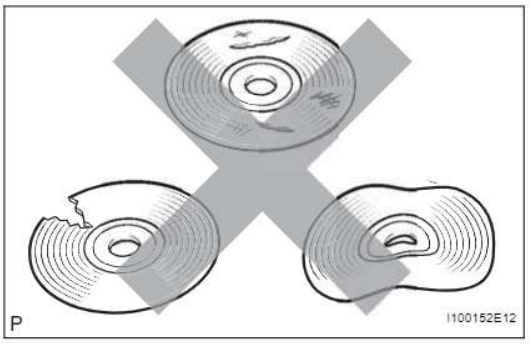
1 CHECK CONDITION

(a) Check if the system's voice recognition level is low by using only one particular voice.
OK:
System's voice recognition level is low with any voice.
HINT:
System's voice recognition level varies depending on voice and pronunciation. This is not a malfunction.

NG → **END**

OK

2 CHECK MAP DISC

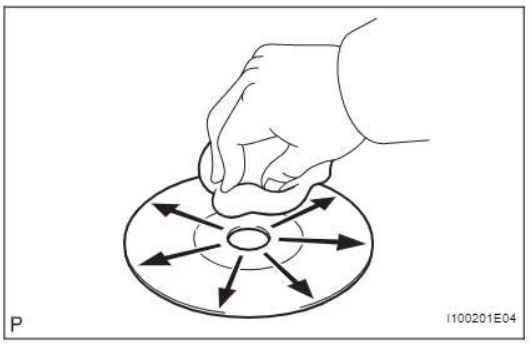


(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

3 CHECK MAP DISC



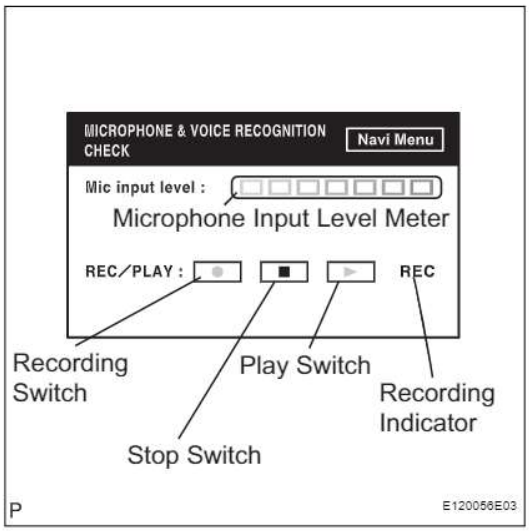
(a) Check for dirt on the map disc surface.
OK:
No dirt is on map disc surface.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.
HINT:
If the disc is dirty, clean the disc by wiping the disc's surface radially with a soft cloth.

NG → **CLEAN MAP DISC**

OK

NS

4	CHECK MICROPHONE (NAVIGATION CHECK MODE)



(a) Enter the "MICROPHONE & VOICE RECOGNITION CHECK" mode (See page NS-27).

(b) When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.

(c) Push the recording switch and perform voice recording.
HINT:
Voice can be recorded up to 5 seconds.

(d) Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.
OK:
All check results are normal.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

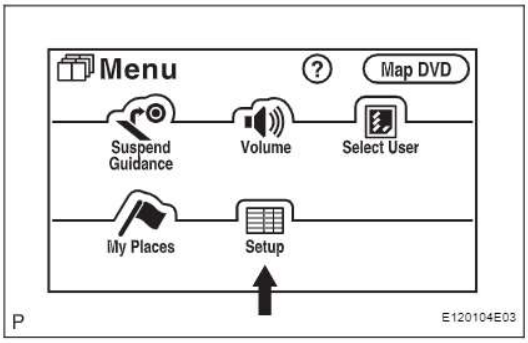
END

NS

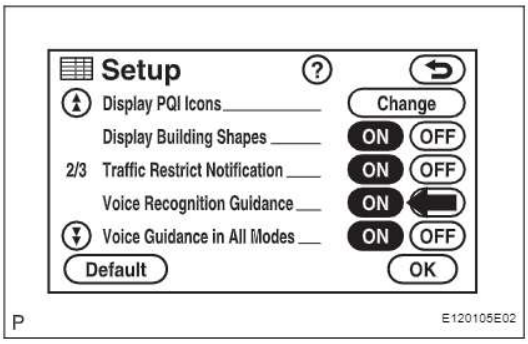
Voice is not Recognized

INSPECTION PROCEDURE

1 CHECK NAVIGATION SETTING



(a) Enter the "Menu" screen by pressing the "MENU" switch.
(b) Select "Setup".

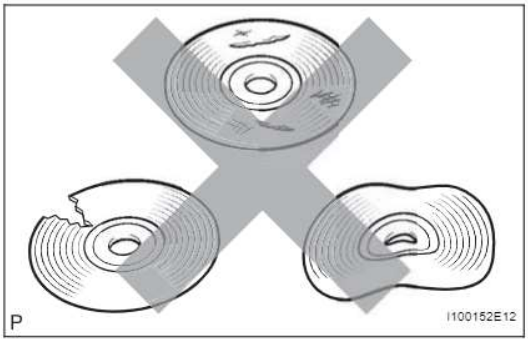


(c) Check that "Voice Recognition Guidance" is not OFF.
OK:
Voice Recognition Guidance is not OFF.

NG → **TURN VOICE RECOGNITION GUIDANCE "ON"**

OK

2 CHECK MAP DISC



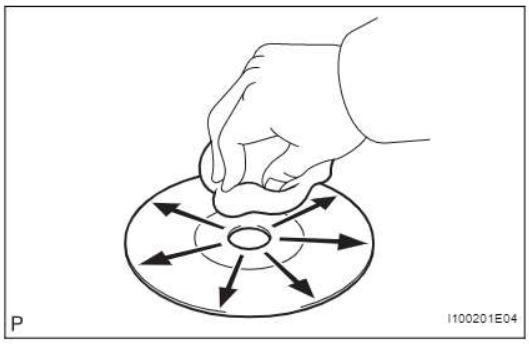
(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

NS

3	CHECK MAP DISC

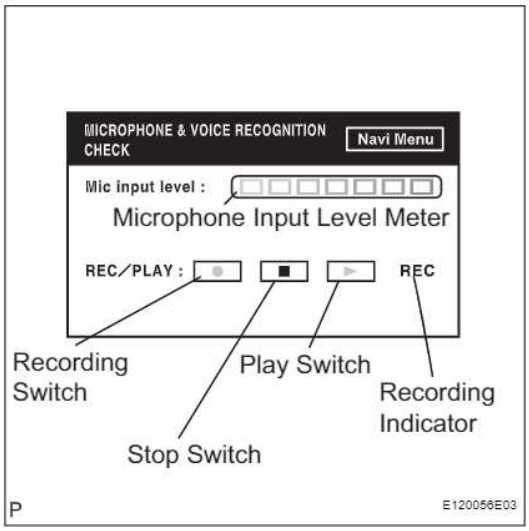


(a) Check for dirt on the map disc surface.
OK:
No dirt is on the map disc surface.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.
HINT:
If the disc is dirty, clean the disc by wiping the disc's surface radially with a soft cloth.

NG → **CLEAN MAP DISC**

OK

4	CHECK MICROPHONE (NAVIGATION CHECK MODE)



(a) Enter the "MICROPHONE & VOICE RECOGNITION CHECK" mode (See page NS-27).
(b) When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.
(c) Push the recording switch and perform voice recording.
HINT:
Voice can be recorded up to 5 seconds.
(d) Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.
OK:
All check results are normal.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Cellular Phone Registration Failure, Phone Directory Transfer Failure

INSPECTION PROCEDURE

1 CHECK CURRENT CONDITIONS

(a) Proceed to the next step according to the table below.

Result

Conditions	Proceed to
Another "Bluetooth" compatible cellular phone is present.	A
Another "Bluetooth" compatible vehicle is present.	B
None of the above	C

B → Go to step 3

C → Go to step 4

A

2 CHECK USING ANOTHER CELLULAR PHONE

(a) Check if the system functions using another "Bluetooth" compatible cellular phone.
HINT:
- Confirm that either the same or a different version of another "Bluetooth" compatible cellular phone complies with the system.
- Depending on the version, some "Bluetooth" compatible cellular phones cannot be used.

OK:
The system functions.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

USE A "BLUETOOTH" COMPATIBLE CELLULAR PHONE

3 CHECK USING ANOTHER "BLUETOOTH" COMPATIBLE VEHICLE

(a) Register the cellular phone with another vehicle and check if the system functions normally.
HINT:
Depending on the version, some "Bluetooth" compatible cellular phones cannot be used.

OK:
The system functions.

NS

OK → REPLACE RADIO AND NAVIGATION ASSEMBLY

NG

USE A "BLUETOOTH" COMPATIBLE CELLULAR PHONE

4	CHECK CELLULAR PHONE

(a) Check if the cellular phone is "Bluetooth" compatible.
HINT:
Some versions of "Bluetooth" compatible cellular phones may not function.
OK:
The phone is "Bluetooth" compatible.

NG → USE A "BLUETOOTH" COMPATIBLE CELLULAR PHONE

OK

5	CHECK CELLULAR PHONE

(a) Check if a call can be made from the cellular phone.
HINT:
When the battery is low, registration or directory transfer cannot be done.
OK:
A call can be made from the cellular phone.

NG → REPAIR OR REPLACE CELLULAR PHONE

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

Cellular Phone cannot Send / Receive

INSPECTION PROCEDURE

1	CHECK "BLUETOOTH" SETTINGS

(a) Check if the "Bluetooth" settings are correct.
OK:
"Bluetooth" settings are correct.

NG → **SET SETTINGS CORRECTLY**

OK ↓

2	CHECK CELLULAR PHONE

(a) Check if the cellular phone is "Bluetooth" compatible.
HINT:
Some versions of "Bluetooth" compatible cellular phones may not function.
OK:
Phone is "Bluetooth" compatible.

NG → **END (ONLY A "BLUETOOTH" COMPATIBLE CELLULAR PHONE CAN BE USED)**

OK ↓

3	CHECK SETTINGS

(a) Check if the cellular phone functions.
HINT:
The cellular phone is unable to call under any of the following conditions.
- The cellular phone is locked.
- The directory is being transferred.
- The line is crossed.
- Transmission is regulated.
- The power is off.
- The cellular phone is not connected to "Bluetooth" ("BT" is displayed while connected).

OK:
None of the above conditions exist.

NG → **SET CORRECTLY**

NS

OK ↓

4	CHECK CELLULAR PHONE

(a) Check if the cellular phone can make a call.

HINT:
When the battery is low, calls cannot be made or received.
OK:
Cellular phone can make a call.

NG → **REPAIR OR REPLACE CELLULAR PHONE**

OK

5	CHECK RECEPTION

(a) Set the cellular phone so that it can receive calls.
(b) Place the cellular phone close to the radio and navigation assembly.
(c) Check if the cellular phone has reception according to the radio and navigation assembly.
OK:
Cellular phone has reception.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Cannot Call in a Certain Place

INSPECTION PROCEDURE

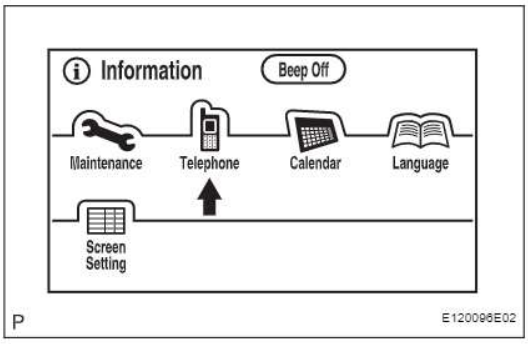
1 CHECK SURROUNDING CONDITIONS

(a) Check if the cellular phone can make calls in a certain place.
OK:
It can make calls.

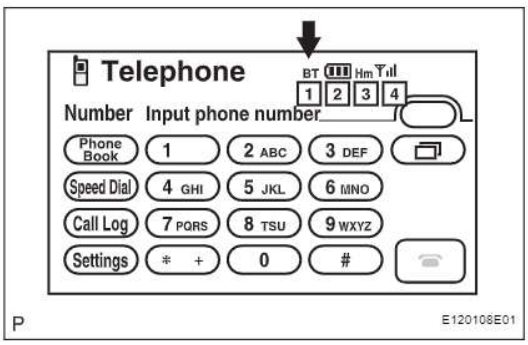
NG → **END (CELLULAR PHONES CAN ONLY FUNCTION IN CELLULAR SERVICE AREAS)**

OK

2 CHECK RECEPTION



(a) Enter the "Information" screen by pressing the "INFO" switch.
(b) Select "Telephone".



(c) Check the "Bluetooth" connection indicator ("BT" indicator).

Result

Condition	Procedure
Yellow color	Bring the cellular phone to a location where the "BT" mark turns blue.
Blue color	Replace radio and navigation assembly.
No connection mark is displayed	Select a registered cellular phone or register a "Bluetooth" compatible phone.

NS

NEXT

END

The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted

INSPECTION PROCEDURE

1 CHECK CELLULAR PHONE

(a) Check if the voice on the other side can be heard using a cellular phone.
OK:
Voice can be heard.

NG → **REPAIR OR REPLACE CELLULAR PHONE**

OK

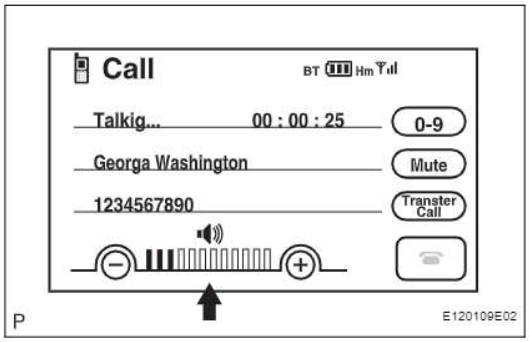
2 CHECK NAVIGATION SYSTEM

(a) Check that navigation sound can be heard from the driver side speaker.
OK:
Audio sound can be heard.

NG → **GO TO "VOICE GUIDANCE DOES NOT FUNCTION" IN PROBLEM SYMPTOMS TABLE**

OK

3 CHECK SETTINGS



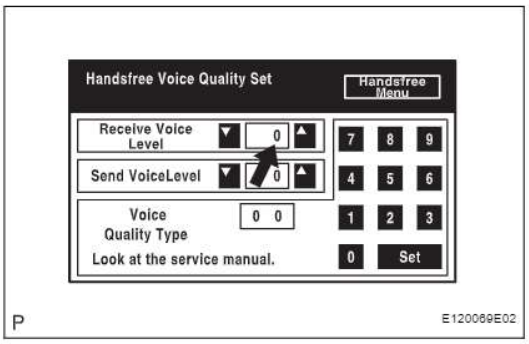
(a) Check if the volume level is set to low on the CALL screen.
OK:
The level is not set low.

NG → **SET VOLUME TO HIGH**

OK

NS

4	CHECK SETTINGS



(a) Enter the "Handsfree Voice Quality Set" mode (See page NS-25).

(b) Check if the Receive Voice Level is set to "0".
HINT:
The Receive Voice Level can be set to 11 different levels, -5 to +5, with a 3 dB difference.

(c) Check if the Receive Voice Level is set to the minimum or maximum level.
HINT:
When the Receive Voice Level is set to the minimum or maximum level, the sound may be distorted.
OK:
The Receive Voice Level is set to "0".

NG → **SET RECEIVE VOICE LEVEL TO "0"**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted

INSPECTION PROCEDURE

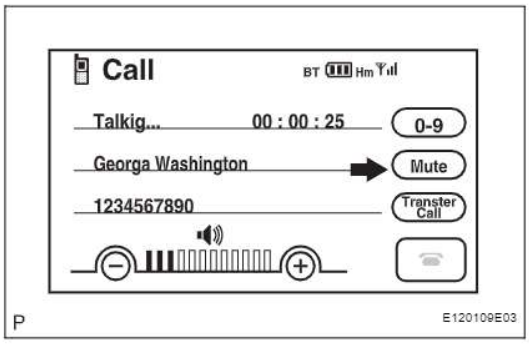
1 CHECK CELLULAR PHONE

(a) Check if the other side can hear your voice properly.
OK:
Your voice can be heard correctly.

NG → **REPLACE CELLULAR PHONE**

OK

2 CHECK SETTINGS

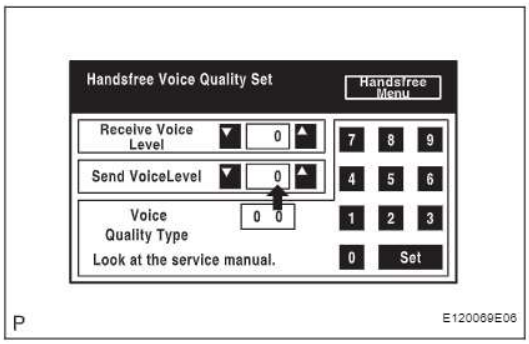


(a) Check if the mute switch is set to ON.
OK:
Mute switch is not set to ON.

NG → **TURN MUTE SWITCH OFF**

OK

3 CHECK SETTINGS



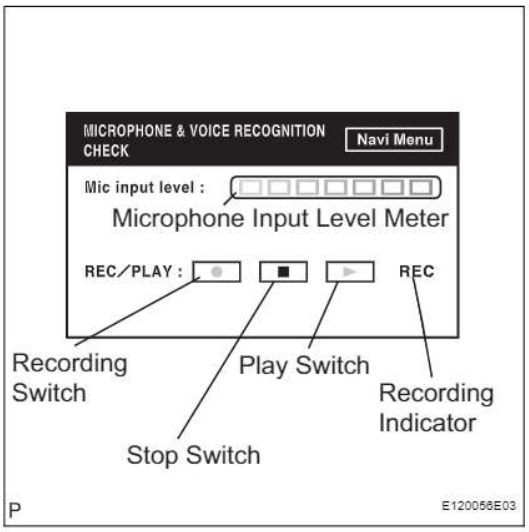
(a) Enter the "Handsfree Voice Quality Set" mode (See page NS-25).
(b) Check if the Send Voice Level is set to "0".
HINT:
The Send Voice Level can be set to 11 different levels, -5 to +5, with a 3 dB difference.
(c) Check if the Send Voice Level is set to the minimum or maximum level.
HINT:
When the Send Voice Level is set to the minimum or maximum level, the sound may be distorted.
OK:
The Send Voice Level is set to "0".

NG → **SET SEND VOICE LEVEL TO "0"**

OK

NS

4	CHECK MICROPHONE (NAVIGATION CHECK MODE)



(a) Enter the "MICROPHONE & VOICE RECOGNITION CHECK" mode (See page NS-27).

(b) When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.

(c) Push the recording switch and perform voice recording.
HINT:
Voice can be recorded up to 5 seconds.

(d) Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.
OK:
All check results are normal.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK →

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Black Screen

INSPECTION PROCEDURE

1 CHECK DISPLAY SETTING

(a) Check that the display is not in "Screen OFF" mode.
OK:
The display setting is not in "Screen OFF" mode.

NG → **CHANGE SCREEN TO "SCREEN ON" MODE**

OK ↓

2 CHECK IMAGE QUALITY SETTING

(a) Check that the screen color quality can be set.
OK:
Setting is possible.

NG → **Go to step 3**

OK ↓

PRESS PANEL SWITCH "DISPLAY" AND SET SCREEN COLOR QUALITY TO NORMAL

3 CHECK CABIN

(a) Check that condensation is not likely to occur in the cabin, and that the temperature is not high or extremely low in the cabin.
HINT:
- A humid cabin and a rapid change in temperature may lead to condensation. Condensation in the cabin may short circuit the screen.
- The appropriate cabin temperature is 20 to 30°C (68 to 86°F).

OK:
Condensation is not likely and temperature is not high or extremely low.

NG → **SET CABIN TO APPROPRIATE TEMPERATURE**

OK ↓

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

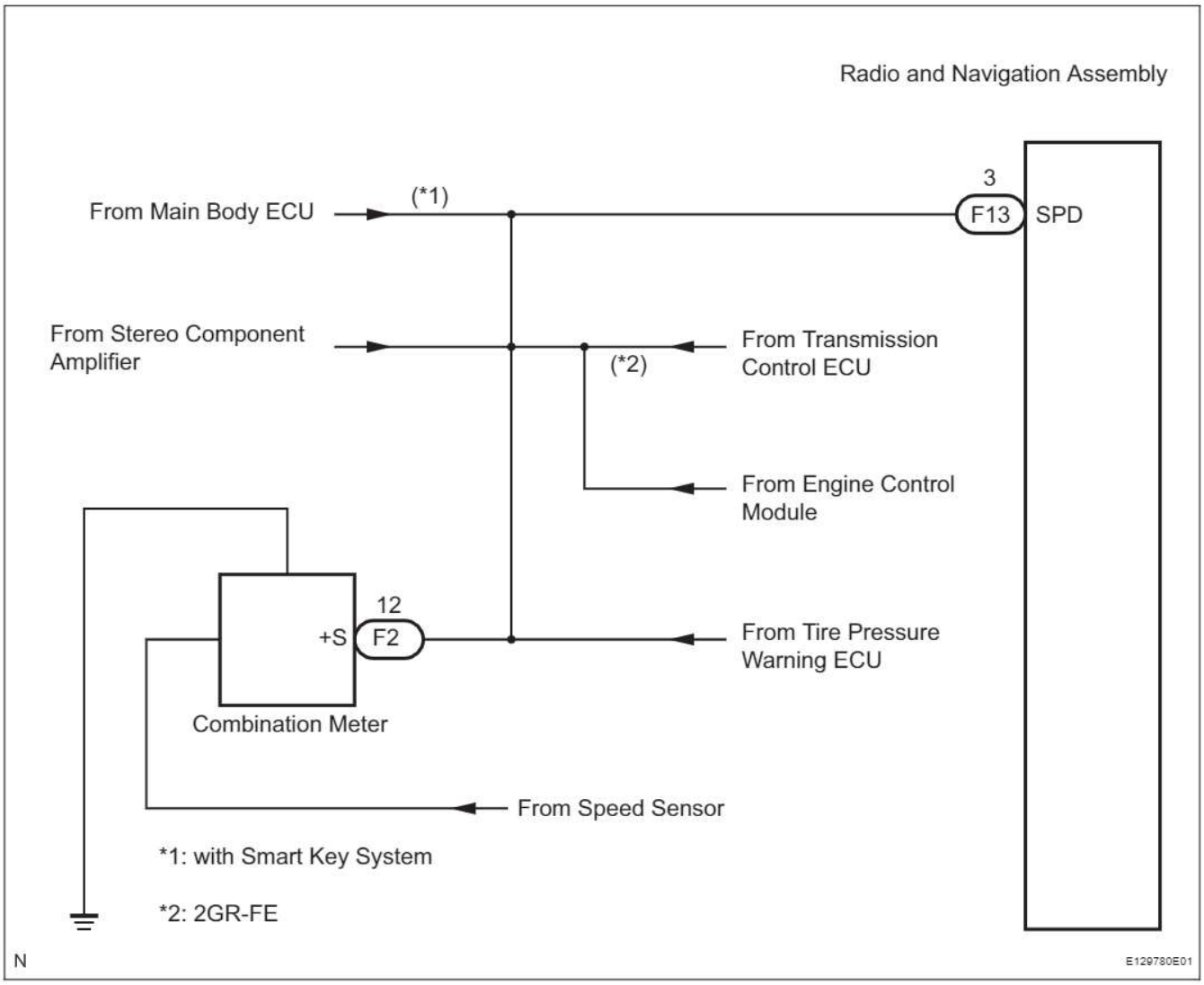
Vehicle Speed Signal Circuit between Radio and Navigation Assembly and Combination Meter

DESCRIPTION

The radio and navigation assembly receives a vehicle speed signal from the combination meter and information about the GPS antenna, and then adjusts vehicle position.
HINT:

- A voltage of 12 V or 5 V is output from each ECU and then input to the combination meter. The signal is changed to a pulse signal at the transistor in the combination meter. Each ECU controls the respective system based on the pulse signal.
- If a short occurs in an ECU, all systems in the diagram below will not operate normally.

WIRING DIAGRAM



NS

INSPECTION PROCEDURE

1	CHECK OPERATION OF SPEEDOMETER

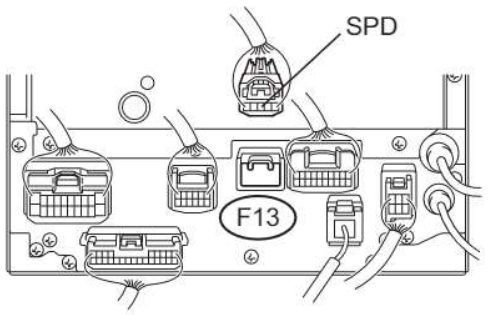
(a) Drive the vehicle and check if the function of the speedometer on the combination meter is normal.
OK:
Actual vehicle speed and the speed indicated on the speedometer are the same.
HINT:
The vehicle speed sensor is functioning normally when the indication on the speedometer is normal.

NG → **GO TO COMBINATION METER SYSTEM**

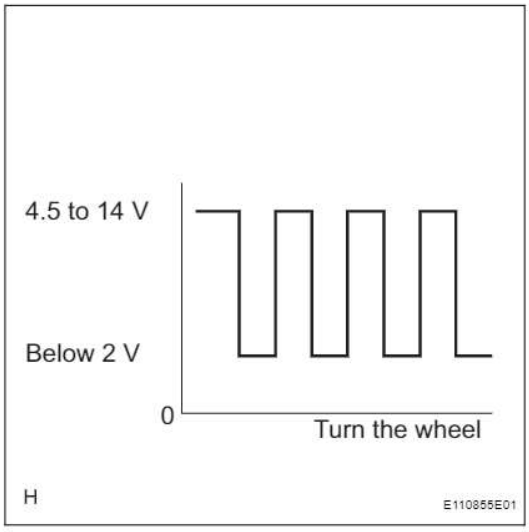
OK

2	INSPECT RADIO AND NAVIGATION ASSEMBLY

Radio and Navigation Assembly Wire Harness View:



(a) Disconnect the radio and navigation assembly connector F13.
(b) Measure the voltage.
(1) Jack up either one of the drive wheels.
(2) Move the shift lever to the neutral position.
(3) Turn the ignition switch on (IG).



(4) Measure the voltage between terminal SPD of the wire harness connector and body ground when the drive wheels are turned slowly.
OK:
Voltage pulses as shown in the illustration.

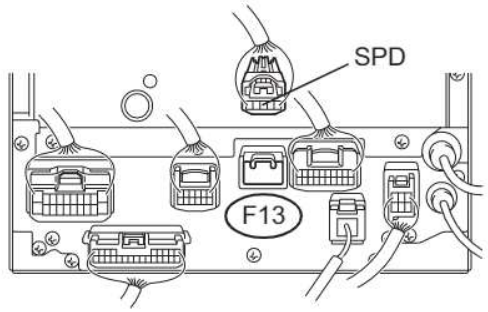
OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NG

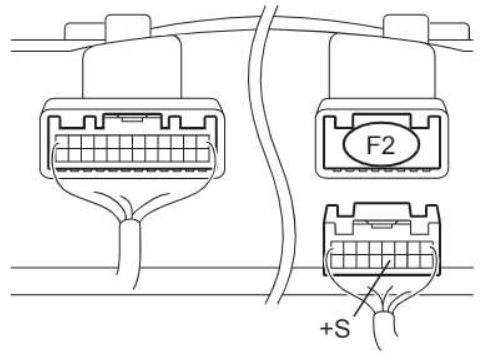
NS

3	CHECK HARNESS AND CONNECTOR (COMBINATION METER - RADIO AND NAVIGATION ASSEMBLY)

Radio and Navigation Assembly Wire Harness View:



Combination Meter Wire Harness View:



P E129818E01

(a) Disconnect the radio and navigation assembly connector F13 and combination meter connector F2.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

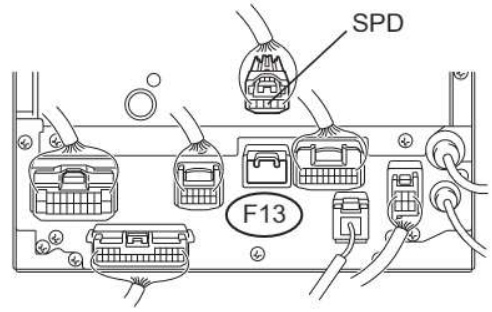
Tester connection	Condition	Specified condition
SPD - +S	Ignition switch off	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - BODY GROUND)

Radio and Navigation Assembly Wire Harness View:



P E113510E05

(a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
SPD - Body ground	Ignition switch off	10 kΩ or higher

HINT:
If the resistance between terminal SPD and body ground is less than 10 kΩ, there may be a short in a wire harness, connector, or an ECU.

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR OR CHECK EACH ECU

NS

OK

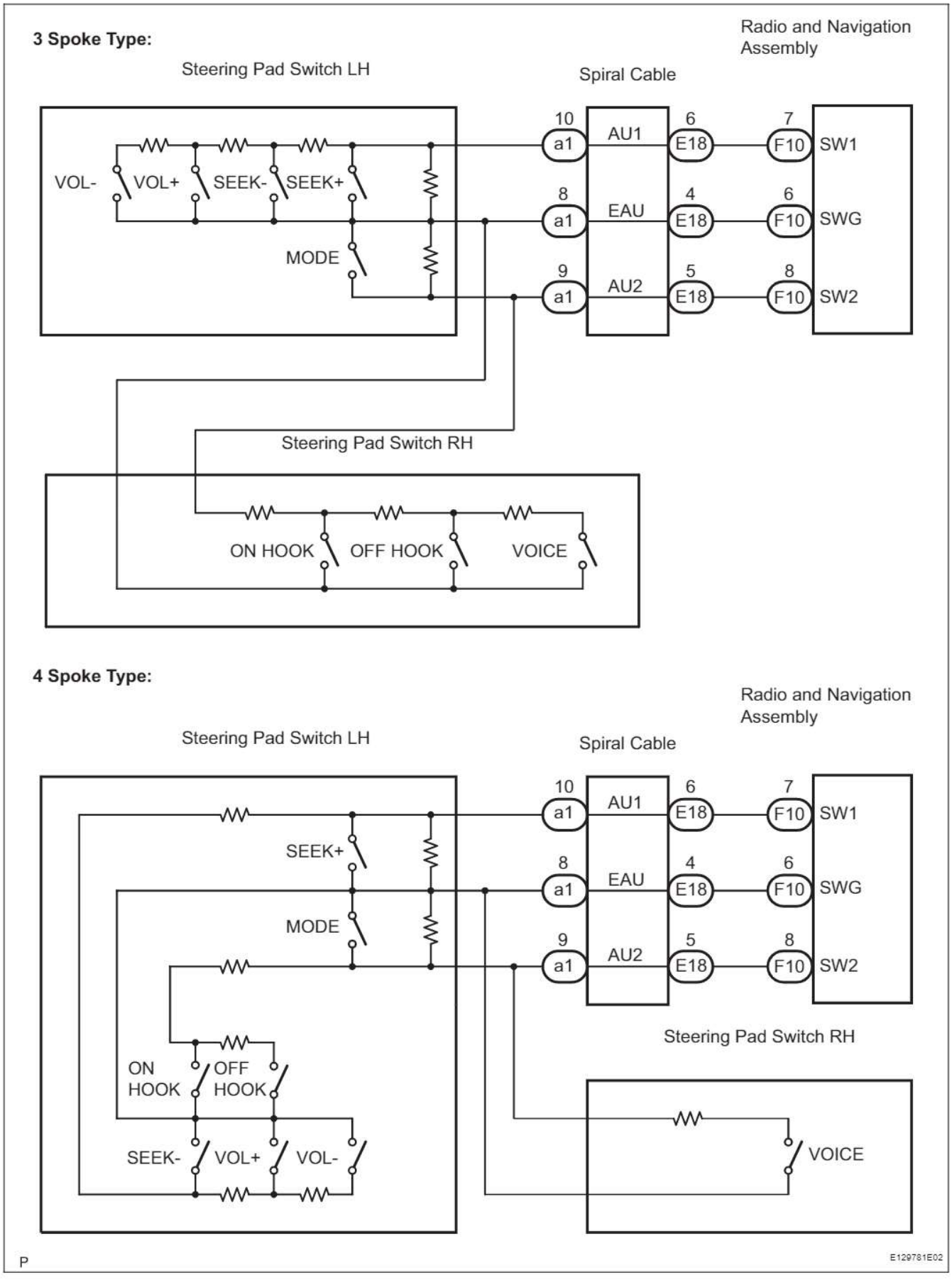
REPLACE COMBINATION METER

Steering Pad Switch Circuit

DESCRIPTION

This circuit sends an operation signal from the steering pad switch to the radio and navigation assembly. If there is an open in the circuit, the navigation system cannot be operated using the steering pad switch. If there is a short in the circuit, the resulting condition is the same as if the switch were continuously depressed. Therefore, the radio and navigation assembly cannot be operated using the steering pad switch, and the radio and navigation assembly itself cannot function.

WIRING DIAGRAM



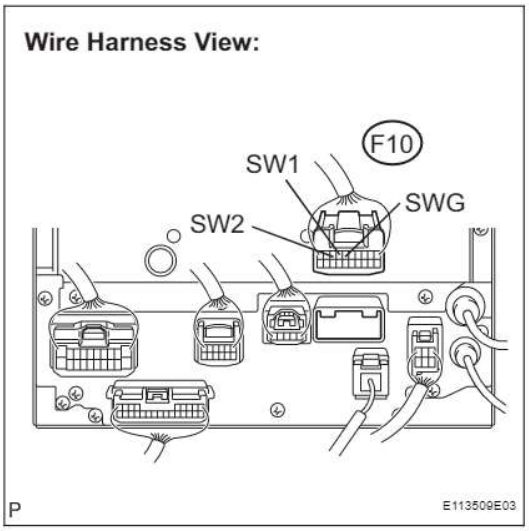
NS

INSPECTION PROCEDURE

NOTICE:

The vehicle is equipped with an SRS (Supplemental Restraint System) such as the airbags. Before servicing (including removal or installation of parts), be sure to read the precautionary notice for the Supplemental Restraint System (See page RS-1).

1 INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector F10.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
SW1 - SWG	No switch is pushed	Approx. 100 kΩ
SW1 - SWG	SEEK+ switch: push	0 to 2.5 Ω
SW1 - SWG	SEEK- switch: push	Approx. 0.3 kΩ
SW1 - SWG	VOL+ switch: push	Approx. 1 kΩ
SW1 - SWG	VOL- switch: push	Approx. 3.1 kΩ
SW2 - SWG	No switch is pushed	Approx. 100 kΩ
SW2 - SWG	MODE switch: push	0 to 2.5 Ω
SW2 - SWG	VOICE switch: push	Approx. 3.1 kΩ
SW2 - SWG	ON HOOK switch: push	Approx. 0.3 kΩ
SW2 - SWG	OFF HOOK switch: push	Approx. 1 kΩ

NG → Go to step 2

OK

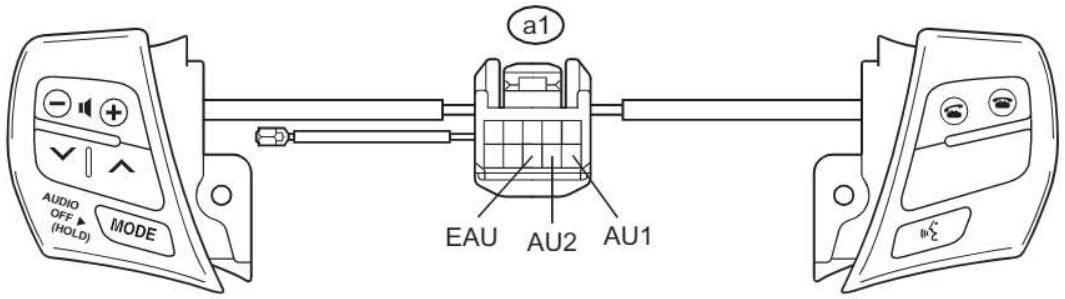
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2 INSPECT STEERING PAD SWITCH ASSEMBLY

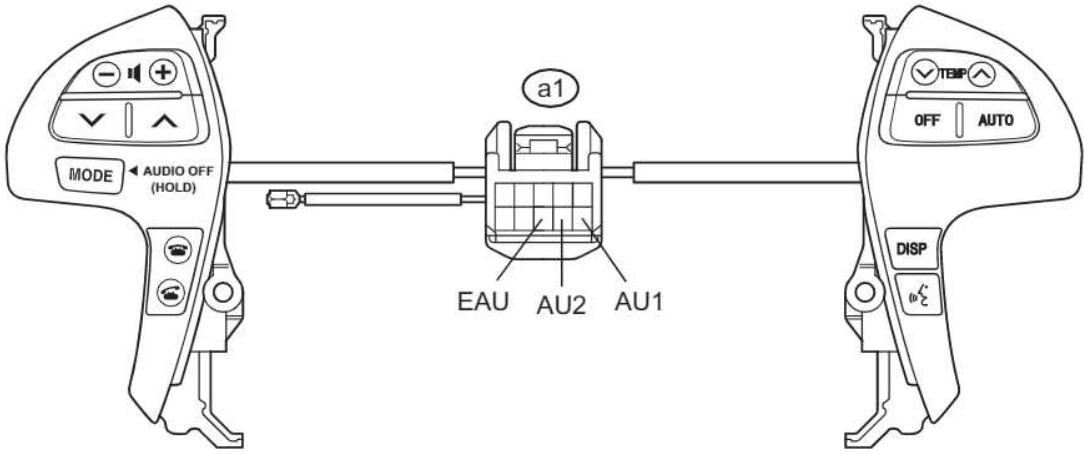
(a) Disconnect the steering pad switch assembly connector a1.

NS

3 Spoke Type:



4 Spoke Type:



P E129804E01

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

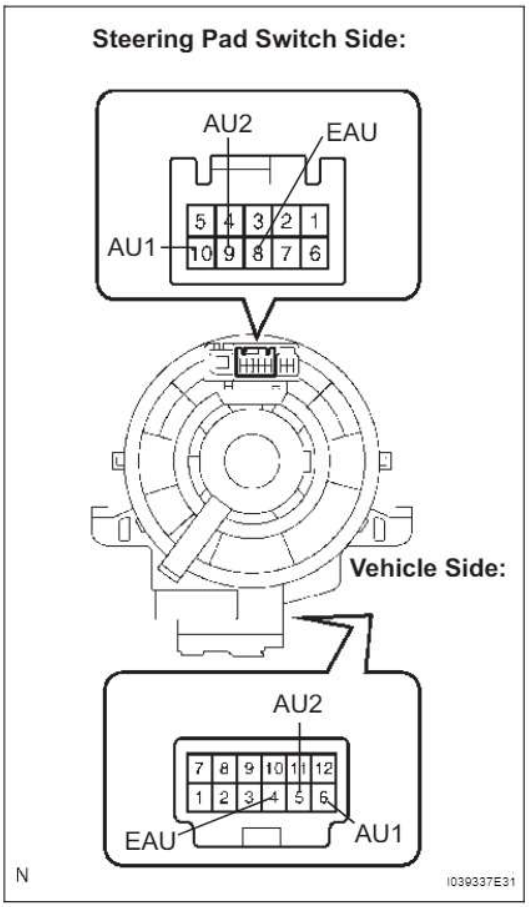
Tester connection	Condition	Specified condition
AU1 - EAU	No switch is pushed	Approx. 100 kΩ
AU1 - EAU	SEEK+ switch: push	0 to 2.5 Ω
AU1 - EAU	SEEK- switch: push	Approx. 0.3 kΩ
AU1 - EAU	VOL+ switch: push	Approx. 1 kΩ
AU1 - EAU	VOL- switch: push	Approx. 3.1 kΩ
AU2 - EAU	No switch is pushed	Approx. 100 kΩ
AU2 - EAU	MODE switch: push	0 to 2.5 Ω
AU2 - EAU	VOICE switch: push	Approx. 3.1 kΩ
AU2 - EAU	ON HOOK switch: push	Approx. 0.3 kΩ
AU2 - EAU	OFF HOOK switch: push	Approx. 1 kΩ

NS

NG → REPLACE STEERING PAD SWITCH ASSEMBLY

OK

3 INSPECT SPIRAL CABLE



(a) Disconnect the steering pad switch assembly and spiral cable connectors.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Spiral cable position	Specified condition
EAU - EAU	Center	Below 1 Ω
	2.5 rotations to the left	
	2.5 rotations to the right	
AU1 - AU1	Center	Below 1 Ω
	2.5 rotations to the left	
	2.5 rotations to the right	
AU2 - AU2	Center	Below 1 Ω
	2.5 rotations to the left	
	2.5 rotations to the right	

NOTICE:
The spiral cable is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable may prevent the airbag from deploying. Be sure to read the page shown in the brackets.

HINT:

- Removal (See page RS-363)
- Installation (See page RS-366)

NG → REPLACE SPIRAL CABLE

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (SPIRAL CABLE - RADIO AND NAVIGATION ASSEMBLY)

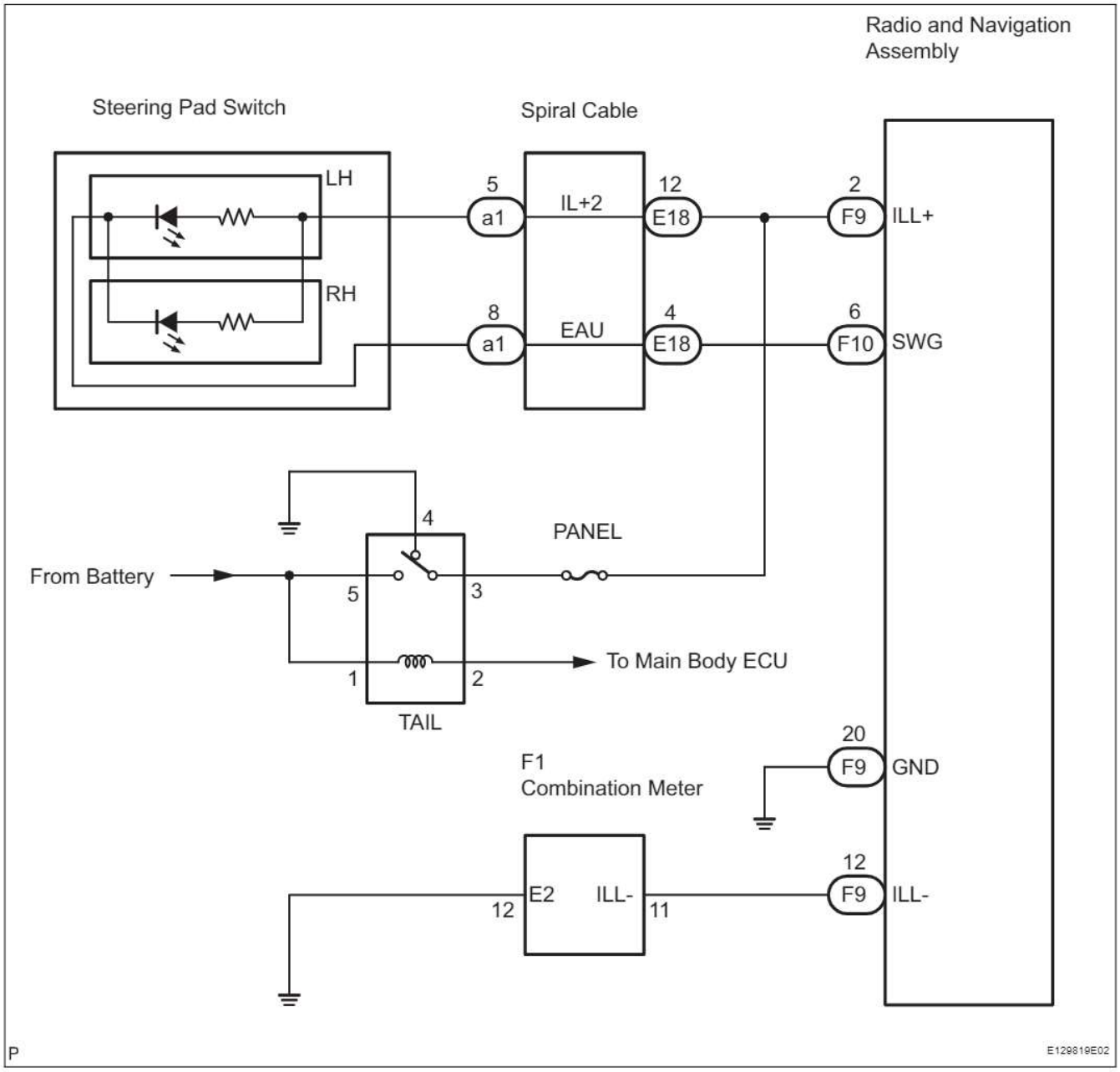
NS

Illumination Circuit

DESCRIPTION

Power is supplied to the radio and navigation assembly and steering pad switch illumination when the light control switch is in the TAIL or HEAD position.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

The vehicle is equipped with an SRS (Supplemental Restraint System) such as the airbags. Before servicing (including removal or installation of parts), be sure to read the precautionary notice for the Supplemental Restraint System (See page RS-1).

1	CHECK ILLUMINATION

(a) Check if the illumination for the radio and navigation assembly, steering pad switch, glove box or others (Hazard switch, transmission control switch, etc.) comes on when the light control switch is turned to the HEAD or TAIL position.

Result

Condition	Proceed to
Illumination comes on for all components except steering pad switch.	A
Illumination comes on for all components except radio and navigation assembly.	B
No illumination comes on (radio receiver, hazard switch, glove box, etc.)	C
Illumination comes on only for glove box and steering pad switch.	D

B → Go to step 6

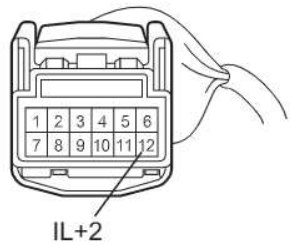
C → GO TO LIGHTING SYSTEM

D → GO TO COMBINATION METER SYSTEM

A

2	CHECK HARNESS AND CONNECTOR (BATTERY - SPIRAL CABLE)

Spiral Cable Connector Front View:



H E120026E07

(a) Disconnect the spiral cable connector.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection	Condition	Specified condition
IL+2 - Body ground	Light control switch TAIL or HEAD	10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

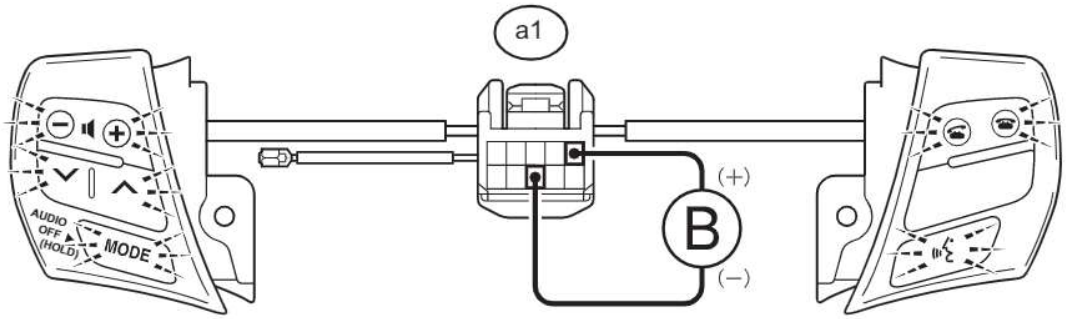
OK

NS

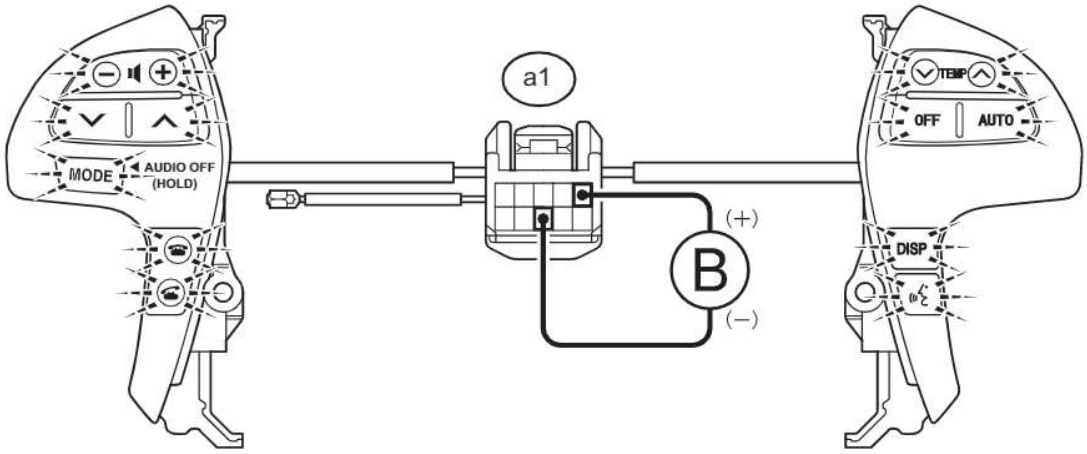
3	CHECK STEERING PAD SWITCH ASSEMBLY

(a) Disconnect the steering pad switch assembly connector.

3 Spoke Type:



4 Spoke Type:



P E129805E01

(b) Connect the positive (+) lead to terminal ILL+ and the negative (-) lead to terminal EAU of the steering pad switch connector.

(c) Check if the illumination for the steering pad switch comes on.

OK:

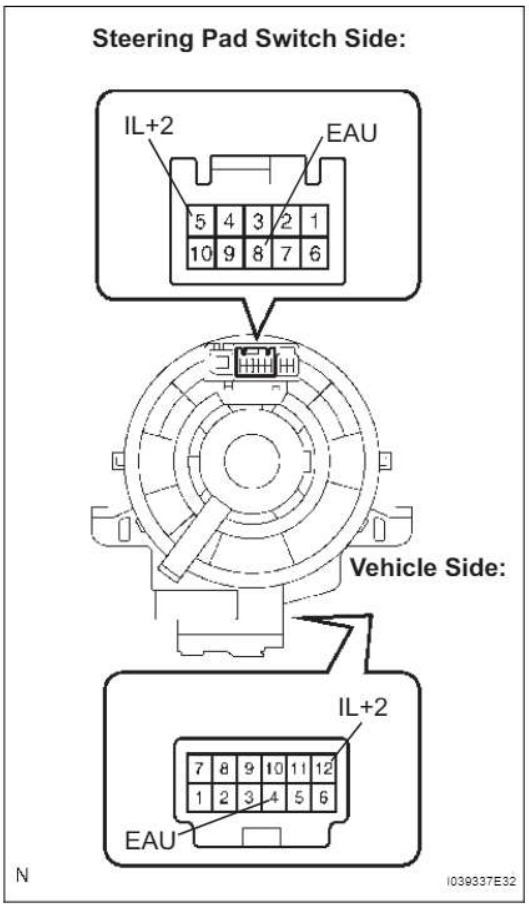
Illumination for the steering pad switch assembly comes on.

NG → **REPLACE STEERING PAD SWITCH ASSEMBLY**

OK

NS

4	INSPECT SPIRAL CABLE



(a) Disconnect the steering pad switch and spiral cable connectors.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Spiral cable position	Specified Condition
EAU - EAU	Center	Below 1 Ω
	2.5 rotations to the left	
	2.5 rotations to the right	
ILL+ - ILL+	Center	Below 1 Ω
	2.5 rotations to the left	
	2.5 rotations to the right	

NOTICE:
The spiral cable is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable may prevent the airbag from deploying. Be sure to read the page shown in the brackets.

HINT:

- Removal (See page RS-363)
- Installation (See page RS-366)

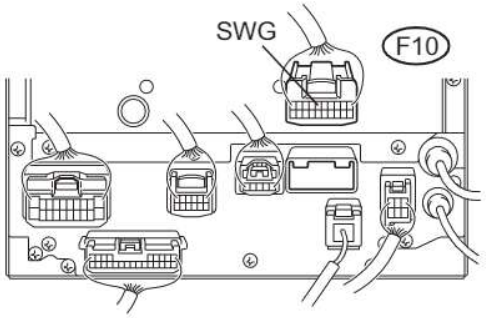
NG → **REPLACE SPIRAL CABLE**

OK

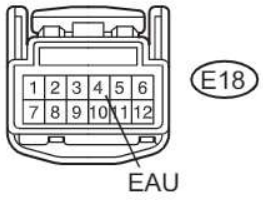
NS

5	CHECK HARNESS AND CONNECTOR (SPIRAL CABLE - RADIO AND NAVIGATION ASSEMBLY)

Radio and Navigation Assembly Wire Harness View:



Spiral Cable Connector Front View:



P E120116E03

(a) Disconnect the connectors from the radio and navigation assembly and spiral cable.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
SWG - EAU	Always	Below 1 Ω
SWG - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

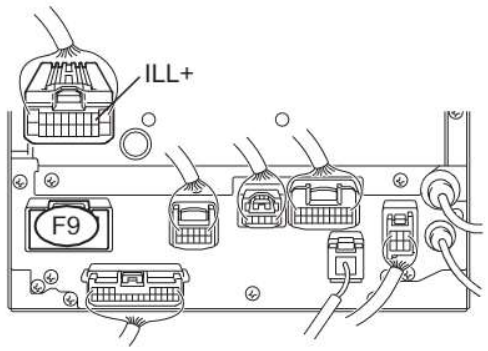
OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

6	CHECK HARNESS AND CONNECTOR (BATTERY - RADIO AND NAVIGATION ASSEMBLY)

Wire Harness View:



(a) Disconnect the radio and navigation assembly connector F9.
(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

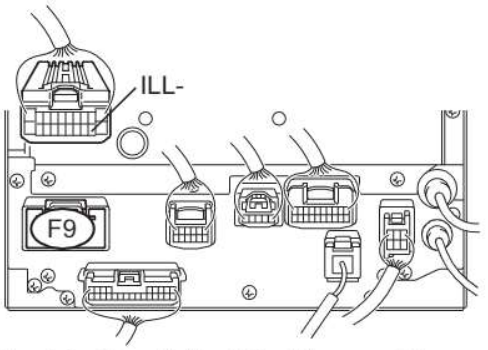
Tester connection	Condition	Specified condition
ILL+ - Body ground	Light control switch TAIL or HEAD	10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

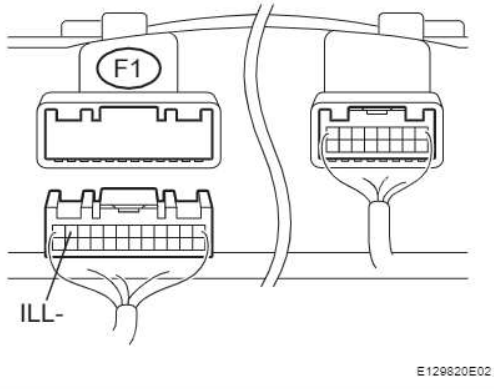
OK

7	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - COMBINATION METER)

Radio and Navigation Assembly Wire Harness View:



Combination Meter Wire Harness View:



(a) Disconnect the radio and navigation assembly and combination meter connectors.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
ILL- - ILL-	Always	Below 1 Ω
ILL- - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

NS

OK

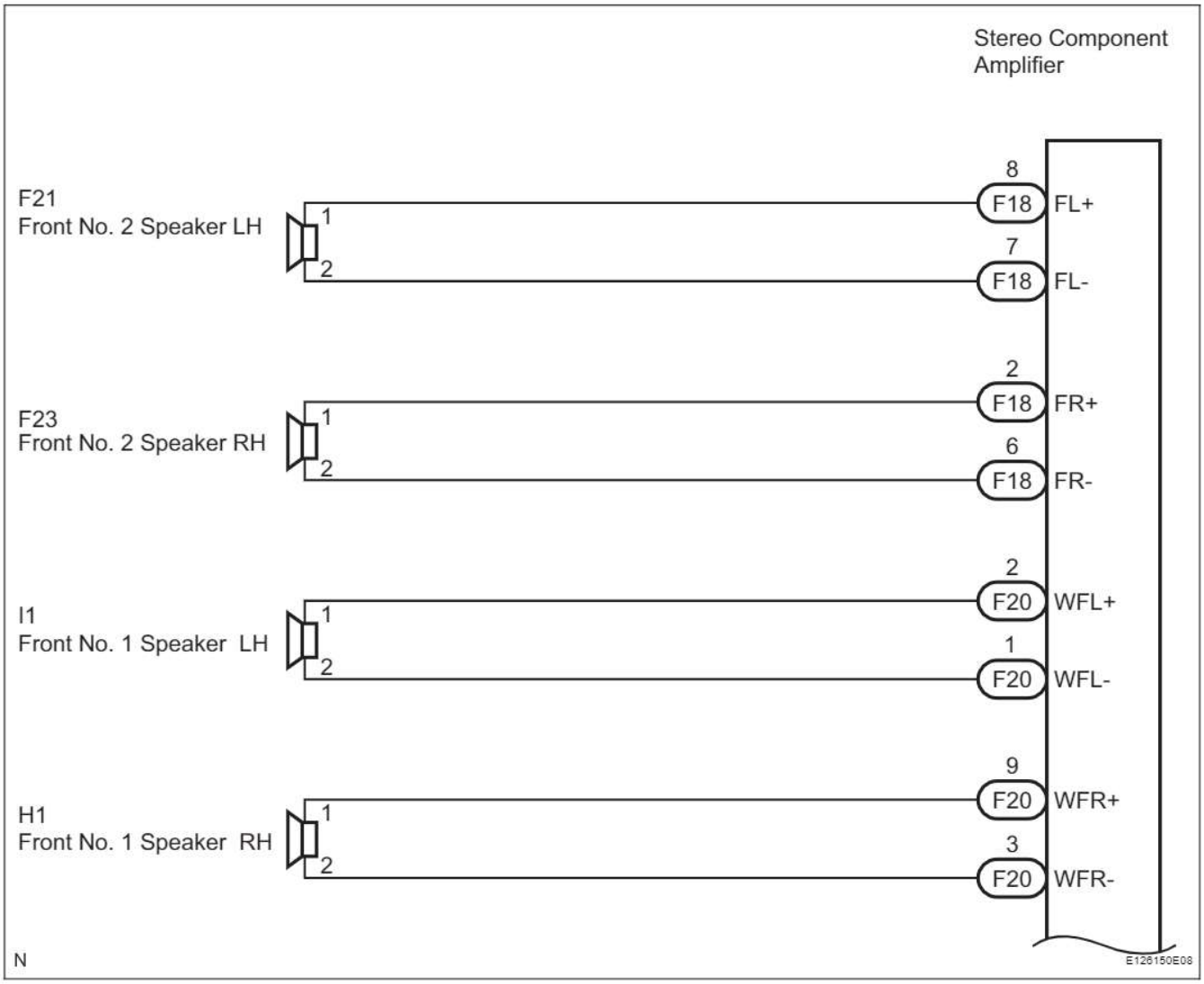
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Speaker Circuit

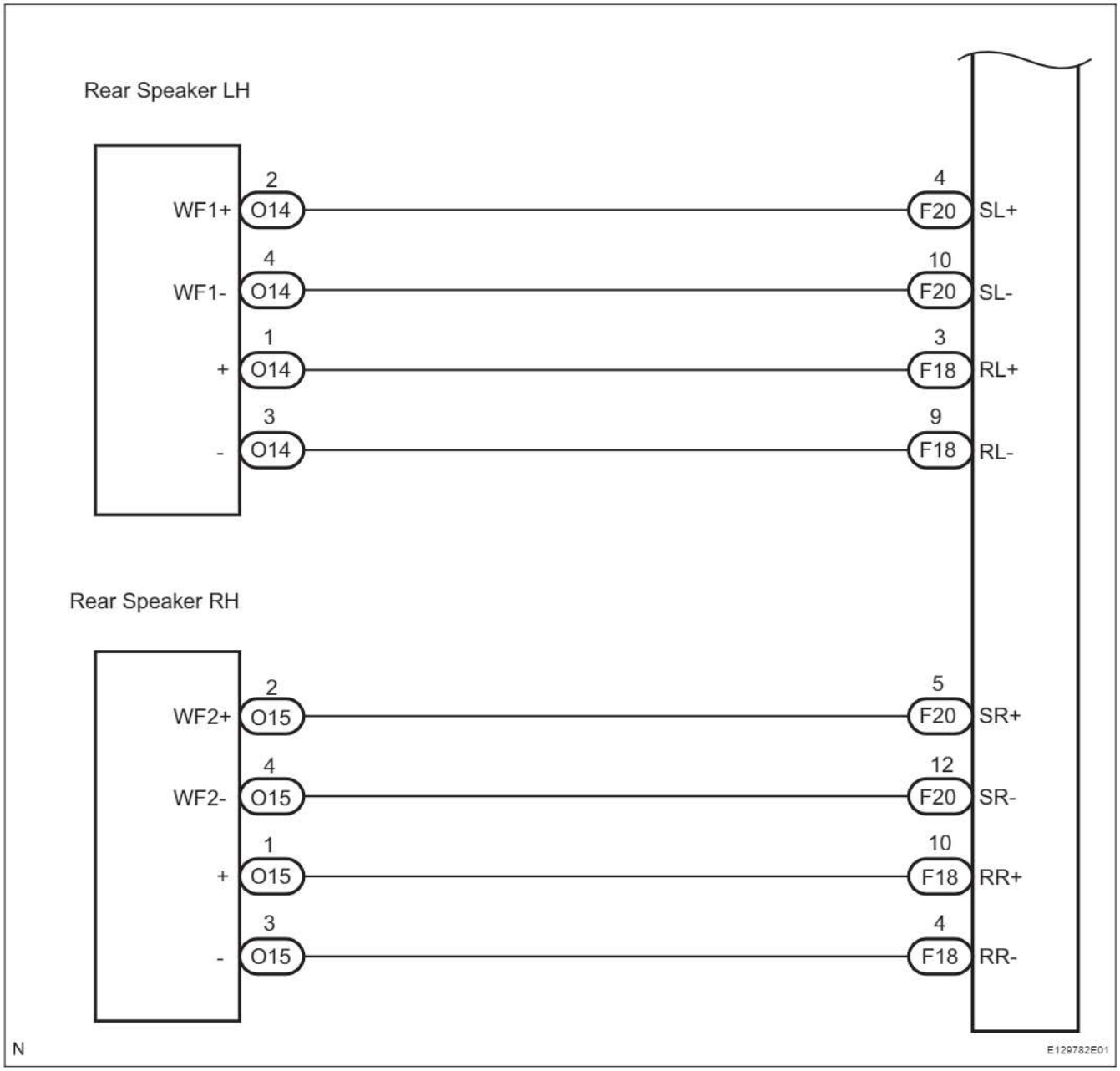
DESCRIPTION

The sound signal that has been amplified by the stereo component amplifier is sent to the speakers from the stereo component amplifier through this circuit.
If there is a short in this circuit, the stereo component amplifier detects it and stops output to the speakers. Thus sound cannot be heard from the speakers even if there is no malfunction in the stereo component amplifier or speakers.

WIRING DIAGRAM



NS

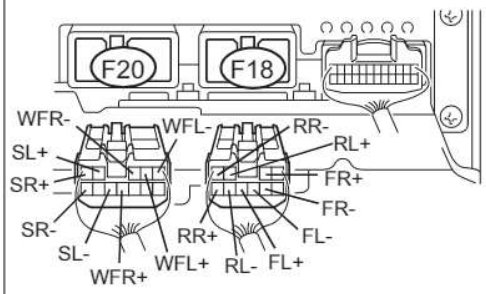

Rear Speaker LH
WF1+
2
O14
4
F20
SL+
WF1-
4
O14
10
F20
SL-
+
1
O14
3
F18
RL+
-
3
O14
9
F18
RL-
Rear Speaker RH
WF2+
2
O15
5
F20
SR+
WF2-
4
O15
12
F20
SR-
+
1
O15
10
F18
RR+
-
3
O15
4
F18
RR-
N
E129782E01

NS

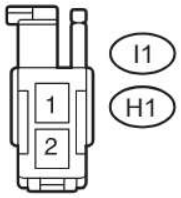
INSPECTION PROCEDURE

1	CHECK HARNESS AND CONNECTOR

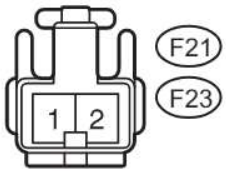
Stereo Component Amplifier Wire Harness View:



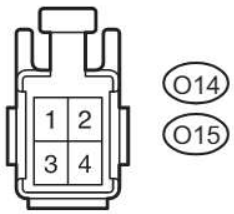
Front No. 1 Speaker Connector Front View:



Front No. 2 Speaker Connector Front View:



Rear Speaker Connector Front View:



P E129821E04

(a) Disconnect the connectors shown in the illustration on the left from the stereo component amplifier and speakers.
(b) Measure the resistance between each of the front No. 2 speakers and the stereo component amplifier to check for an open circuit in the wire harness.
Standard resistance:
Below 1 Ω
(c) Measure the resistance between each of the rear speakers and the stereo component amplifier to check for an open circuit in the wire harness.
Standard resistance:
Below 1 Ω
(d) Measure the resistance between each of the front No. 1 speakers and the stereo component amplifier to check for an open circuit in the wire harness.
Standard resistance:
Below 1 Ω
(e) Measure the resistance between each speaker and body ground to check for a short circuit in the wire harness.
Standard resistance:
10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

2	INSPECT FRONT NO. 1 SPEAKER

(a) Resistance check.

NS

(1) Measure the resistance between the terminals of the speaker.
Standard resistance:
1.8 to 2.6 Ω

NG → **REPLACE FRONT NO. 1 SPEAKER**

OK

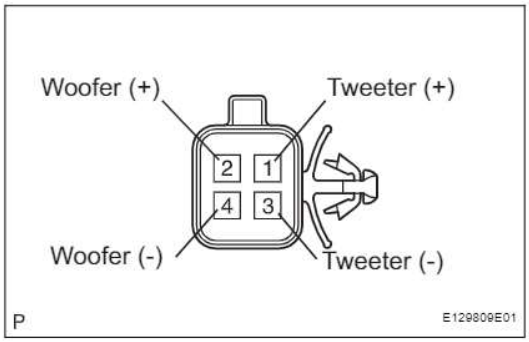
3	INSPECT FRONT NO. 2 SPEAKER

(a) Check that the malfunction disappears when another speaker in good condition is installed.
OK:
Malfunction disappears.
HINT:
- Connect all the connectors to the front No. 2 speakers.
- When there is a possibility that either the right or left front speaker is defective, inspect by interchanging the right one with the left one.
- Perform the above inspection on both LH and RH sides.

OK → **REPLACE FRONT NO. 2 SPEAKER**

NG

4	INSPECT REAR SPEAKER



(a) Woofer speaker:
(1) Measure the resistance according to the value(s) in the table below.
NOTICE:
The speaker should not be removed for checking.
Standard resistance

Tester connection	Condition	Specified condition
2 - 4	Always	1.8 to 2.6 Ω

(b) Tweeter speaker:
(1) Check that the malfunction disappears when another rear speaker in good condition is installed.

OK:
Malfunction appears.
HINT:
- Connect all the connectors to the rear speaker.
- When there is a possibility that either the right or left rear speaker is detective, inspect by interchanging the right one with the left one.

NG → **REPLACE REAR SPEAKER**

NS

OK

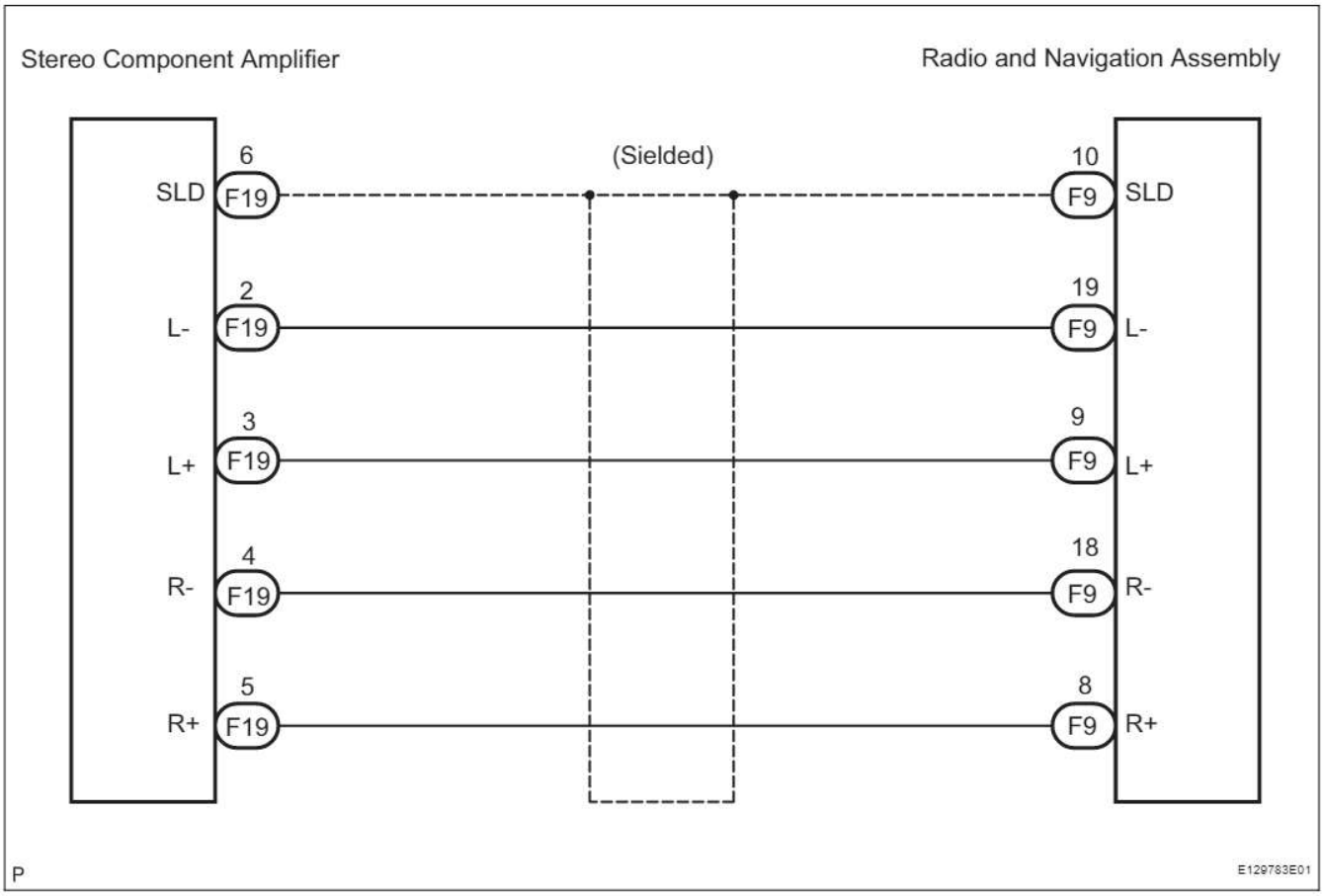
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Sound Signal Circuit between Radio and Navigation Assembly and Stereo Component Amplifier

DESCRIPTION

The radio and navigation assembly sends a sound signal to the stereo component amplifier through this circuit.
The sound signal that has been sent is amplified by the stereo component amplifier, and then is sent to the speakers.
If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the stereo component amplifier or speakers.

WIRING DIAGRAM

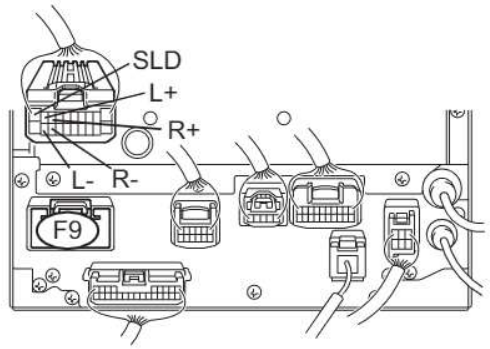


NS

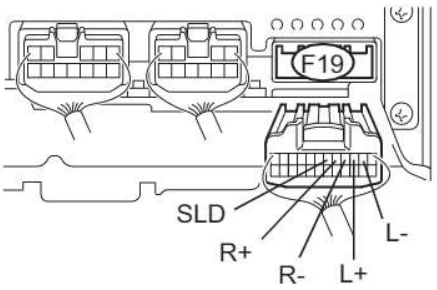
INSPECTION PROCEDURE

1	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)

Radio and Navigation Assembly Wire Harness View:



Stereo Component Amplifier Wire Harness View:



P E129822E01

(a) Disconnect the connectors from the radio and navigation assembly and stereo component amplifier.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
L+ - L+	Always	Below 1 Ω
L- - L-	Always	Below 1 Ω
R+ - R+	Always	Below 1 Ω
R- - R-	Always	Below 1 Ω
SLD - SLD	Always	Below 1 Ω
L+ - Body ground	Always	10 kΩ or higher
L- - Body ground	Always	10 kΩ or higher
R+ - Body ground	Always	10 kΩ or higher
R- - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

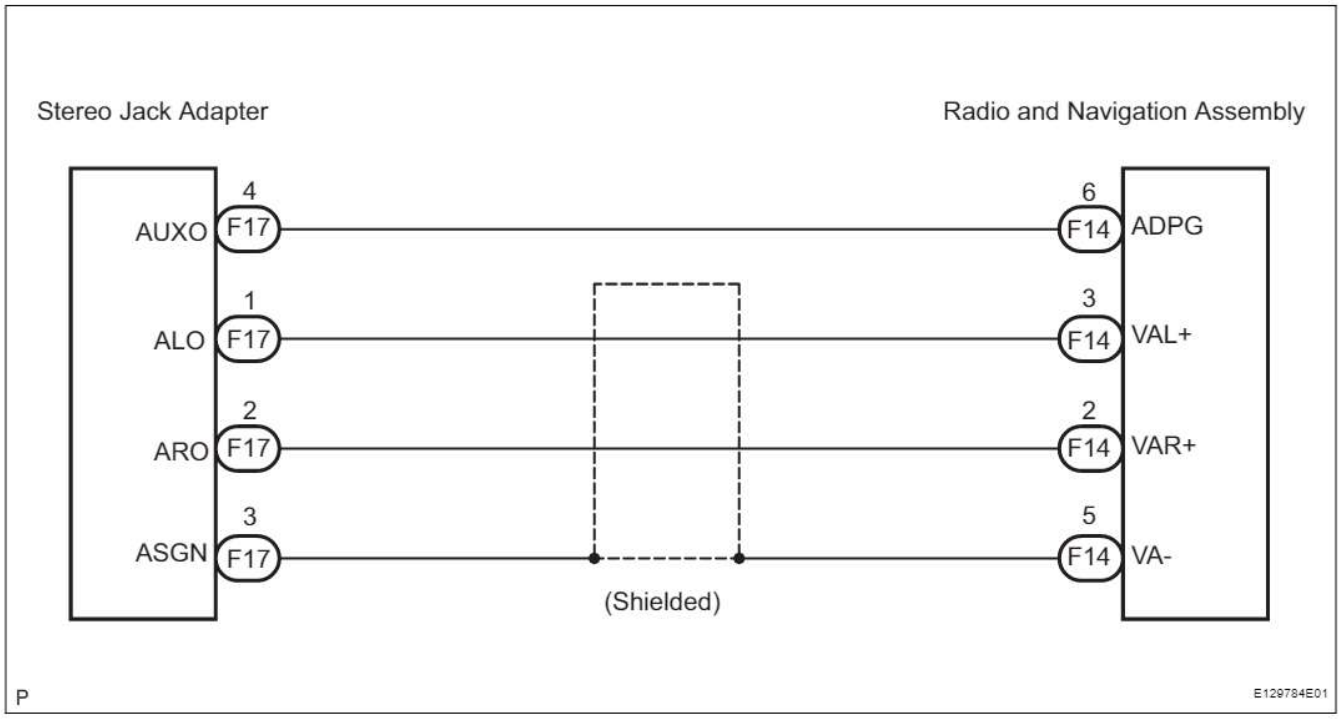
NS

Sound Signal Circuit between Radio and Navigation Assembly and Stereo Jack Adapter

DESCRIPTION

The stereo jack adapter sends an external device sound signal to the radio and navigation assembly through this circuit.
The sound signal that has been sent is amplified by the stereo component amplifier and then is sent to the speakers.
If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the stereo component amplifier, radio and navigation assembly, or speakers.

WIRING DIAGRAM

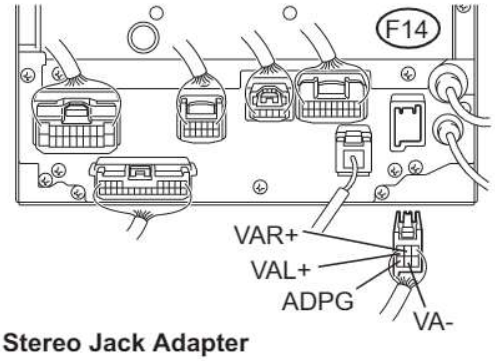


NS

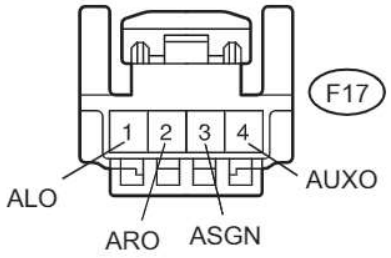
INSPECTION PROCEDURE

1	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO JACK ADAPTER)

Radio and Navigation Assembly Wire Harness View:



Stereo Jack Adapter Connector Front View:



P E129823E03

(a) Disconnect the connectors from the stereo jack adapter and radio and navigation assembly.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
AUXO - ADPG	Always	Below 1 Ω
ASGN - VA-	Always	Below 1 Ω
ARO - VAR+	Always	Below 1 Ω
ALO - VAL+	Always	Below 1 Ω
AUXO - Body ground	Always	10 kΩ or higher
ASGN - Body ground	Always	10 kΩ or higher
ARO - Body ground	Always	10 kΩ or higher
ALO - Body ground	Always	10 kΩ or higher

NG → REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Mute Signal Circuit between Radio and Navigation Assembly and Stereo Component Amplifier

DESCRIPTION

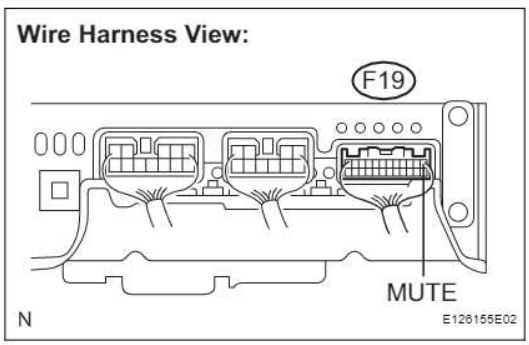
This circuit sends a signal to the stereo component amplifier to mute noise. Because of that, the noise produced by changing the sound source ceases.
If there is an open in the circuit, noise can be heard from the speakers when changing the sound source.
If there is a short in the circuit, even though the stereo component amplifier is normal, no sound, or only an extremely small sound, can be produced.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT STEREO COMPONENT AMPLIFIER



(a) Measure the voltage according to the value(s) in the table below.
Standard voltage

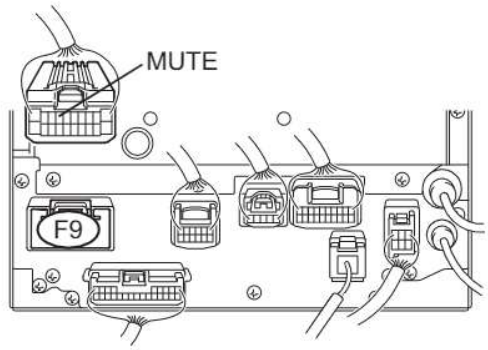
Tester connection	Condition	Specified condition
MUTE - Body ground	Turn ignition switch on (ACC), Audio system is playing → Changing	Above 3.5 V → Below 1 V

OK → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

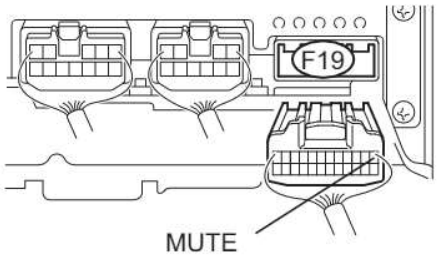
NG

2	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)

Radio and Navigation Assembly Wire Harness View:



Stereo Component Amplifier Wire Harness View:



P E129822E02

(a) Disconnect the radio and navigation assembly connector F9 and stereo component amplifier connector F19.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

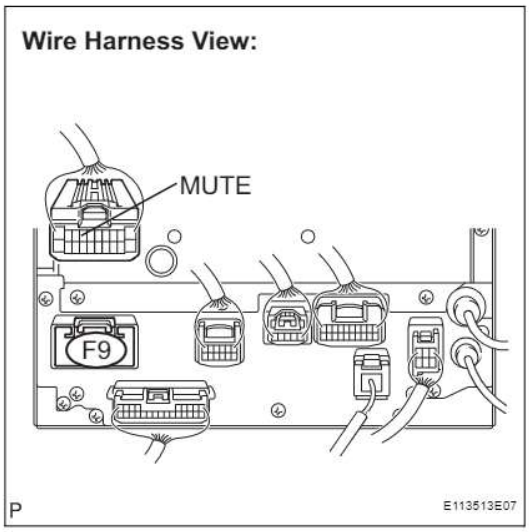
Tester connection	Condition	Specified condition
MUTE (F9-7) - MUTE (F19-1)	Always	Below 1 Ω
MUTE - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

NS

3	INSPECT STEREO COMPONENT AMPLIFIER (OUTPUT SIGNAL)



(a) Reconnect the stereo component amplifier connector F19.

(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection	Condition	Specified condition
MUTE - Body ground	Turn ignition switch on (ACC) Audio system is playing	Above 3.5 V

NG → **REPLACE STEREO COMPONENT AMPLIFIER**

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

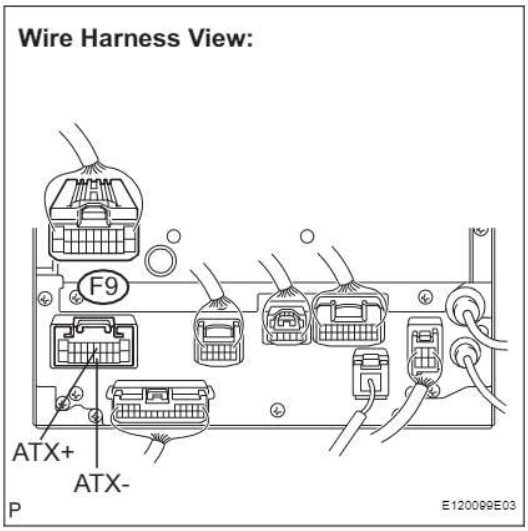
AVC-LAN Circuit

DESCRIPTION

Each unit of the navigation system connected to the AVC-LAN (communication bus) transfers the signal of each switch by communication.
When a short to +B or short to ground occurs in this AVC-LAN, the navigation system will not function normally as the communication is discontinued.

INSPECTION PROCEDURE

1 **INSPECT RADIO AND NAVIGATION ASSEMBLY**



(a) Disconnect the radio and navigation assembly connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
ATX+ (F19-5) - ATX- (F19-15)	Always	60 to 80 Ω

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

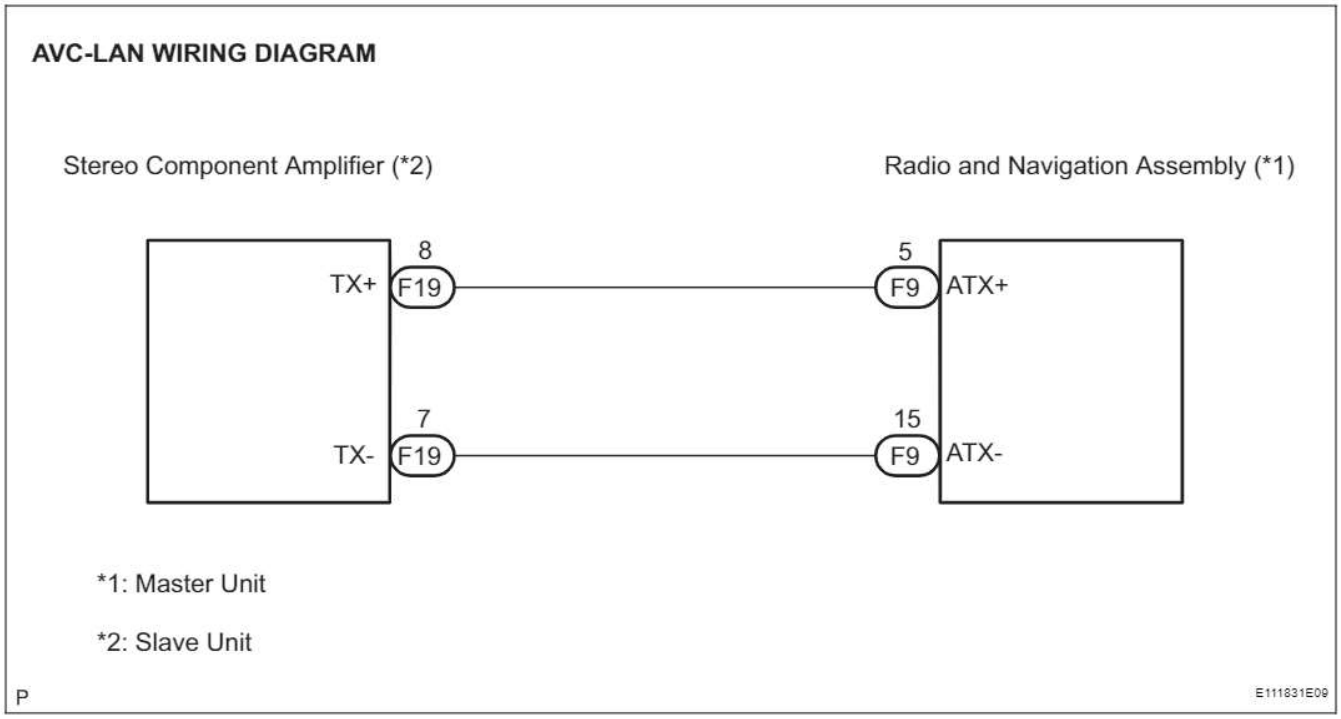
2 **CHECK HARNESS AND CONNECTOR**

HINT:
For details of the connectors, refer to "TERMINALS OF ECU" (See page NS-45).

(a) Referring to the AVC-LAN wiring diagram below, check all AVC-LAN circuits.
  (1) Disconnect all connectors in all AVC-LAN circuits.
  (2) Check for an open or short in all AVC-LAN circuits.

NS

AVC-LAN WIRING DIAGRAM



OK:
There is no open or short circuit.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

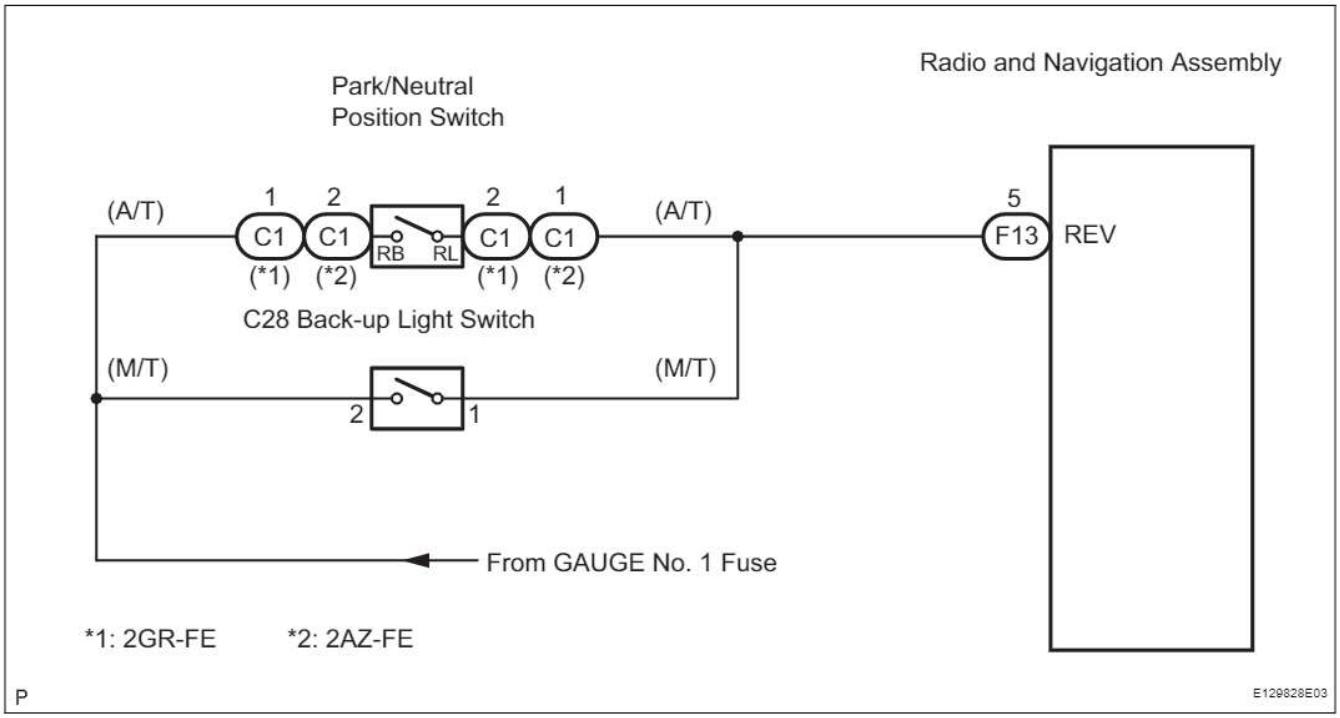
NS

Reverse Signal Circuit

DESCRIPTION

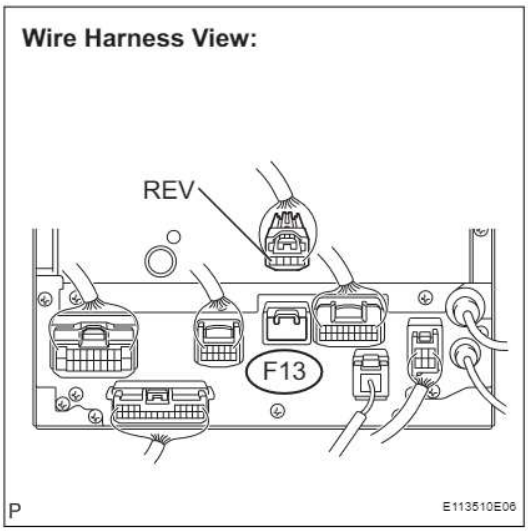
The radio and navigation assembly receives a reverse signal from the park/neutral position switch and information about the GPS antenna, and then adjusts vehicle position.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector F13.

(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection	Condition	Specified condition
REV - Body ground	Ignition switch on (IG). Shift lever is moved to R position.	10 to 14 V
REV - Body ground	Ignition switch on (IG). Shift lever is moved to any position except R.	Below 1 V

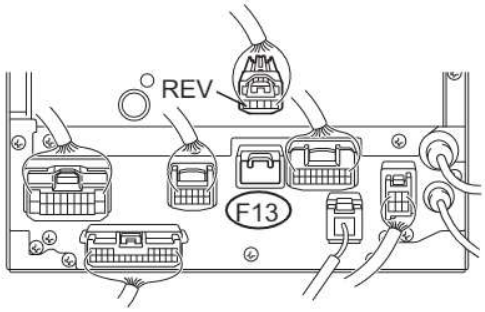
OK → REPLACE RADIO AND NAVIGATION ASSEMBLY

NG

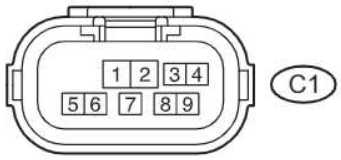
NS

2 CHECK HARNESS AND CONNECTOR

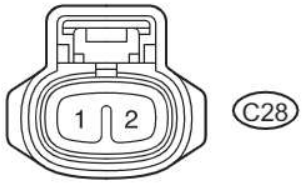
Radio and Navigation Assembly Wire Harness View:



Park/Neutral Position Switch Connector Front View:



Back-up Light Switch Connector Front View:



P E129830E02

(a) Disconnect the radio and navigation assembly connector F13 and park/neutral position switch connector C1 or back-up light switch connector C28.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
REV - C1-1 (*1)	Always	Below 1 Ω
REV - C1-2 (*2)	Always	Below 1 Ω
REV - C28-1 (*3)	Always	Below 1 Ω
REV - Body ground	Always	10 kΩ or higher

*1: 2AZ-FE, A/T
*2: 2GR-FE, A/T
*3: M/T

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3 CHECK VEHICLE TYPE

(a) Choose type to be inspected.

NS

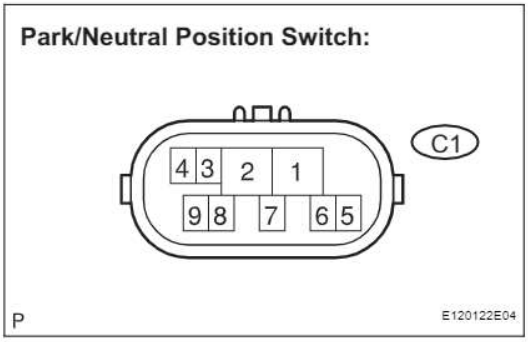
Result

Type	Go to step
A/T	A
M/T	B

B → Go to step 5

A

4 INSPECT PARK/NEUTRAL POSITION SWITCH



(a) Disconnect the park/neutral position switch connector C1.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

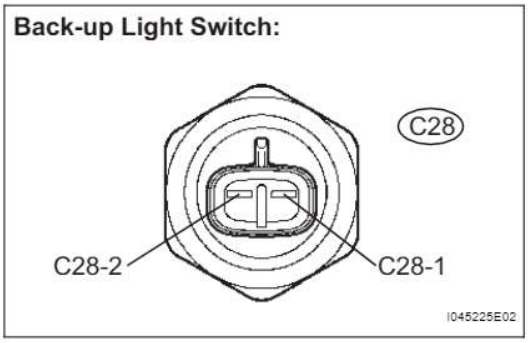
Tester connection	Condition	Specified condition
C1-1 - C1-2	Shift lever is moved to R.	Below 1 Ω
C1-1 - C1-2	Shift lever is moved to any position except R.	10 kΩ or higher

NG → REPLACE PARK/NEUTRAL POSITION SWITCH

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR

5 INSPECT BACK-UP LIGHT SWITCH



(a) Disconnect the buck-up light switch connector C28.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
C28-1 - C28-2	Shift lever is moved to R.	Below 1 Ω
C28-1 - C28-2	Shift lever is moved to any position except R.	10 kΩ or higher

NG → REPLACE BACK-UP LIGHT SWITCH

NS

OK

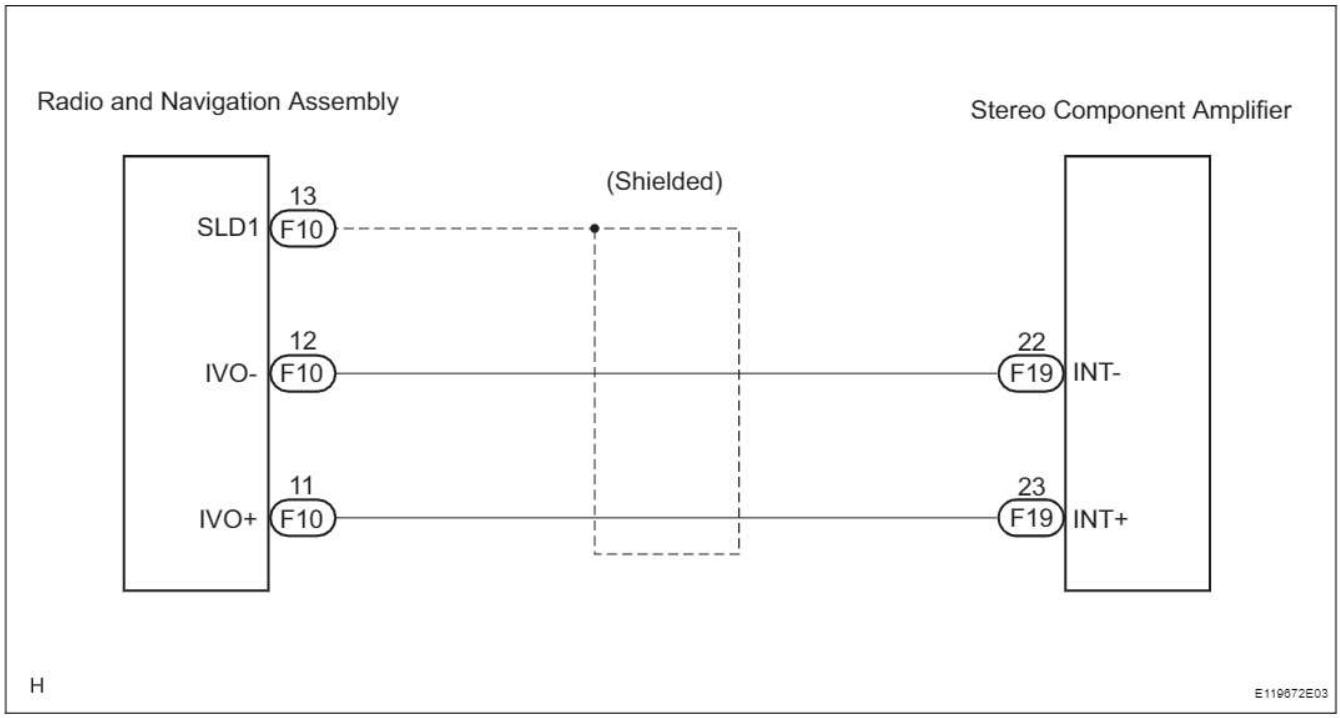
REPAIR OR REPLACE HARNESS OR CONNECTOR

Navigation Voice Circuit

DESCRIPTION

This circuit is used when the voice guidance in the navigation system is on.

WIRING DIAGRAM

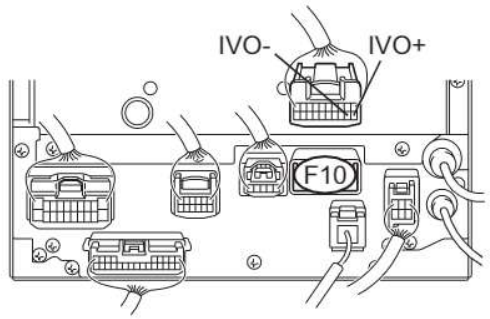


NS

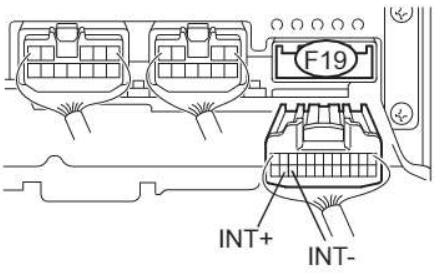
INSPECTION PROCEDURE

1	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)

Radio and Navigation Assembly Wire Harness View:



Stereo Component Amplifier Wire Harness View:



P E129824E01

(a) Disconnect the radio and navigation assembly connector F10 and stereo component amplifier connector F19.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
IVO+ - INT+	Always	Below 1 Ω
IVO- - INT-	Always	Below 1 Ω
IVO+ - Body ground	Always	10 kΩ or higher
IVO- - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

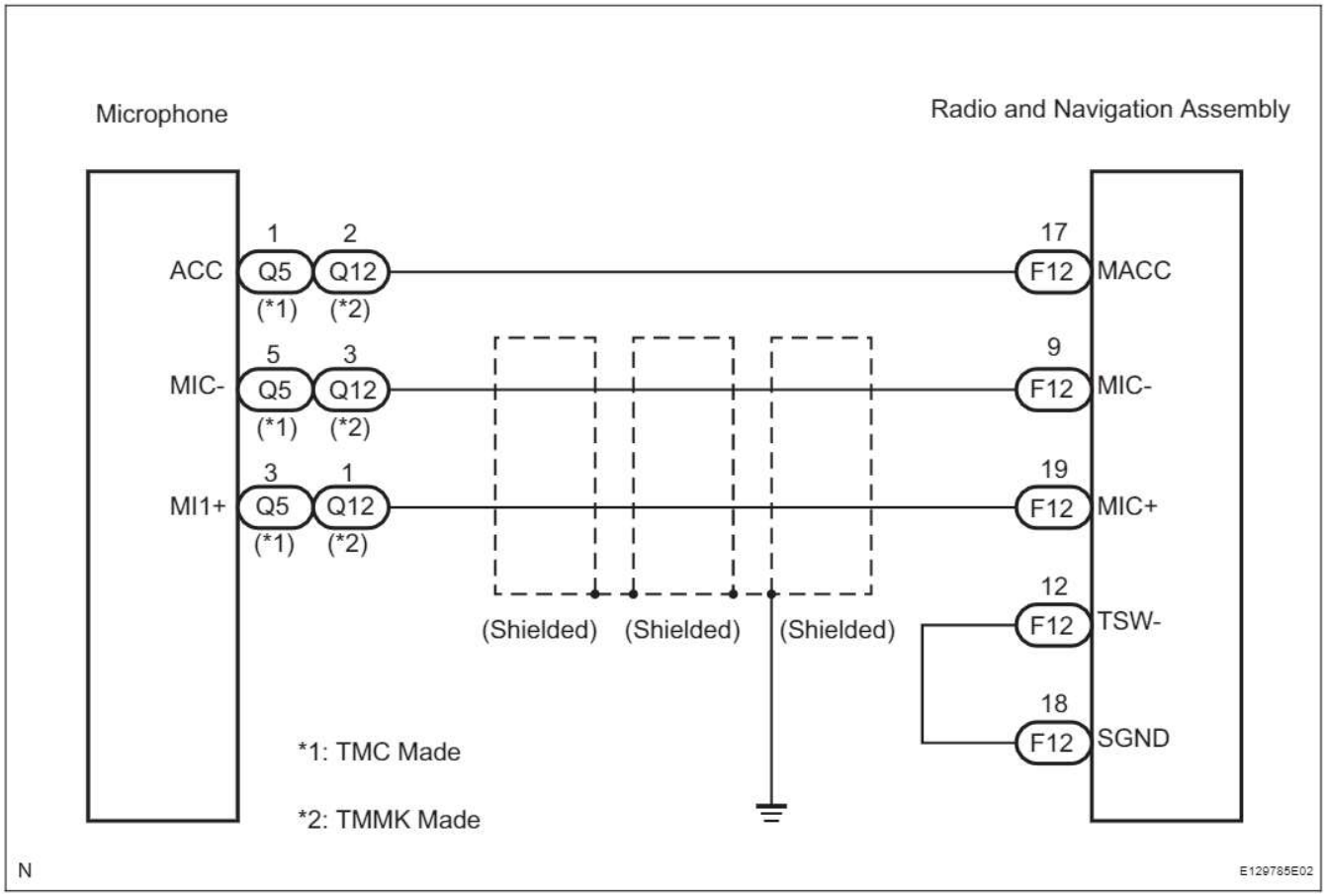
NS

Microphone Circuit between Microphone and Radio and Navigation Assembly

DESCRIPTION

This circuit sends a microphone signal from the microphone to the radio and navigation assembly. It also supplies power from the radio and navigation assembly to the microphone.

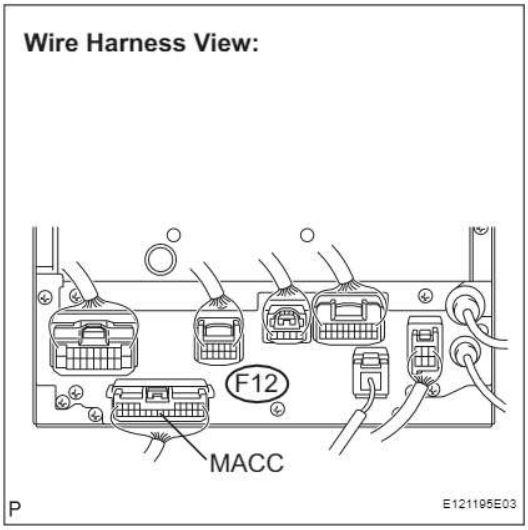
WIRING DIAGRAM



NS

INSPECTION PROCEDURE

1 INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Measure the voltage according to the value(s) in the table below.

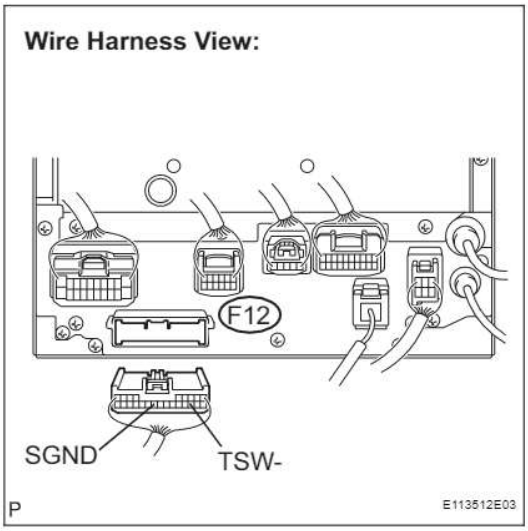
Standard voltage

Tester connection	Condition	Specified condition
MACC - Body ground	Ignition SW on (ACC)	4 to 6 V

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

2 CHECK HARNESS AND CONNECTOR



(a) Disconnect the radio and navigation assembly connector F12.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
SGND - TSW-	Always	Below 1 Ω

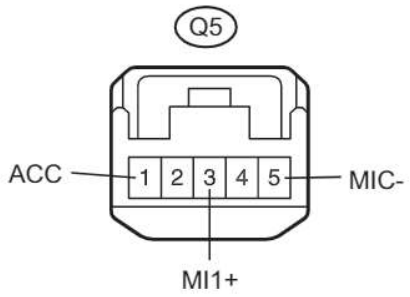
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

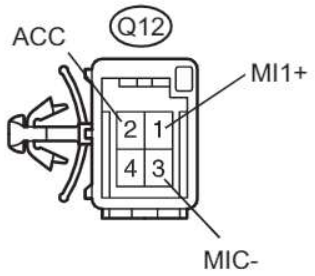
NS

3	CHECK HARNESS AND CONNECTOR (MICROPHONE - RADIO AND NAVIGATION ASSEMBLY)

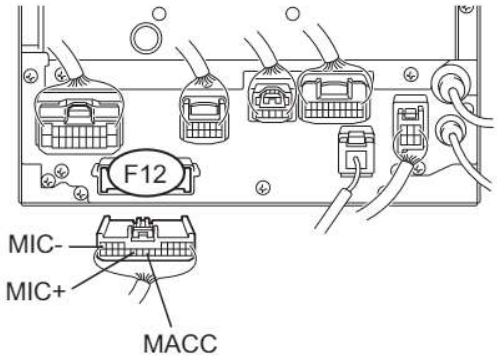
Microphone Connector Front View (TMC Made):



Microphone Connector Front View (TMMK Made):



Radio and Navigation Assembly Wire Harness View:



P E131896E01

(a) Disconnect the microphone connector Q5 or Q12 and radio and navigation assembly connector F12.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
ACC - MACC	Always	Below 1 Ω
MI1+ - MIC+	Always	Below 1 Ω
MIC- - MIC-	Always	Below 1 Ω
MACC - Body ground	Always	10 kΩ or higher
MIC+ - Body ground	Always	10 kΩ or higher
MIC- - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

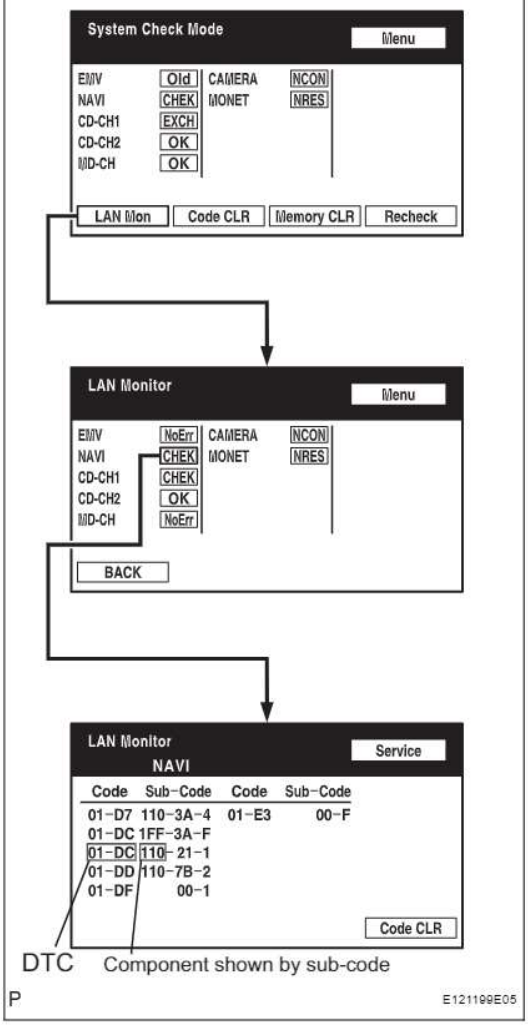
NS

Stereo Component Amplifier Communication Error

INSPECTION PROCEDURE

1 IDENTIFY THE COMPONENT SHOWN BY SUB-CODE

Example:



(a) Enter the diagnostic mode.
(b) Press the "LAN Mon" switch to change to "LAN Monitor" mode.
(c) Identify the component shown by the sub-code.
HINT:
- "110 (multi-display)" is the component shown by the sub-code in the example shown in the illustration.
- The sub-code will be indicated by its physical address.
- For the component list, refer to "DIAGNOSIS DISPLAY DETAILED DESCRIPTION" (See page NS-30).

NEXT

2 CHECK POWER SOURCE CIRCUIT OF COMPONENT SHOWN BY SUB-CODE

(a) Inspect the power source circuit of the component shown by the sub-code.
If the power source circuit is operating normally, proceed to the next step.

Component Table:

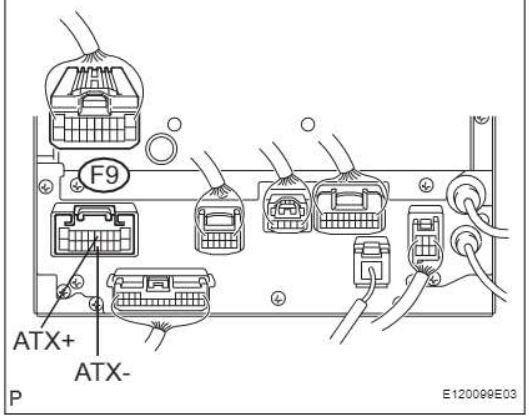
Component	Proceed to
Radio and navigation assembly (140)	Radio and navigation assembly power source circuit (See page NS-191)

NS

NEXT

3	CHECK RADIO AND NAVIGATION ASSEMBLY

Wire Harness View:



(a) Disconnect the radio and navigation assembly connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
ATX+ (F9-5) - ATX- (F9-15)	Always	60 to 80 Ω

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

OK

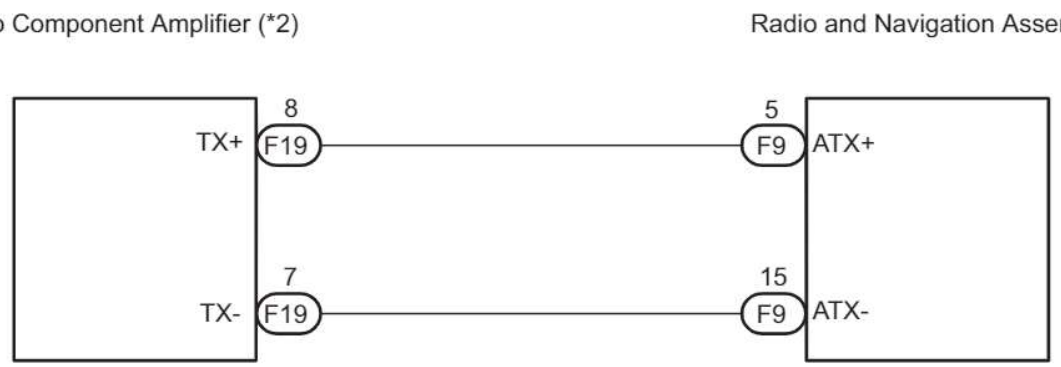
4	CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - COMPONENT SHOWN BY SUB-CODE)

HINT:
- Start the check from the circuit that is near the component shown by the sub-code first.
- For details of the connectors, refer to "TERMINALS OF ECU" (See page NS-45).

(a) Referring to the AVC-LAN wiring diagram below, check the AVC-LAN circuit between the stereo component amplifier and the component shown by the sub-code.
  (1) Disconnect all connectors between the stereo component amplifier and the component shown by the sub-code.
  (2) Check for an open or short in the AVC-LAN circuit between the stereo component amplifier and the component shown by the sub-code.

NS

AVC-LAN WIRING DIAGRAM



OK:
There is no open or short circuit.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5	**REPLACE COMPONENT SHOWN BY SUB-CODE**

(a) Replace the component shown by the sub-code with a normal one and check if the same problem occurs again.
OK:
Same problem does not occur.

NG → **REPLACE STEREO COMPONENT AMPLIFIER**

OK

END

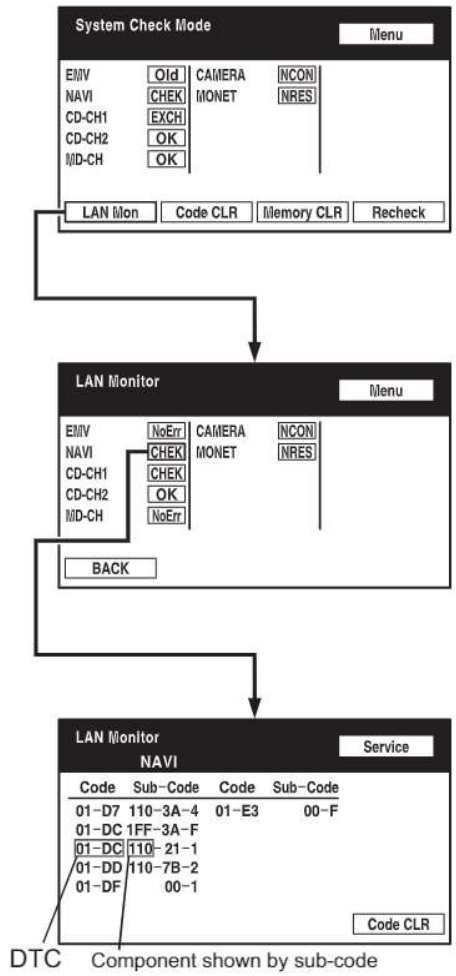
NS

Radio and Navigation Assembly Communication Error

INSPECTION PROCEDURE

1 IDENTIFY THE COMPONENT SHOWN BY SUB-CODE

Example:



(a) Enter the diagnostic mode.
(b) Press the "LAN Mon" switch to change to "LAN Monitor" mode.
(c) Identify the component shown by the sub-code.
HINT:
- "110 (multi-display)" is the component shown by the sub-code in the example shown in the illustration.
- The sub-code will be indicated by its physical address.
- For the component list, refer to "DIAGNOSIS DISPLAY DETAILED DESCRIPTION" (See page NS-30).

NEXT

2 CHECK POWER SOURCE CIRCUIT OF COMPONENT SHOWN BY SUB-CODE

(a) Inspect the power source circuit of the component shown by the sub-code.
If the power source circuit is operating normally, proceed to the next step.

Component Table:

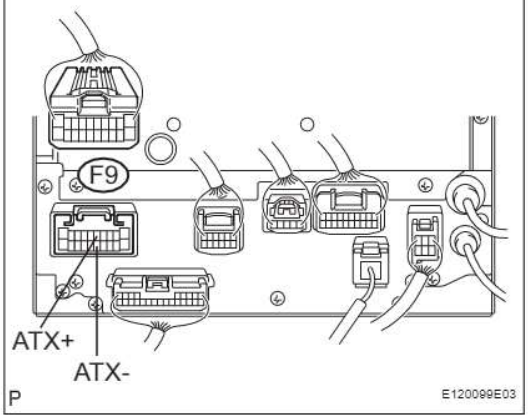
Component	Proceed to
Stereo component amplifier (440)	Stereo component amplifier power source circuit (See page AV-142)

NS

NEXT

3	CHECK RADIO AND NAVIGATION ASSEMBLY

Wire Harness View:



(a) Disconnect the radio and navigation assembly connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
ATX+ (F9-5) - ATX- (F9-15)	Always	60 to 80 Ω

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

OK

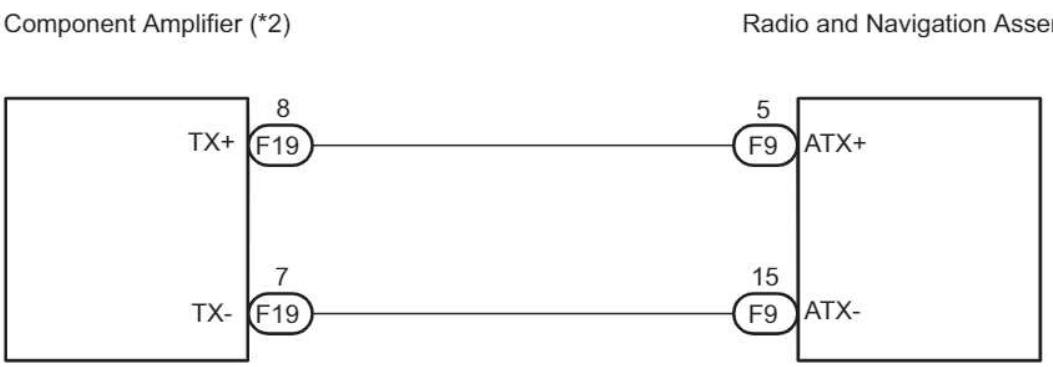
4	CHECK HARNESS AND CONNECTOR

HINT:
- Start the check from the circuit that is near the component shown by the sub-code first.
- For details of the connectors, refer to "TERMINALS OF ECU" (See page NS-45).

(a) Referring to the AVC-LAN wiring diagram below, check the AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code.
  (1) Disconnect all connectors between the radio and navigation assembly and the component shown by the sub-code.
  (2) Check for an open or short in the AVC-LAN circuit between the radio and navigation assembly and the component shown by the sub-code.

NS

AVC-LAN WIRING DIAGRAM



*1: Master Unit

*2: Slave Unit

P E111831E09

OK:
There is no open or short circuit.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ↓

5	REPLACE COMPONENT SHOWN BY SUB-CODE

(a) Replace the component shown by the sub-code with a normal one and check if the same problem occurs again.
OK:
Same problem does not occur.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK ↓

END

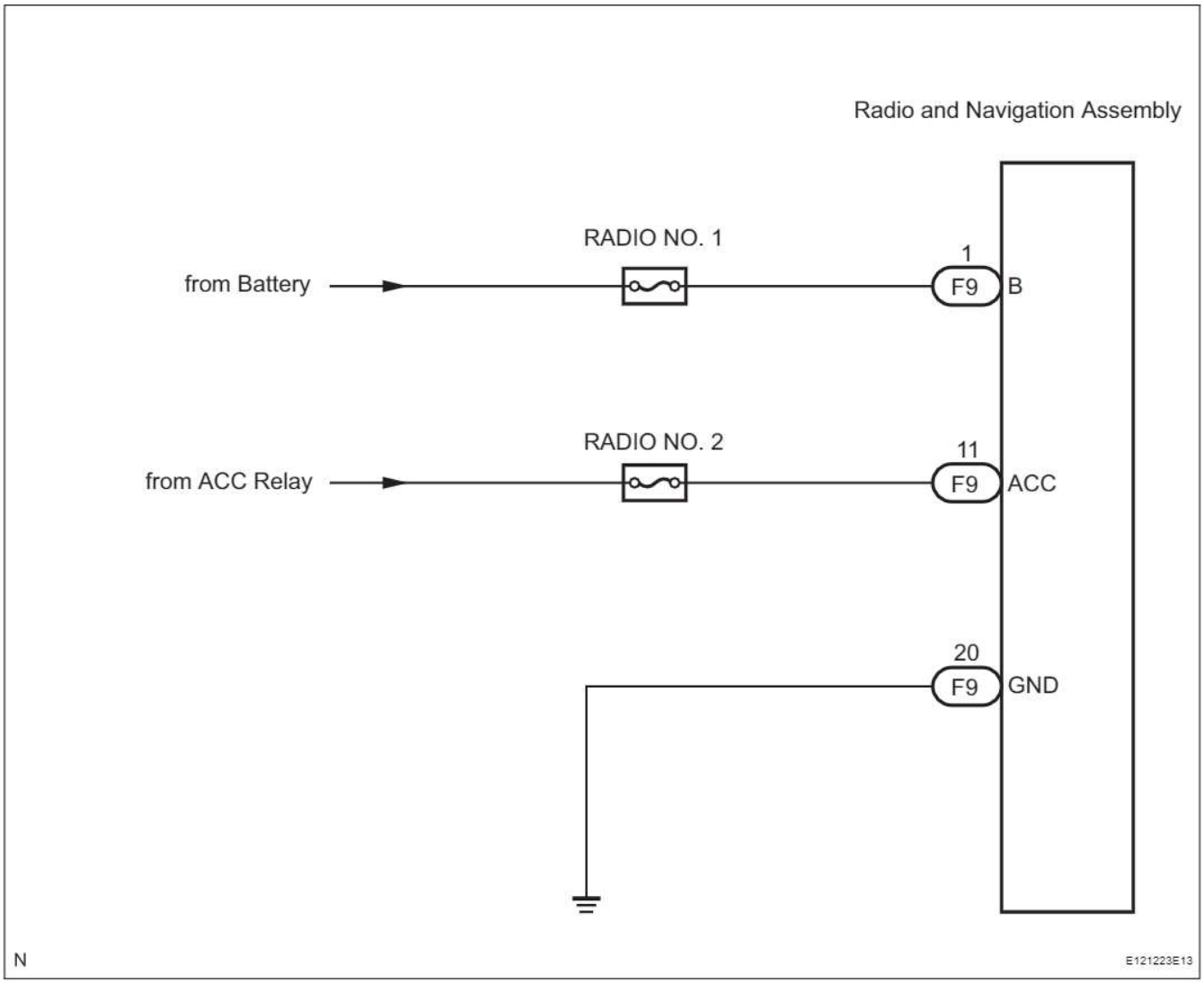
NS

Radio and Navigation Assembly Power Source Circuit

DESCRIPTION

This is the power source circuit to operate the radio and navigation assembly.

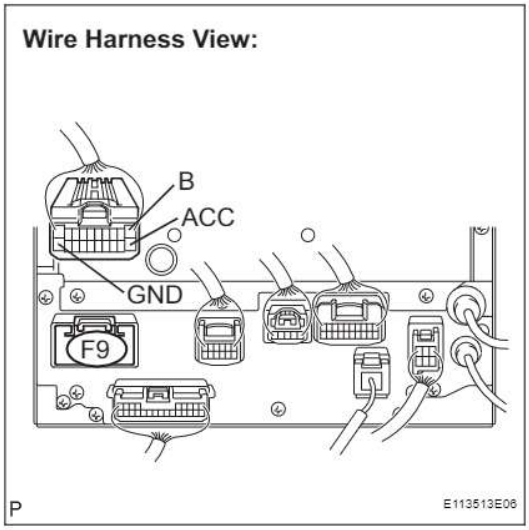
WIRING DIAGRAM



NS

INSPECTION PROCEDURE

1	INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector F9.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
GND - Body ground	Always	Below 1 Ω

(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection	Condition	Specified condition
B - GND	Always	10 to 14 V
ACC - GND	Ignition SW on (ACC)	10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

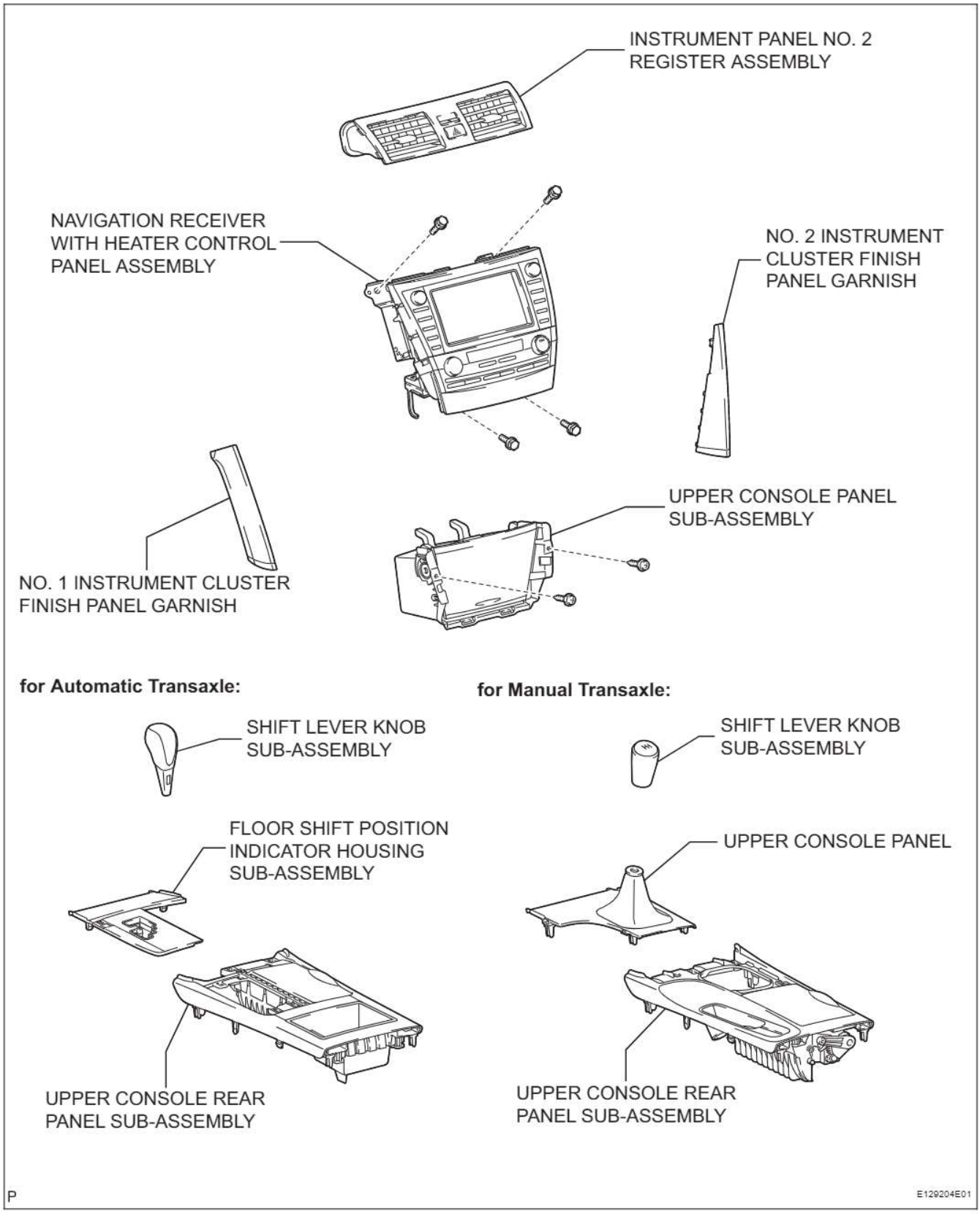
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

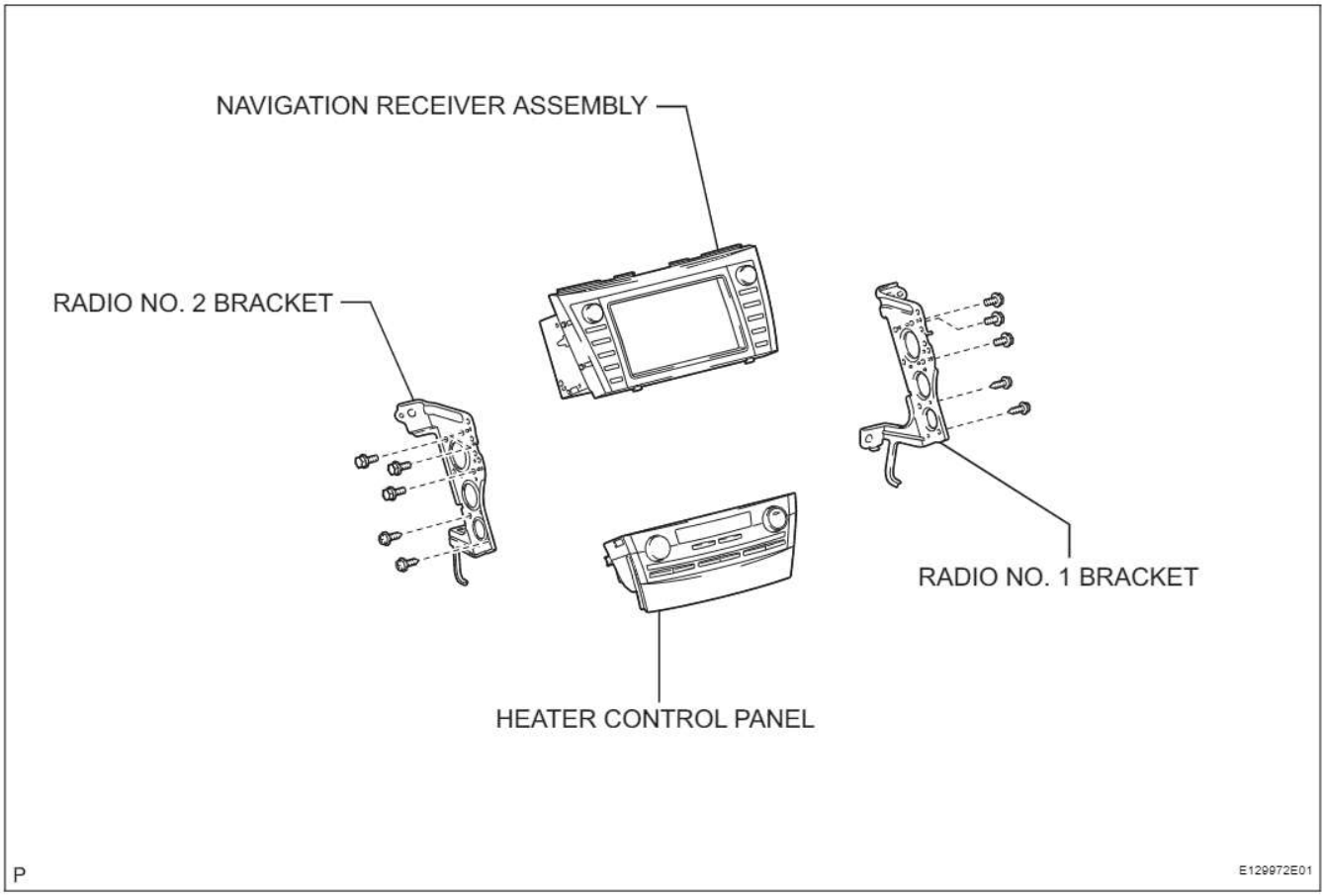
NS

MULTI-DISPLAY

COMPONENTS

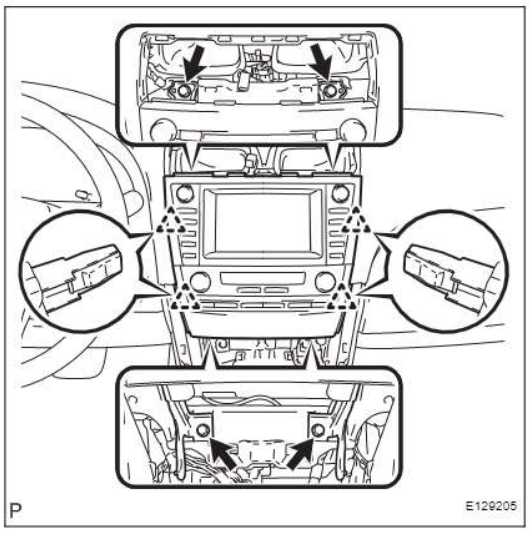


NS

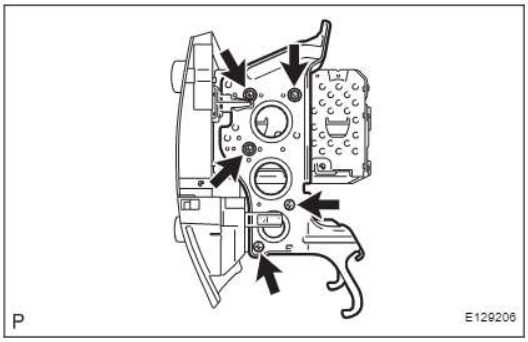

NAVIGATION RECEIVER ASSEMBLY
RADIO NO. 2 BRACKET
RADIO NO. 1 BRACKET
HEATER CONTROL PANEL
P
E129972E01

REMOVAL

1. **EJECT MAP DISC**
   (a) Turn the ignition switch on (ACC).
   (b) Push the "CLOSE" button.
   (c) Touch "MAP EJECT" on the navigation screen to eject the map disc.
2. **REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-24)**
3. **REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (for Manual Transaxle) (See page IP-24)**
4. **REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-24)**
5. **REMOVE NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-25)**
6. **REMOVE FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-25)**
7. **REMOVE UPPER CONSOLE PANEL (for Manual Transaxle) (See page IP-25)**
8. **REMOVE UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-26)**
9. **REMOVE UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Manual Transaxle) (See page IP-26)**
10. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY (See page IP-27)**
11. **REMOVE INSTRUMENT PANEL NO. 2 REGISTER ASSEMBLY (See page IP-27)**
12. **REMOVE NAVIGATION RECEIVER WITH HEATER CONTROL PANEL ASSEMBLY**
    (a) Remove the 4 bolts.
    (b) Pull the navigation receiver with heater control panel assembly toward the rear of the vehicle and disengage the 4 clips.
    (c) Disconnect each connector and remove the navigation receiver with heater control panel assembly.

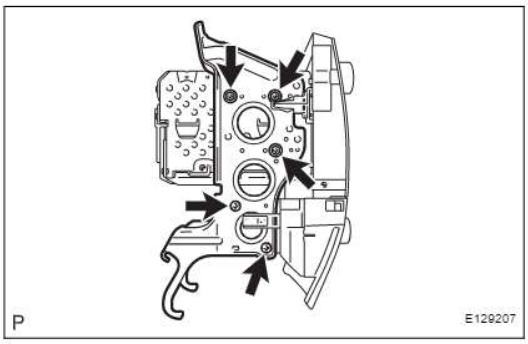


NS



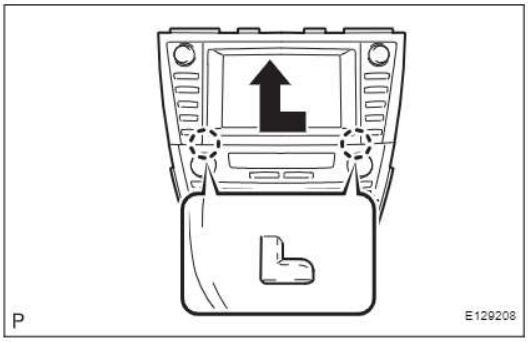
13. REMOVE RADIO NO. 1 BRACKET

(a) Remove the 5 bolts and radio No. 1 bracket.



14. REMOVE RADIO NO. 2 BRACKET

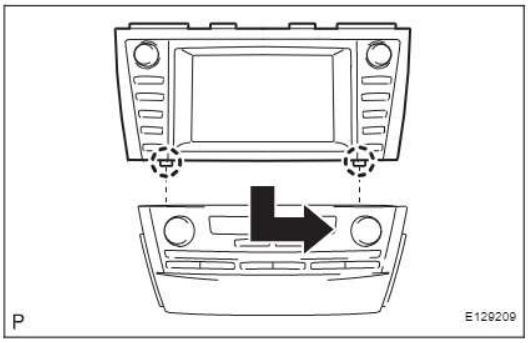
(a) Remove the 5 bolts and radio No. 2 bracket.



15. REMOVE NAVIGATION RECEIVER ASSEMBLY

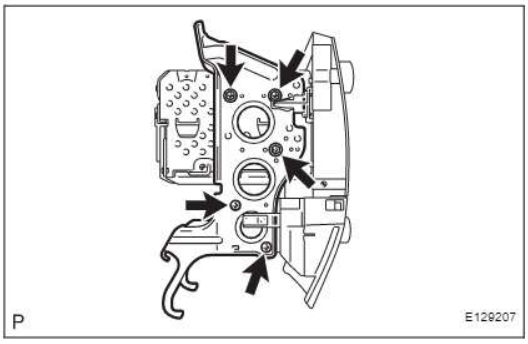
(a) Remove the navigation receiver assembly as shown in the illustration.

INSTALLATION



1. INSTALL NAVIGATION RECEIVER ASSEMBLY

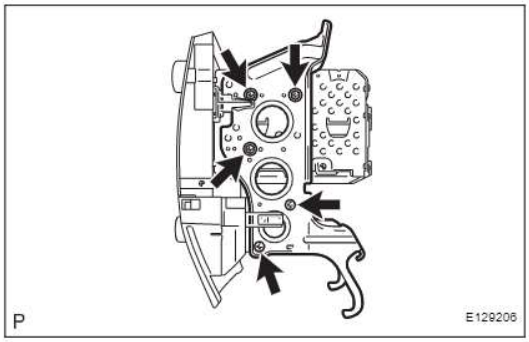
(a) Install the navigation receiver assembly as shown in the illustration.

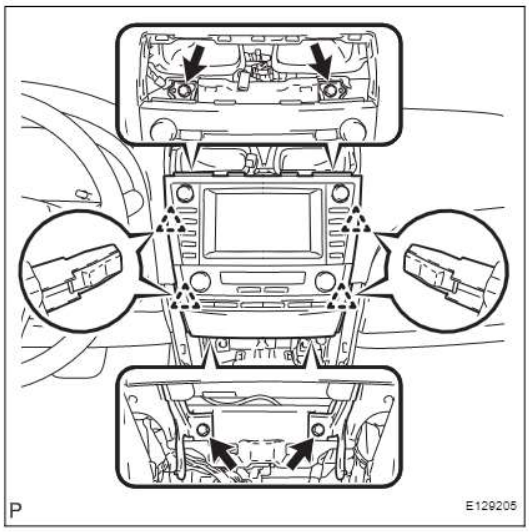


2. INSTALL RADIO NO. 2 BRACKET

(a) Install the radio No. 2 bracket with the 5 bolts.

NS





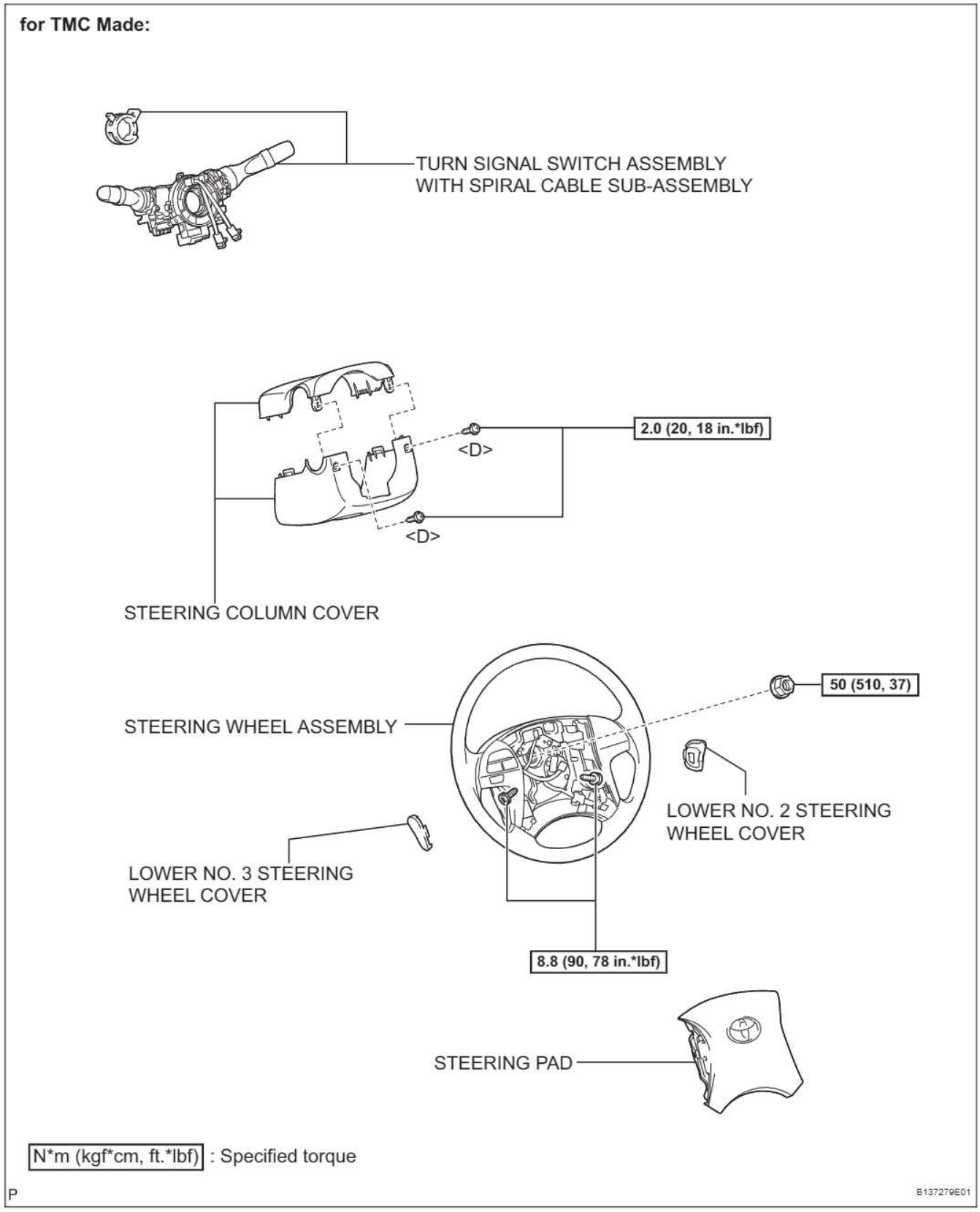
3. **INSTALL RADIO NO. 1 BRACKET**
   (a) Install the radio No. 1 bracket with the 5 bolts.
4. **INSTALL NAVIGATION RECEIVER WITH HEATER CONTROL PANEL ASSEMBLY**
   (a) Connect each connector.
   (b) Engage the 4 clips.
   (c) Install the navigation receiver with heater control panel assembly with the 4 bolts.
5. **INSTALL INSTRUMENT PANEL NO. 2 REGISTER ASSEMBLY (See page IP-52)**
6. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY (See page IP-52)**
7. **INSTALL UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-53)**
8. **INSTALL UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Manual Transaxle) (See page IP-53)**
9. **INSTALL FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-53)**
10. **INSTALL UPPER CONSOLE PANEL (for Manual Transaxle) (See page IP-54)**
11. **INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-54)**
12. **INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-55)**
13. **INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-55)**
14. **INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (for Manual Transaxle) (See page IP-55)**
15. **INSERT MAP DISC**

NS

NAVIGATION ANTENNA CORD

COMPONENTS

for TMC Made:

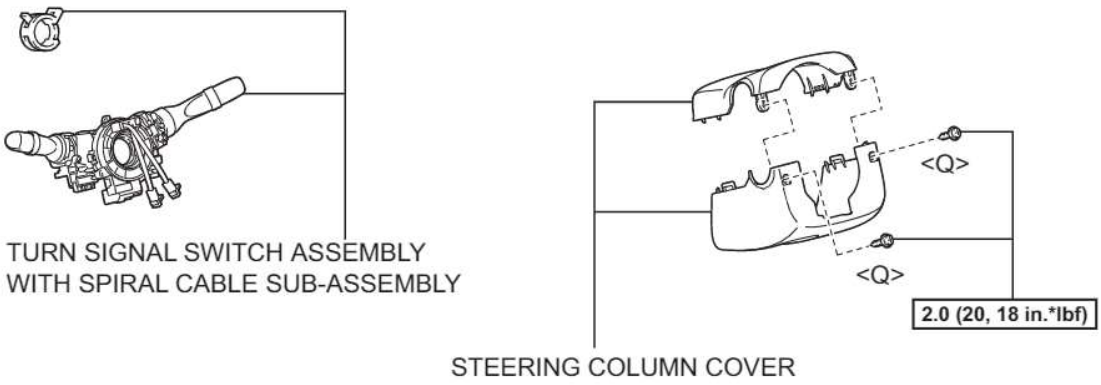


N*m (kgf*cm, ft.*lbf) : Specified torque

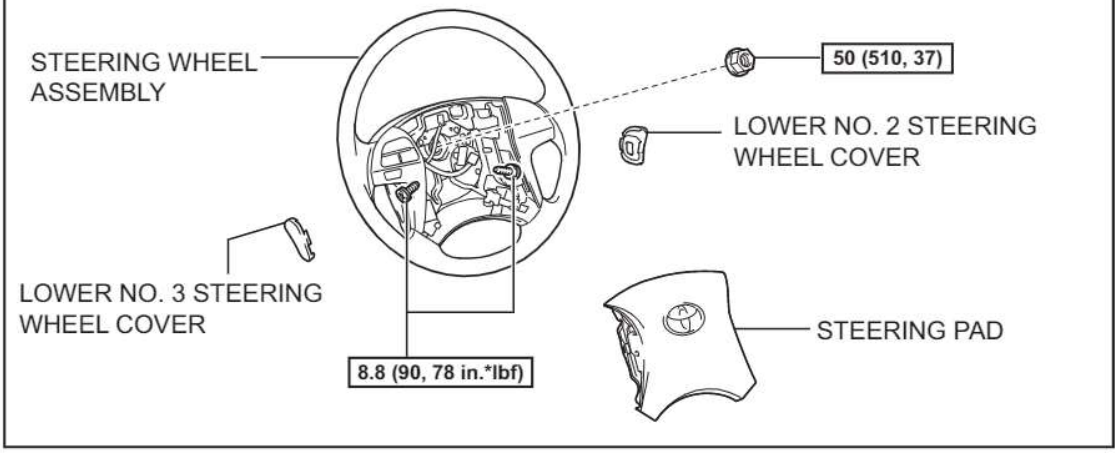
P B137279E01

NS

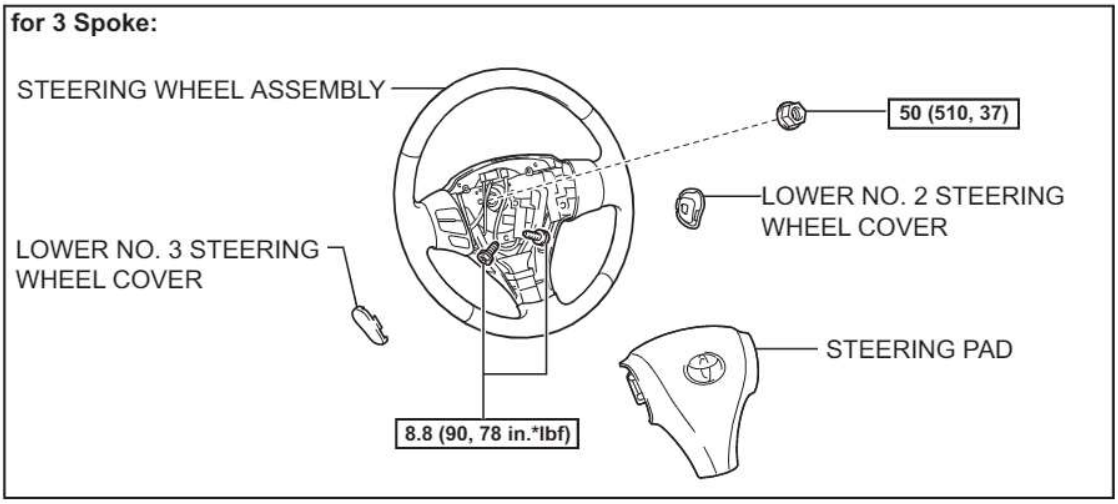
for TMMK Made:



for 4 Spoke:



for 3 Spoke:

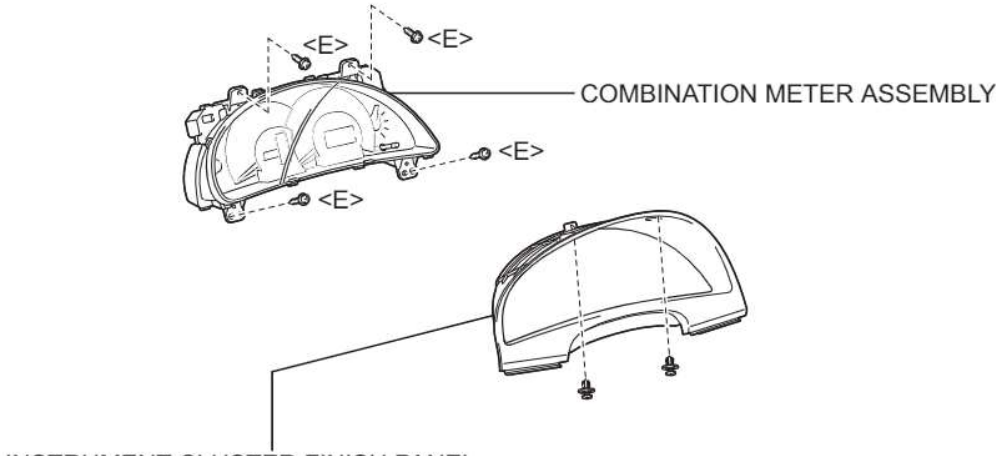


N*m (kgf*cm, ft.*lbf) : Specified torque

P B137280E01

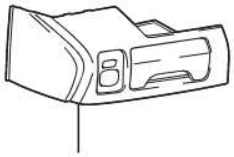
NS

for TMC Made:

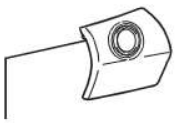


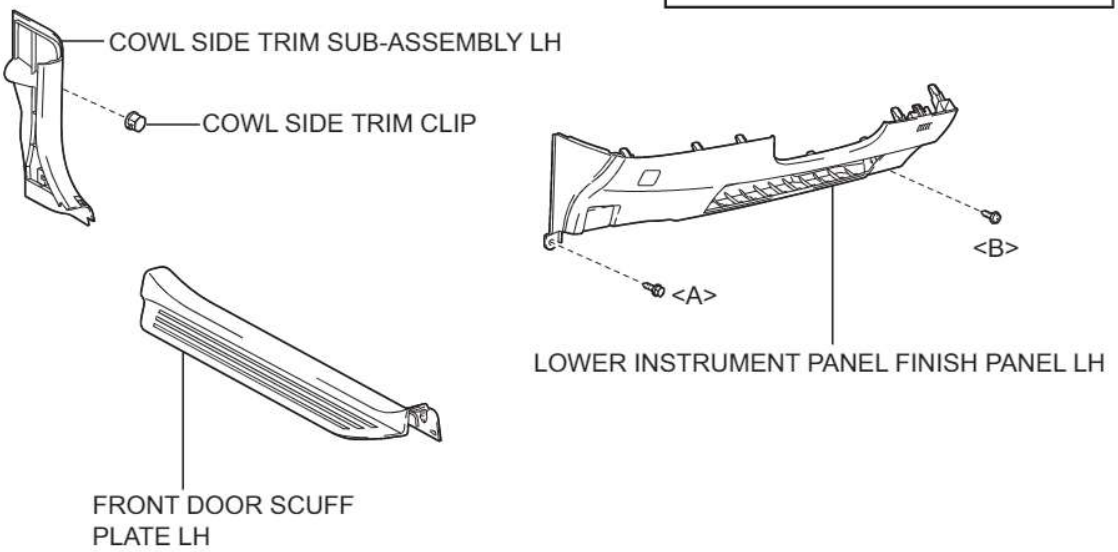
without Smart Key System:





with Smart Key System:



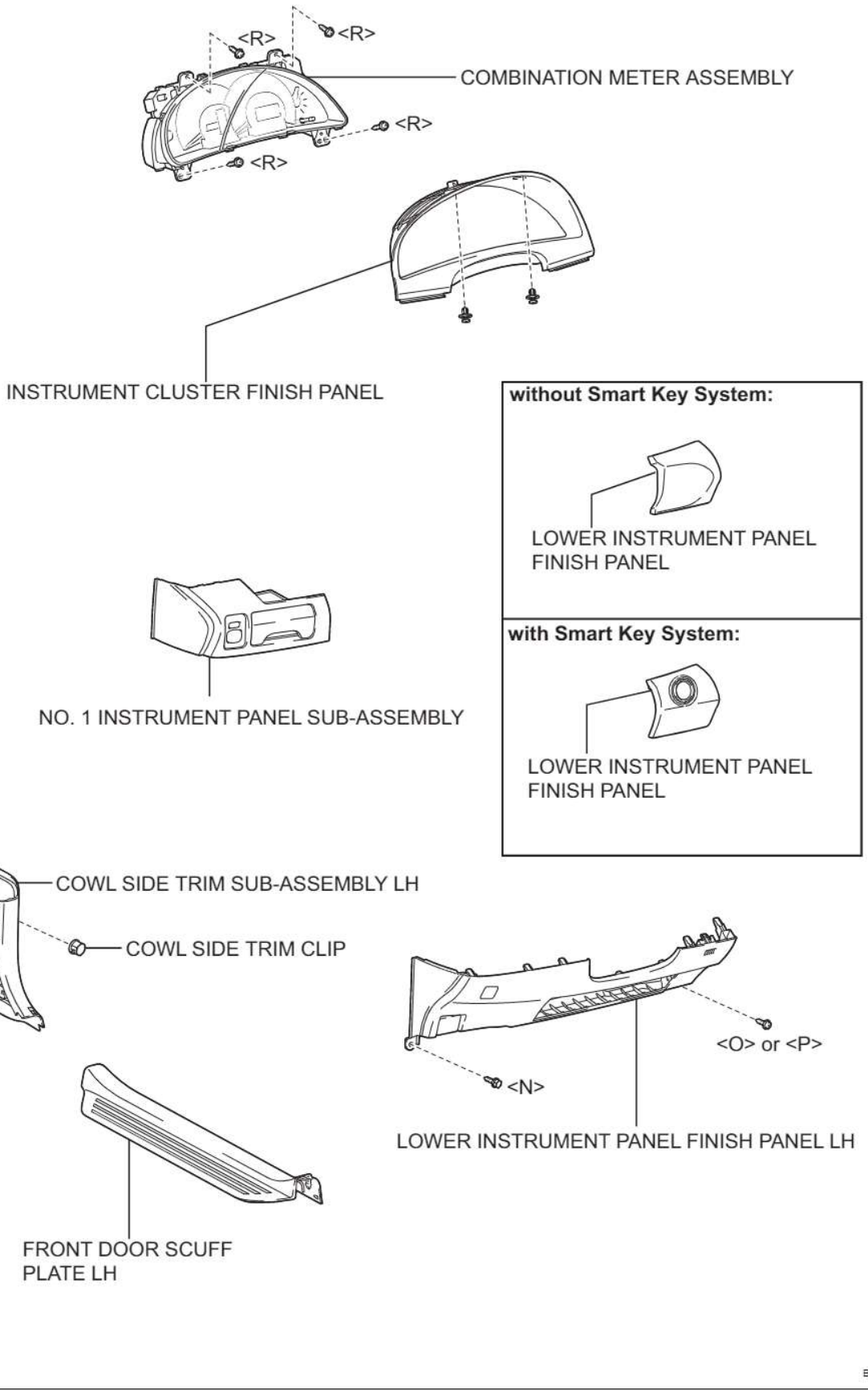


P

B137281E01

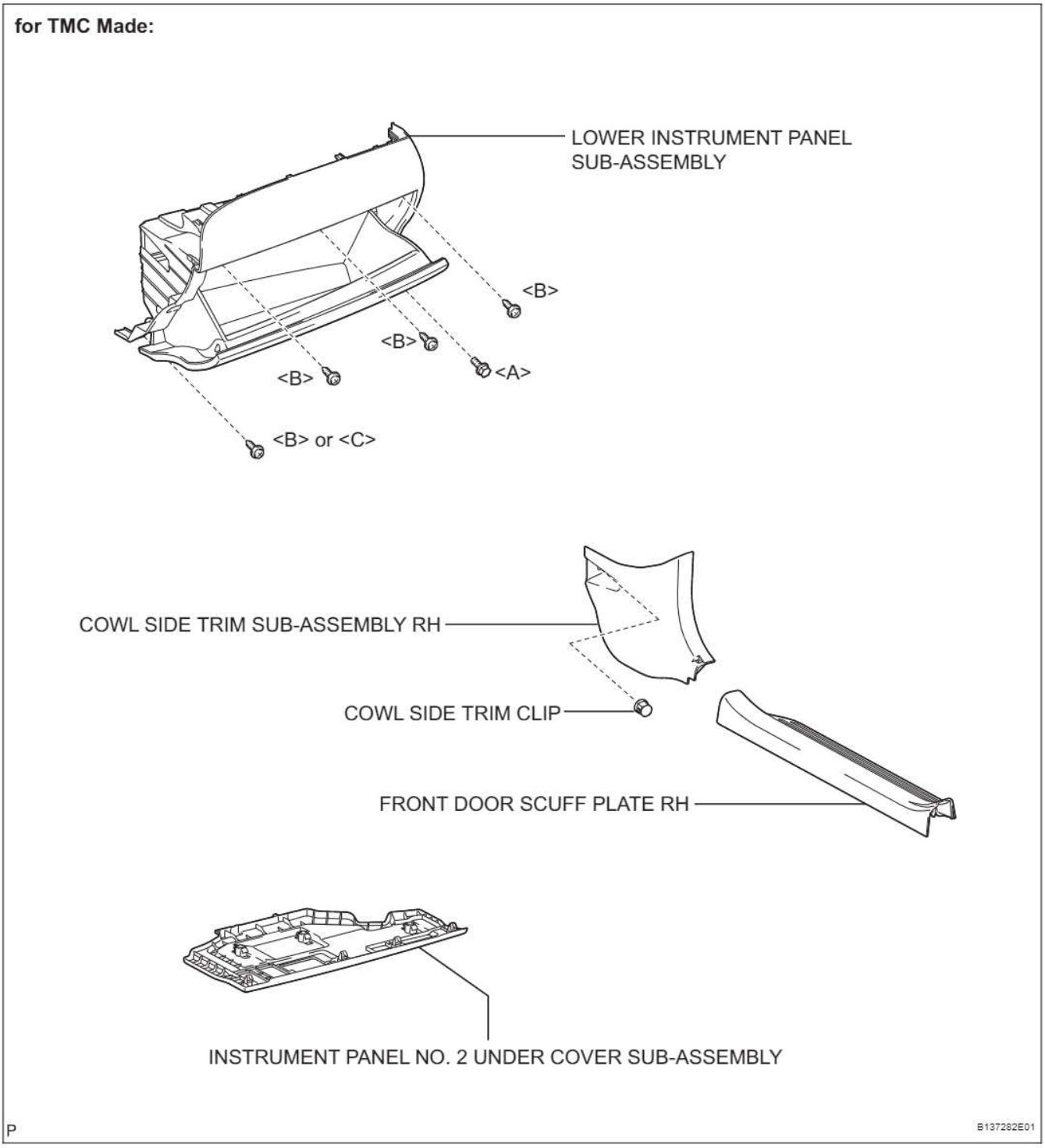
NS

for TMMK Made:



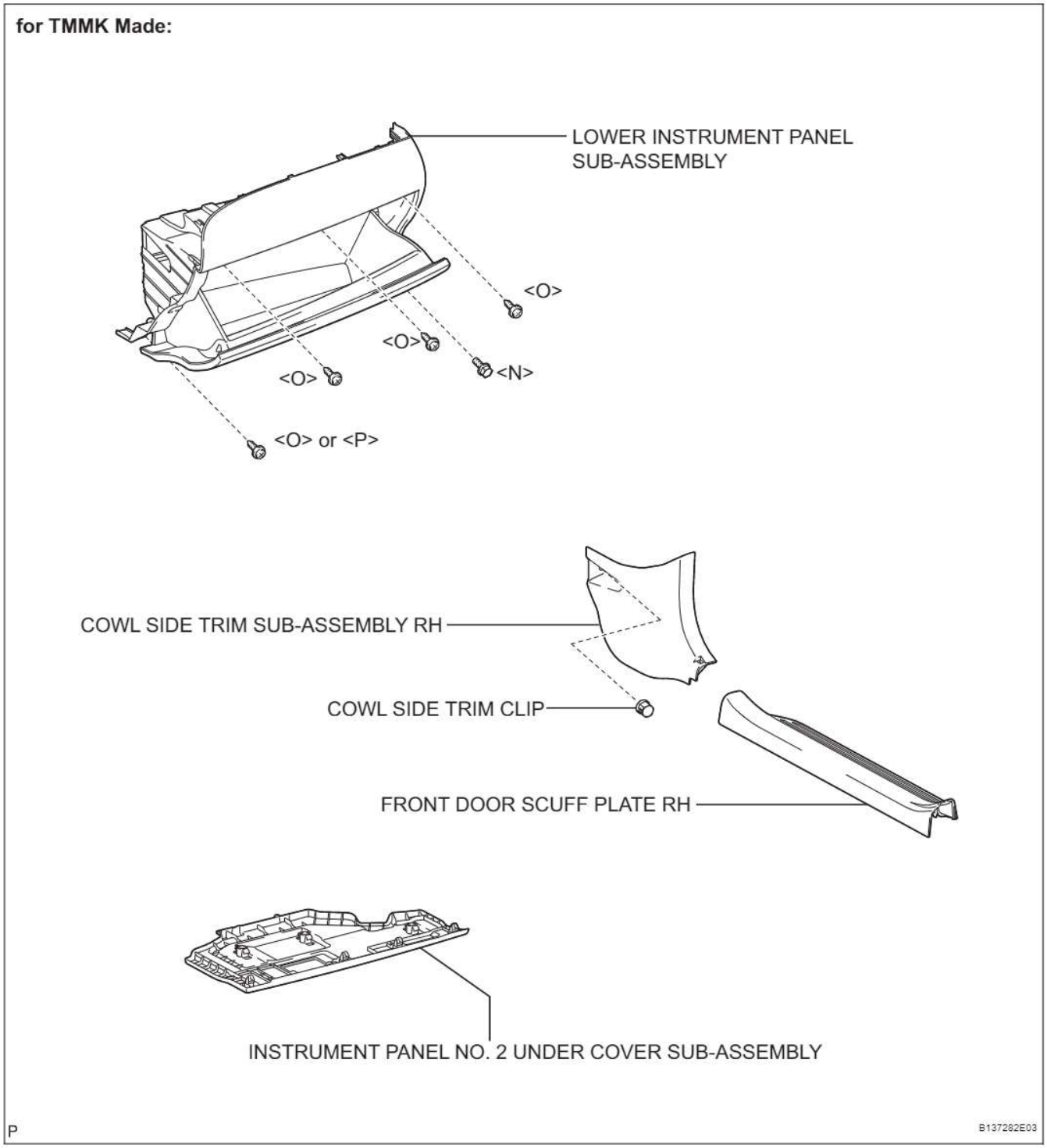
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for TMC Made:

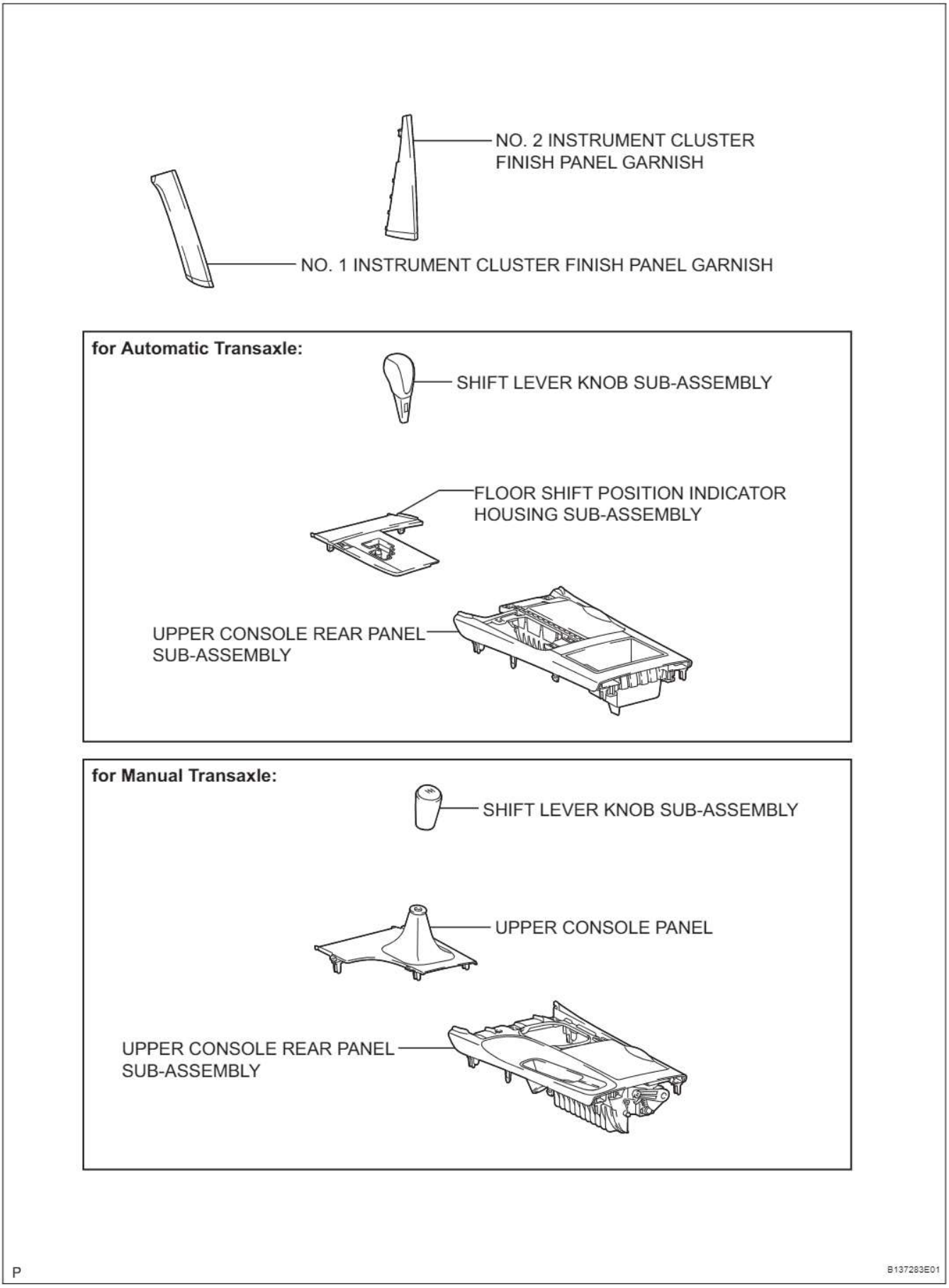


NS

for TMMK Made:



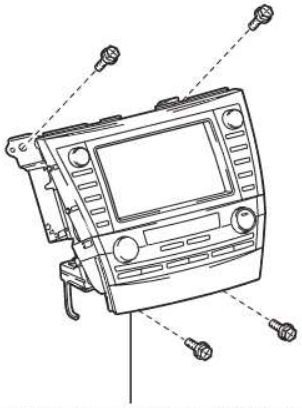
NS


NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH
NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH
for Automatic Transaxle:
SHIFT LEVER KNOB SUB-ASSEMBLY
FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY
UPPER CONSOLE REAR PANEL SUB-ASSEMBLY
for Manual Transaxle:
SHIFT LEVER KNOB SUB-ASSEMBLY
UPPER CONSOLE PANEL
UPPER CONSOLE REAR PANEL SUB-ASSEMBLY
P
B137283E01

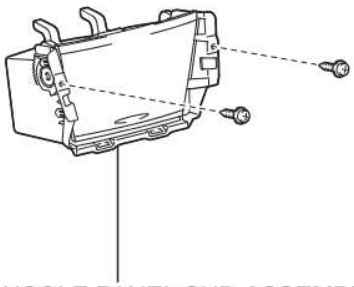
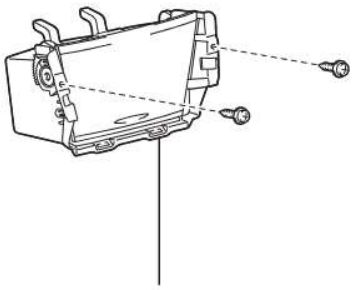
NS



INSTRUMENT PANEL NO. 2 REGISTER ASSEMBLY



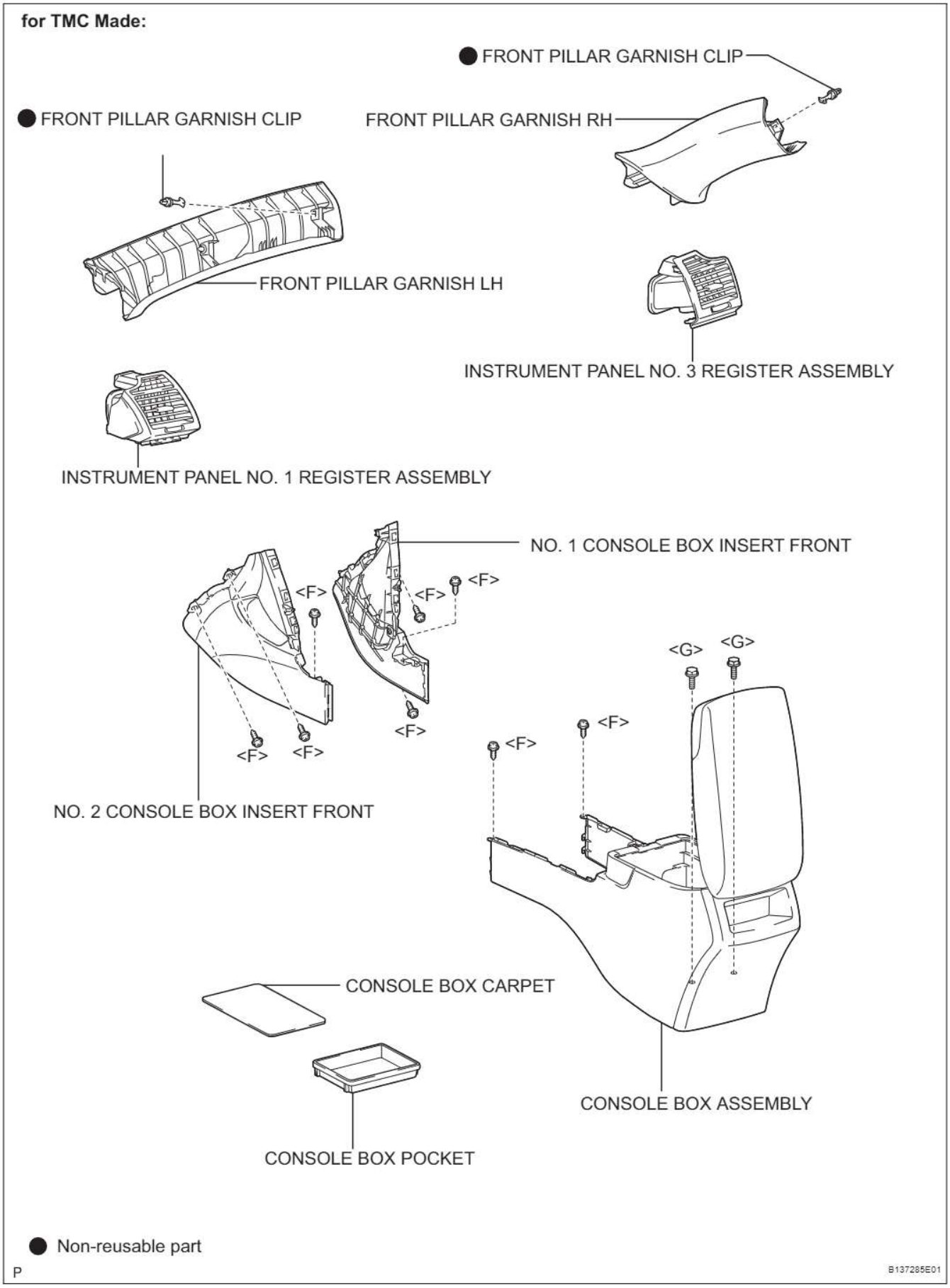
NAVIGATION RECEIVER WITH HEATER CONTROL PANEL ASSEMBLY

for TMC Made:	for TMMK Made:
 UPPER CONSOLE PANEL SUB-ASSEMBLY	 UPPER CONSOLE PANEL SUB-ASSEMBLY

P

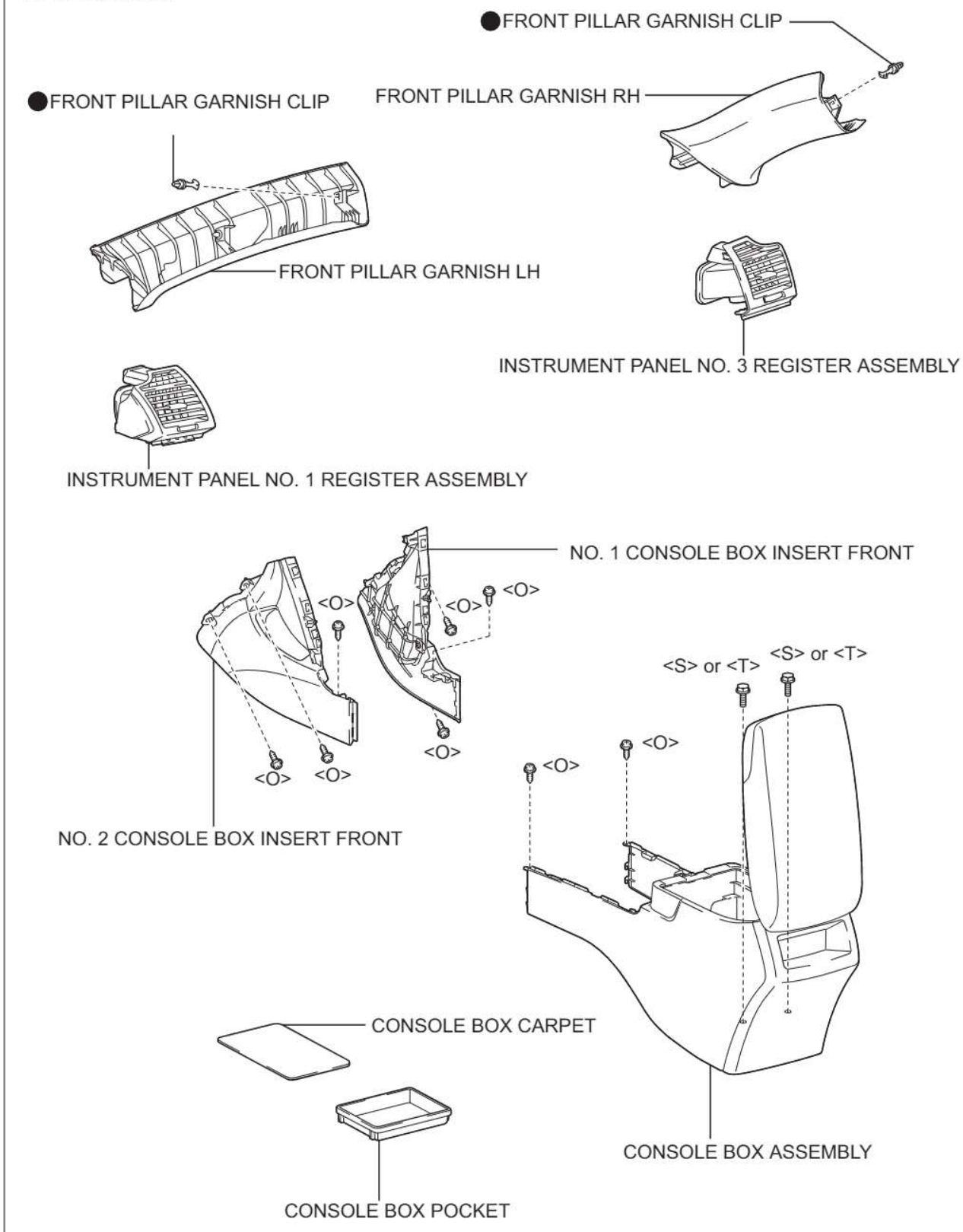
E133838E01

NS


for TMC Made:
● FRONT PILLAR GARNISH CLIP
● FRONT PILLAR GARNISH CLIP
FRONT PILLAR GARNISH RH
FRONT PILLAR GARNISH LH
INSTRUMENT PANEL NO. 3 REGISTER ASSEMBLY
INSTRUMENT PANEL NO. 1 REGISTER ASSEMBLY
NO. 1 CONSOLE BOX INSERT FRONT
<F>
<G>
NO. 2 CONSOLE BOX INSERT FRONT
CONSOLE BOX CARPET
CONSOLE BOX ASSEMBLY
CONSOLE BOX POCKET
● Non-reusable part
P
B137285E01

NS

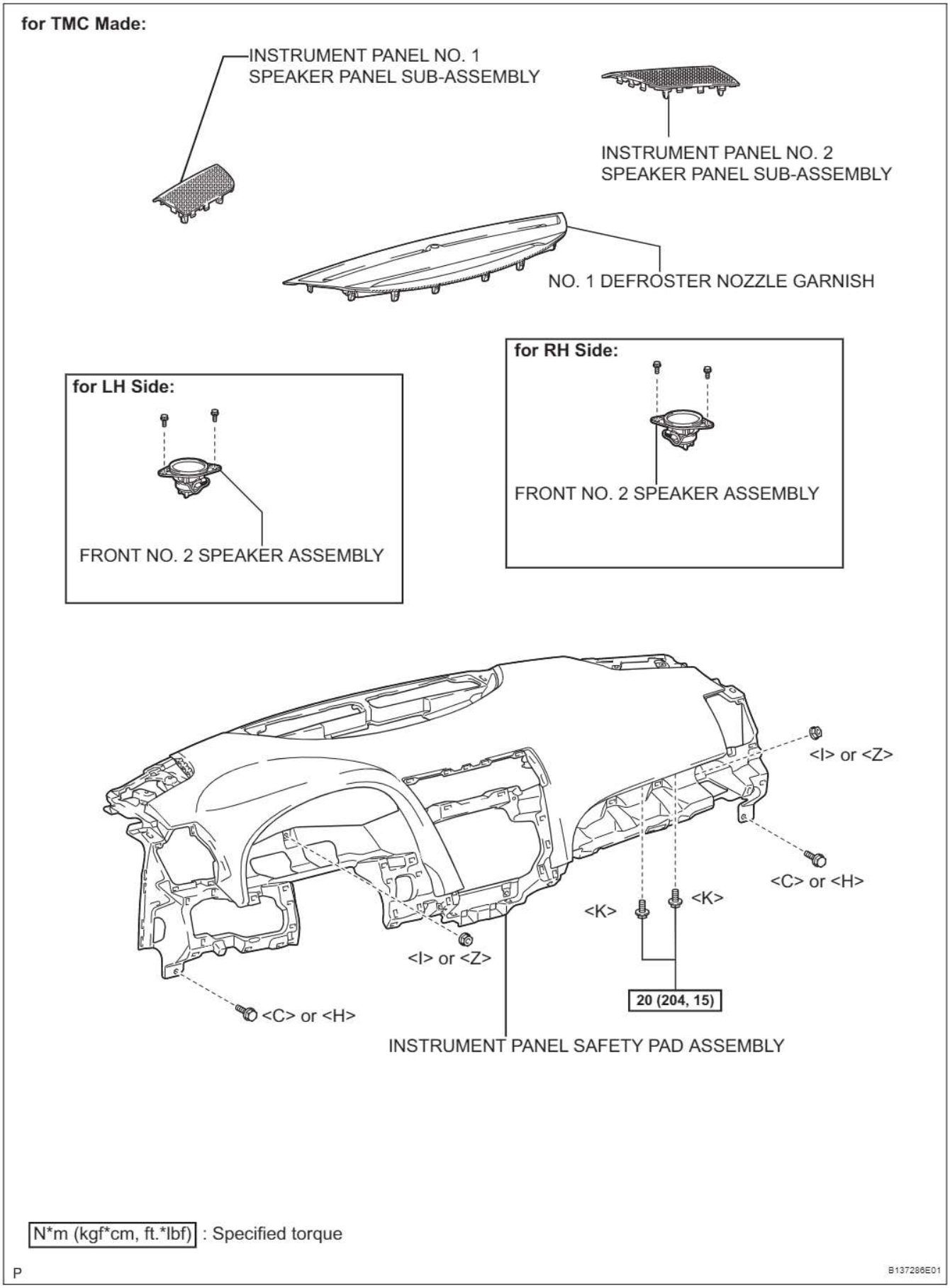
for TMMK Made:

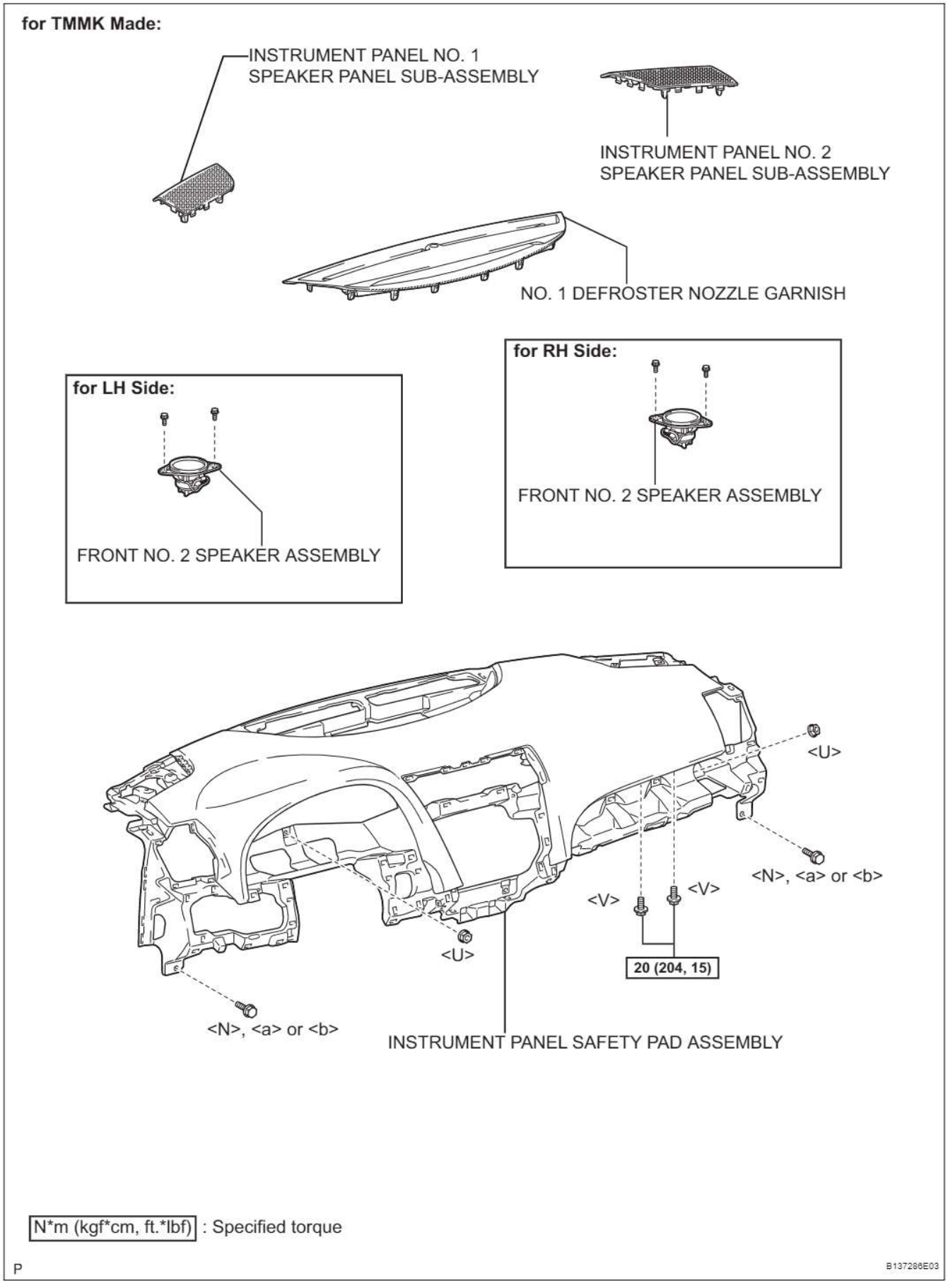


● Non-reusable part

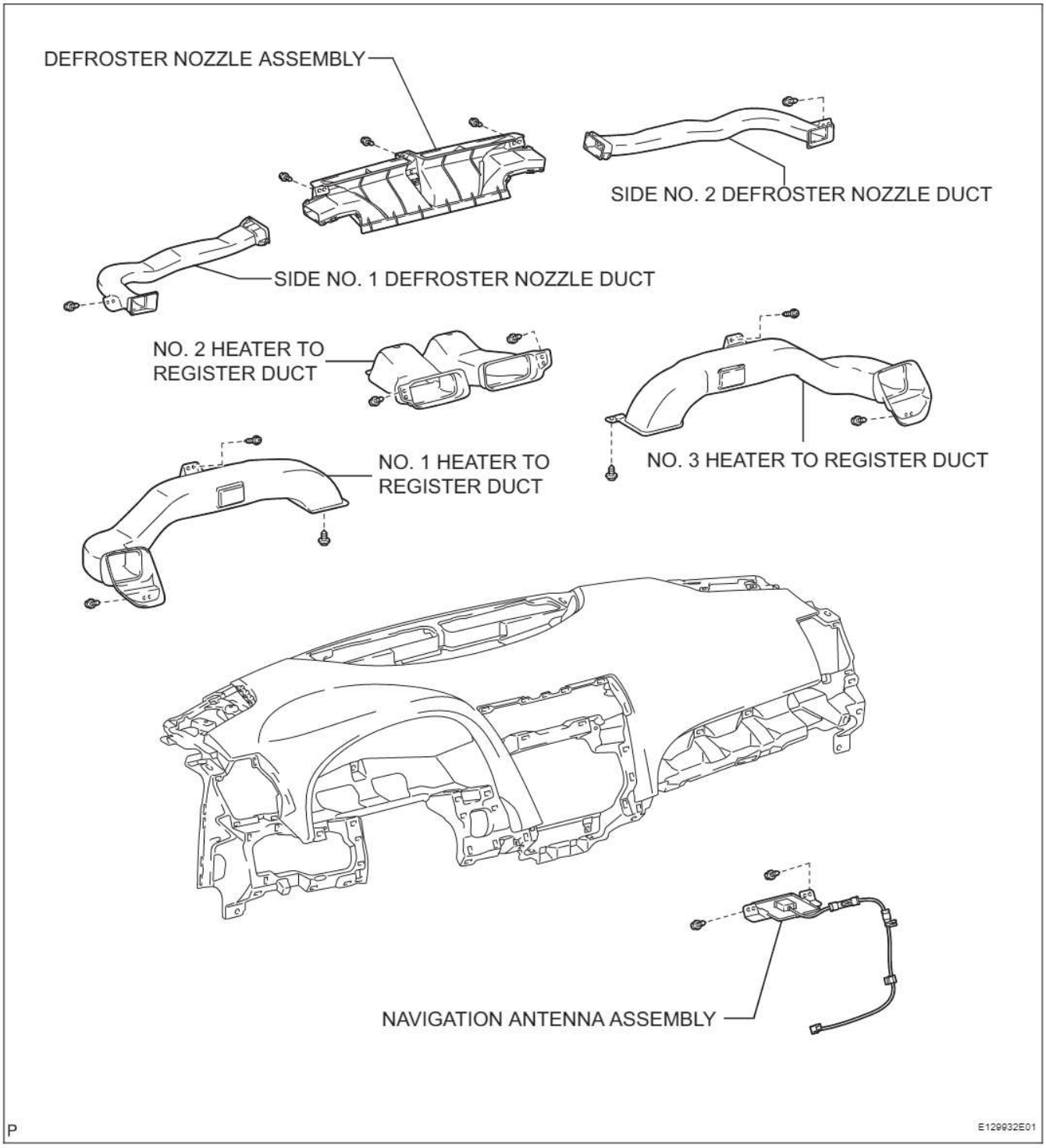
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NS


for TMC Made:
INSTRUMENT PANEL NO. 1 SPEAKER PANEL SUB-ASSEMBLY
INSTRUMENT PANEL NO. 2 SPEAKER PANEL SUB-ASSEMBLY
NO. 1 DEFROSTER NOZZLE GARNISH
for LH Side:
FRONT NO. 2 SPEAKER ASSEMBLY
for RH Side:
FRONT NO. 2 SPEAKER ASSEMBLY
<I> or <Z>
<C> or <H>
<K>
<K>
<I> or <Z>
<C> or <H>
20 (204, 15)
INSTRUMENT PANEL SAFETY PAD ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
P
B137286E01


for TMMK Made:
INSTRUMENT PANEL NO. 1 SPEAKER PANEL SUB-ASSEMBLY
INSTRUMENT PANEL NO. 2 SPEAKER PANEL SUB-ASSEMBLY
NO. 1 DEFROSTER NOZZLE GARNISH
for LH Side:
FRONT NO. 2 SPEAKER ASSEMBLY
for RH Side:
FRONT NO. 2 SPEAKER ASSEMBLY
<U>
<N>, <a> or <b>
<V>
<V>
<U>
20 (204, 15)
<N>, <a> or <b>
INSTRUMENT PANEL SAFETY PAD ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
P
B137286E03

NS


DEFROSTER NOZZLE ASSEMBLY
SIDE NO. 2 DEFROSTER NOZZLE DUCT
SIDE NO. 1 DEFROSTER NOZZLE DUCT
NO. 2 HEATER TO REGISTER DUCT
NO. 3 HEATER TO REGISTER DUCT
NO. 1 HEATER TO REGISTER DUCT
NAVIGATION ANTENNA ASSEMBLY
P
E129932E01

NS

REMOVAL

1. PRECAUTION
(See page IP-1)
2. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD
3. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL
CAUTION:
Wait for 90 seconds after disconnecting the cable to prevent airbag deployment (See page RS-1).
4. REMOVE LOWER NO. 3 STEERING WHEEL COVER (See page RS-349)
5. REMOVE LOWER NO. 2 STEERING WHEEL COVER (See page RS-349)
6. REMOVE STEERING PAD (See page RS-350)
7. REMOVE STEERING WHEEL ASSEMBLY (See page SR-38)
8. REMOVE FRONT DOOR SCUFF PLATE LH (See page IR-24)
9. REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page IR-25)
10. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMC Made) (See page IP-20)
11. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMMK Made) (See page IP-21)
12. REMOVE STEERING COLUMN COVER (for TMC Made) (See page IP-21)
13. REMOVE STEERING COLUMN COVER (for TMMK Made) (See page IP-21)
14. REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY (See page SR-39)
15. REMOVE NO. 1 INSTRUMENT PANEL SUB-ASSEMBLY (See page IP-22)
16. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL (w/o Smart Key System) (See page IP-22)
17. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL (w/ Smart Key System) (See page IP-22)
18. REMOVE INSTRUMENT CLUSTER FINISH PANEL (See page IP-22)
19. REMOVE COMBINATION METER ASSEMBLY (for TMC Made) (See page IP-23)
20. REMOVE COMBINATION METER ASSEMBLY (for TMMK Made) (See page IP-23)
21. REMOVE FRONT DOOR SCUFF PLATE RH (See page IR-26)

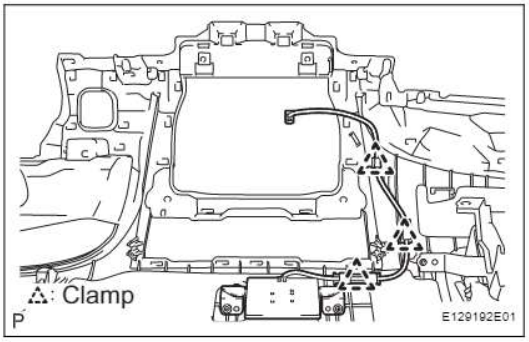
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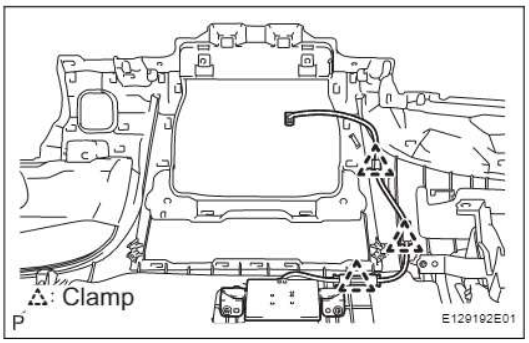
22. REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH
23. REMOVE INSTRUMENT PANEL NO. 2 UNDER COVER SUB-ASSEMBLY (See page IP-23)
24. REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY (for TMC Made) (See page IP-23)
25. REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY (for TMMK Made) (See page IP-24)
26. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-24)
27. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (for Manual Transaxle) (See page IP-24)
28. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-24)
29. REMOVE NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-25)
30. REMOVE FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-25)
31. REMOVE UPPER CONSOLE PANEL (for Manual Transaxle) (See page IP-25)
32. REMOVE UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-26)
33. REMOVE UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Manual Transaxle) (See page IP-26)
34. REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY (for TMC Made) (See page IP-27)
35. REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY (for TMMK Made) (See page IP-27)
36. REMOVE INSTRUMENT PANEL NO. 2 REGISTER ASSEMBLY (See page IP-27)
37. REMOVE NAVIGATION RECEIVER WITH HEATER CONTROL PANEL ASSEMBLY (See page NS-195)
38. REMOVE CONSOLE BOX POCKET (See page IP-28)
39. REMOVE CONSOLE BOX CARPET (See page IP-28)
40. REMOVE CONSOLE BOX ASSEMBLY (for TMC Made) (See page IP-28)
41. REMOVE CONSOLE BOX ASSEMBLY (for TMMK Made) (See page IP-29)
42. REMOVE NO. 2 CONSOLE BOX INSERT FRONT (for TMC Made) (See page IP-29)
43. REMOVE NO. 2 CONSOLE BOX INSERT FRONT (for TMMK Made) (See page IP-30)

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44. REMOVE NO. 1 CONSOLE BOX INSERT FRONT (for TMC Made) (See page IP-30)
45. REMOVE NO. 1 CONSOLE BOX INSERT FRONT (for TMMK Made) (See page IP-30)
46. REMOVE FRONT PILLAR GARNISH LH (See page IR-27)
47. REMOVE INSTRUMENT PANEL NO. 1 REGISTER ASSEMBLY (See page IP-31)
48. REMOVE INSTRUMENT PANEL NO. 1 SPEAKER PANEL SUB-ASSEMBLY (See page IP-31)
49. REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side) (See page AV-156)
50. REMOVE FRONT PILLAR GARNISH RH (See page IR-27)
51. REMOVE INSTRUMENT PANEL NO. 3 REGISTER ASSEMBLY (See page IP-31)
52. REMOVE INSTRUMENT PANEL NO. 2 SPEAKER PANEL SUB-ASSEMBLY (See page IP-32)
53. REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)
    HINT:
    Use the same procedures for the RH side and the LH side (See page AV-156).
54. REMOVE NO. 1 DEFROSTER NOZZLE GARNISH (See page IP-32)
55. REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for TMC Made) (See page IP-32)
56. REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for TMMK Made) (See page IP-34)
57. REMOVE SIDE NO. 1 DEFROSTER NOZZLE DUCT (for TMC Made) (See page IP-37)
58. REMOVE SIDE NO. 1 DEFROSTER NOZZLE DUCT (for TMMK Made) (See page IP-37)
59. REMOVE SIDE NO. 2 DEFROSTER NOZZLE DUCT (for TMC Made) (See page IP-38)
60. REMOVE SIDE NO. 2 DEFROSTER NOZZLE DUCT (for TMMK Made) (See page IP-38)
61. REMOVE DEFROSTER NOZZLE ASSEMBLY (for TMC Made) (See page IP-38)
62. REMOVE DEFROSTER NOZZLE ASSEMBLY (for TMMK Made) (See page IP-38)
63. REMOVE NO. 1 HEATER TO REGISTER DUCT (for TMC Made) (See page IP-38)
64. REMOVE NO. 1 HEATER TO REGISTER DUCT (for TMMK Made) (See page IP-39)

65. REMOVE NO. 3 HEATER TO REGISTER DUCT (for TMC Made) (See page IP-39)
66. REMOVE NO. 3 HEATER TO REGISTER DUCT (for TMMK Made) (See page IP-39)
67. REMOVE NO. 2 HEATER TO REGISTER DUCT (for TMC Made) (See page IP-39)
68. REMOVE NO. 2 HEATER TO REGISTER DUCT (for TMMK Made) (See page IP-39)
69. REMOVE NAVIGATION ANTENNA ASSEMBLY
    (a) Disengage the 3 clamps.
    (b) Remove the 2 screws and navigation antenna assembly.





INSTALLATION

1. INSTALL NAVIGATION ANTENNA ASSEMBLY
    (a) Install the navigation antenna assembly with the 2 screws.
    (b) Engage the 3 clamps.
2. INSTALL NO. 2 HEATER TO REGISTER DUCT (for TMC Made) (See page IP-41)
3. INSTALL NO. 2 HEATER TO REGISTER DUCT (for TMMK Made) (See page IP-41)
4. INSTALL NO. 3 HEATER TO REGISTER DUCT (for TMC Made) (See page IP-41)
5. INSTALL NO. 3 HEATER TO REGISTER DUCT (for TMMK Made) (See page IP-41)
6. INSTALL NO. 1 HEATER TO REGISTER DUCT (for TMC Made) (See page IP-42)
7. INSTALL NO. 1 HEATER TO REGISTER DUCT (for TMMK Made) (See page IP-42)
8. INSTALL DEFROSTER NOZZLE ASSEMBLY (for TMC Made) (See page IP-42)
9. INSTALL DEFROSTER NOZZLE ASSEMBLY (for TMMK Made) (See page IP-42)
10. INSTALL SIDE NO. 2 DEFROSTER NOZZLE DUCT (for TMC Made) (See page IP-42)
11. INSTALL SIDE NO. 2 DEFROSTER NOZZLE DUCT (for TMMK Made) (See page IP-43)
12. INSTALL SIDE NO. 1 DEFROSTER NOZZLE DUCT (for TMC Made) (See page IP-43)

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13. INSTALL SIDE NO. 1 DEFROSTER NOZZLE DUCT (for TMMK Made) (See page IP-43)
14. INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for TMC Made) (See page IP-44)
15. INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for TMMK Made) (See page IP-45)
16. INSTALL NO. 1 DEFROSTER NOZZLE GARNISH (See page IP-48)
17. INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side) (See page AV-156)
18. INSTALL INSTRUMENT PANEL NO. 1 SPEAKER PANEL SUB-ASSEMBLY (See page IP-48)
19. INSTALL INSTRUMENT PANEL NO. 1 REGISTER ASSEMBLY (See page IP-48)
20. INSTALL FRONT PILLAR GARNISH LH (See page IR-51)
21. INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)
    HINT:
    Use the same procedures for the RH side and the LH side (See page AV-156).
22. INSTALL INSTRUMENT PANEL NO. 2 SPEAKER PANEL SUB-ASSEMBLY (See page IP-49)
23. INSTALL INSTRUMENT PANEL NO. 3 REGISTER ASSEMBLY (See page IP-49)
24. INSTALL FRONT PILLAR GARNISH RH (See page IR-52)
25. INSTALL NO. 1 CONSOLE BOX INSERT FRONT (for TMC Made) (See page IP-49)
26. INSTALL NO. 1 CONSOLE BOX INSERT FRONT (for TMMK Made) (See page IP-50)
27. INSTALL NO. 2 CONSOLE BOX INSERT FRONT (for TMC Made) (See page IP-50)
28. INSTALL NO. 2 CONSOLE BOX INSERT FRONT (for TMMK Made) (See page IP-50)
29. INSTALL CONSOLE BOX ASSEMBLY (for TMC Made) (See page IP-51)
30. INSTALL CONSOLE BOX ASSEMBLY (for TMMK Made) (See page IP-51)
31. INSTALL CONSOLE BOX CARPET (See page IP-51)
32. INSTALL CONSOLE BOX POCKET (See page IP-51)
33. INSTALL NAVIGATION RECEIVER WITH HEATER CONTROL PANEL ASSEMBLY (See page NS-196)
34. INSTALL INSTRUMENT PANEL NO. 2 REGISTER ASSEMBLY (See page IP-52)

35. INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY (for TMC Made) (See page IP-52)
36. INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY (for TMMK Made) (See page IP-52)
37. INSTALL UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-53)
38. INSTALL UPPER CONSOLE REAR PANEL SUB-ASSEMBLY (for Manual Transaxle) (See page IP-53)
39. INSTALL FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-53)
40. INSTALL UPPER CONSOLE PANEL (for Manual Transaxle) (See page IP-54)
41. INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-54)
42. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH (See page IP-55)
43. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (for Automatic Transaxle) (See page IP-55)
44. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY (for Manual Transaxle) (See page IP-55)
45. INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY (for TMC Made) (See page IP-55)
46. INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY (for TMMK Made) (See page IP-56)
47. INSTALL INSTRUMENT PANEL NO. 2 UNDER COVER SUB-ASSEMBLY (See page IP-56)
48. INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH (See page IR-55)
49. INSTALL FRONT DOOR SCUFF PLATE RH (See page IR-55)
50. INSTALL COMBINATION METER ASSEMBLY (for TMC Made) (See page IP-56)
51. INSTALL COMBINATION METER ASSEMBLY (for TMMK Made) (See page IP-56)
52. INSTALL INSTRUMENT CLUSTER FINISH PANEL (See page IP-57)
53. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL (w/o Smart Key System) (See page IP-57)
54. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL (w/ Smart Key System) (See page IP-57)
55. INSTALL NO. 1 INSTRUMENT PANEL SUB-ASSEMBLY (See page IP-57)

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56. INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY
57. ADJUST SPIRAL CABLE SUB-ASSEMBLY (See page RS-367)
58. INSTALL STEERING COLUMN COVER (for TMC Made) (See page IP-58)
59. INSTALL STEERING COLUMN COVER (for TMMK Made) (See page IP-58)
60. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMC Made) (See page IP-58)
61. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL LH (for TMMK Made) (See page IP-59)
62. INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page IR-54)
63. INSTALL FRONT DOOR SCUFF PLATE LH (See page IR-54)
64. INSTALL STEERING WHEEL ASSEMBLY (See page SR-51)
65. INSTALL STEERING PAD (See page RS-350)
66. INSTALL LOWER NO. 3 STEERING WHEEL COVER (See page RS-351)
67. INSTALL LOWER NO. 2 STEERING WHEEL COVER (See page RS-352)
68. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL
69. INSPECT STEERING PAD (See page RS-352)
70. INSPECT SRS WARNING LIGHT (See page RS-32)