

TROUBLESHOOTING

1. USA and CANADA models:

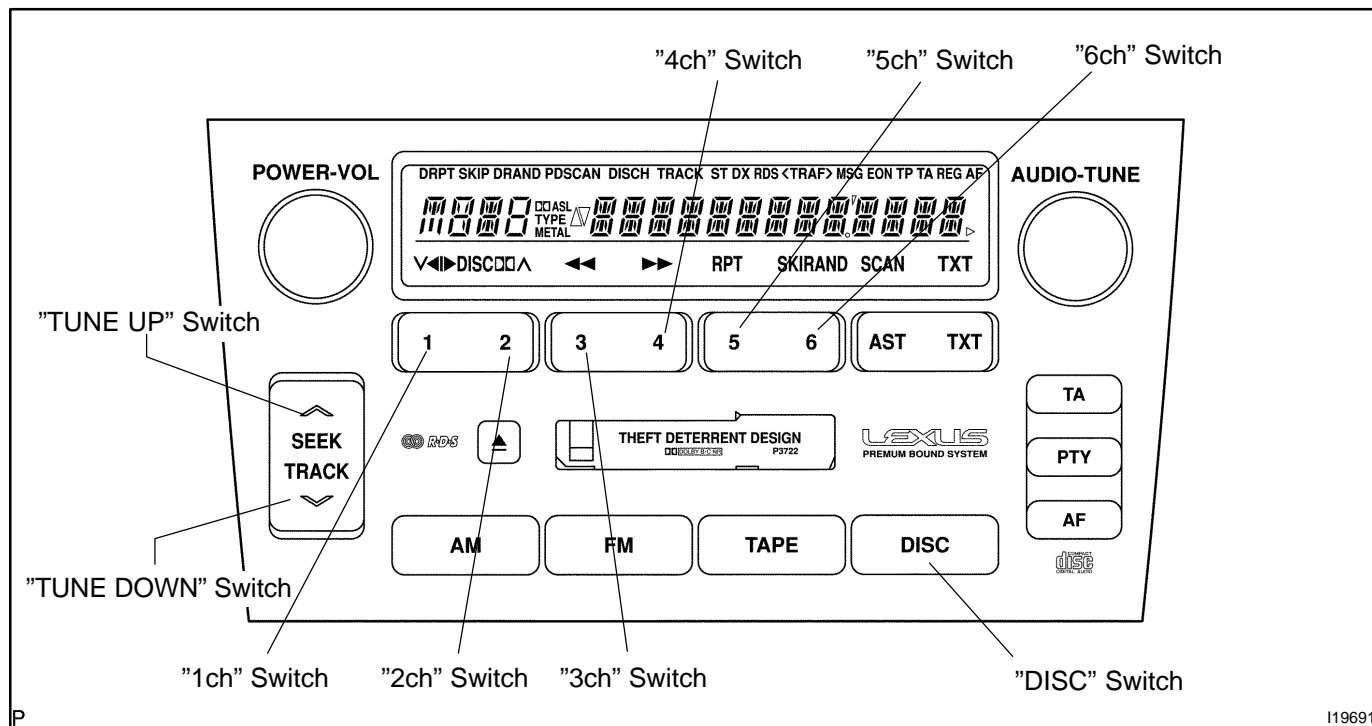
DIAGNOSIS FUNCTION

(a) Diagnosis start-up

For shifting diagnosis mode, turn ignition switch ON and push the "DISC" switch 3 times while pressing "ch1" and "ch6" switches.

HINT:

To exist from the diagnosis mode, push the "DISC" switch for 1.7 sec. or turn ignition switch to OFF.



(b) Service check mode

- (1) After the diagnosis start-up, the system enters service check mode.
- (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.

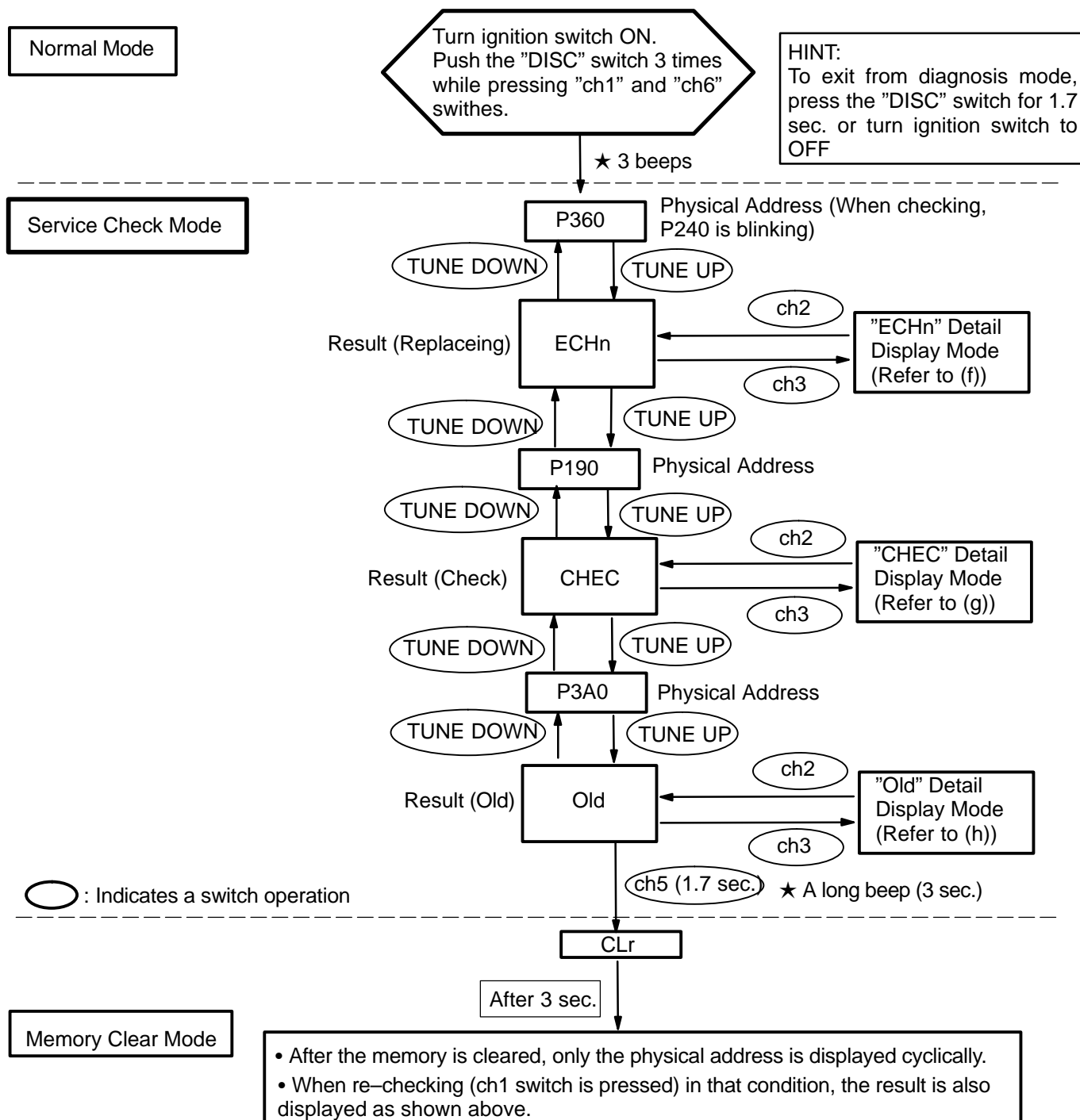
HINT:

- 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".

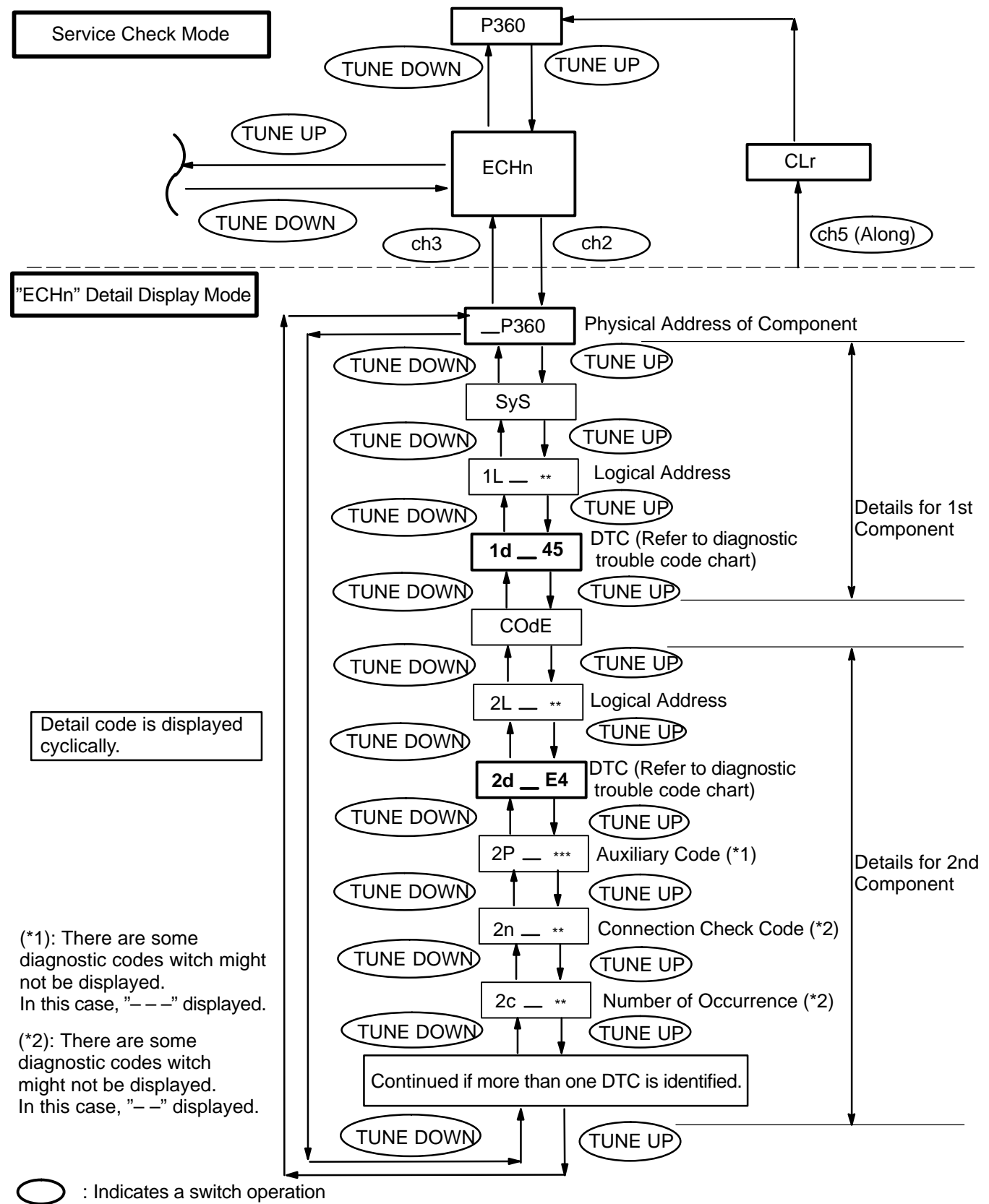
(c) Display Screen for Service Check.

Example:

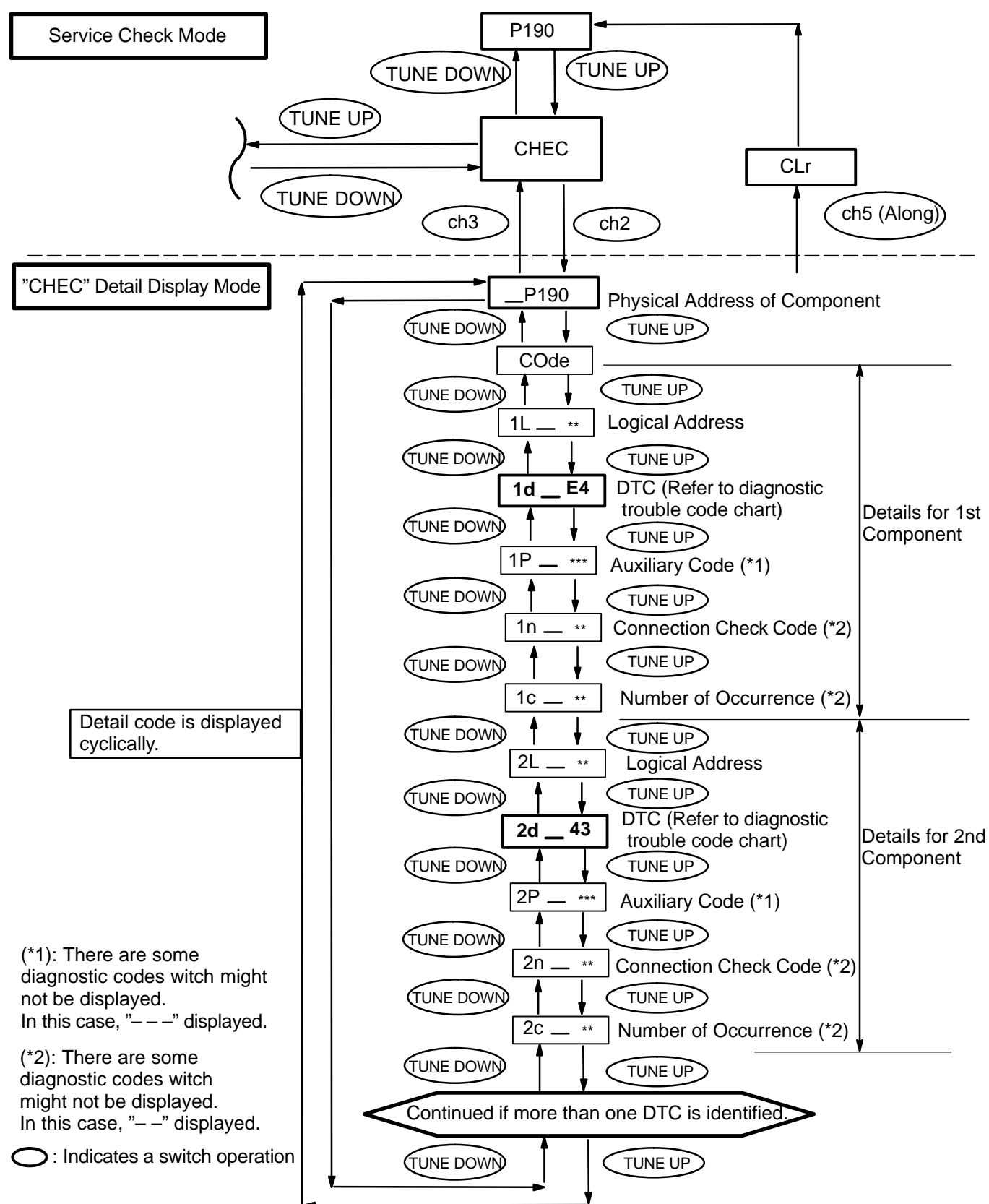
Connection parts (physical address): Radio receiver (P190), CD Auto Changer (P360), MD chnger (P3A0)



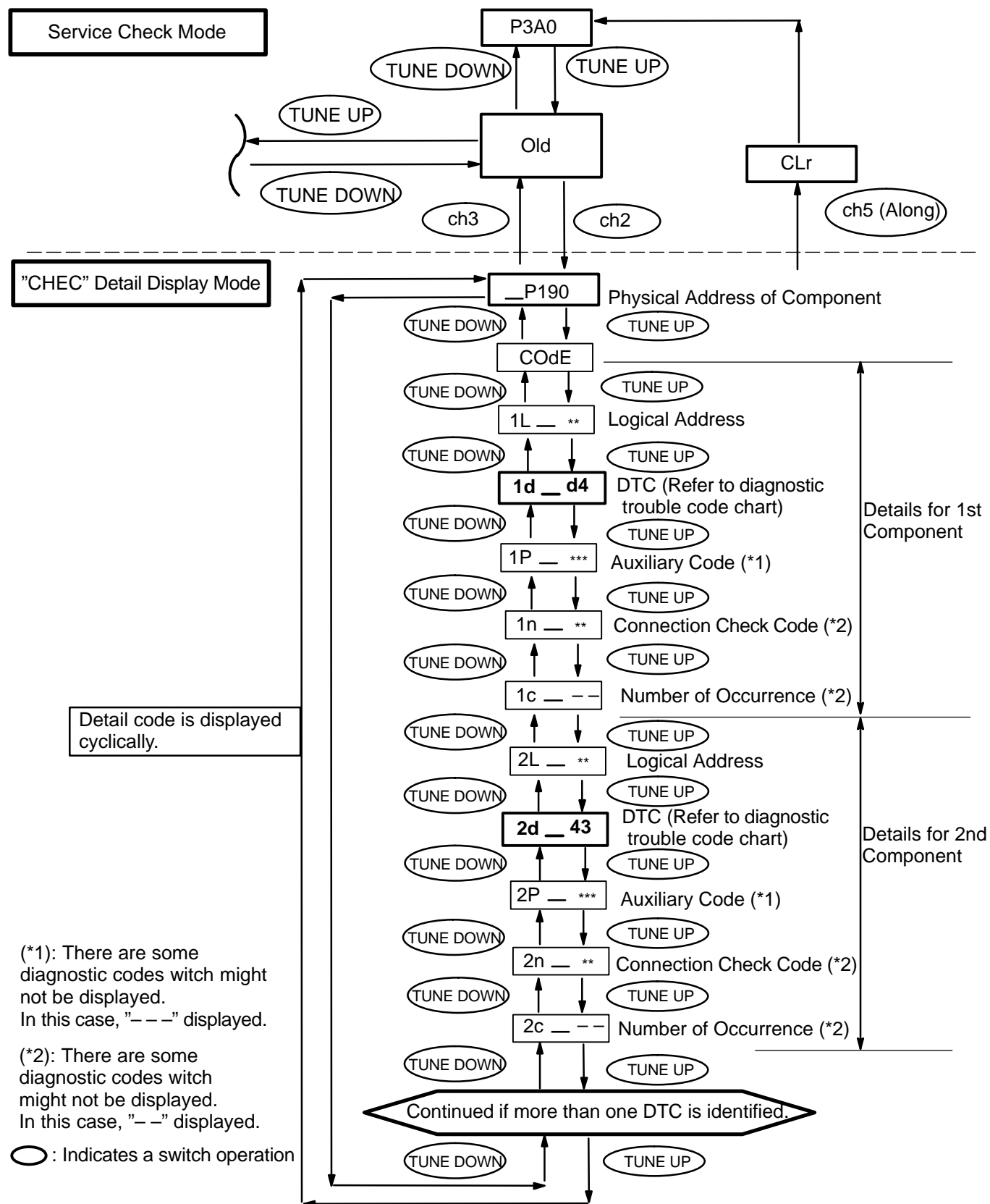
(d) "ECHn" Detail Display Mode Screen



(e) "CHEC" Detail Display Mode Screen



(f) "Old" Detail Display Mode Screen



2. TAIWAN models: DIAGNOSIS FUNCTION

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

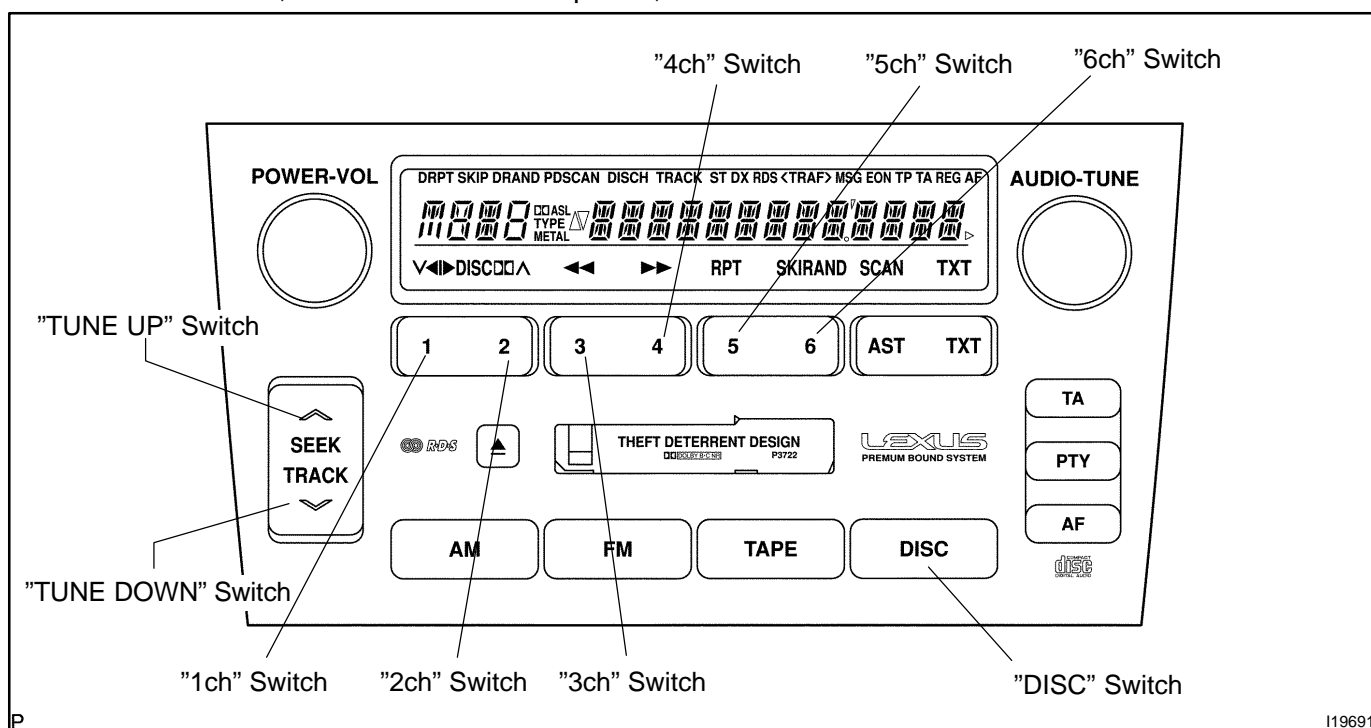
(a) Diagnosis start-up

For shifting to diagnosis mode, push "DISC" 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 "DISC" 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

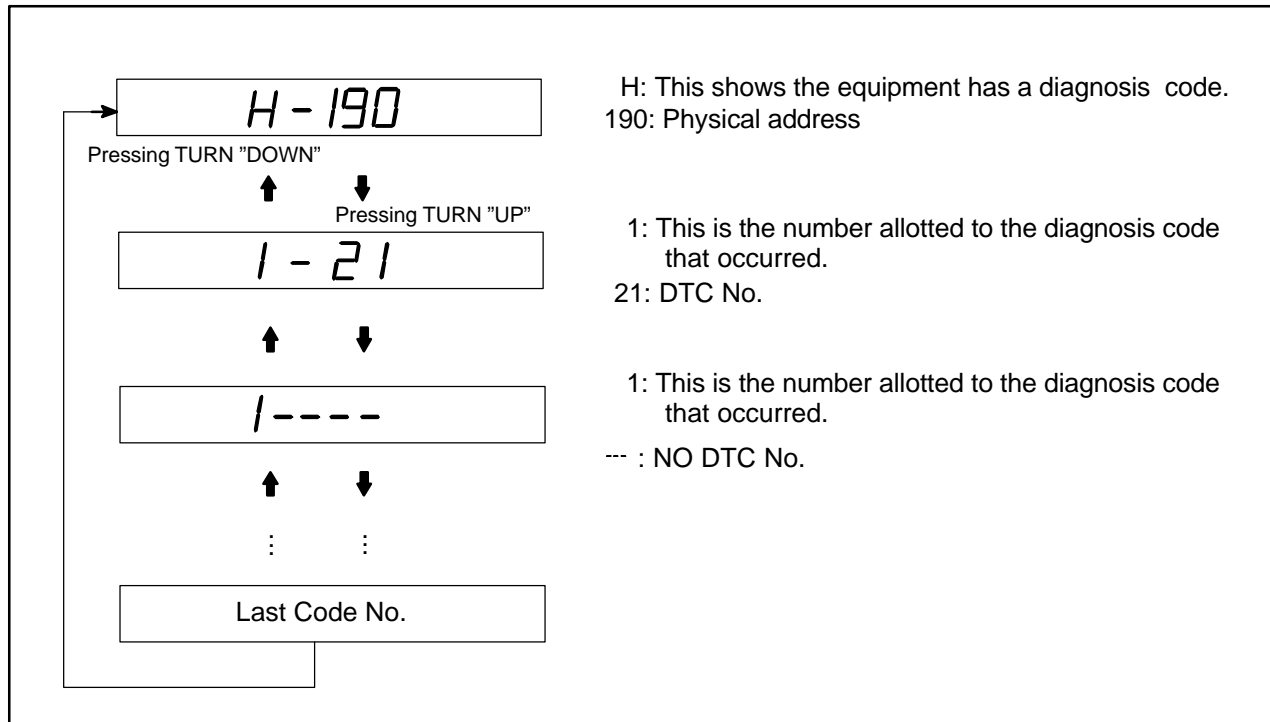
Code No. (physical address)	Equipment name
190	Radio receiver assembly (Audio head unit)
240	CD changer (in Luggage room)
360	CD changer (in center console and glove compartment box)
440	Stereo component amplifier

(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.

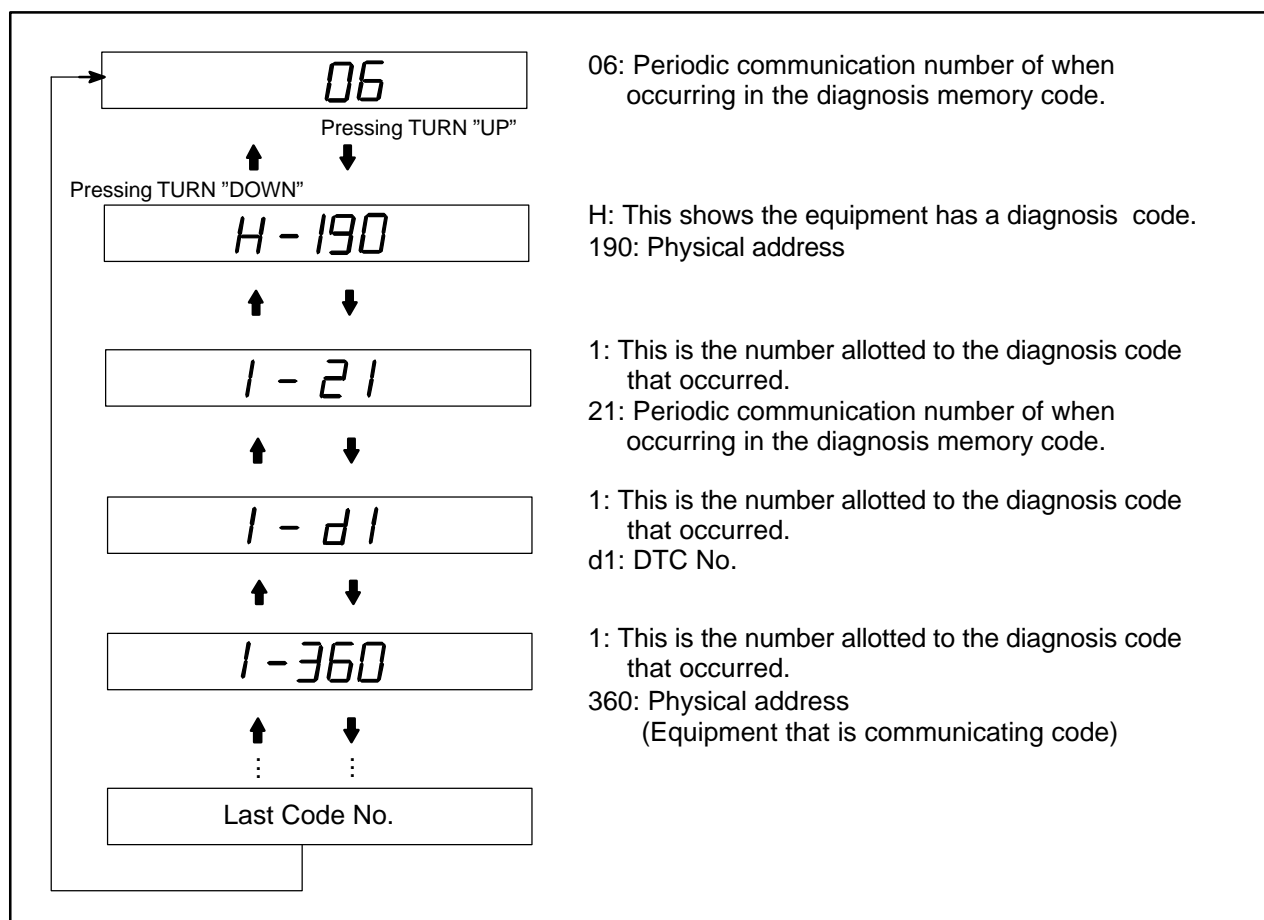


(d) Diagnosis memory

- (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.

3. USA and CANADA models: DIAGNOSTIC TROUBLE CODE CHART

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, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> • Check harness for power supply system of radio receiver assembly. • Check harness for communication system of radio receiver assembly.
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"> • Check harness for power supply system of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
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"> • Check harness for power supply system of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
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"> • Check harness for power supply system of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code. • If error occurs again, replace component shown by auxiliary code.
DB *1	Mode Status Error	Dual alarm is detected.	<ul style="list-style-type: none"> • Check harness for power supply of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
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.
DD *4	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly was disconnected from system.	<ul style="list-style-type: none"> • Check harness for power supply system of radio receiver assembly. • Check harness for communication system of radio receiver assembly. • If this error occurs frequently, replace radio receiver assembly assembly.

BODY ELECTRICAL – AUDIO SYSTEM

DE *4	Slave Reset (Momentary Interruption)	After engine is started, slave component was disconnected from system.	<ul style="list-style-type: none"> • Check harness for power supply of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
DF *5	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"> • Check harness for power supply of radio receiver assembly. • Check harness for communication system of radio receiver assembly. • Check harness for communication system between radio receiver assembly and sub-master component.
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"> • Check harness for power supply of radio receiver assembly. • Check harness for communication system of radio receiver assembly.
E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from radio receiver assembly.	Replace radio receiver assembly.
E3 *1	Registration Request Transmission	<p>Registration Request command is output from slave component.</p> <p>Receiving Connection Check Instruction, Registration Request command is output from sub-master component.</p>	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	<p>Malfunction due to mechanical failure is identified.</p> <p>Or cassette tape is cut or entangled.</p>	<ul style="list-style-type: none"> • Inspect cassette tape. • Replace radio receiver assembly.

(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, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> • Check harness for power supply of radio receiver assembly. • Check harness for communication system of radio receiver assembly. • Check harness for power supply of Stereo component amplifier. • Check harness for communication system of Stereo component amplifier.
D7 *2	Communication Check Error	Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, multi-display assembly was disconnected. D6	<ul style="list-style-type: none"> • Check harness for power supply system of multi-display. • Check harness for communication system of multi-display. • Check harness for power supply system of stereo component amplifier. • Check harness for communication system of stereo component amplifier.
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.
DD *4	Master Reset (Momentary Interruption)	After engine is started, Stereo component amplifier was disconnected from system.	<ul style="list-style-type: none"> • Check harness for power supply system of radio receiver assembly. • Check harness for communication system of radio receiver assembly. • If this error occurs frequently, replace radio receiver assembly assembly.
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"> • Check harness for power supply of radio receiver assembly. • Check harness for communication system of radio receiver assembly. • Check harness for communication system between Stereo component amplifier and sub-master component.
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"> • Check harness for power supply of radio receiver assembly. • Check harness for communication system of Stereo component amplifier.

BODY ELECTRICAL – AUDIO SYSTEM

E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from Stereo component amplifier.	Replace Stereo component amplifier.
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.

(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.

(1) Logical address: 01 (Communication control)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
D1	Transmission Error	Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.)	If same auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code.
D4 *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, radio receiver assembly assembly was disconnected.	<ul style="list-style-type: none"> • Check harness for power supply of radio receiver assembly. • Check harness for communication system of radio receiver assembly. • Check harness for power supply of DVD auto changer. • Check harness for communication system of DVD auto changer.

(2) Logical address: 63 (CD Auto Changer)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
60	CD Error	Error is detected in CD auto changer.	Replace CD auto changer
61	EJECT Error	Magazine cannot be ejected.	Replace CD auto changer
62	No Disc Readout	Disc cannot be read.	Inspect CD
63	CD Auto Changer Temp. Too High	Readout cannot be done because temperature around player's pick-up (reading part) is too high.	With IG switch OFF, leave vehicle in cool shaded place for a while and re-check. After deleting the DTC memory, if same code detected, replace CD auto changer.
64	CD Changer Excess Current	Excess current is applied CD auto changer.	Replace CD auto changer

(d) Physical address: 1C6 Gateway ECU

HINT:

*1: 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
D4 *1	Regular Communication Error	Component in which this code is recorded has been disconnected after engine start. Or, when this code was recorded, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> • Check harness for power supply system of radio receiver assembly assembly. • Check harness for communication system of radio receiver assembly assembly. • Check harness for power supply system of gateway ECU. • Check harness for communication system of gateway ECU.

4. TAIWAN models:

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)	50	Cassette error	There is an error in cassette deck.	Radio receiver check.	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 flip.	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	<ul style="list-style-type: none"> • Radio receiver check. • Wire harness check. 	X	○

5. 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:

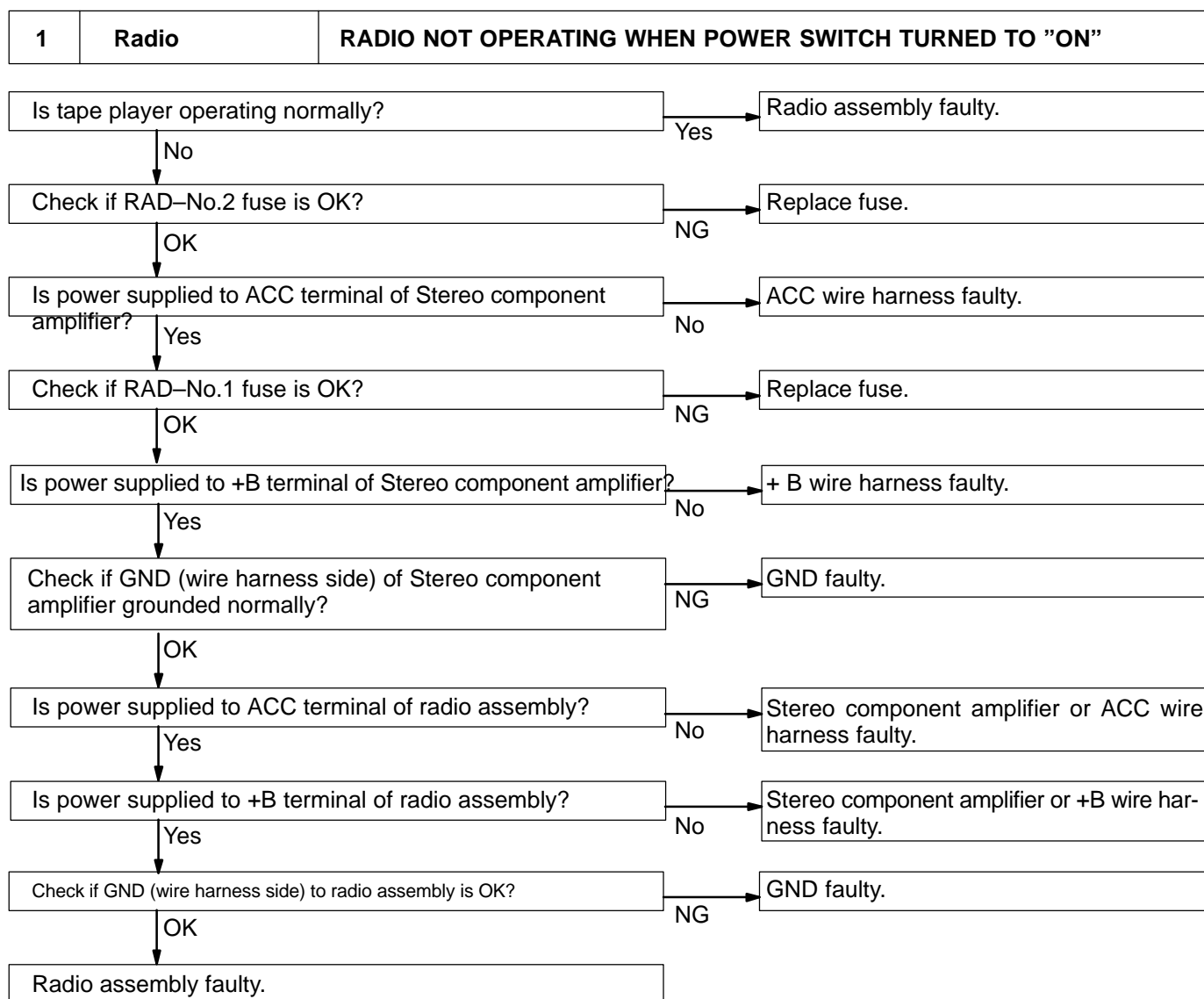
This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

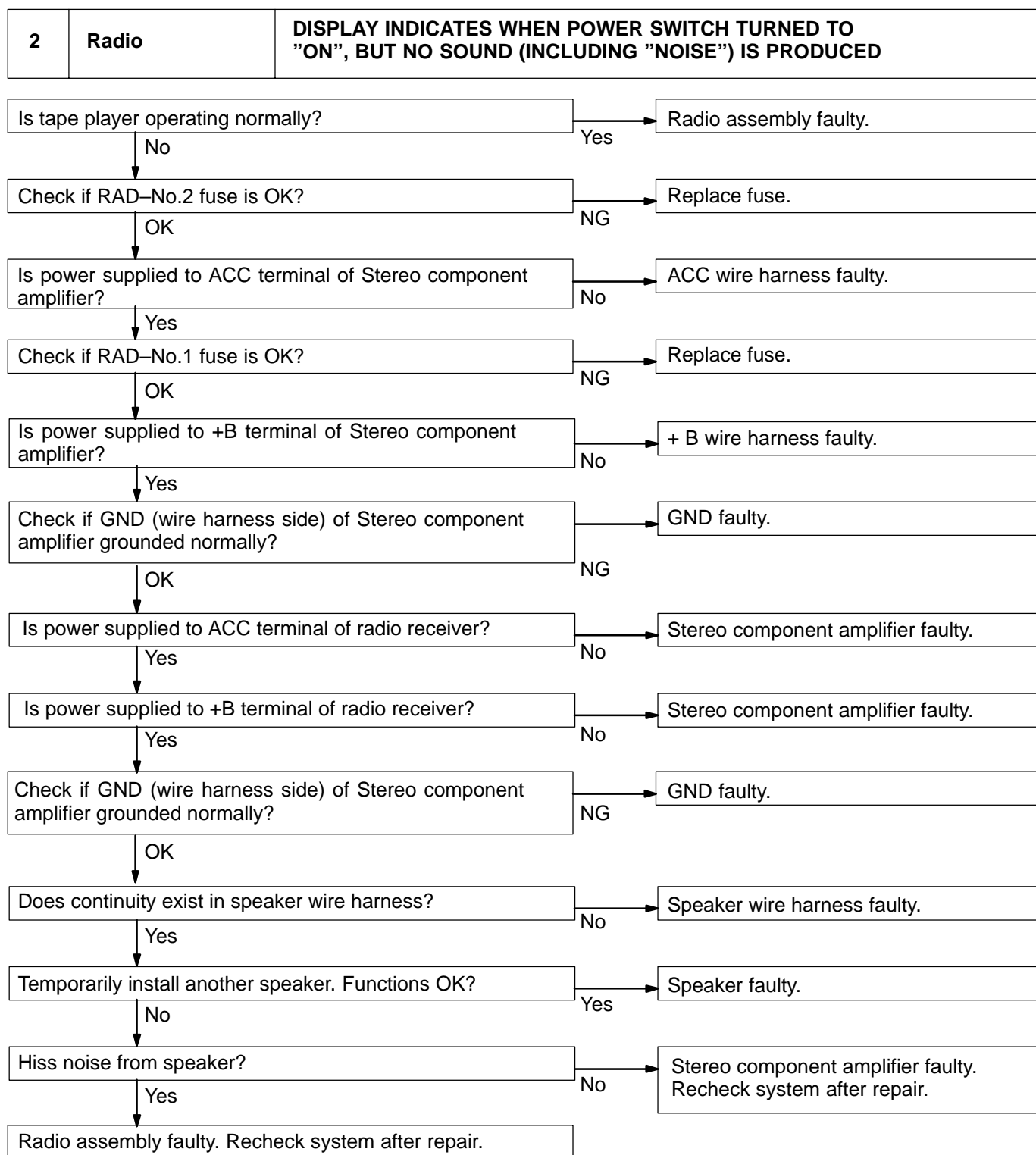
Always inspect the trouble taking the following items into consideration.

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

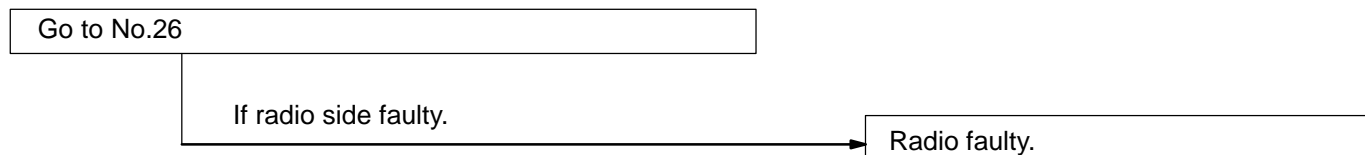
	Problem	No.
Radio	Radio not operating when power switch turned to 'ON'.	1
	Display indicates when power switch turned to 'ON', but no sound (including 'noise') is produced.	2
	Noise present, but AM – FM not operating.	3
	Any speaker does not work.	4
	Any AM or FM does not work.	5
	Few preset tuning bands.	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 eject.	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
	No power coming in.	23
Stereo Component Amplifier	Power coming in, but Stereo component 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.

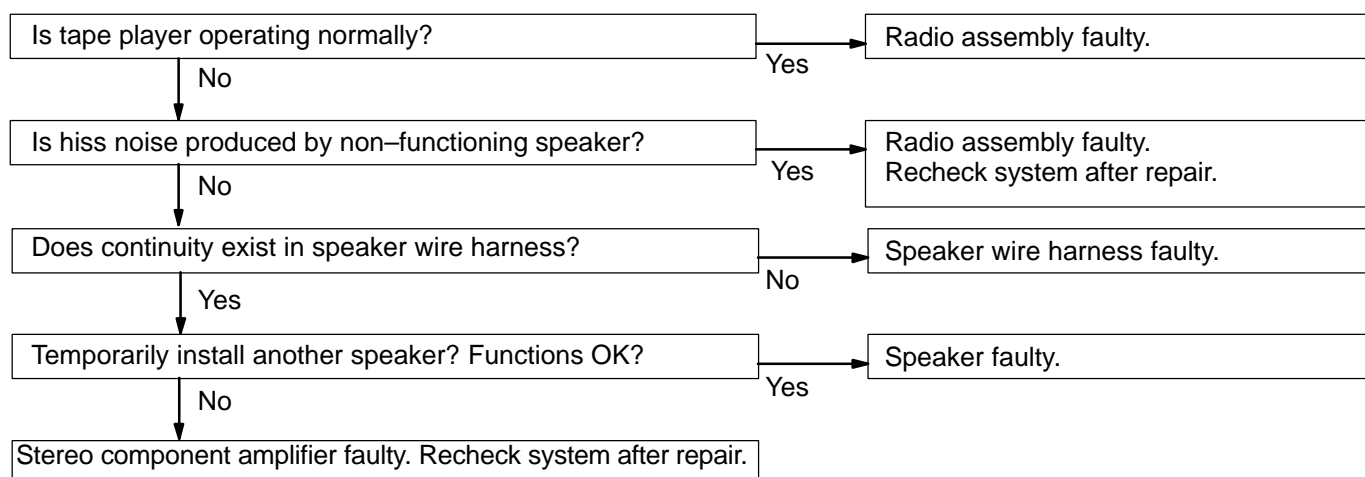


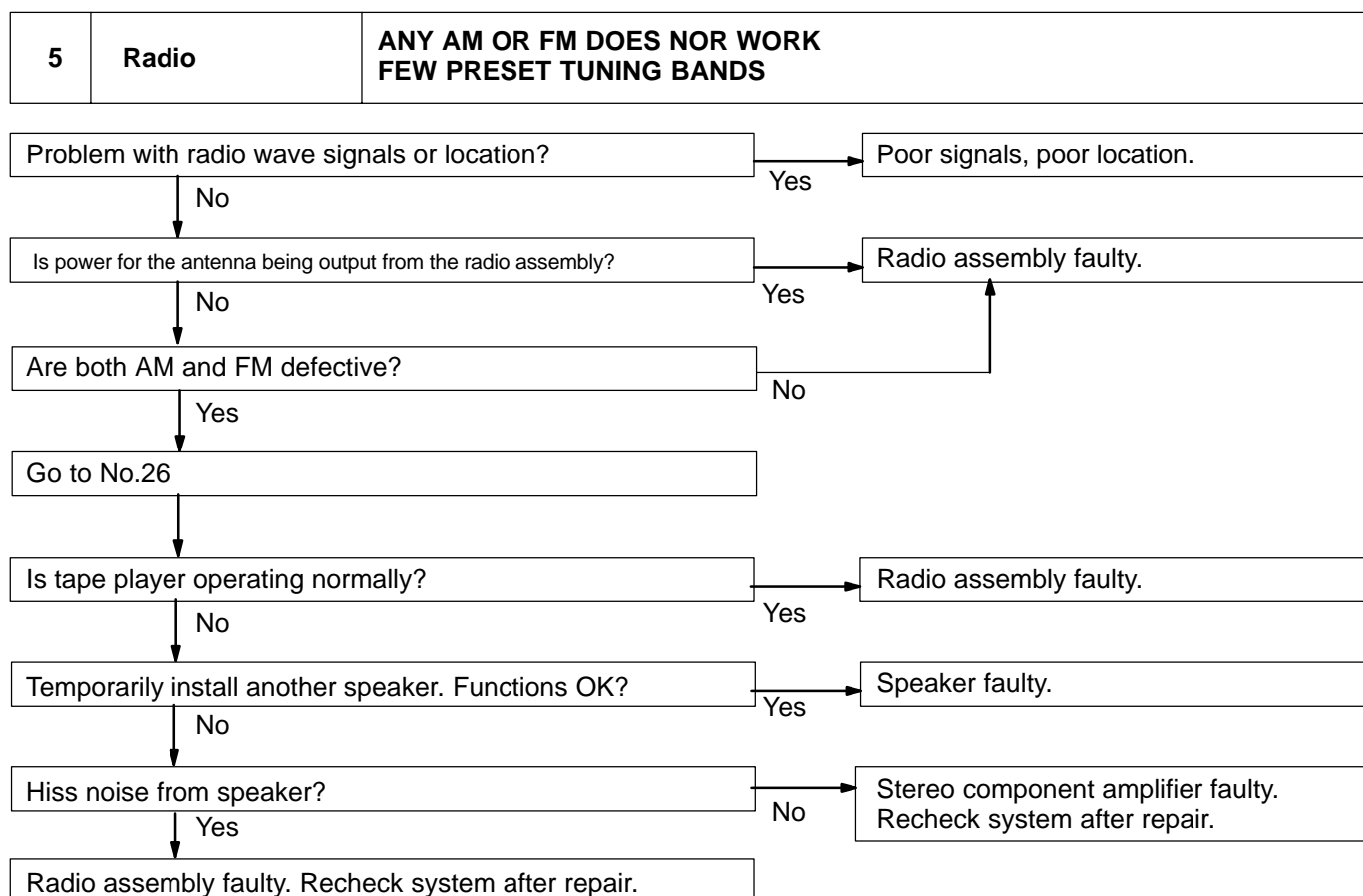


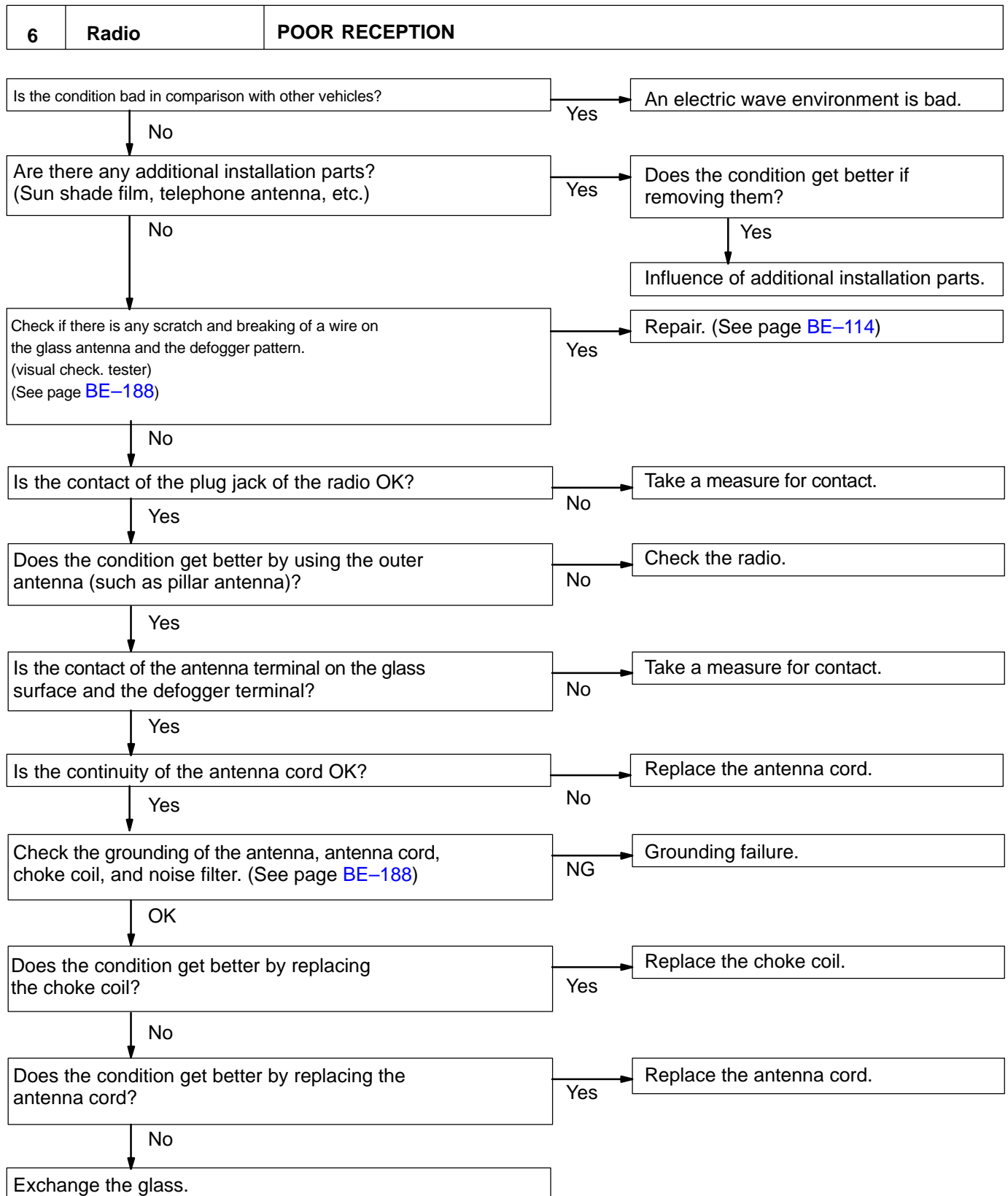
3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING
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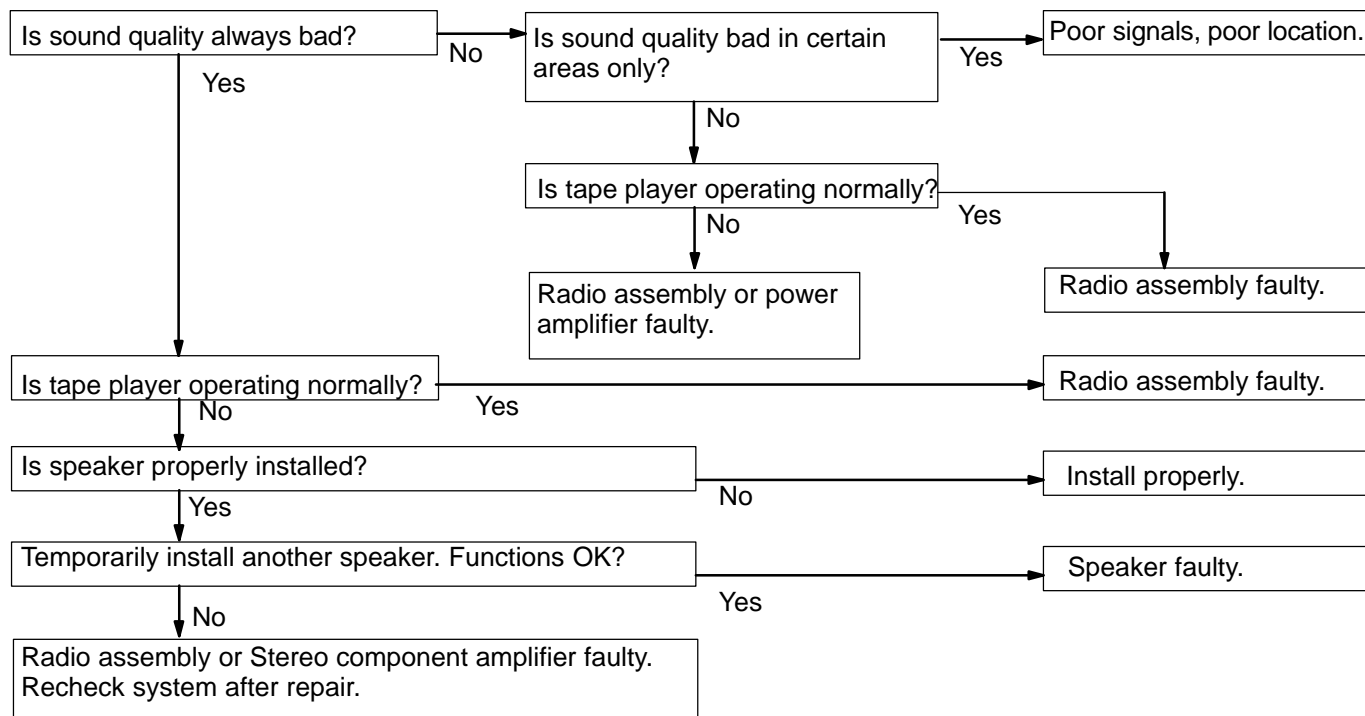
4	Radio	ANY SPEAKER DOSE NOT WORK
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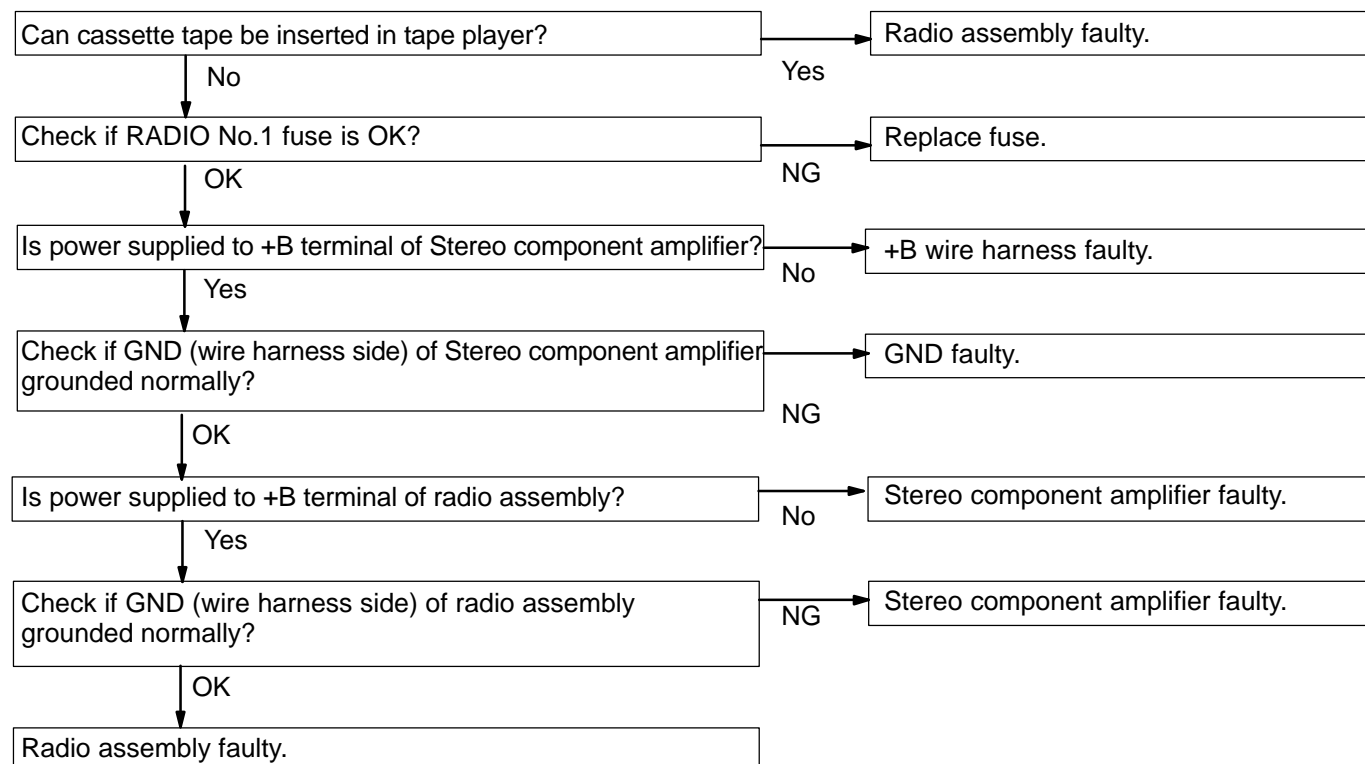




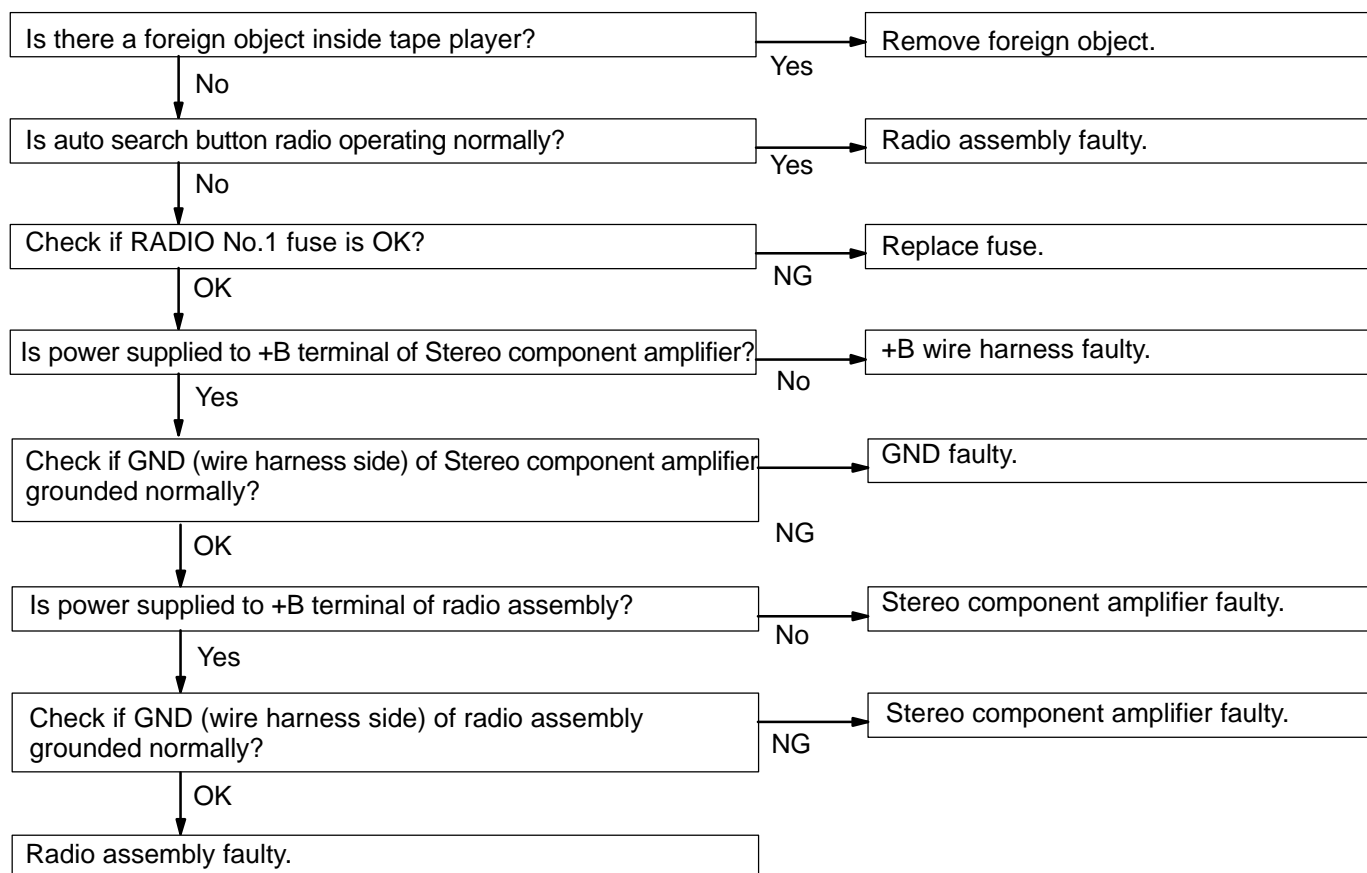
7	Radio	SOUND QUALITY POOR
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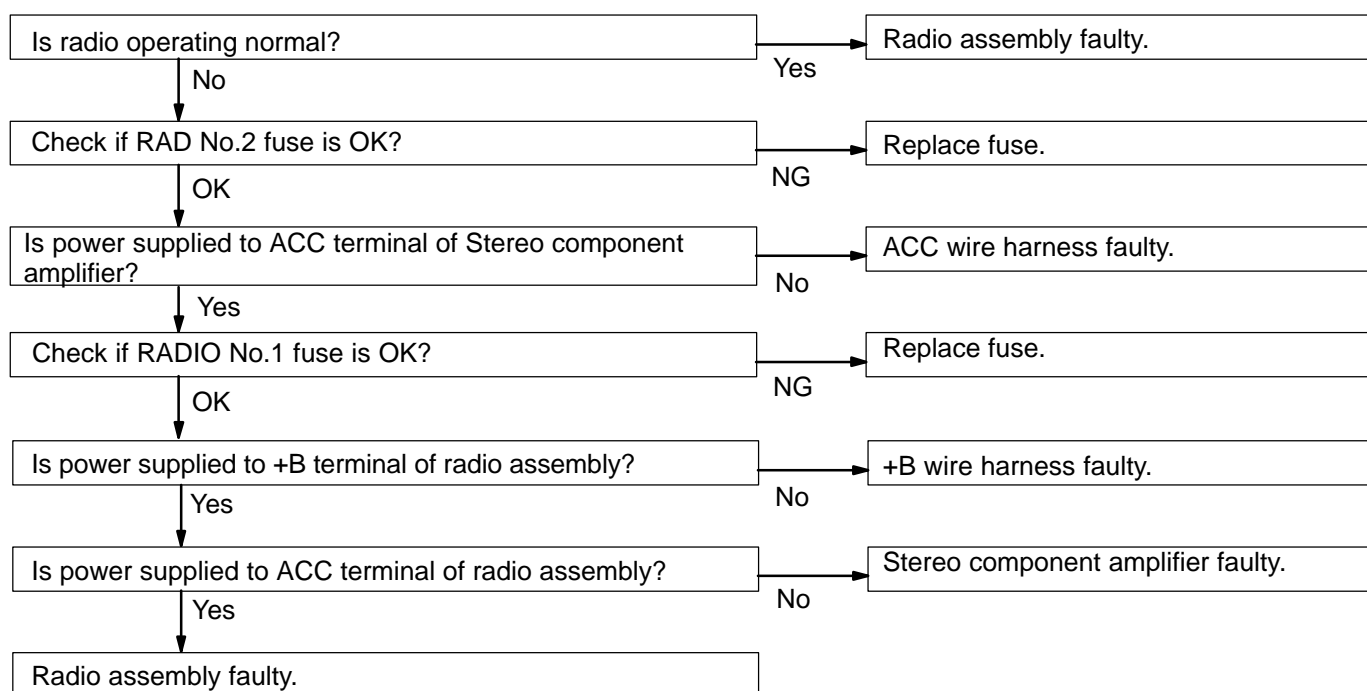
8	Radio	PRESET MEMORY DISAPPEARS
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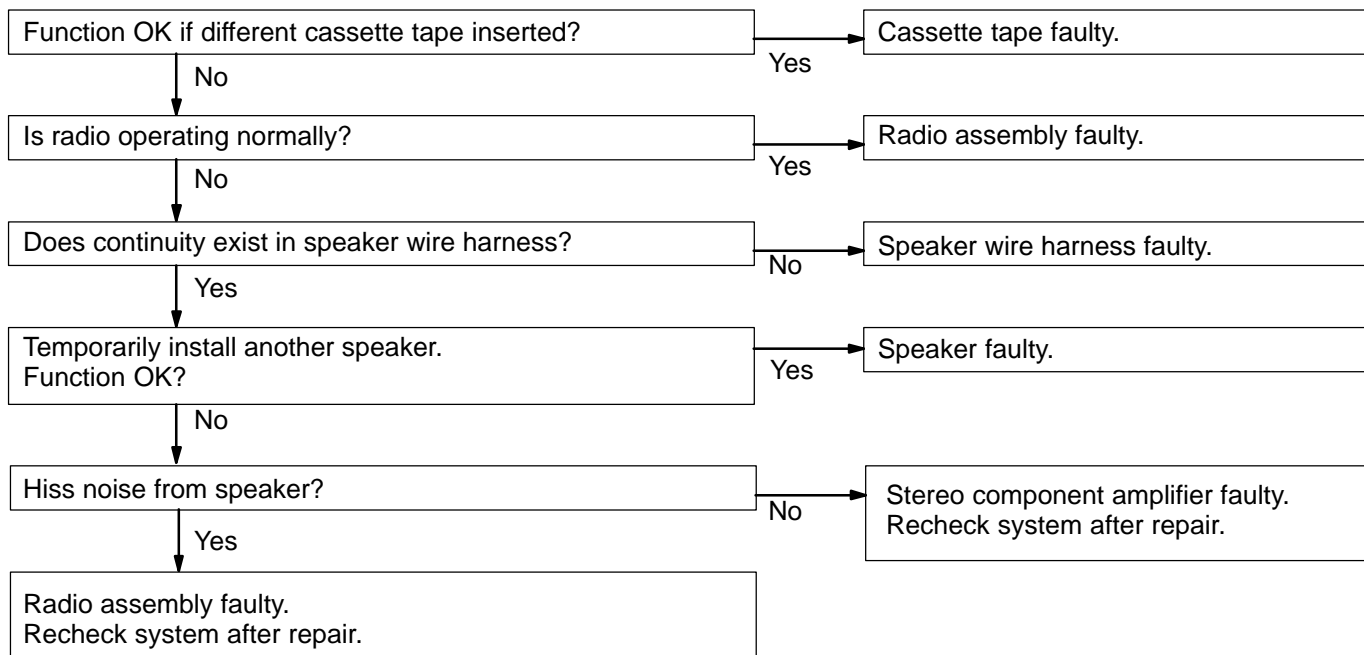
9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED
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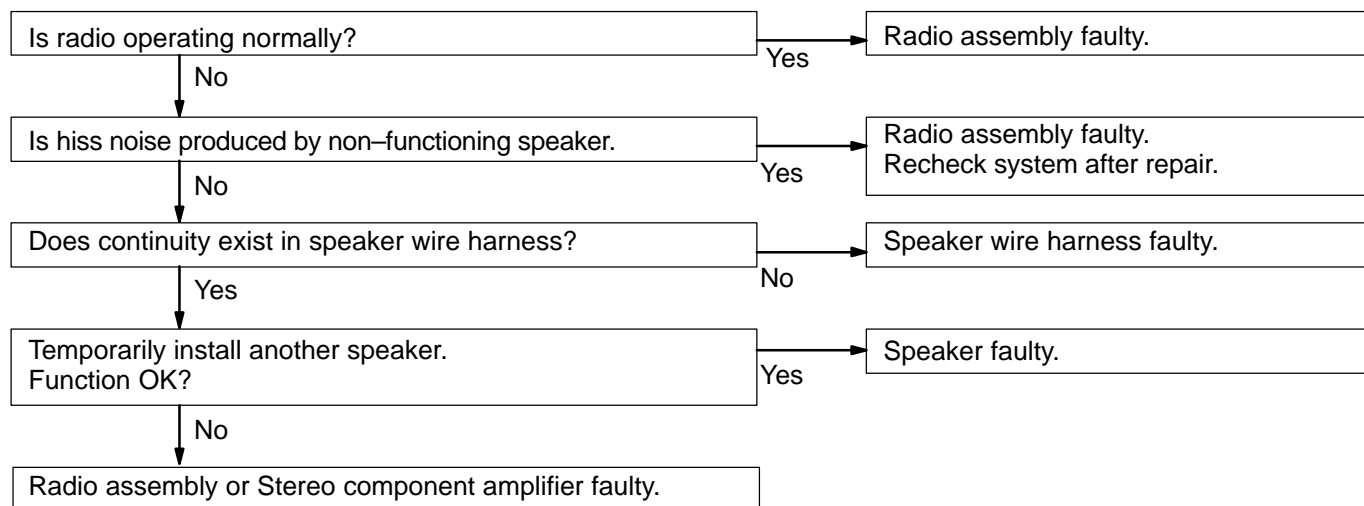
10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER
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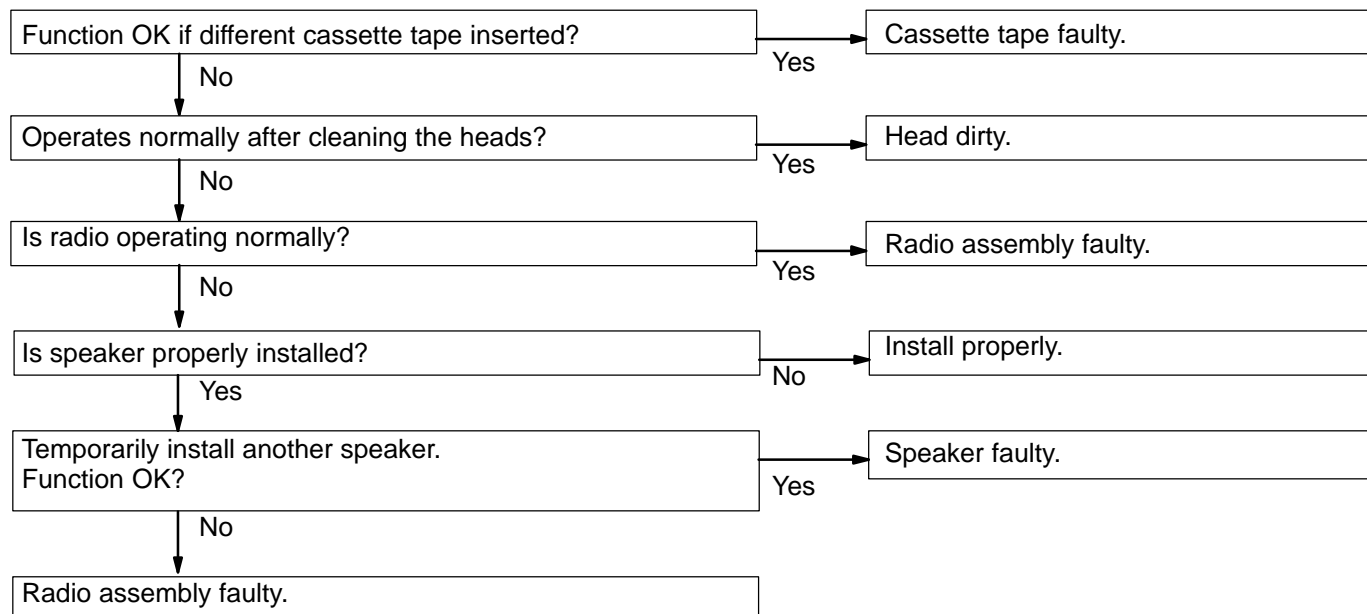
11	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING
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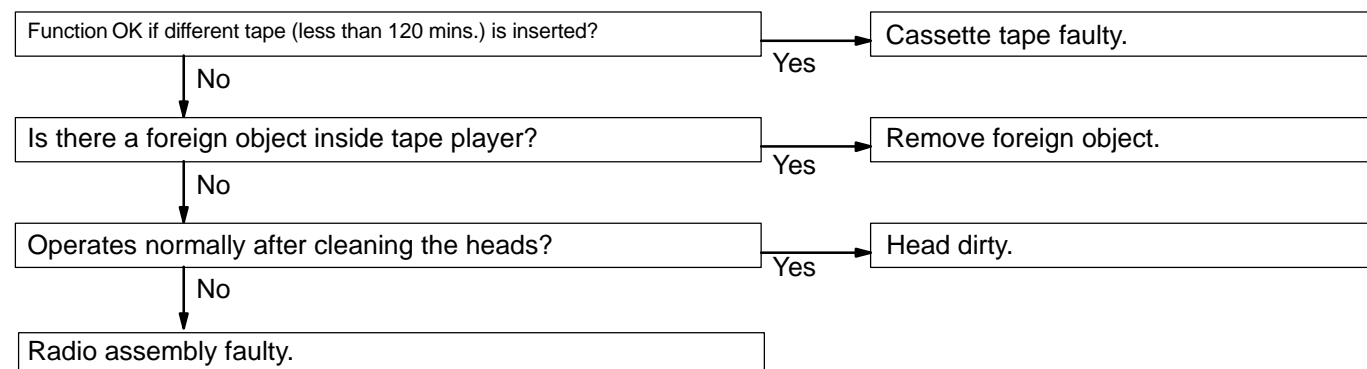
12	Tape Player	ANY SPEAKER DOES NOT WORK
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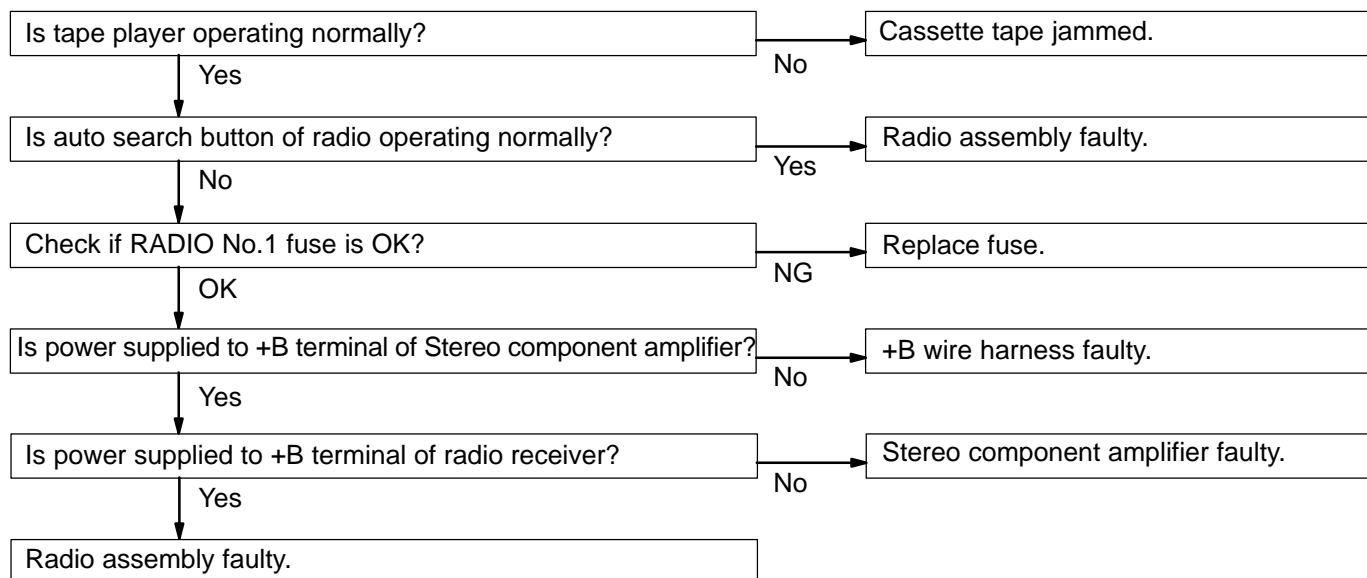
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)
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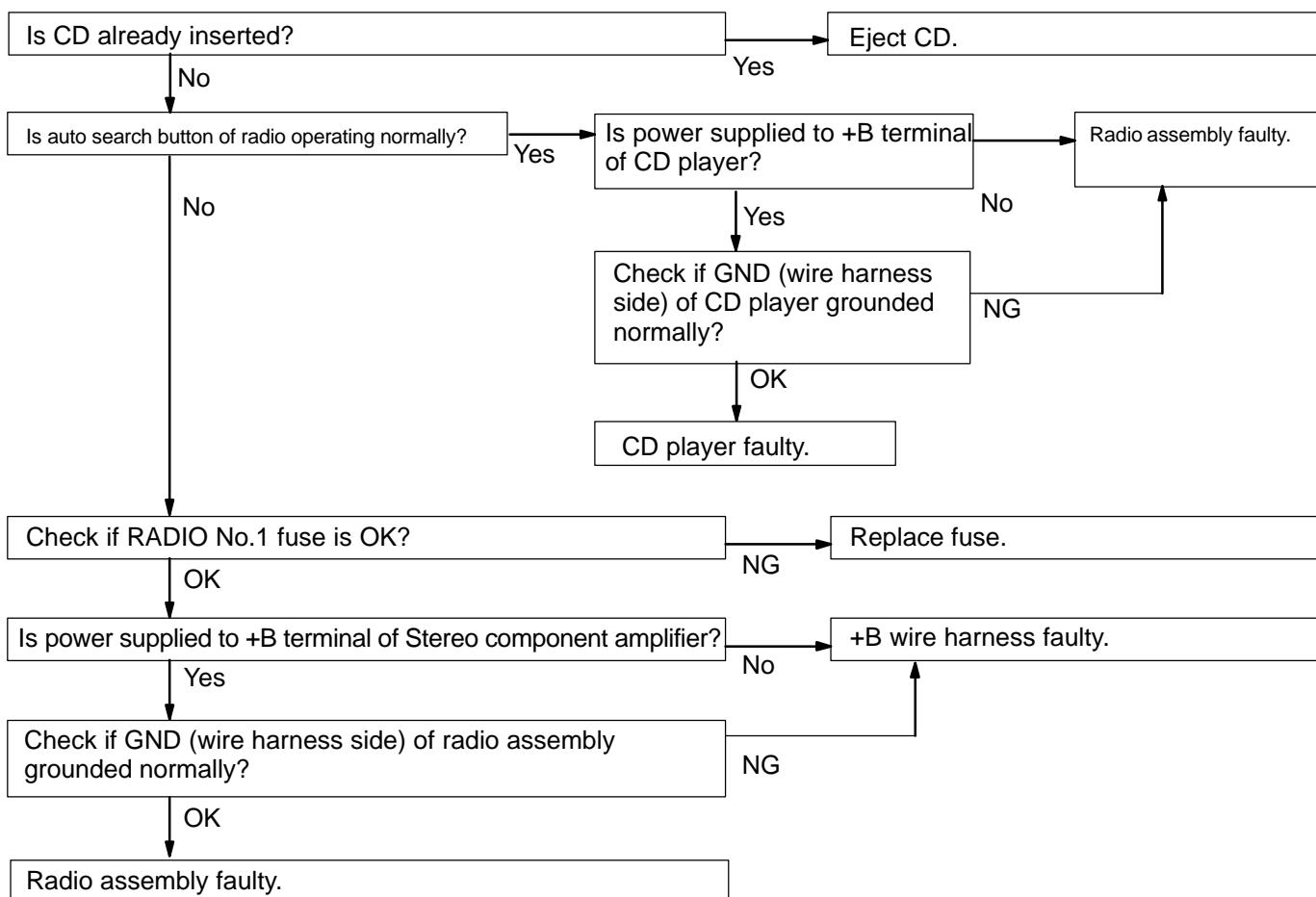
14	Tape Player	TAPE JAMMED MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE
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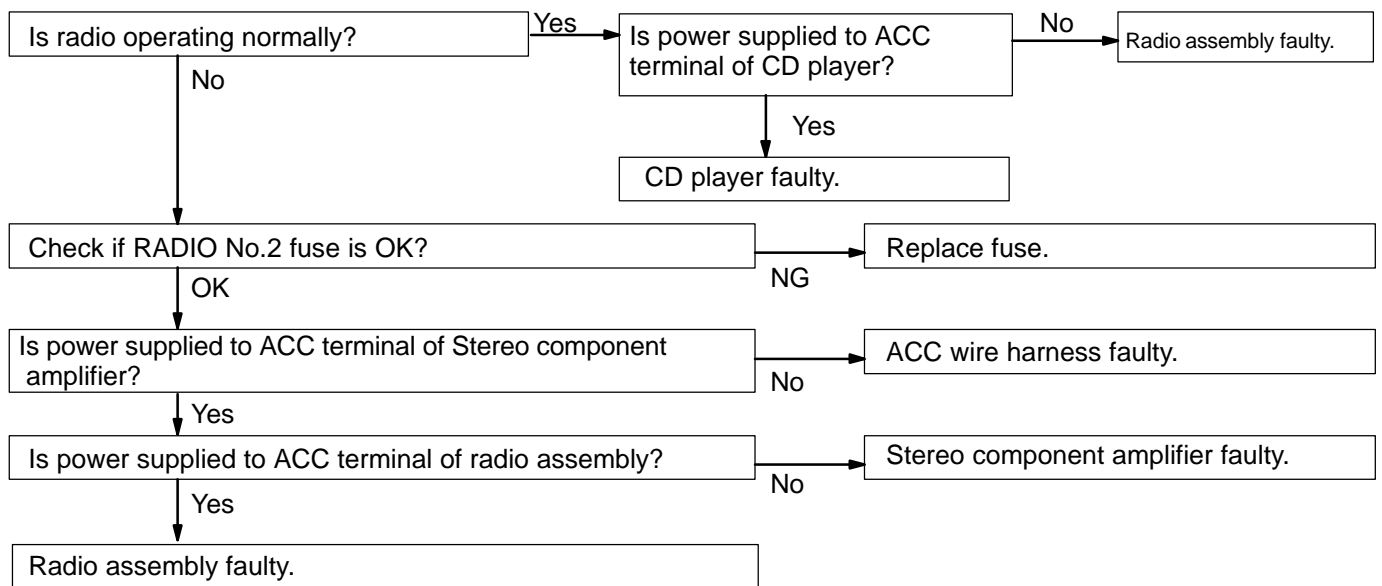
15	Tape Player	CASSETTE TAPE WILL NOT BE EJECTED
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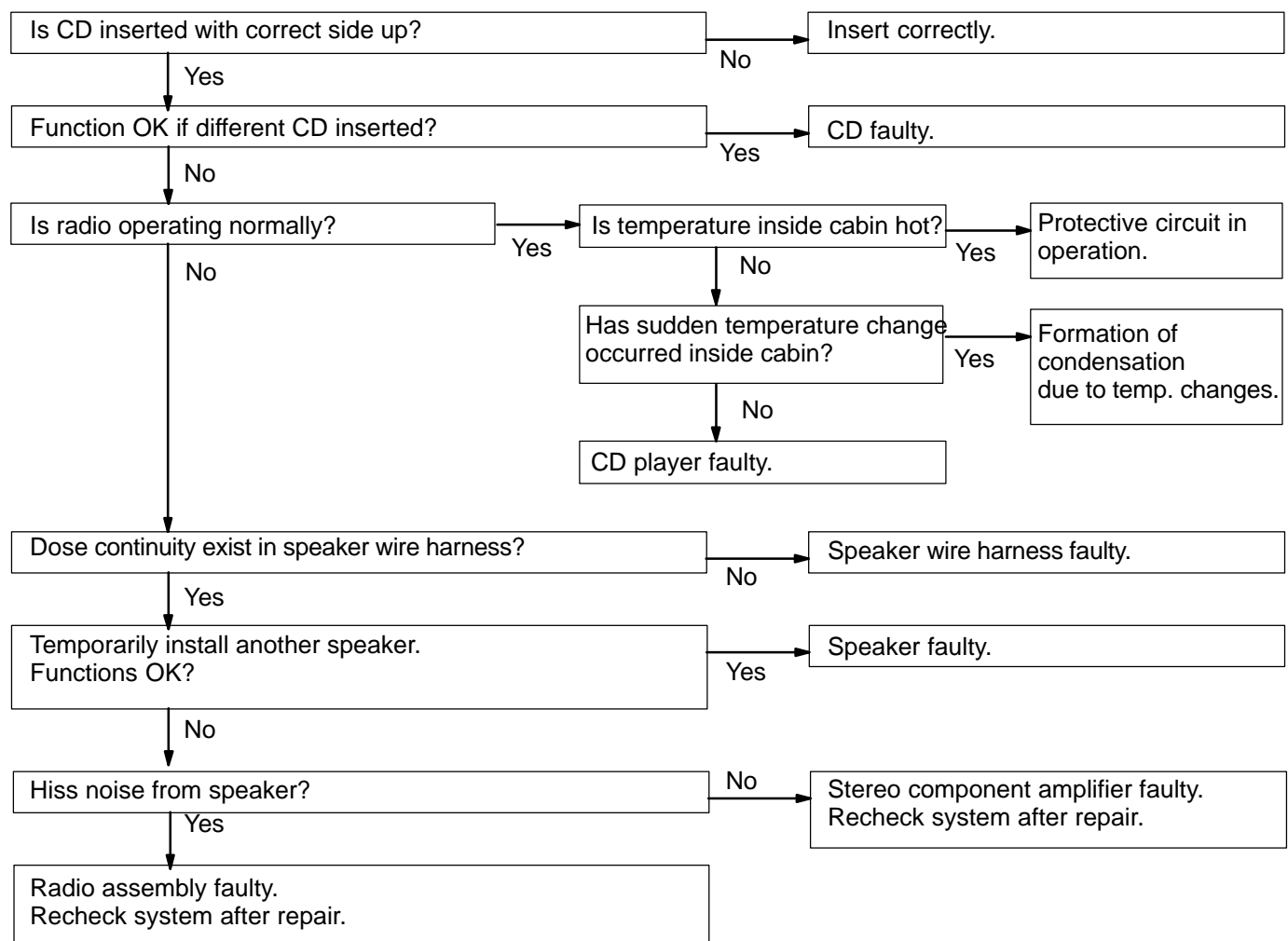
16	CD Player	CD CANNOT BE INSERTED
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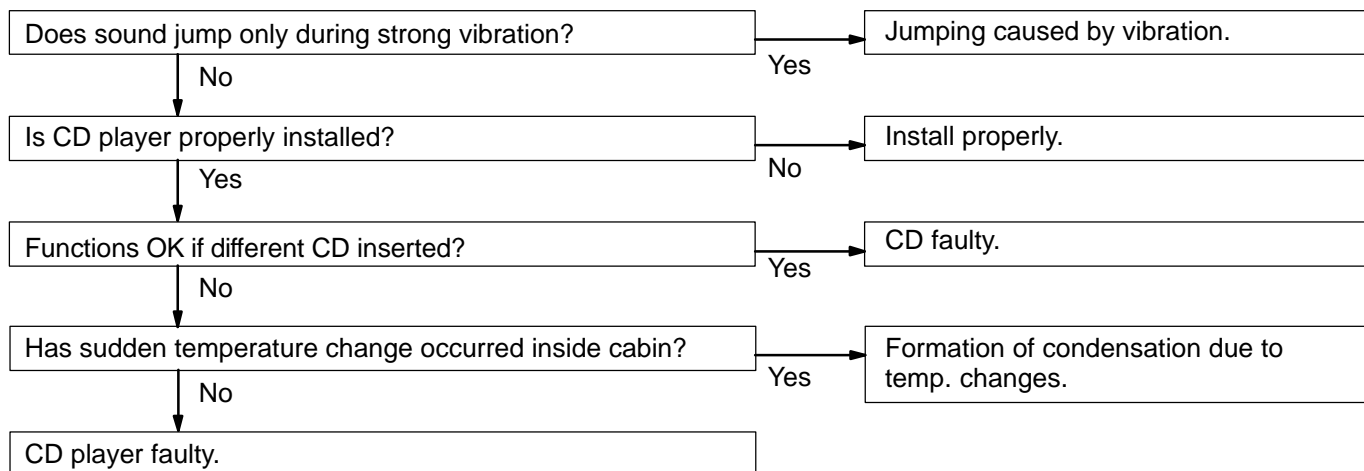
17	CD Player	CD INSERTED, BUT NO POWER
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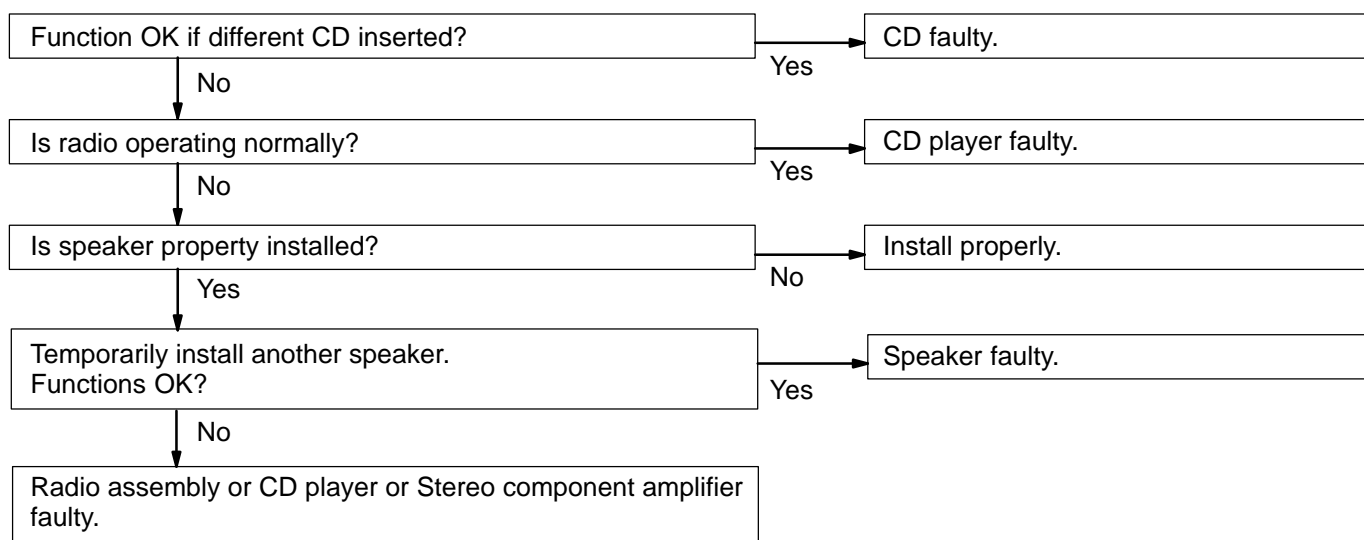
18	CD Player	POWER COMING IN, BUT CD PLAYER NOT OPERATING
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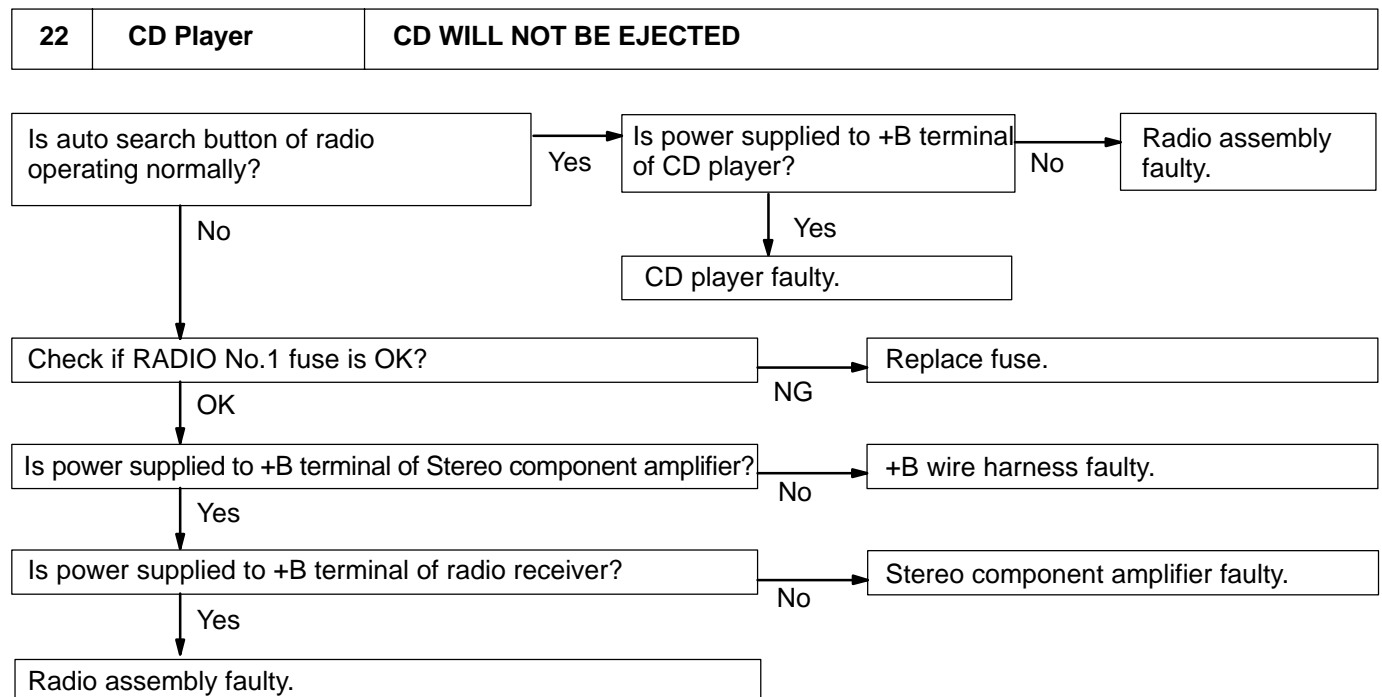
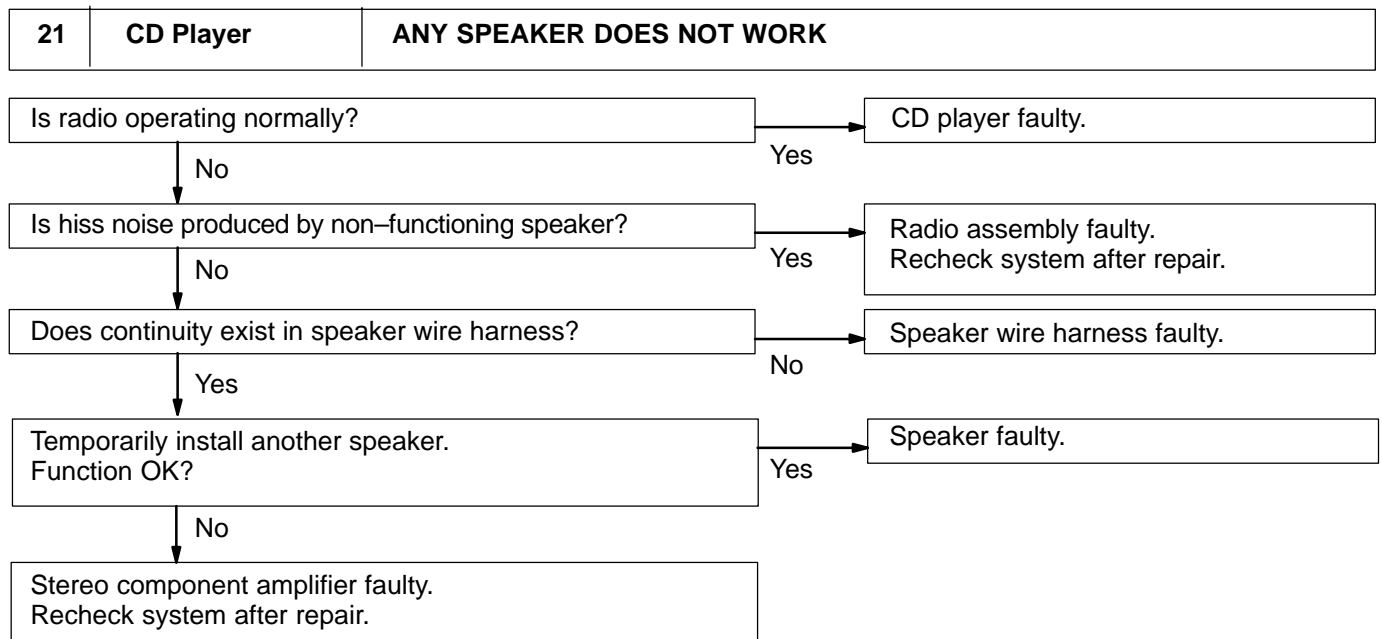


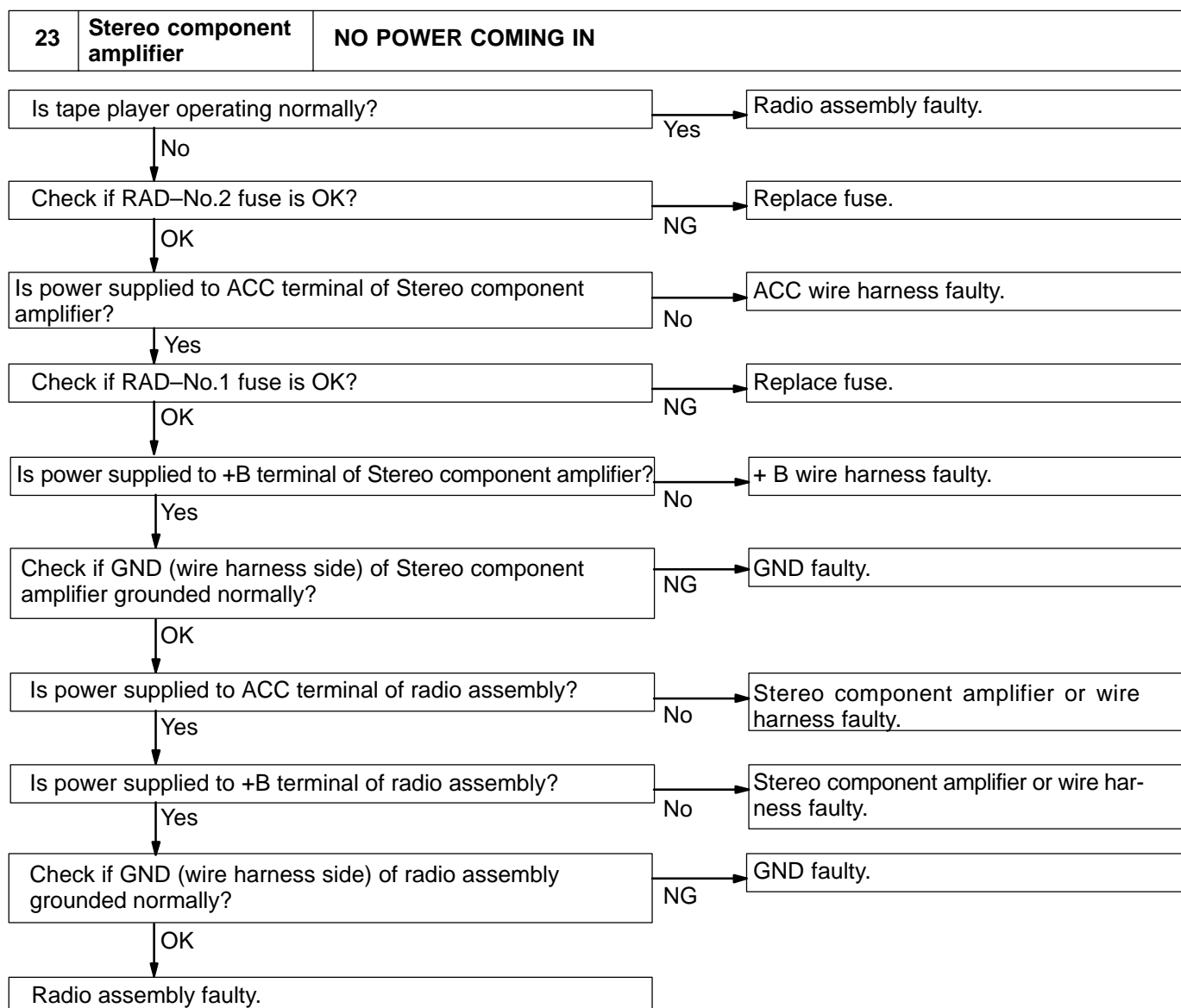
19	CD Player	SOUND JUMPS
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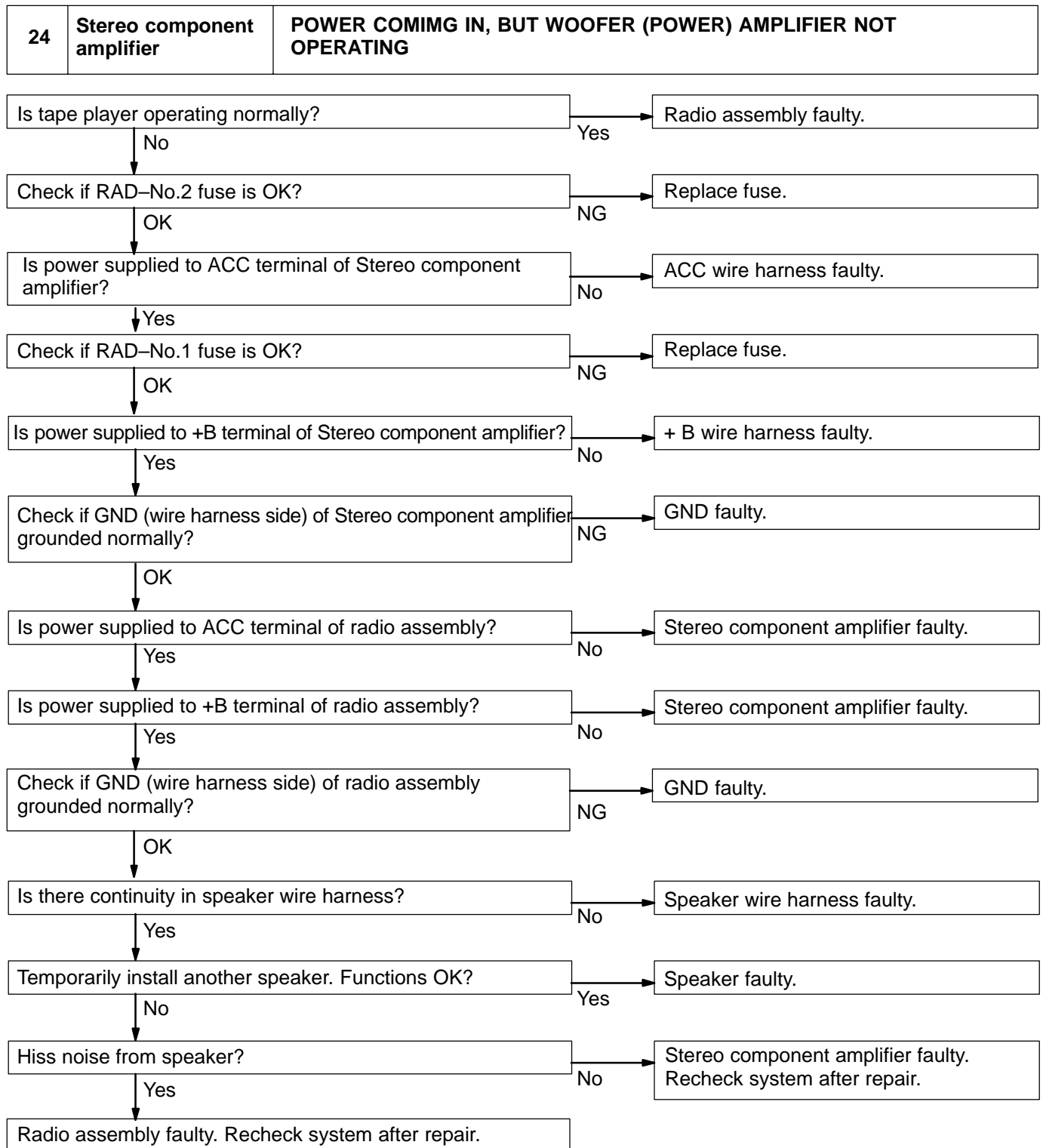


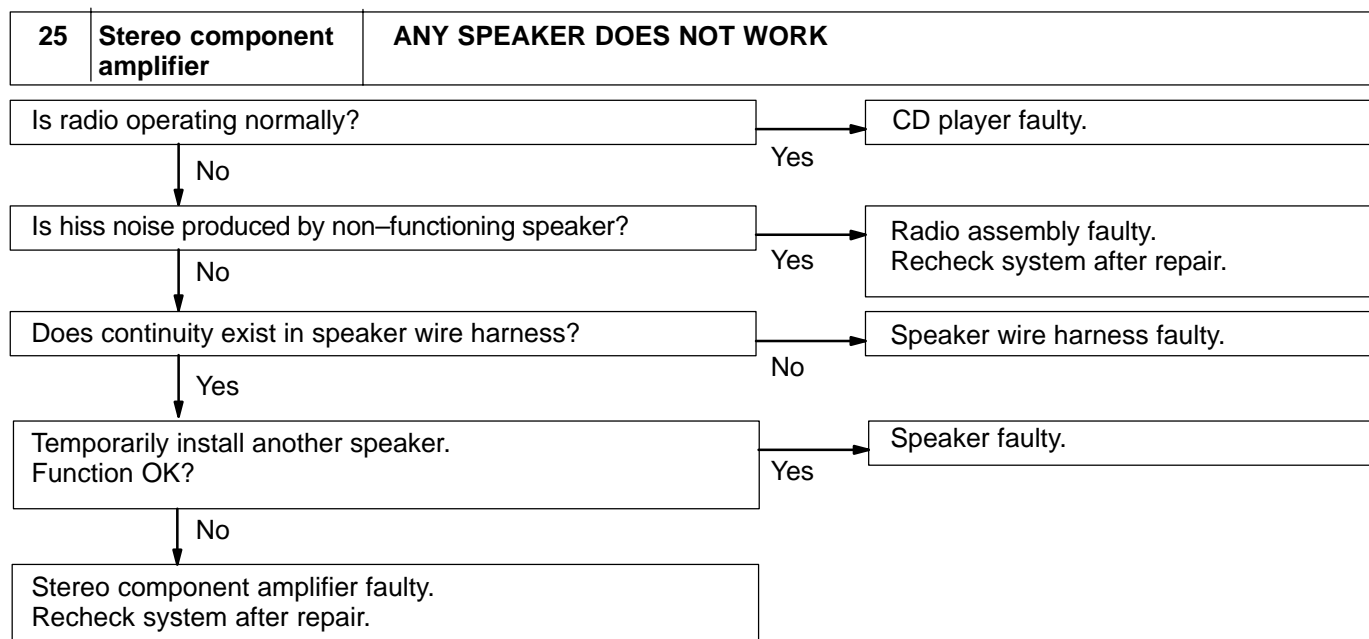
20	CD Player	SOUND QUALITY POOR (VOLUME FAINT)
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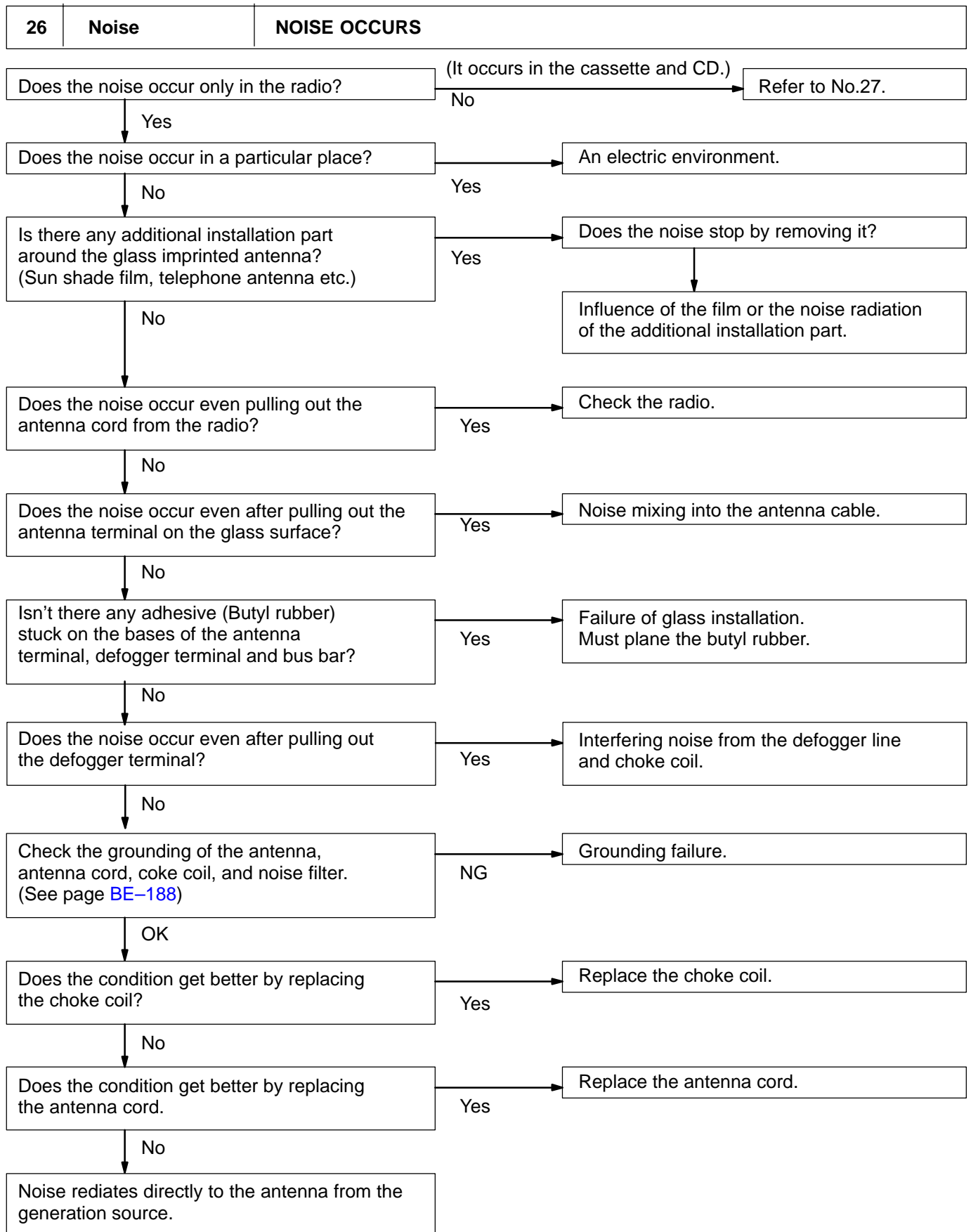




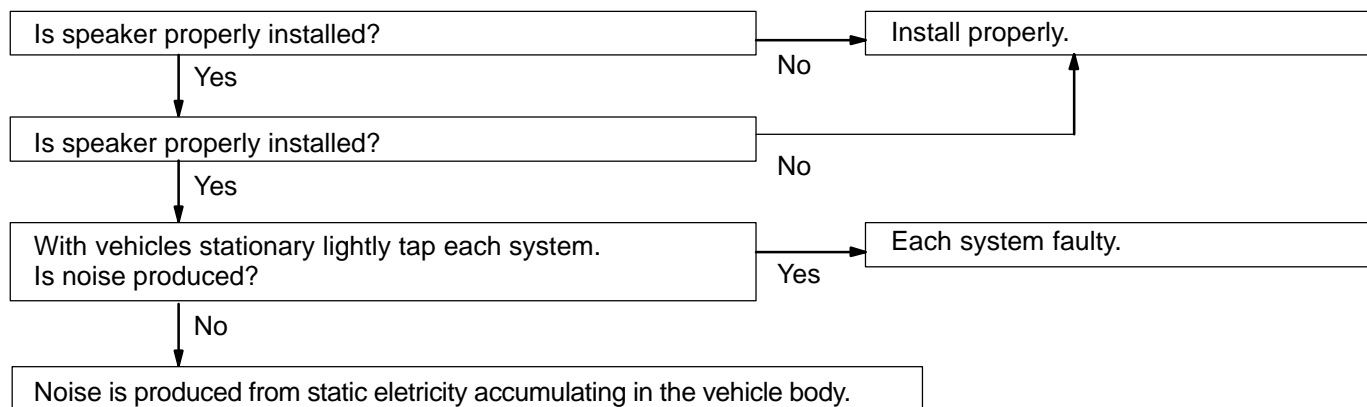








27	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING
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28	Noise	NOISE PRODUCED WHEN ENGINE STARTS
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