

TROUBLESHOOTING

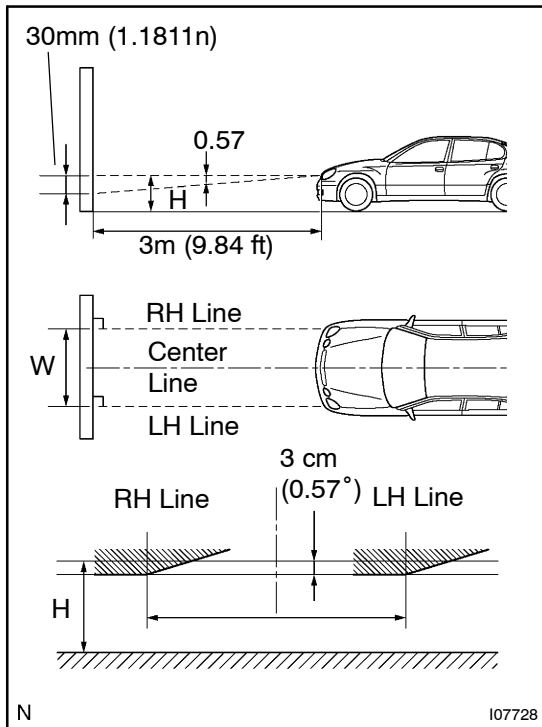
PROBLEM SYMPTOMS TABLE

BE11G-03

POWER MIRROR CONTROL SYSTEM:

Trouble	Parts name	See page
Mirror does not operate.	1. CIG Fuse (I/P J/B) 2. Mirror Swith 3. Mirror Motor 4. Wire Harness	- BE-3 *BE-192 -
Mirror operates abnormally.	1. Mirror Swith 2. Mirror Motor 3. Wire Harness	BE-3 *BE-192 -
Electrical retract system does not operate.	1. Retract Switch 2. Position Switch 3. Retract Motor 4. Wire Harness	BE-3 *BE-192 BE-3 -

*: See Pub. No. RM588E



HEADLIGHT AND TAILLIGHT SYSTEM ADJUSTMENT

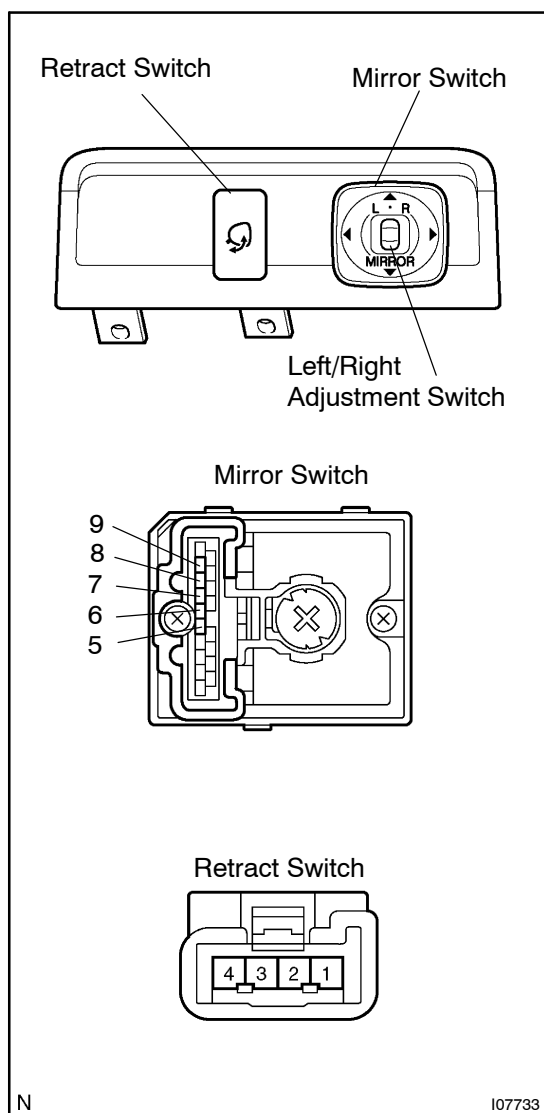
BE132-01

CHECK HEADLIGHT AIMING

- Prepare the thick white colored paper.
- Stand the paper perpendicularly and ensure the distance from it to the head lights is 9.84 ft.
- Ensure that the center line of vehicle and the paper are at a 90 degree angle as shown in the illustration.
- Engine running.
- Draw a horizontal line on the paper where the head lights of the vehicle are to be.
- Draw a vertical line on the paper where the center line of the vehicle is to be. (V line)
- Turn the head lights ON.
- Check that the head lights light up the paper as shown in the illustration.
- When the paper is not lighted up properly, adjust the lights in the vertical or horizontal direction.

HINT:

As shown in the illustration, adjust aiming of the LH and RH lights along each vertical line respectively.



POWER MIRROR CONTROL SYSTEM INSPECTION

BE133-01

1. W/ RETRACT SYSTEM: INSPECT MIRROR SWITCH CONTINUITY

Switch position	Tester connection	Resistance (Ω)
LEFT	8 - 9	100
RIGHT	8 - 9	0
Illumination	5 - 6	Continuity

Measure resistance between terminals 7 and 9.

Switch position	Resistance (Ω)
UP	Approx. 100
RIGHT	250
DOWN	470
LEFT	800

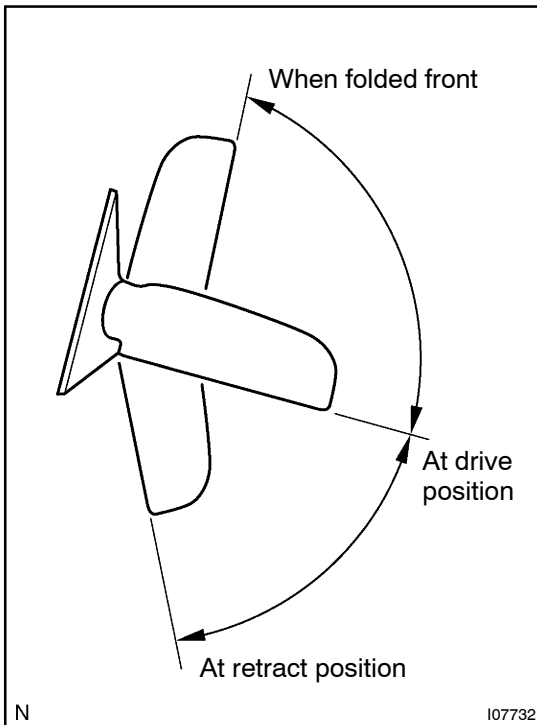
If continuity is not as specified, replace the switch.

2. W/ RETRACT SYSTEM: INSPECT RETRACT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	No continuity
ON	1 - 2	Continuity

If continuity is not as specified, replace the switch.

3. INSPECT MIRROR SWITCH CIRCUIT (See Pub. No. RM588E on page DI-673)



4. W/ RETRACT SYSTEM:

INSPECT ELECTRICAL RETRACT MOTOR CONTINUITY

- When folded front:
 - (1) Connect the positive (+) lead from ohmmeter to terminal 1 and negative (-) lead to terminal 2, check that there is no continuity in folding position.
 - (2) Reverse the polarity, check that there is no continuity in driving position.

If operation is not as specified, replace the mirror assembly.

- At drive position:
 - (1) Connect the positive (+) lead from ohmmeter to terminal 1 and negative (-) lead to terminal 2, check that continuity exists in folding position.
 - (2) Reverse the polarity, check that there is no continuity in driving position.

If operation is not as specified, replace the mirror assembly.

- Between drive position and retract position:
 - (1) Connect the positive (+) lead from ohmmeter to terminal 1 and negative (-) lead to terminal 2, check that continuity exists in driving position.
 - (2) Reverse the polarity, check that continuity exists in driving position.

If operation is not as specified, replace the mirror assembly.

- At retract position:
 - (1) Connect the positive (+) lead from ohmmeter to terminal 1 and negative (-) lead to terminal 2, check that continuity exists in folding position.
 - (2) Reverse the polarity, check that continuity exists in driving position.

If operation is not as specified, replace the mirror assembly.

5. W/ RETRACT SYSTEM:

INSPECT MIRROR MOTOR OPERATION

- (a) Connect the positive (+) lead from battery to terminal 1 and negative (-) lead to terminal 2.
- (b) Check that the motor turns (moves to folding position).

NOTICE:

These tests must be performed quickly (within 5 – 10 seconds) to prevent the coil from burning out.

- (c) Connect the positive (+) lead from battery to terminal 2 and negative (-) lead to terminal 1.
- (d) Check that the motor turns (moves to driving position).

NOTICE:

These tests must be performed quickly (within 5 – 10 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the mirror assembly.

AUDIO SYSTEM

DESCRIPTION

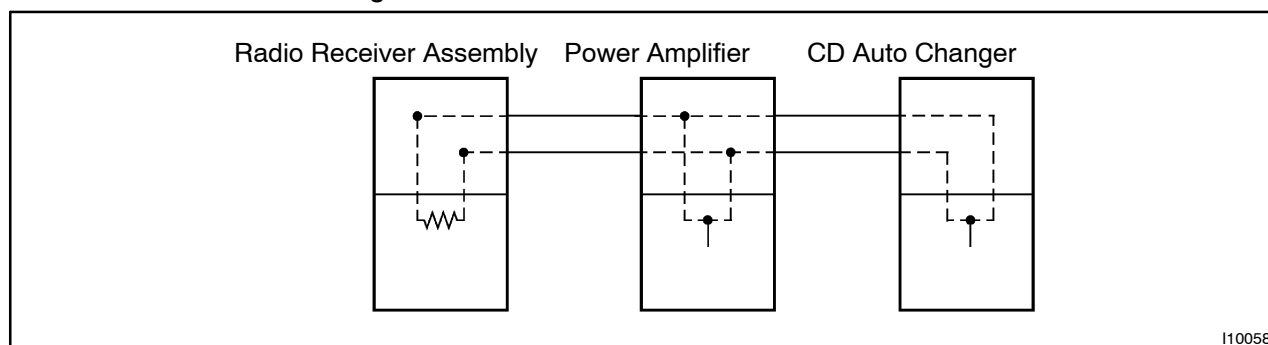
BE134-01

OUTLINE OF AVC-LAN

(a) What is AVC-LAN?

AVC-LAN is the abbreviation, which stands for Audio Visual Communication-Local Area Network. This is a unified standard co-developed by 6 audio manufactures associated with Toyota Motor Corporation.

The Unified standard covers signals, such as audio signal, visual signal, signal for switch indication and communication signal.



(b) Objectives

Recently the car audio system has been rapidly developed and functions have been changed drastically. The conventional system has been switched to the multi-media type such as a navigation system. At the same time the level of customers needs to audio system has been upgraded. This lies behind this standardization.

The concrete objectives are explained below.

- (1) When products by different manufactures were combined together, there used to be a case that malfunction occurred such as sound did not come out. This problem has been resolved by standardization of signals.
- (2) Various types of after market products have been able to add or replace freely.
- (3) Because of the above (2), each manufacture has become able to concentrate on developing products in their strongest field. This has enabled many types of products provided inexpensively.
- (4) Conventionally, a new product developed by a manufacture could not be used due to a lack of compatibility with other manufactures products. Because of this new standard, users can enjoy compatible products provided for them timely.

The above descriptions are the objectives to introduce AVC-LAN. By this standardization, development of new products will no longer cause systematic errors. Thus, this is very effective standard for a product in the future.

HINT:

- When +B short or GND short is detected in AVC-LAN circuit, communication stops. Accordingly the audio system does not function normally.
- When audio system is not equipped with a navigation system, audio head unit is the master unit. (When audio system is equipped with a navigation system, navigation ECU is the master unit.)
- The car audio system using AVC-LAN circuit has a diagnosis function.
- Each product has its own specified numbers called physical address. Numbers are also allotted to each function in one product, which are called logical address.

TROUBLESHOOTING

1. DIAGNOSIS FUNCTION (PIONEER made)

Error codes over tuner and connected equipment are displayed on the screen of tuner.

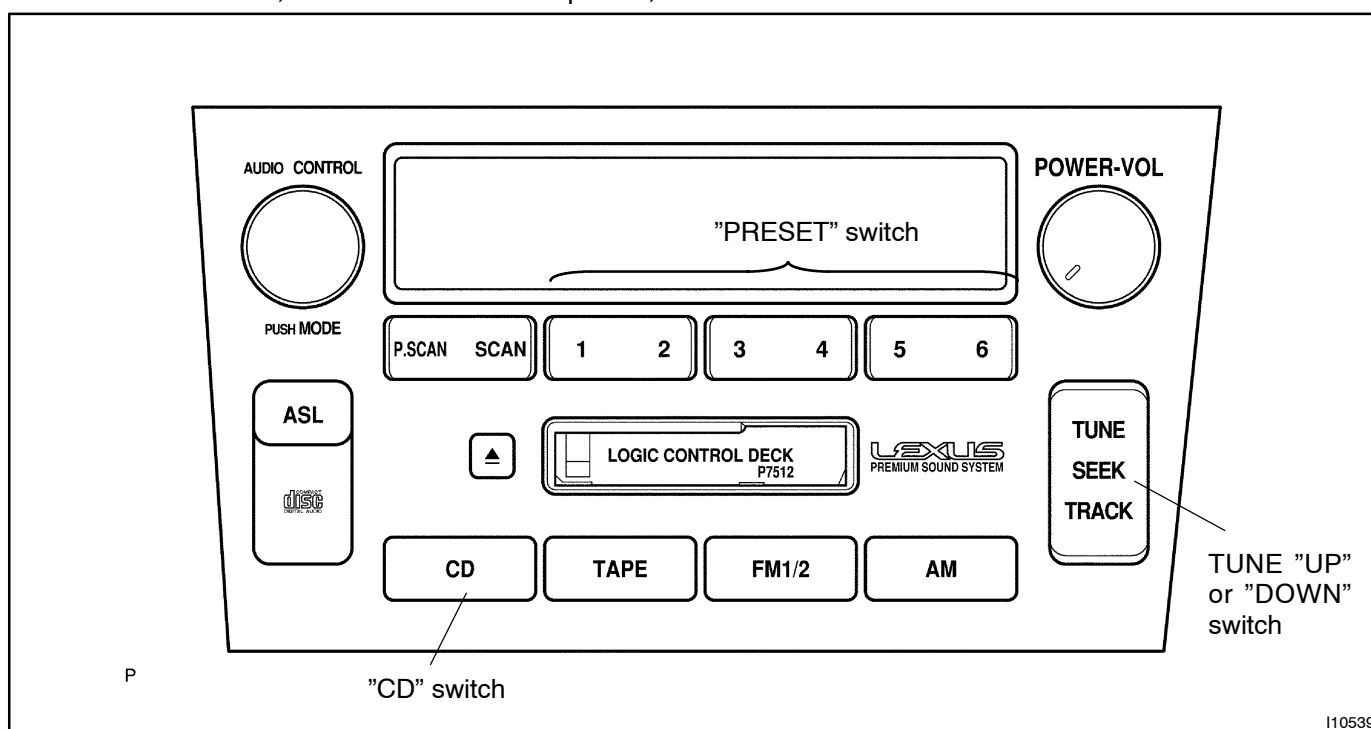
(a) Diagnosis start-up

For shifting to diagnosis mode, push "CD" switch 3 times with pressing "1" and "6" of PRESET switch at the same time while the audio power is OFF and ACC is ON.

To exit from diagnosis mode, press "CD" switch for 2 seconds or turn the ignition key OFF.
(When "1-190" is displayed, the mode is transferred to LAN check mode.)

(b) LAN check

When starting up the diagnosis mode, the mode turns to LAN check mode, the screen displays the code numbers (physical address) of tuner and connected equipment. Smaller codes are displayed in order, displayed code numbers are switched by operating TUNE "UP" or "DOWN" switch. In LAN check mode, by pressing "5" of PRESET switch for more than 2 secs., diagnosis memory of each equipment can be deleted, when deletion is completed, the mode returns to LAN check mode.



Code No. (physical address) List

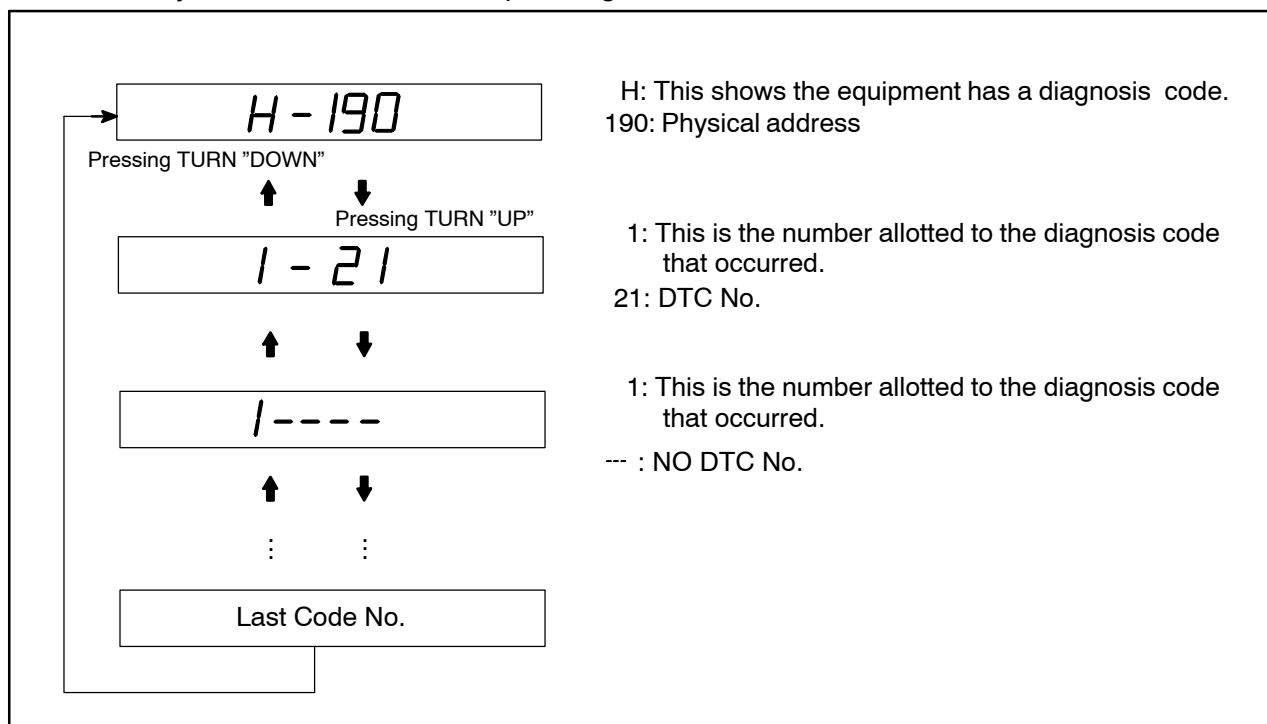
Code No. (physical address)	Equipment name
190	Radio receiver assembly (Audio head unit)
240	CD changer (in Luggage room)
360	CD changer (in center console and glove compartment box)
440	Power amplifier

(c) System check

- When pressing "1" of PRESET switch in LAN check mode, the mode turns to the system check mode, the system performs self diagnosis of connected equipment and displays the results. ("SYS" (showing the system is under detection) is displayed.)
- Perform the operation shown in the following illustration, then read the result of the inspection.

HINT:

- It sometimes takes approx. 40 secs. till the system inspection is completed.
- The chart below is an example of when diagnosis code "21" appears on the physical address (190) equipment. (ROM error occurs on the radio receiver.)
- The smaller code numbers (physical address) are displayed in order (code No., diagnosis code, support code of diagnosis code (object equipment)).
- When no error is detected in the system, "00" is displayed.
- When an error code is detected, up to 6 codes per one system are displayed. Pressing TUNE "UP" or "DOWN" switches the display.
- In the system check mode, when pressing "6" of PRESET switch the mode returns to LAN check mode.

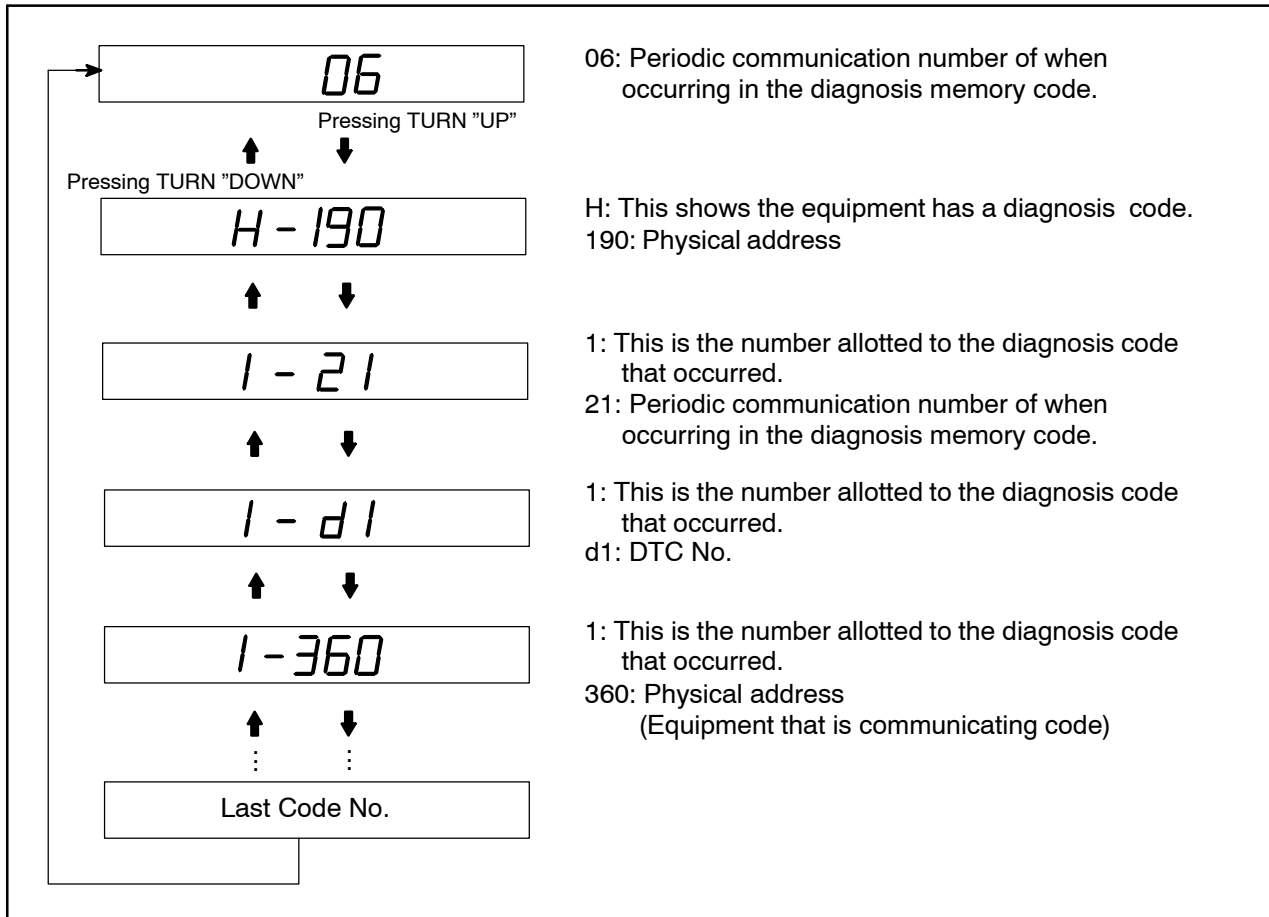


(d) Diagnosis memory

- (1) In LAN check mode, when pressing "2" of PRESET switch the mode turns to the diagnosis memory mode. ("CODE" is displayed.)
The results of self diagnosis performed over tuner and connected equipment are memorized and displayed.
- (2) Perform the operation shown in the following illustration, then read the result of the inspection.

HINT:

- The smaller code numbers (physical address) are displayed in order (code No. , periodic communication number when error occurs, diagnosis code, and support code of diagnosis code (object equipment)).
- When no error is detected in the system, "00" is displayed. When an error code is detected, up to 6 codes per one system are displayed. Pressing TUNE "UP" or "DOWN" switches the display. Each diagnosis code is same as code in the system check mode.
- When pressing "6" of PRESET switch, the mode returns to LAN check mode.
- The following illustration below is an example of when diagnosis code "D1" appears on the code (190) and (240 or 360) equipment. (Communication error occurs between the radio receiver and CD changer.)



(e) Diagnosis memory clear

- (1) After error is fixed, start up the diagnosis mode.
- (2) Continue pressing preset switch "5" for 2 secs. (CLr is displayed.)
- (3) Press the preset switch "2" and transfer to the diagnosis memory mode and check that the normal code (00) is output.

2. DIAGNOSIS CODE LIST

- If there is "O" in the column of system check, an error can be detected when the mode is switched to the system check mode.
- If there is "O" in the column of diagnosis mode, each unit is monitoring whether or not it has failure. In case of detecting failure, it memorizes DTC.

Parts Name	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts	System Check	Diagnosis memory
Head Unit (190)	42	FM tuner error	There is an error in FM tuner.	Radio receiver check.	X	○
	50	Cassette error	There is an error in cassette deck.		X	○
	51	Cassette eject error	Cassette can not be ejected from Head Unit.		X	○
	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.	Radio receiver check. Wire harness and connector check.	○	○
	D2	Periodic communication no response	Error in periodic communication.	• Wire harness and connector	X	○
	FF	Diagnosis no response	Result of diagnosis is not issued from start to finish.	Radio receiver check.	○	X
CD (240) (360)	60	CD error	Error codes other than 61-69 are detected.	CD changer check.	X	○
	61	EJECT error	CD is not ejected.	CD changer check. Magazine check.	X	○
	62	DISC inside out/flip	CD is inserted inside out or it has a flaw.	CD check.	X	○
	63	Pickup temperature detection	High temperature of CD changer is detected.	CD changer check.	X	○
	64	Excessive current detection	Excessive current to CD changer is detected.		X	○
	67	Tray insertion/ discharging error	An error occurs in insertion and discharging operation of CD changer tray.	CD changer check. Magazine check.	X	○
	68	Elevator error	An error occurs in elevator of CD changer elevator.	CD changer check.	X	○
	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.		○	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	• Radio receiver check. • Wire harness check.	X	○

Parts Name	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts	System Check	Diagnosis memory
AMP (440)	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.	Stereo component amplifier check.	○	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	• Radio receiver check. • Wire harness check.	X	○