

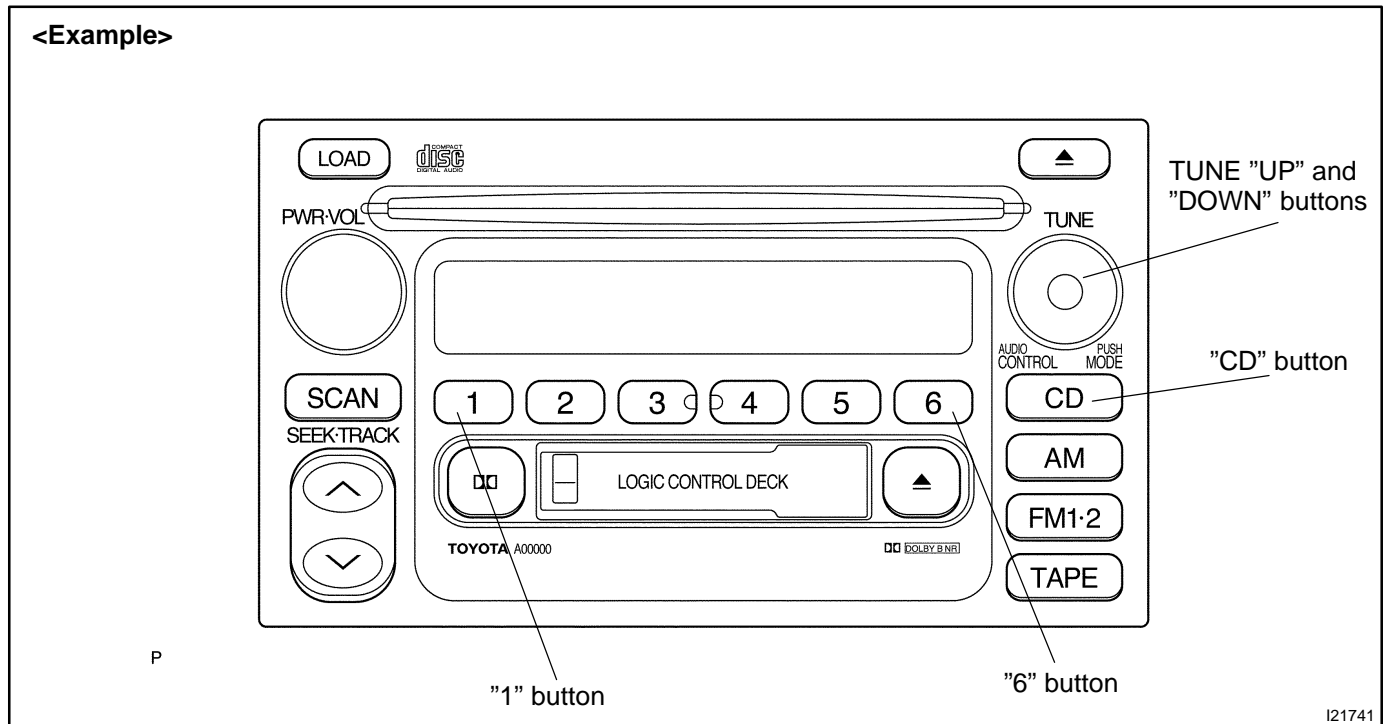
## TROUBLESHOOTING

### 1. DIAGNOSIS FUNCTION

#### (a) Diagnosis start-up

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

In diagnosis mode, by pressing "CD" button for 2 seconds or turning the ignition key OFF, the diagnosis mode is released.



#### (b) Service check mode

- (1) After the diagnosis start-up, the system enters service check mode when "TUNE UP" switch is pressed.
- (2) Error codes over tuner and connected equipment are displayed on the screen of tuner. Results for each check are displayed as follows:
  - good:  
No DTC is detected for both "System Check Confirmation" and "Diagnosis Memory Response".
  - nCon:  
The Component does not respond to the "Diagnosis On Instruction" command. Applicable to only the system where connected components are limited to be used.
  - ECHn:  
Application of new version has been confirmed by the "Diagnosis On Check", and there is one or more DTC which indicates "Replacement" in the "System Check Result Response" or "Diagnosis Memory Response".
  - CHEC:  
Application of new version has been confirmed by the "Diagnosis On Check", and there is no DTC which indicates "Replacement" in the "System Check Result Response" or "Diagnosis Memory Response", but one or more DTC which indicated "Check" is identified.
  - Old:  
Application of old version is confirmed by the "Diagnosis On Check", and DTC is identified in the "System Check Result Response" or "Diagnosis Memory Response".

- nrES:  
No response is identified to the "System Check Start Instruction" and "Request for System Check Result" commands.

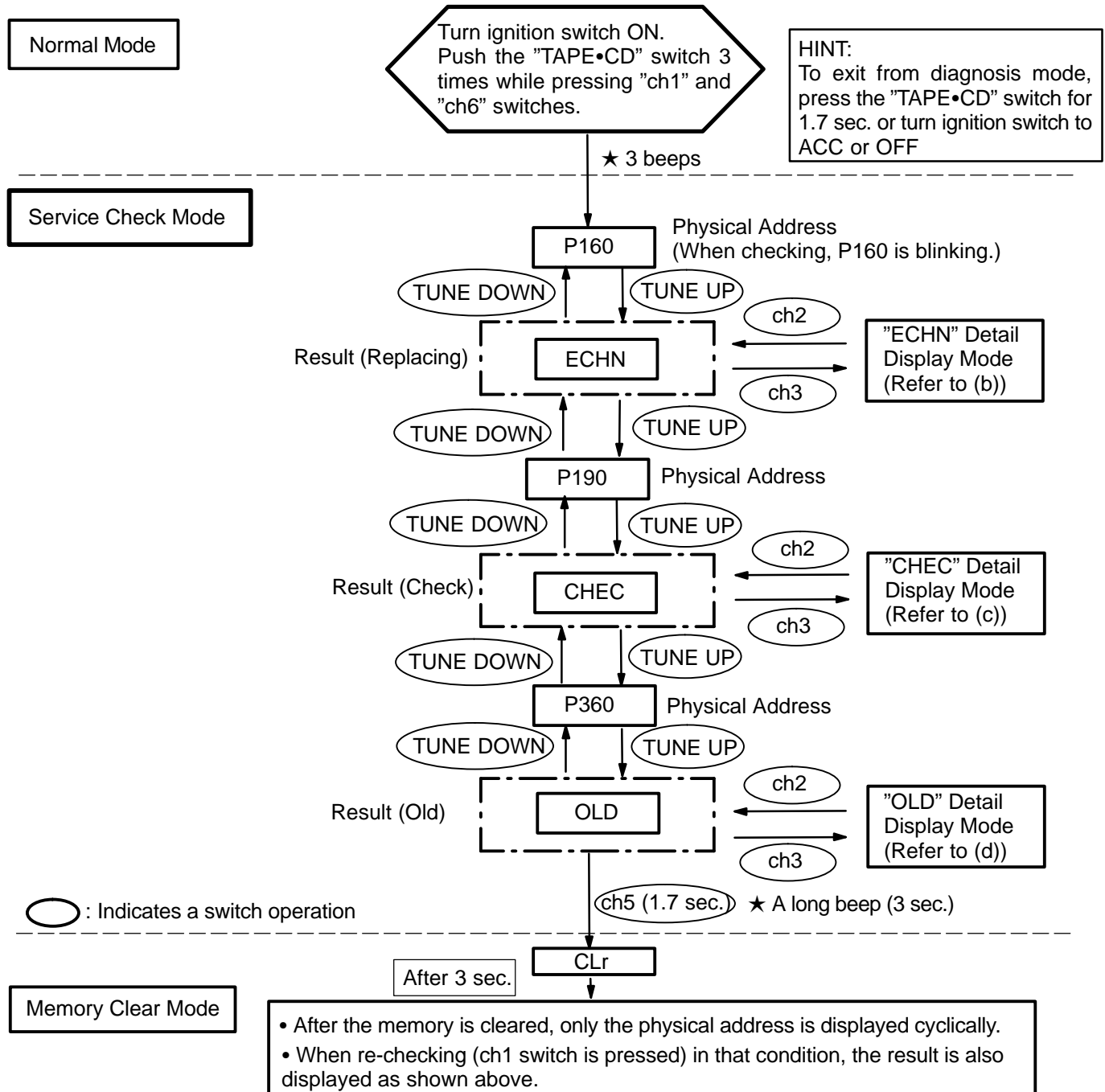
**HINT:**

- Check the present and past condition of components by performing the System Check and collecting stored DTC memories.
- Check results shall be displayed as one of six following indications: "good", "ECHn", "CHEC", "nCon", "Old" or "nrES".

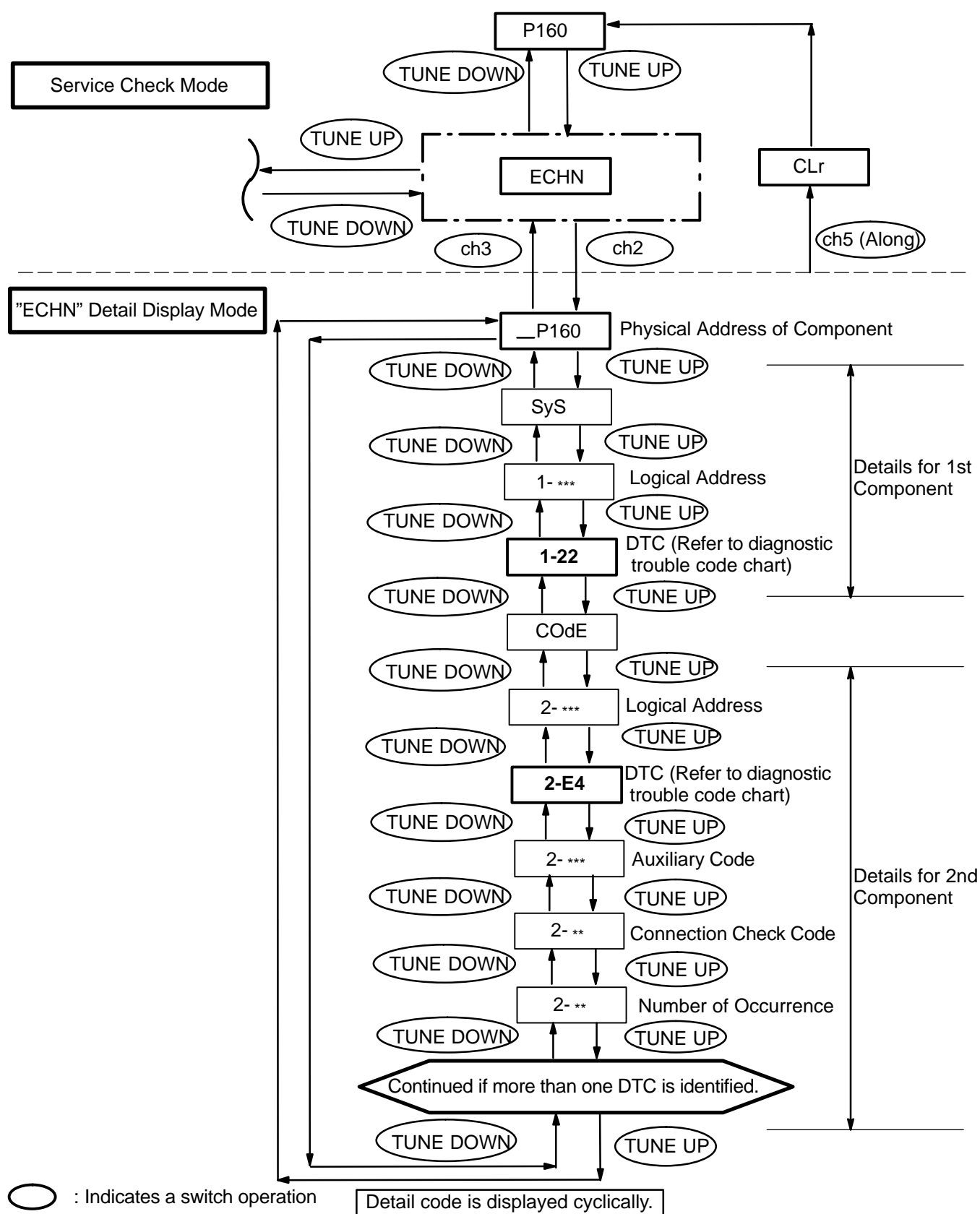
## (c) Display Screen for Service Check.

**Example:**

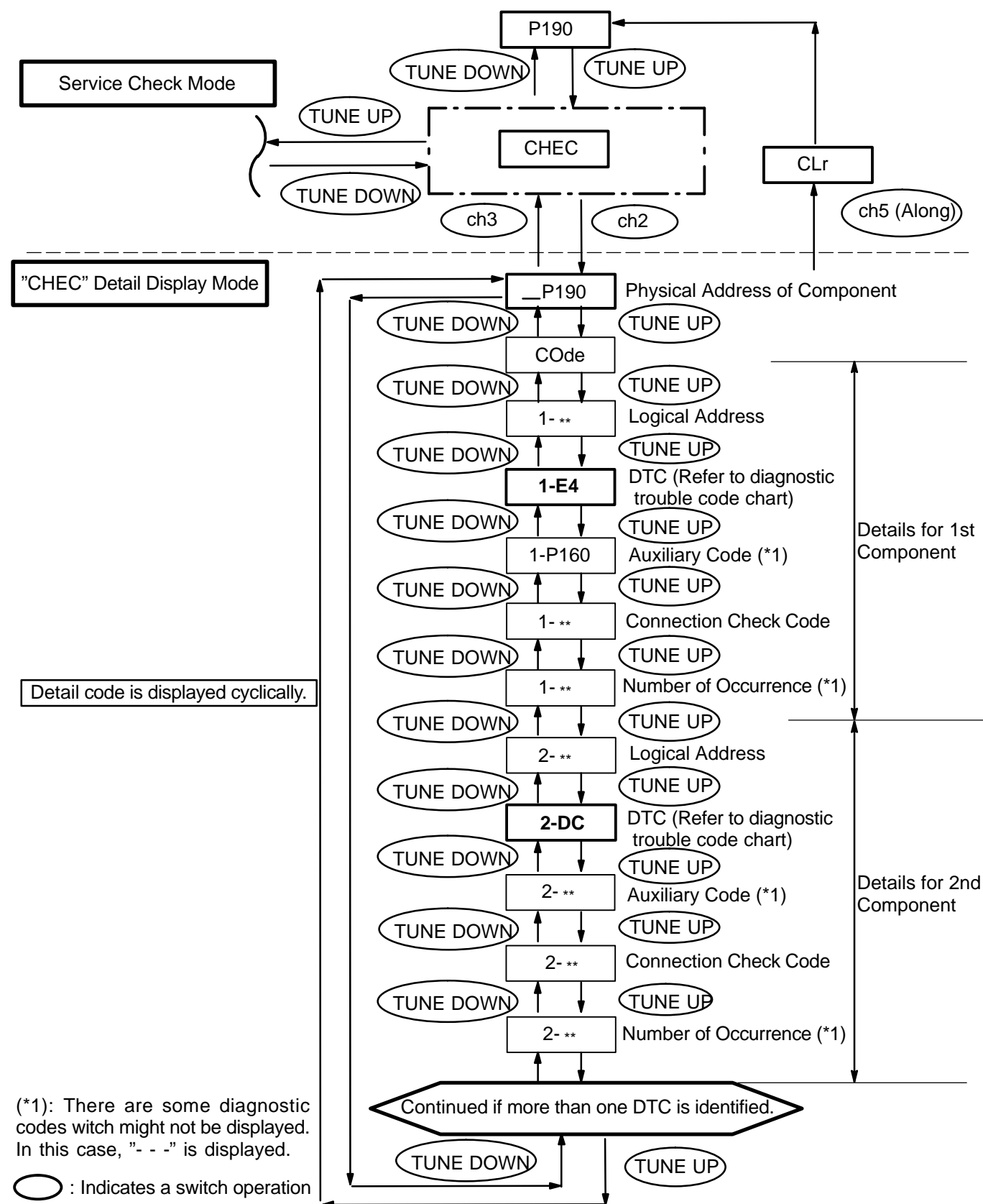
Connection parts (physical address): Multi Display (P160), Radio Receiver (P190), CD changer (P360)



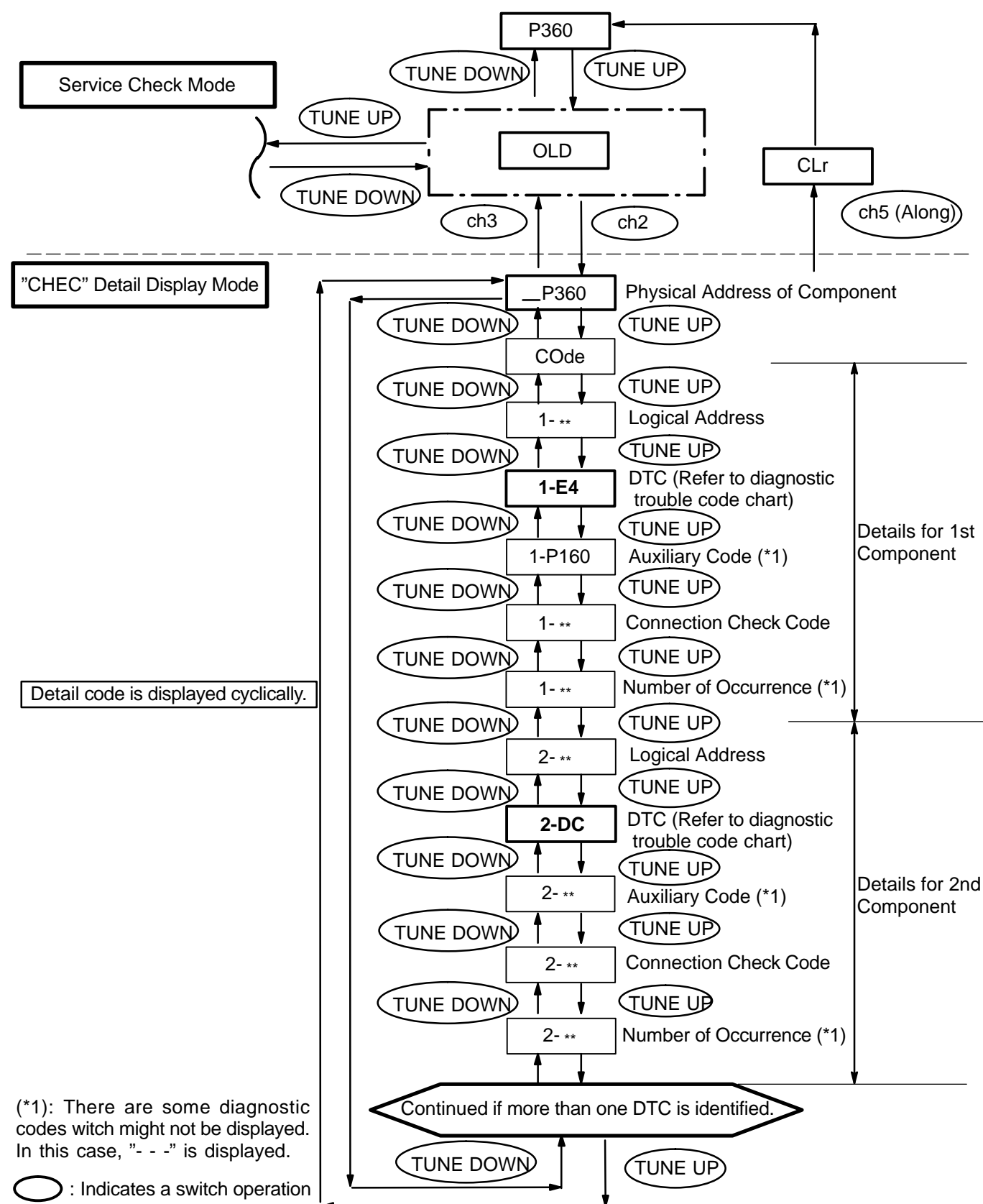
## (d) "ECHN" Detail Display Mode Screen



## (e) "CHEC" Detail Display Mode Screen



## (f) "OLD" Detail Display Mode Screen



## (g) Recheck

- (1) Pressing the [ch1] key in Service Check Mode executes recheck.
- (2) To display the recheck process, follow the sequence indicated Display Screen for Service Check.

## 2. DIAGNOSIS CODE LIST

Terms	Meaning
Physical address	Three-digit code (shown in hexadecimal) which is given to each component comprising the AVC-LAN. Corresponding to the function, individual symbols are specified.
Logical address	Two-digit code (shown in hexadecimal) which is given to each function comprising the inner system of the AVC-LAN.

(a) Physical address: 190 Radio receiver assembly

HINT:

- \*1: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.
- \*2: It is stored when 180 sec. has passed after the power supply connector is pulled out after engine start.
- \*3: It may be stored when the engine key is turned 1 min. again after engine start.
- \*4: It may be stored when the engine key is turned again after engine start.
- \*5: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

(1) Logical address: 01 (Communication control)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
D6 *1	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-display assembly was disconnected.	<ul style="list-style-type: none"> <li>• Check harness for power supply system of multi-display.</li> <li>• Check harness for communication system of multi-display.</li> <li>• Check harness for power supply system of radio and player.</li> <li>• Check harness for communication system of radio and player.</li> </ul>
D8 *2	No Response to Connection Check	Component shown by auxiliary code is or had been disconnected from system after engine is start. D9	<ul style="list-style-type: none"> <li>• Check harness for power supply system of component shown by auxiliary code.</li> <li>• Check harness for communication system of component shown by auxiliary code.</li> </ul>
D9 *1	Last Mode Error	Component operated (sounds and/or images were provided) before engine stop is or has been disconnected with ignition switch in ACC or ON.	<ul style="list-style-type: none"> <li>• Check harness for power supply system of component shown by auxiliary code.</li> <li>• Check harness for communication system of component shown by auxiliary code.</li> </ul>
DA	No Response to ON/OFF Instruction	No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation.	<ul style="list-style-type: none"> <li>• Check harness for power supply system of component shown by auxiliary code.</li> <li>• Check harness for communication system of component shown by auxiliary code.</li> <li>• If error occurs again, replace component shown by auxiliary code.</li> </ul>
DB *1	Mode Status Error	Dual alarm is detected.	<ul style="list-style-type: none"> <li>• Check harness for power supply of component shown by auxiliary code.</li> <li>• Check harness for communication system of component shown by auxiliary code.</li> </ul>
DC *3	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	If same auxiliary code is recorded in order component, check harness for power supply and communication system of all components shown by code.

## BODY ELECTRICAL - AUDIO SYSTEM

DD *4	Master Reset (Momentary Interruption)	After engine is started, multi-display assembly was disconnected from system.	<ul style="list-style-type: none"> <li>• Check harness for power supply system of multi-display.</li> <li>• Check harness for communication system of multi-display.</li> <li>• Check harness for power supply system of radio and player.</li> <li>• Check harness for communication system of radio and player.</li> <li>• If this error occurs frequently, replace multi-display assembly.</li> </ul>
DE *4	Slave Reset (Momentary Interruption)	After engine is started, slave component was disconnected from system.	<ul style="list-style-type: none"> <li>• Check harness for power supply of component shown by auxiliary code.</li> <li>• Check harness for communication system of component shown by auxiliary code.</li> </ul>
DF *5	Master Error	Due to defective condition of component with a display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component.	<ul style="list-style-type: none"> <li>• Check harness for power supply of multi-display assembly.</li> <li>• Check harness for communication system of multi-display assembly.</li> <li>• Check harness for communication system between multi-display assembly and sub-master component.</li> </ul>
E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from master cannot be received.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E1 *1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	<ul style="list-style-type: none"> <li>• Check harness for power supply of multi-display assembly.</li> <li>• Check harness for communication system of multi-display assembly.</li> </ul>
E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from multi-display assembly.	Replace multi-display assembly.
E3 *1	Registration Request Transmission	Registration Request command is output from slave component. Receiving Connection Check Instruction, Registration Request command is output from sub-master component.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E4 *1	Multiple Frame Abort	Multiple frame transmission is aborted.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

## (2) Logical address: 61 (Cassette switch)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
40	Mechanical of Media Error	Malfunction due to mechanical failure is identified. Or cassette tape is cut or entangled.	<ul style="list-style-type: none"> <li>• Inspect cassette tape.</li> <li>• Replace radio and player.</li> </ul>

## (3) Logical address: 62 (CD player)/63 (CD Auto chager)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
42	No Disc Readout	Disc cannot be read	Inspect CD.
44	CD Error	Error is detected in CD player.	Replace radio receiver assembly.
51	Eject Error	CD cannot be ejected.	Replace radio receiver assembly.
46	Scratched/Reversed Disc	Scratches or dirt is found on CD surface or CD is set upside down.	Inspect CD.



(b) Physical address: 440 Stereo component amplifier

HINT:

- \*1: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.
- \*2: It may be stored when the engine key is turned 1 min. again after engine start.
- \*3: It may be stored when the engine key is turned again after engine start.
- \*4: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

Logical address: 01 (Communication control)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
D6 *1	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-display assembly was disconnected.	<ul style="list-style-type: none"> <li>• Check harness for power supply of radio and player.</li> <li>• Check harness for communication system of radio and player.</li> <li>• Check harness for power supply of stereo component amplifier.</li> <li>• Check harness for communication system of stereo component amplifier.</li> </ul>
D7	Communication Check Error	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	<ul style="list-style-type: none"> <li>• Check harness for power supply of radio and player.</li> <li>• Check harness for communication system of radio and player.</li> <li>• Check harness for power supply of stereo component amplifier.</li> <li>• Check harness for communication system of stereo component amplifier.</li> </ul>
DC *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	If same auxiliary code is recorded in order component, check harness for power supply and communication system of all components shown by code.
DD *3	Master Reset (Momentary Interruption)	After engine is started, multi-display assembly was disconnected from system.	<ul style="list-style-type: none"> <li>• Check harness for power supply of radio and player.</li> <li>• Check harness for communication system of radio and player.</li> <li>• Check harness for power supply of stereo component amplifier.</li> <li>• Check harness for communication system of stereo component amplifier.</li> <li>• If this error occurs frequently, replace multi-display assembly.</li> </ul>
DF *4	Master Error	Due to defective condition of component with a display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component.	<ul style="list-style-type: none"> <li>• Check harness for power supply of multi-display assembly.</li> <li>• Check harness for communication system of multi-display assembly.</li> <li>• Check harness for communication system between multi-display assembly and sub-master component.</li> </ul>
E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from master cannot be received.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E1 *1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	<ul style="list-style-type: none"> <li>• Check harness for power supply of multi-display assembly.</li> <li>• Check harness for communication system of multi-display assembly.</li> </ul>

## BODY ELECTRICAL - AUDIO SYSTEM

E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from multi-display assembly.	Replace multi-display assembly.
E3 *1	Registration Request Transmission	<ul style="list-style-type: none"> <li>• Registration Request command is output from slave component.</li> <li>• Registration Connection Check Instruction, Registration Request command is output from sub-master component.</li> </ul>	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

(c) Physical address: 360 CD Auto Changer

HINT:

- \*1: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.
- \*2: It may be stored when the engine key is turned 1 min. again after engine start.
- \*3: It may be stored when the engine key is turned again after engine start.
- \*4: It may be stored when the engine key is turned again after engine start.
- \*5: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

Logical address: 01 (Communication control)

DTC	Diagnosis item	diagnosis content	Countermeasure and inspected parts
21	ROM Error	Abnormal condition of ROM is detected.	Replace CD auto changer.
22	RAM Error	Abnormal condition of ROM is detected.	Replace CD auto changer.
D6 *2	Absence of Master	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	<ul style="list-style-type: none"> <li>• Check harness for power supply system of multi-display.</li> <li>• Check harness for communication system of multi-display.</li> <li>• Check harness for power supply system of CD auto changer</li> <li>• Check harness for communication system CD auto changer</li> </ul>
D7 *5	Connection check Error	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	<ul style="list-style-type: none"> <li>• Check harness for power supply of multi-display.</li> <li>• Check harness for communication system of multi-display.</li> <li>• Check harness for power supply of CD auto changer.</li> <li>• Check harness for communication system of CD auto changer.</li> </ul>
DC *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	If same auxiliary code is recorded in order component, check harness for power supply and communication system of all components shown by code.

DD *3	Master Reset (Momentary Interruption)	After engine is started, multi-display assembly was disconnected from system.	<ul style="list-style-type: none"> <li>• Check harness for power supply system of multi-display.</li> <li>• Check harness for communication system multi-display.</li> <li>• Check harness for power supply system of CD auto changer.</li> <li>• Check harness for communication system CD auto changer.</li> <li>• If this error occurs frequently, replace multi-display assembly.</li> </ul>
DF *4	Master Error	<p>Due to defective condition of component with a display, master function is switched to audio equipment.</p> <p>Error occurs in communication between sub-master (audio) and master component.</p>	<ul style="list-style-type: none"> <li>• Check harness for power supply of multi-display assembly.</li> <li>• Check harness for communication system of multi-display assembly.</li> <li>• Check harness for communication system between multi-display assembly and sub-master component.</li> </ul>
E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from master cannot be received.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from multi-display assembly.	Replace multi-display assembly.
E3 *1	Registration Request Transmission	<ul style="list-style-type: none"> <li>• Registration Request command is output from slave component.</li> <li>• Receiving Connection Check Instruction, Registration Request command is output from sub-master component.</li> </ul>	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E4 *1	Multiple Frame Abort	Multiple frame transmission is aborted.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

### 3. PROBLEM SYMPTOMS TABLE

#### NOTICE:

When replacing the internal mechanism (computer part) of the audio system, be careful that no part of your body or clothing comes in contact with the terminals of the leads from the IC, etc. of the replacement part (spare part).

#### HINT:

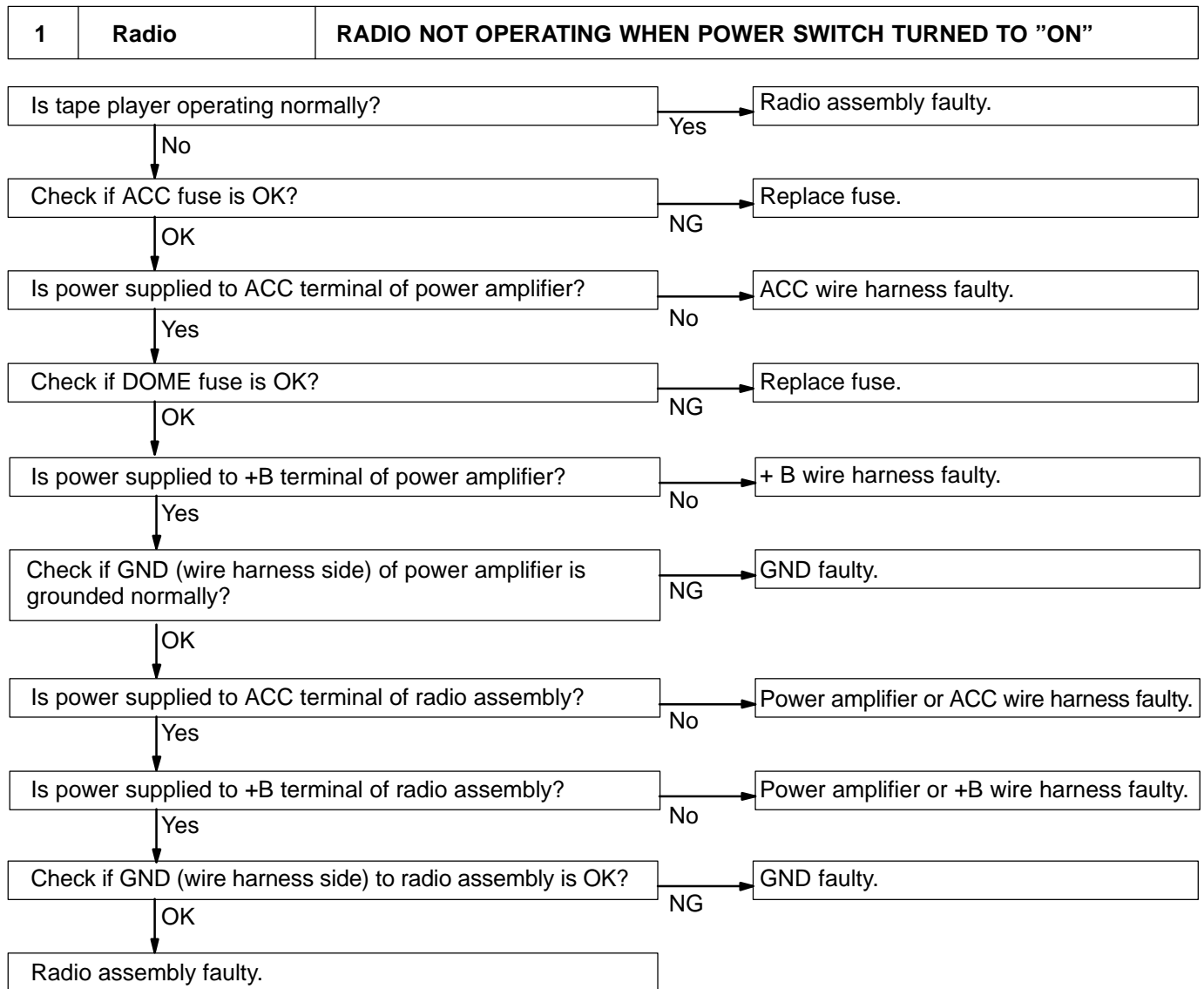
This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

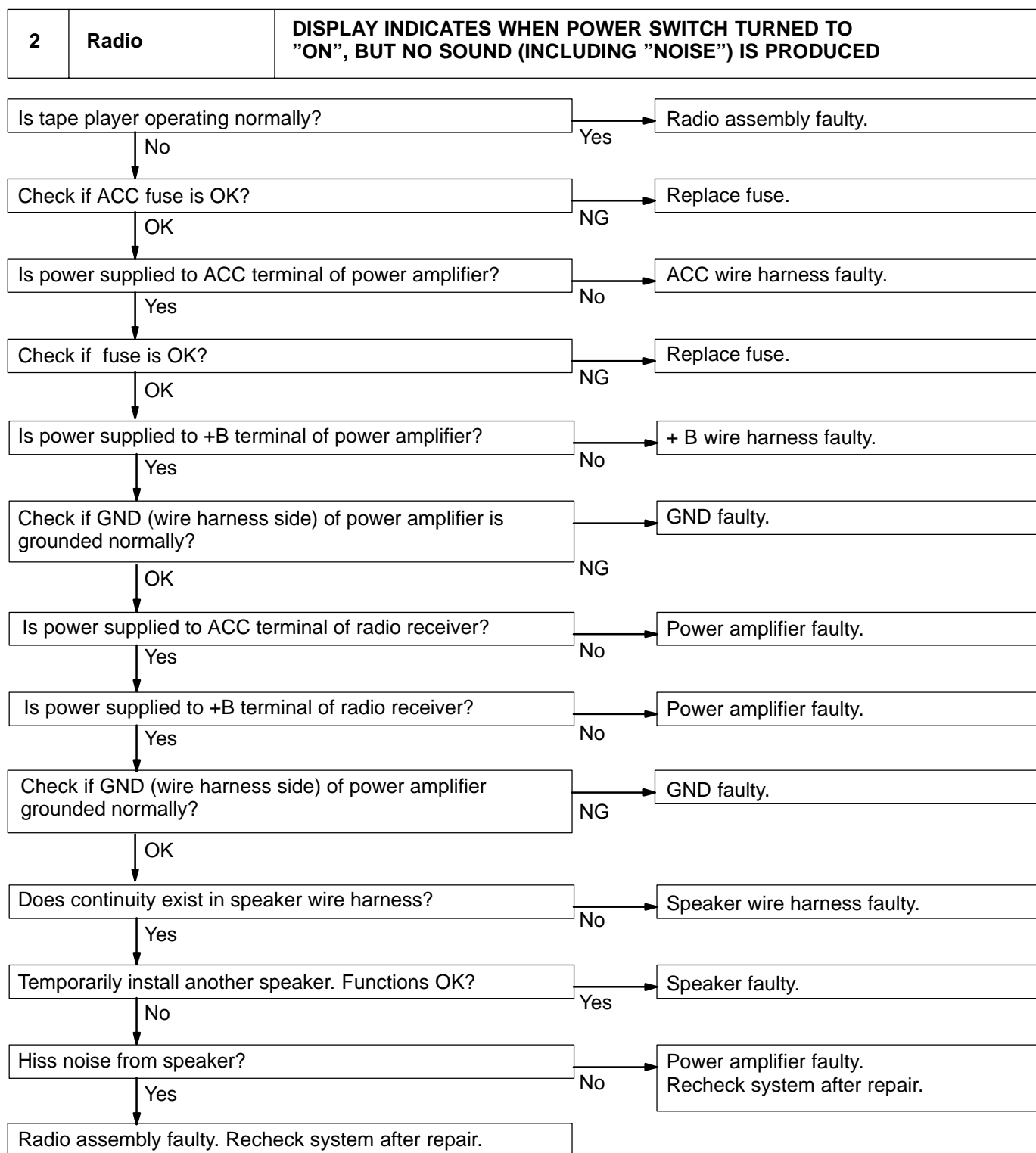
Always inspect the trouble taking the following items into consideration.

- Open or short circuit of the wire harness
- Connector or terminal connection fault

	Problem	No.
Radio	Radio not operating when power switch turned to 'ON'.	1
	Display indicates when power switch turned to 'ON', but no sound (including 'noise') is produced.	2
	Noise present, but AM - FM not operating.	3
	Any speaker does not work.	4
	Any AM or FM does not work.	5
	Few preset tuning bands.	5
	Reception poor.	6
	Sound quality poor.	7
Tape Player	Preset memory disappears.	8
	Cassette tape cannot be inserted.	9
	Cassette tape inserted, but no power.	10
	Power coming in, but tape player not operating.	11
	Any speaker does not work.	12
	Sound quality poor.	13
	Tape jammed, malfunction with tape speed or auto-reverse.	14
	Cassette tape will not be ejected.	15
CD Player	CD cannot be inserted.	16
	CD inserted, but no power.	17
	Power coming in, but CD player not operating.	18
	Sound jumps.	19
	Sound quality poor (Volume faint).	20
	Any speaker does not work.	21
	CD will not be ejected.	22
	CD will not be ejected.	22
Power Amplifier	No power coming in.	23
	Power coming in, but power amplifier not operating.	24
	Any speaker does not work.	25
Noise	Noise occurs	26
	Noise produced by vibration or shock while driving.	27
	Noise produced when engine starts.	28

The term "AM" includes LW, MW and SW, and the term "FW" includes UKW.





<b>3</b>	<b>Radio</b>	<b>NOISE PRESENT, BUT AM-FM NOT OPERATING</b>
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Go to No.25

If radio side faulty.

Radio faulty.

<b>4</b>	<b>Radio</b>	<b>ANY SPEAKER DOSE NOT WORK</b>
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Is tape player operating normally?

Yes

Radio assembly faulty.

No

Is hiss noise produced by non-functioning speaker?

Yes

Radio assembly faulty.  
Recheck system after repair.

No

Does continuity exist in speaker wire harness?

No

Speaker wire harness faulty.

Yes

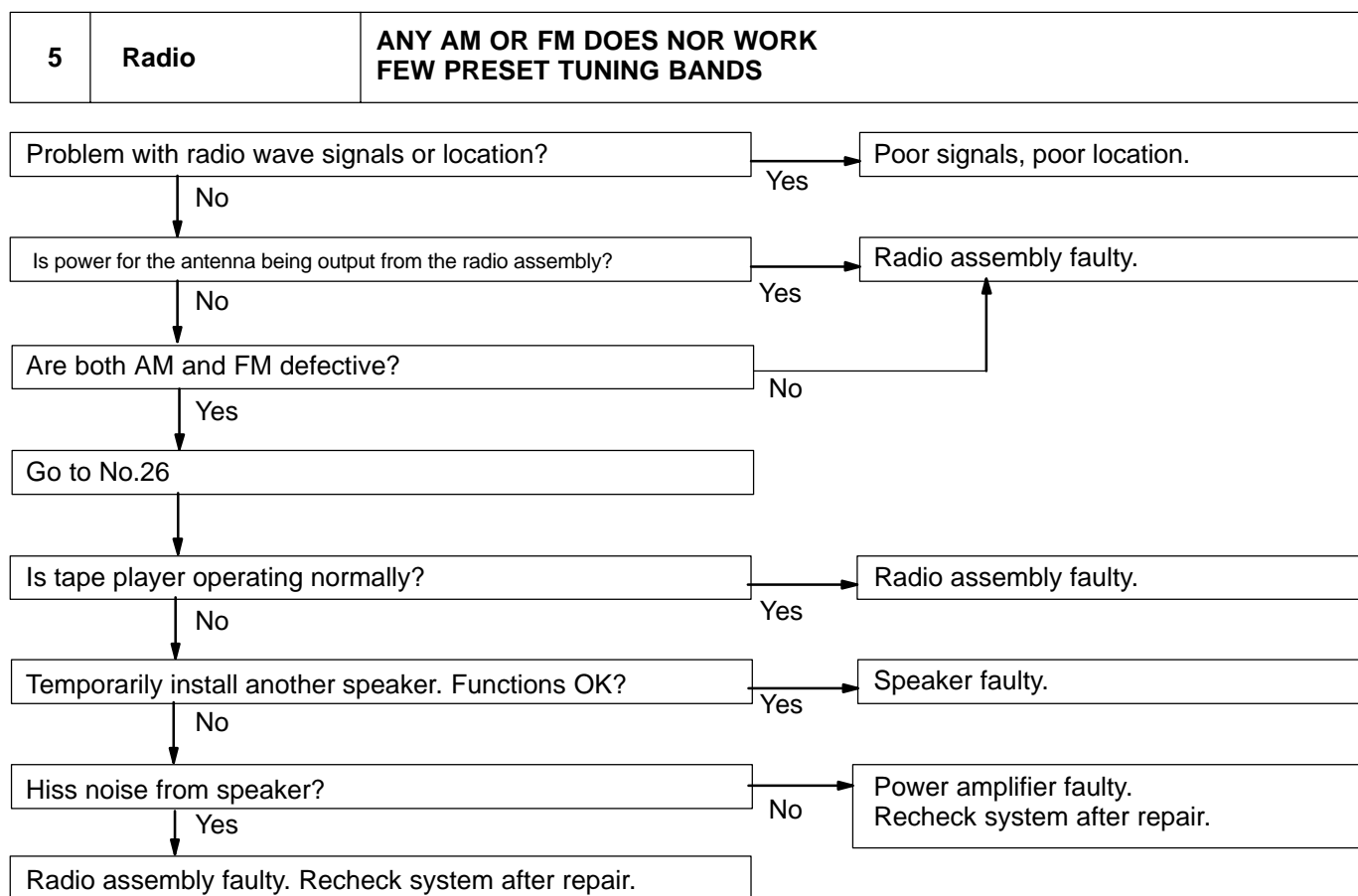
Temporarily install another speaker? Functions OK?

Yes

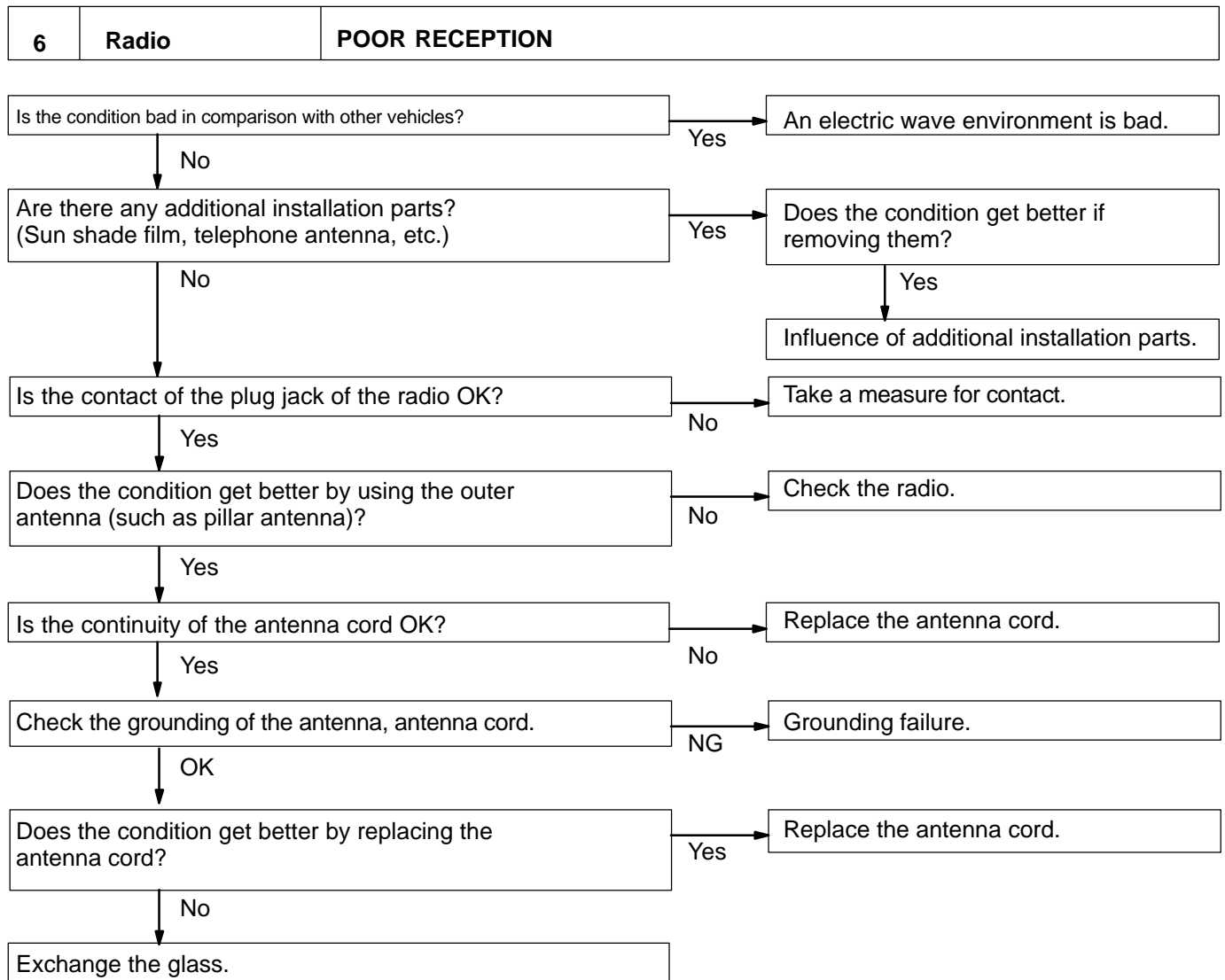
Speaker faulty.

No

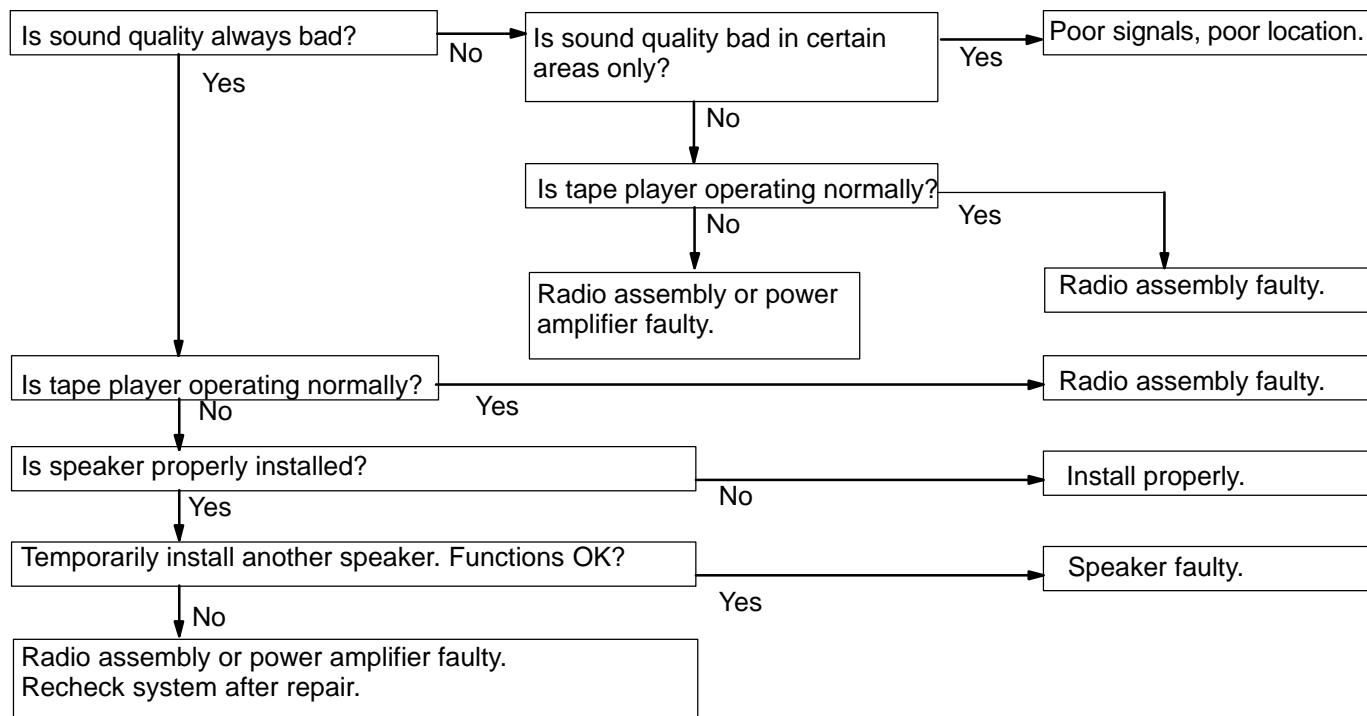
Power amplifier faulty. Recheck system after repair.



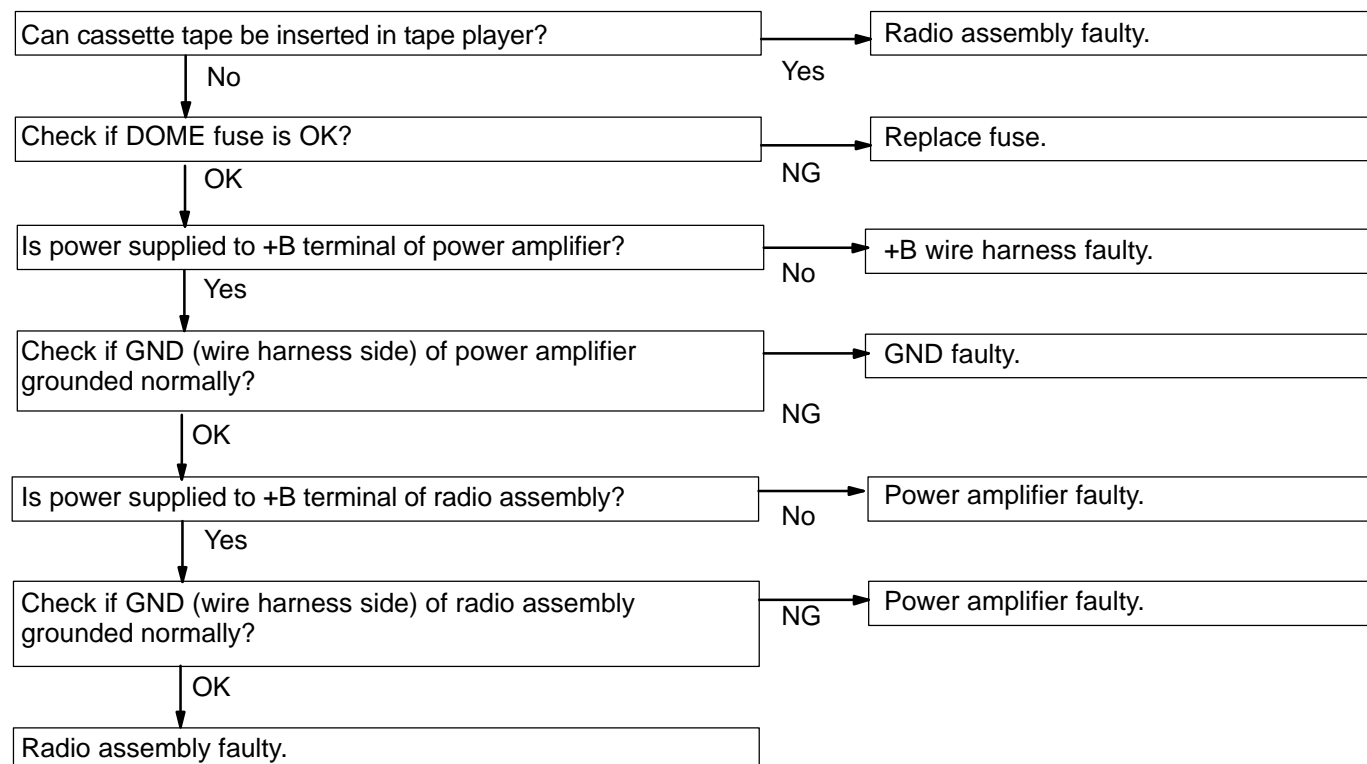




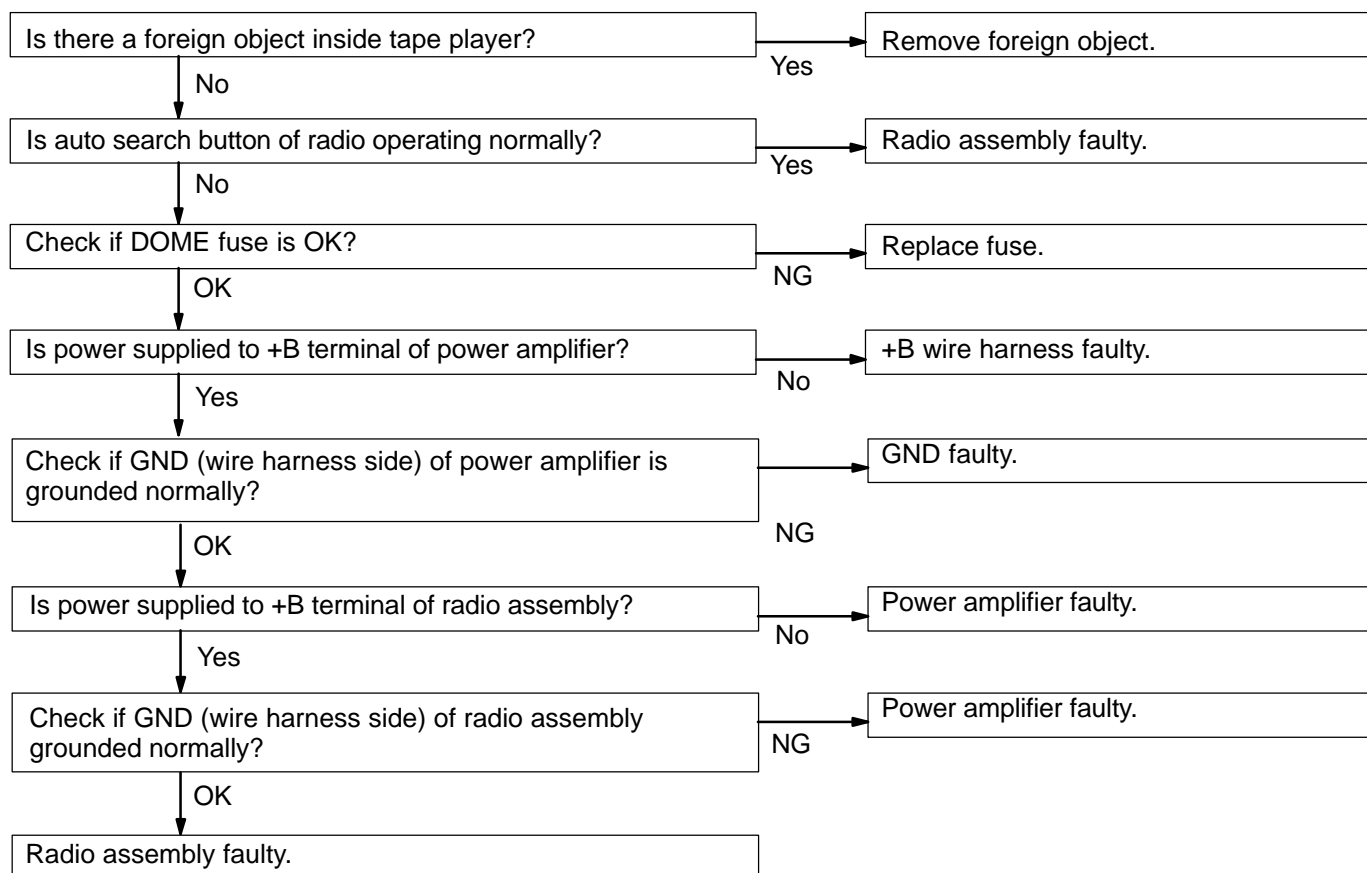
<b>7</b>	<b>Radio</b>	<b>SOUND QUALITY POOR</b>
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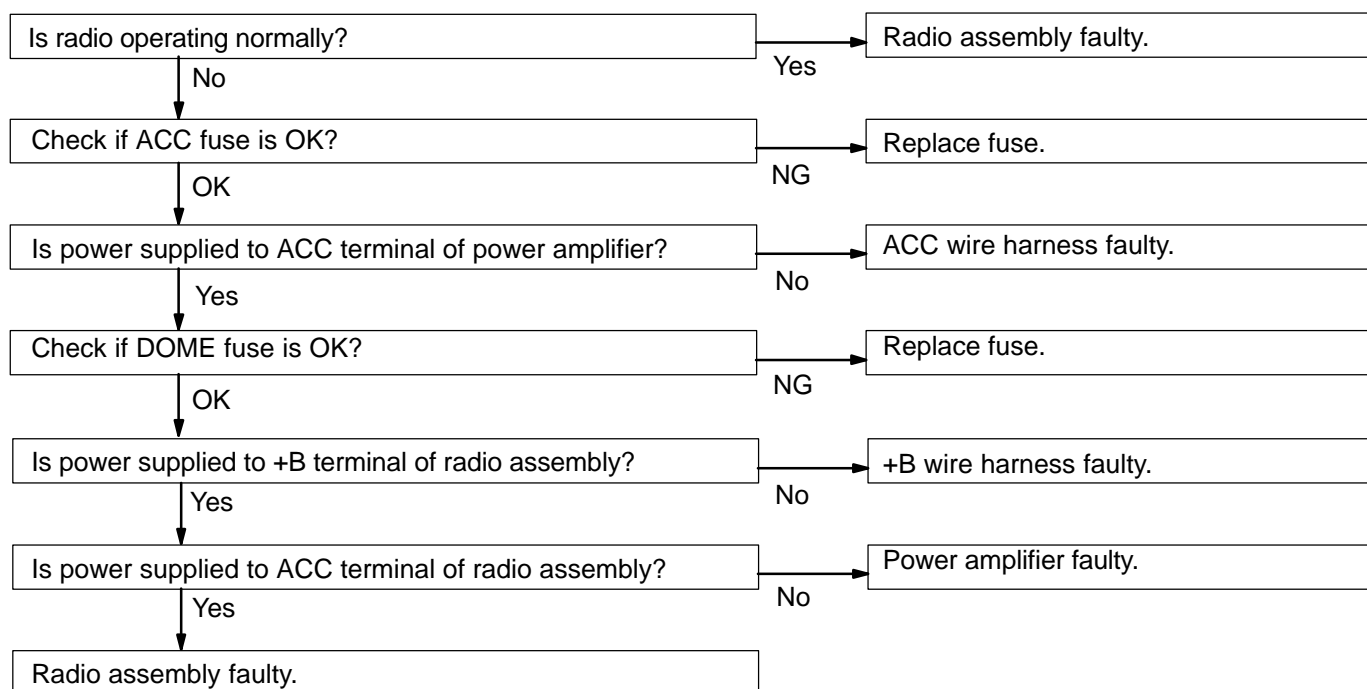
<b>8</b>	<b>Radio</b>	<b>PRESET MEMORY DISAPPEARS</b>
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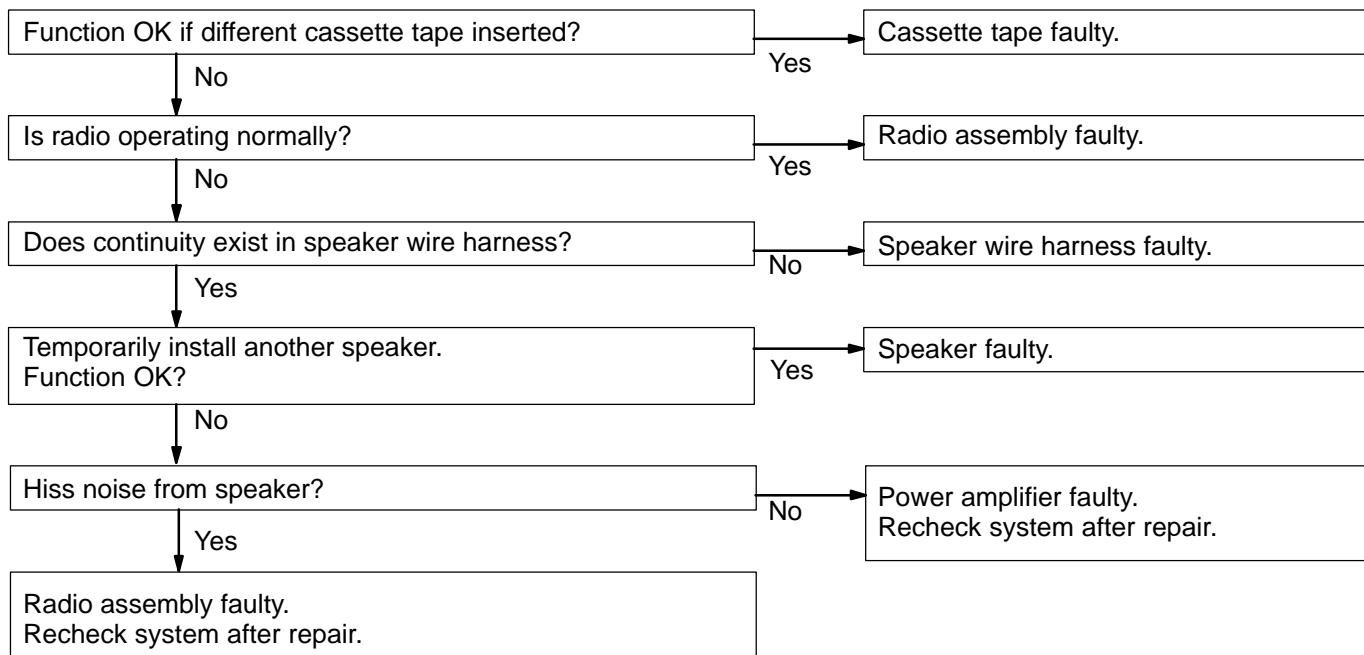
<b>9</b>	<b>Tape Player</b>	<b>CASSETTE TAPE CANNOT BE INSERTED</b>
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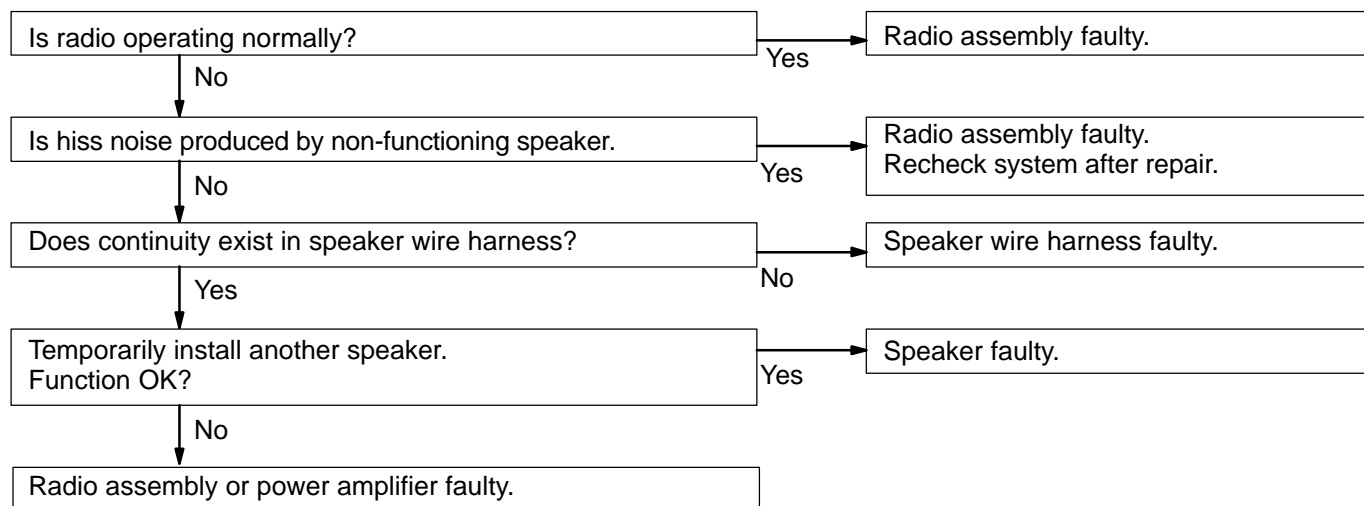
<b>10</b>	<b>Tape Player</b>	<b>CASSETTE TAPE INSERTED, BUT NO POWER</b>
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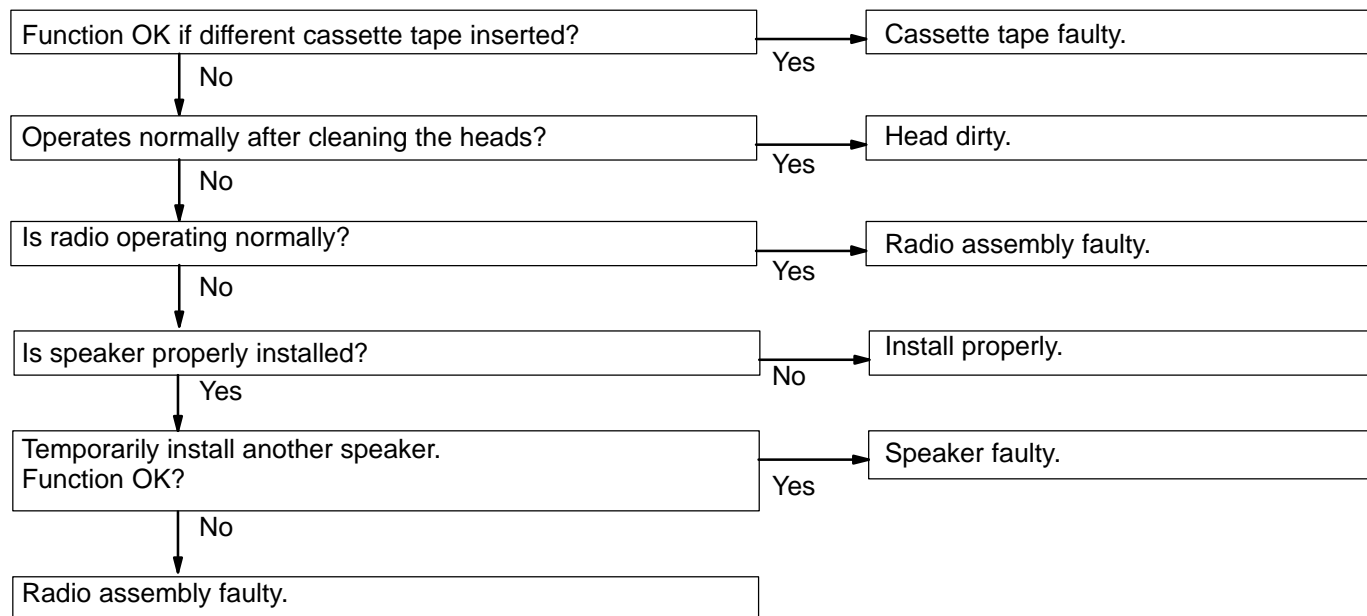
<b>11</b>	<b>Tape Player</b>	<b>POWER COMING IN, BUT TAPE PLAYER NOT OPERATING</b>
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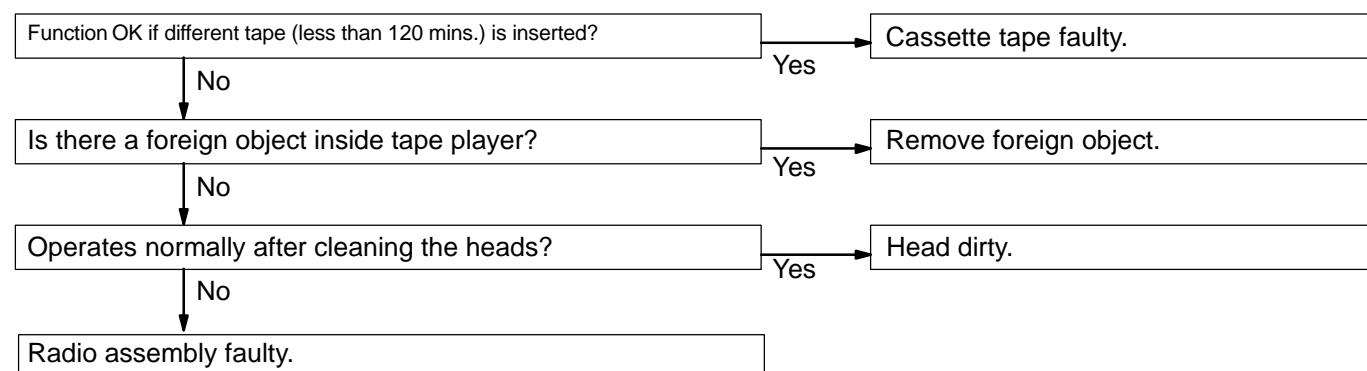
<b>12</b>	<b>Tape Player</b>	<b>ANY SPEAKER DOES NOT WORK</b>
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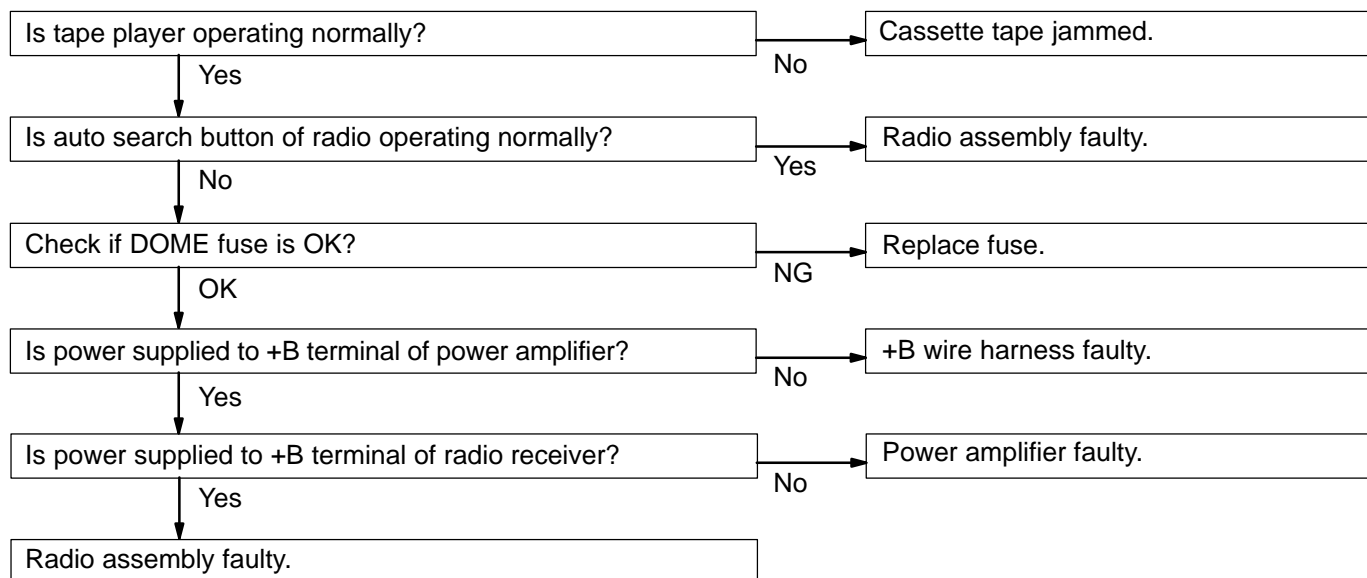
<b>13</b>	<b>Tape Player</b>	<b>SOUND QUALITY POOR (VOLUME FAINT)</b>
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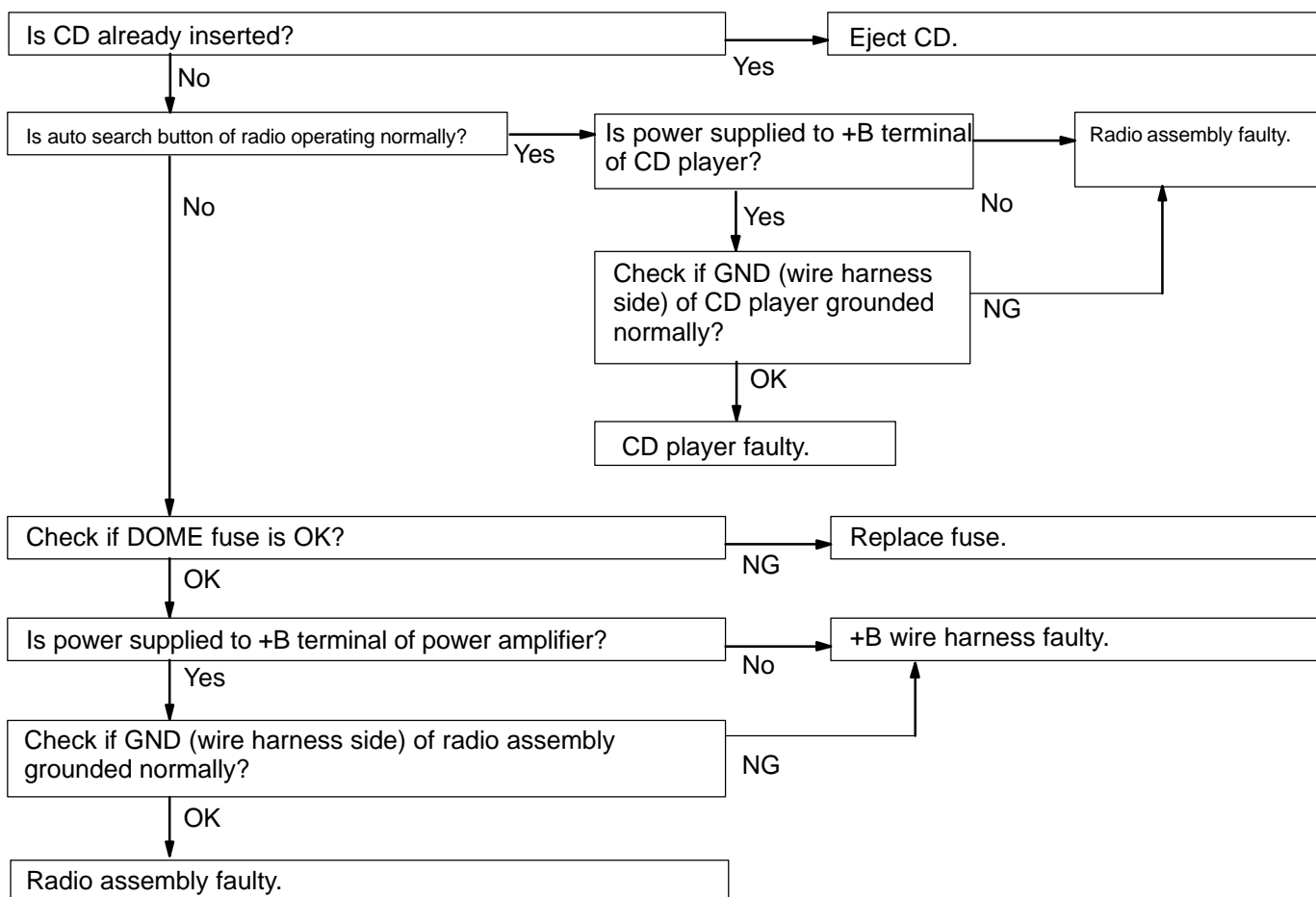
<b>14</b>	<b>Tape Player</b>	<b>TAPE JAMMED, MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE</b>
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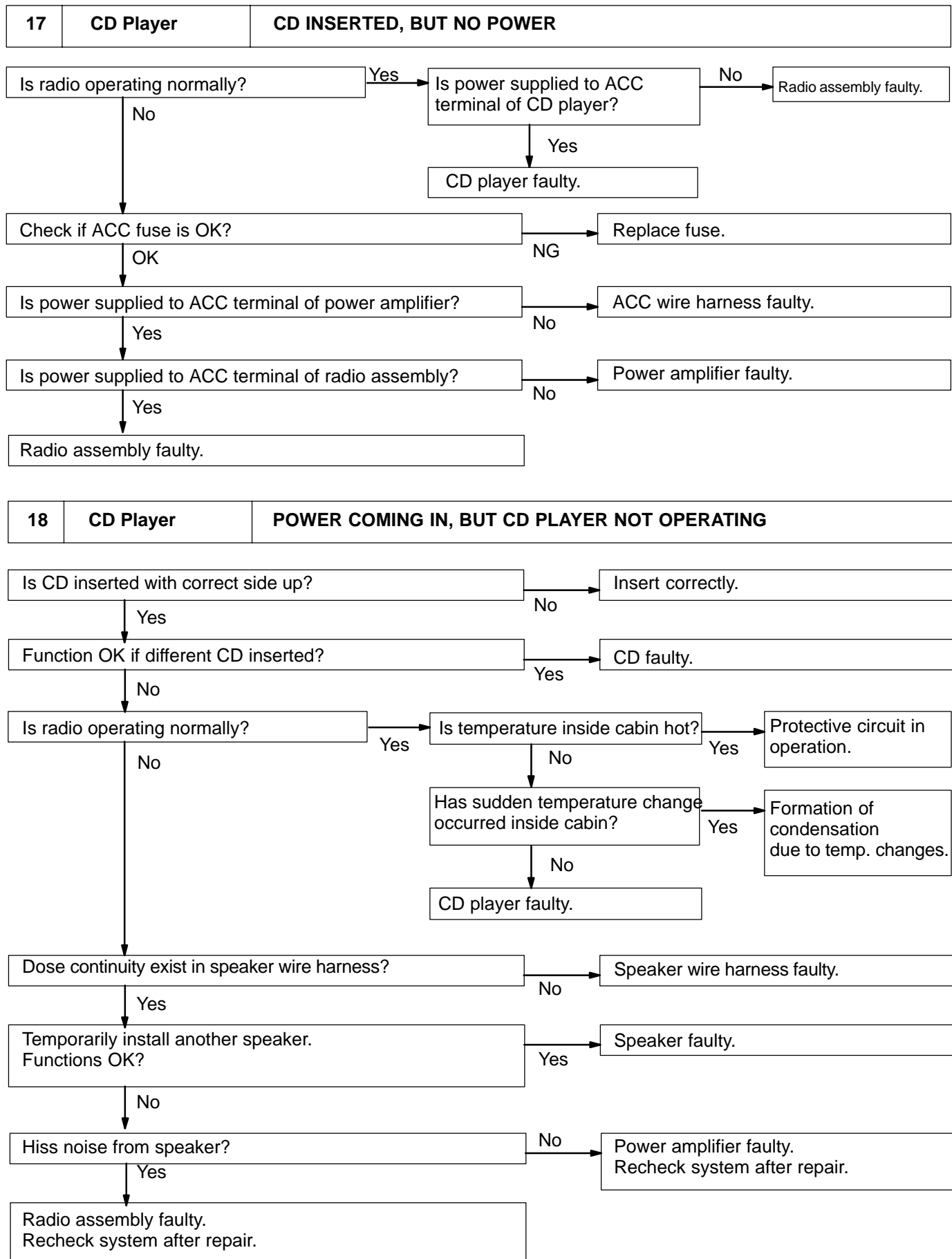


<b>15</b>	<b>Tape Player</b>	<b>CASSETTE TAPE WILL NOT BE EJECTED</b>
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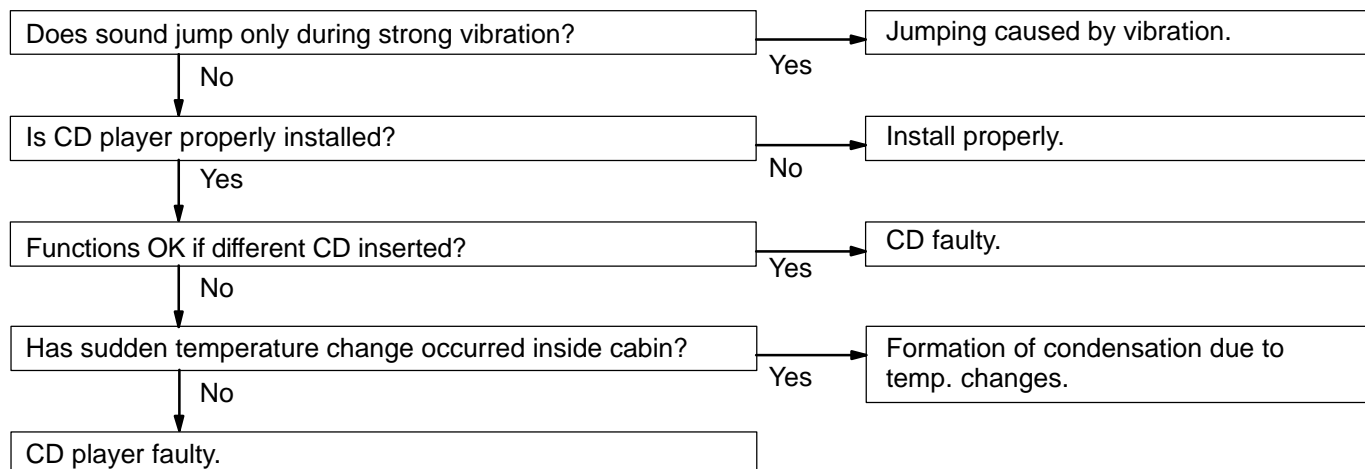


<b>16</b>	<b>CD Player</b>	<b>CD CANNOT BE INSERTED</b>
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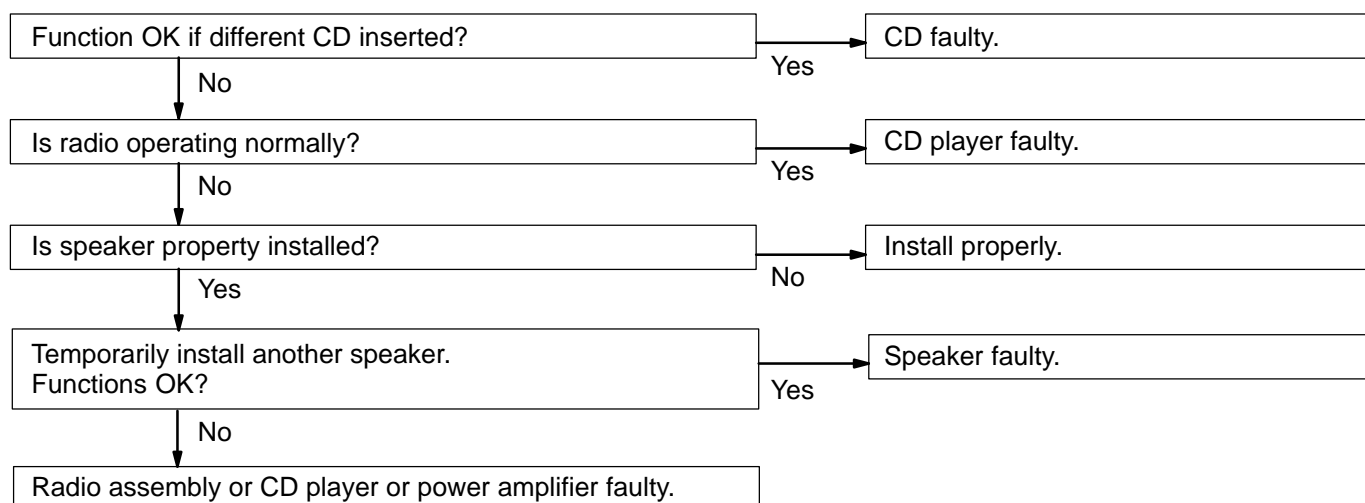




<b>19</b>	<b>CD Player</b>	<b>SOUND JUMPS</b>
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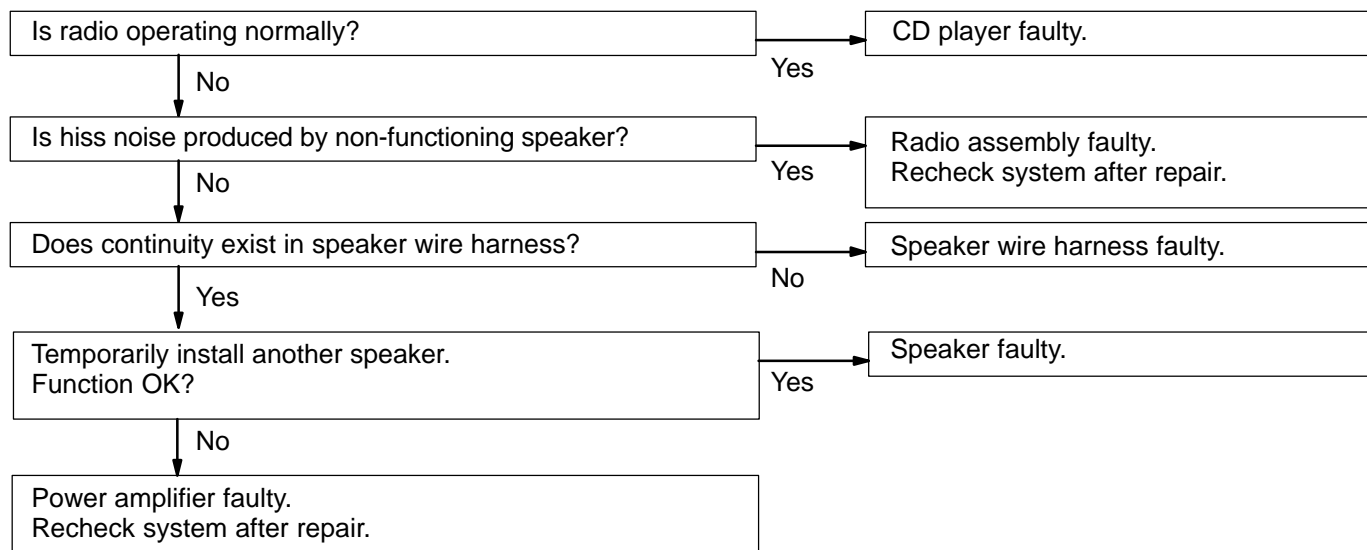


<b>20</b>	<b>CD Player</b>	<b>SOUND QUALITY POOR (VOLUME FAINT)</b>
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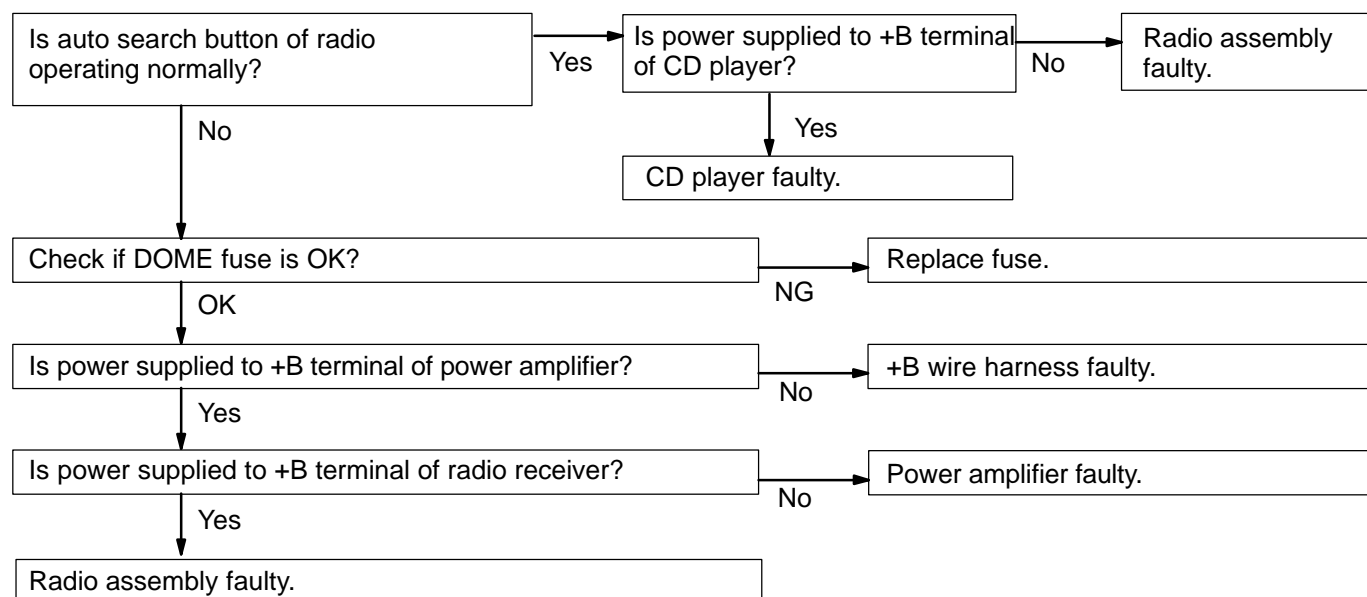


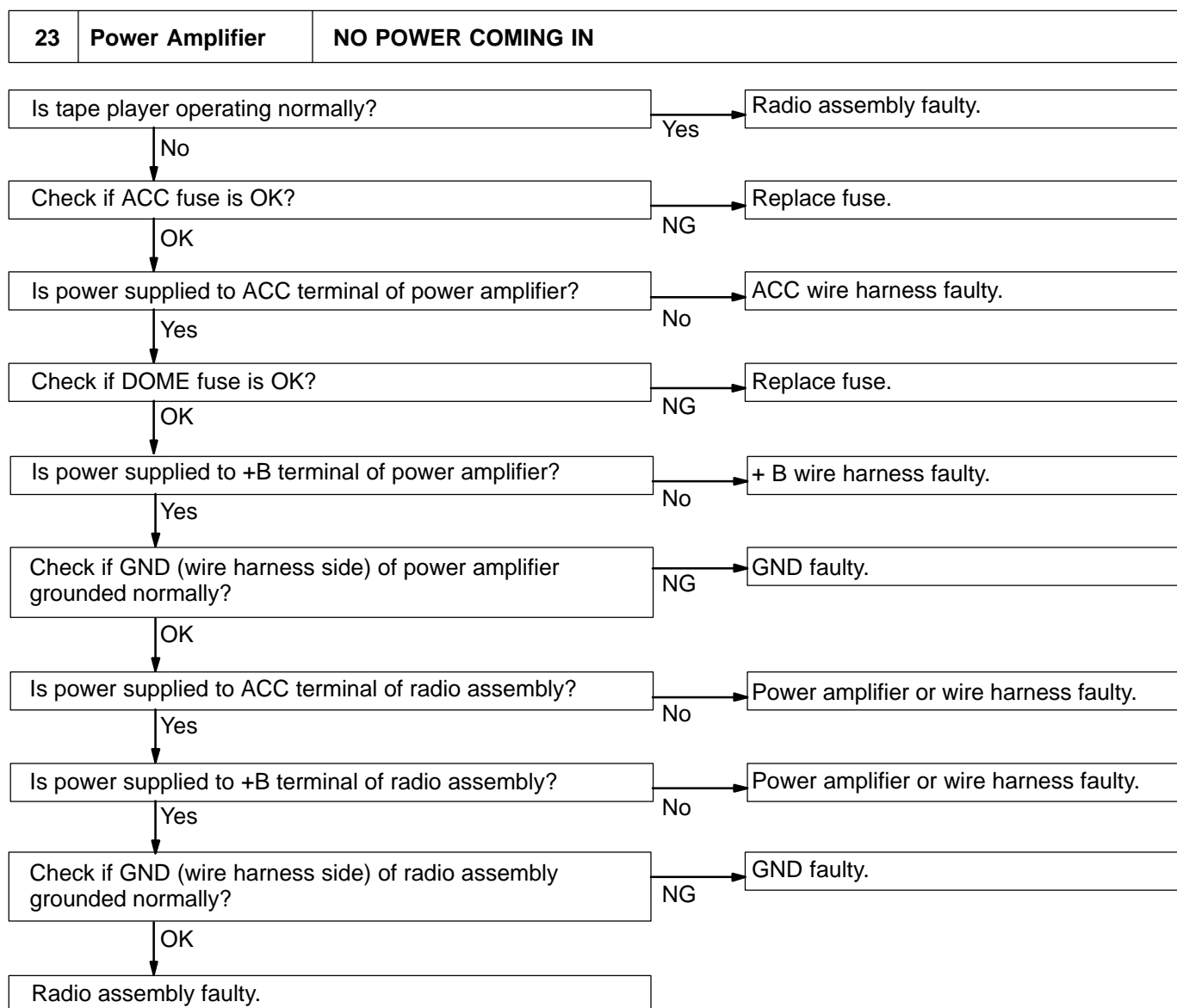


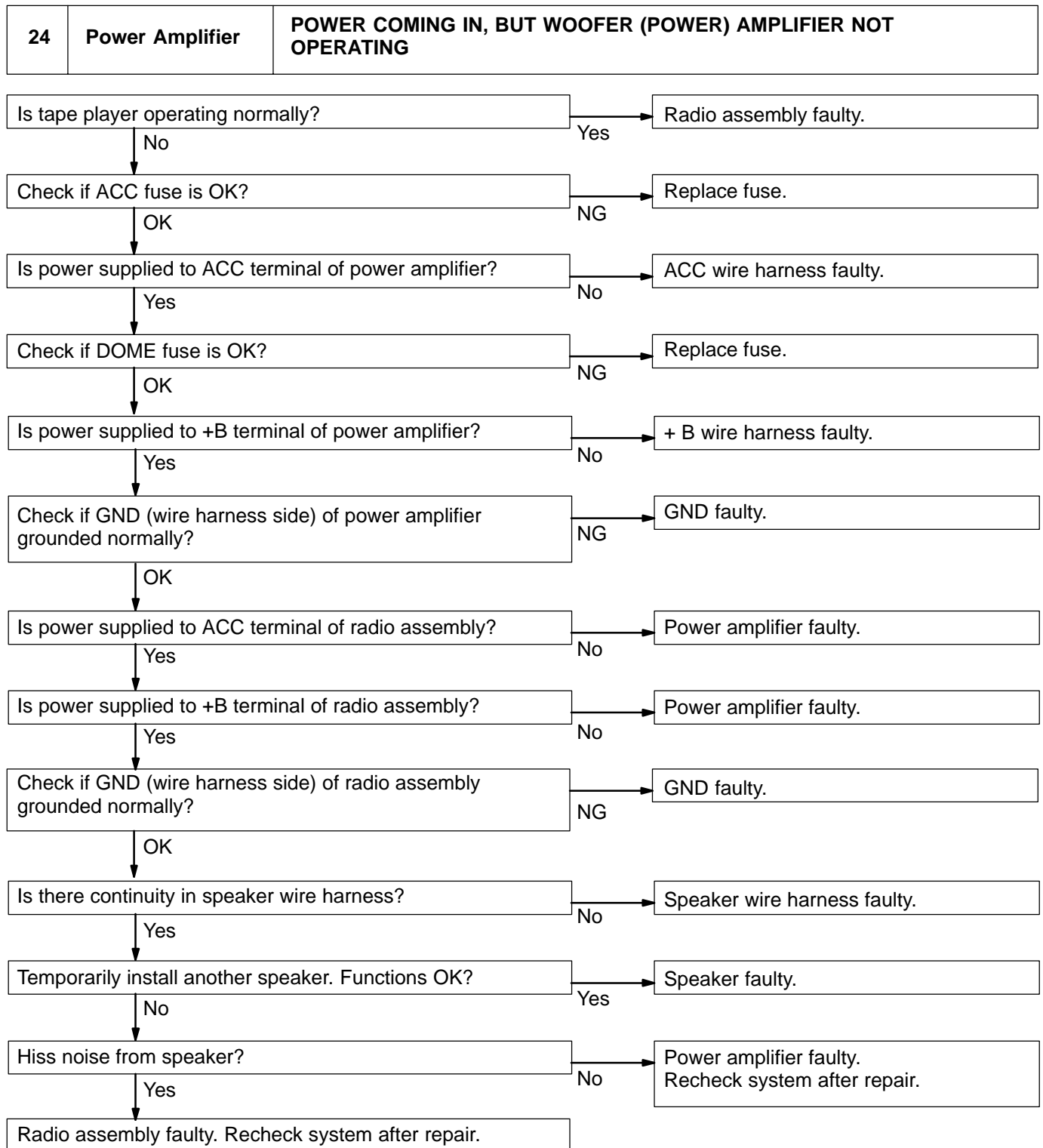
<b>21</b>	<b>CD Player</b>	<b>ANY SPEAKER DOES NOT WORK</b>
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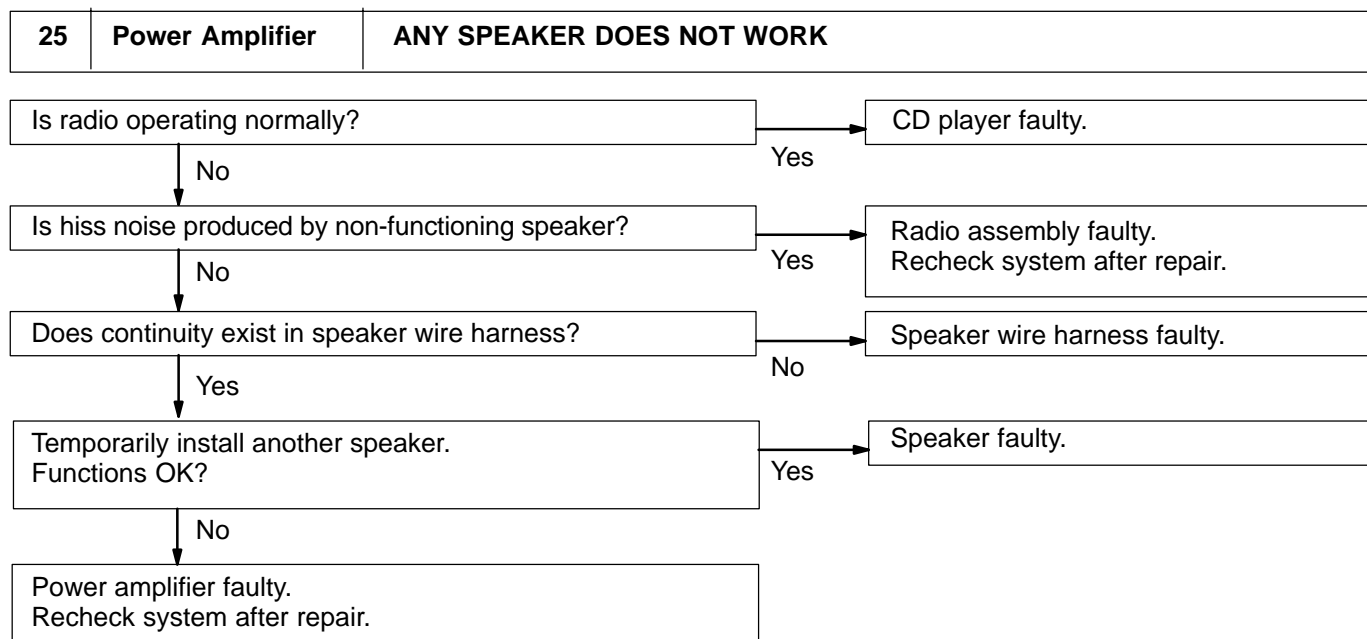


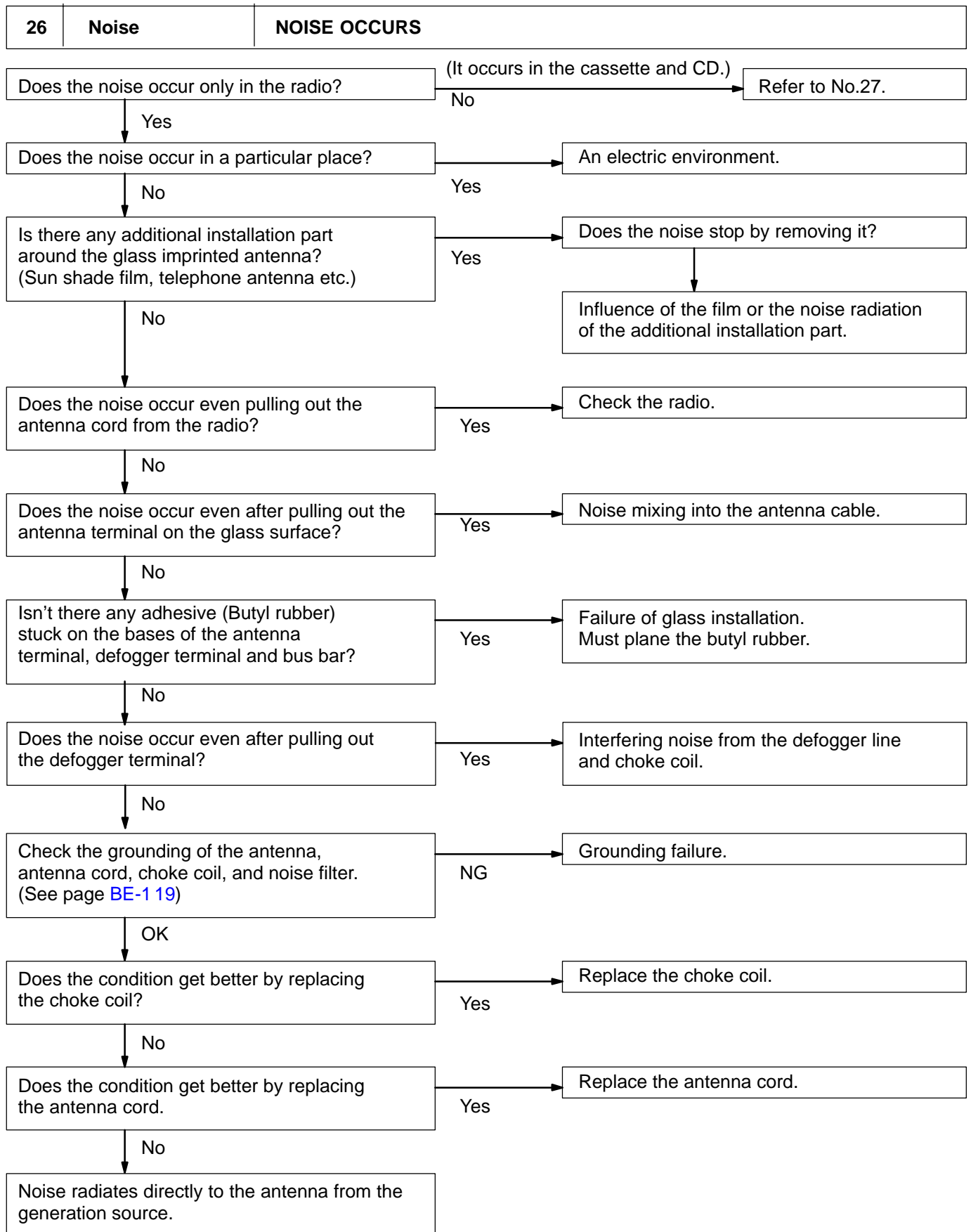
<b>22</b>	<b>CD Player</b>	<b>CD WILL NOT BE EJECTED</b>
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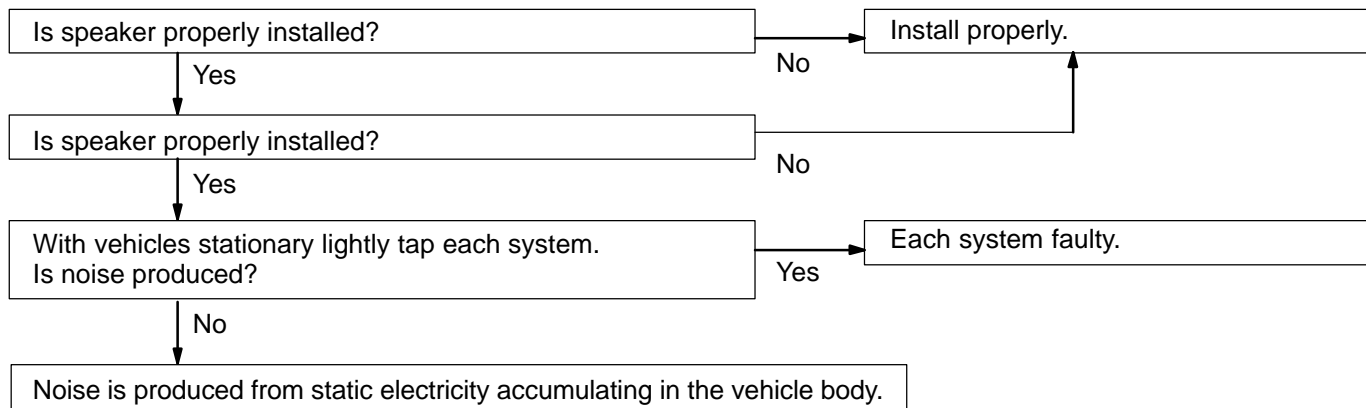








<b>27</b>	<b>Noise</b>	<b>NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING</b>
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<b>28</b>	<b>Noise</b>	<b>NOISE PRODUCED WHEN ENGINE STARTS</b>
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