

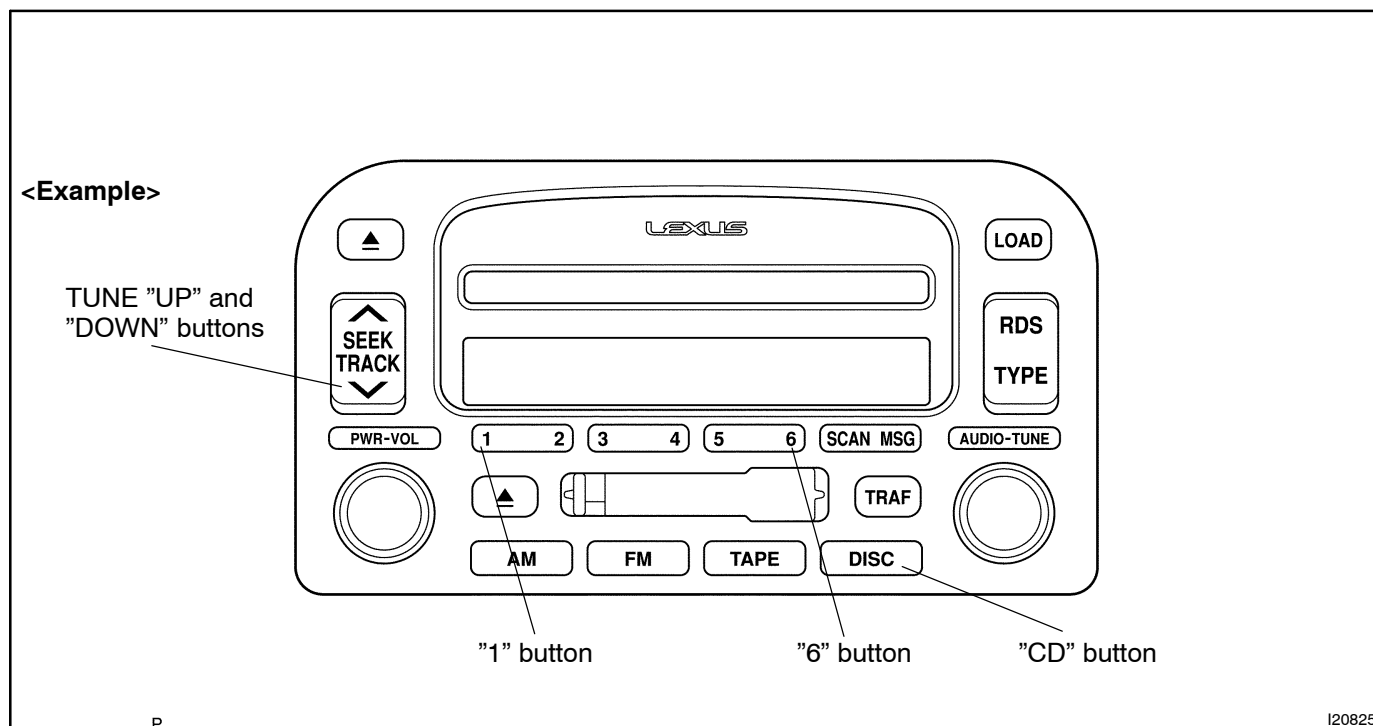
TROUBLESHOOTING

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:

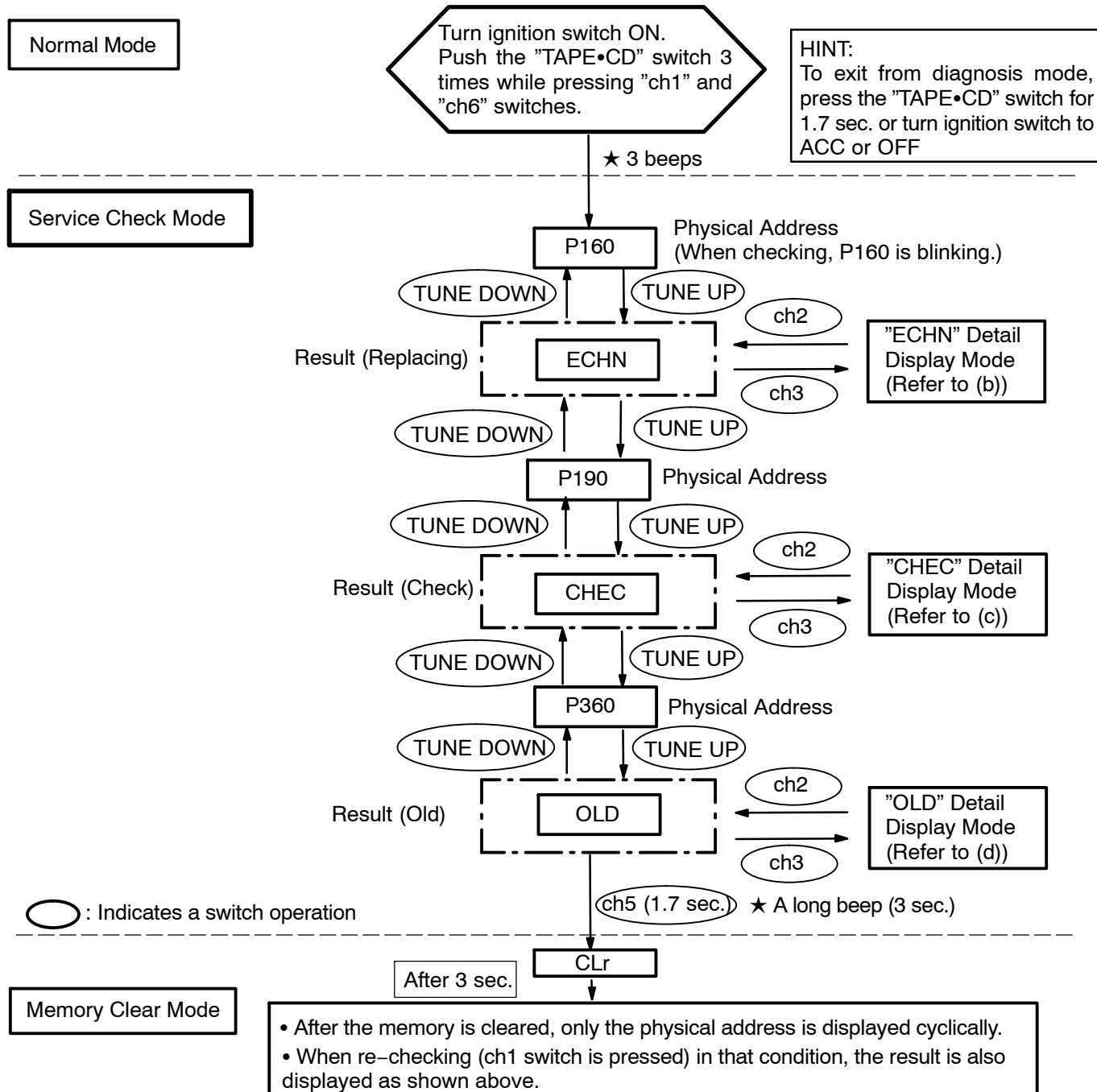
- good:
No DTC is detected for both "System Check Confirmation" and "Diagnosis Memory Response".
- nCon:
The Component does not respond to the "Diagnosis On Instruction" command.
Applicable to only the system where connected components are limited to be used.
- ECHn:
Application of new version has been 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.

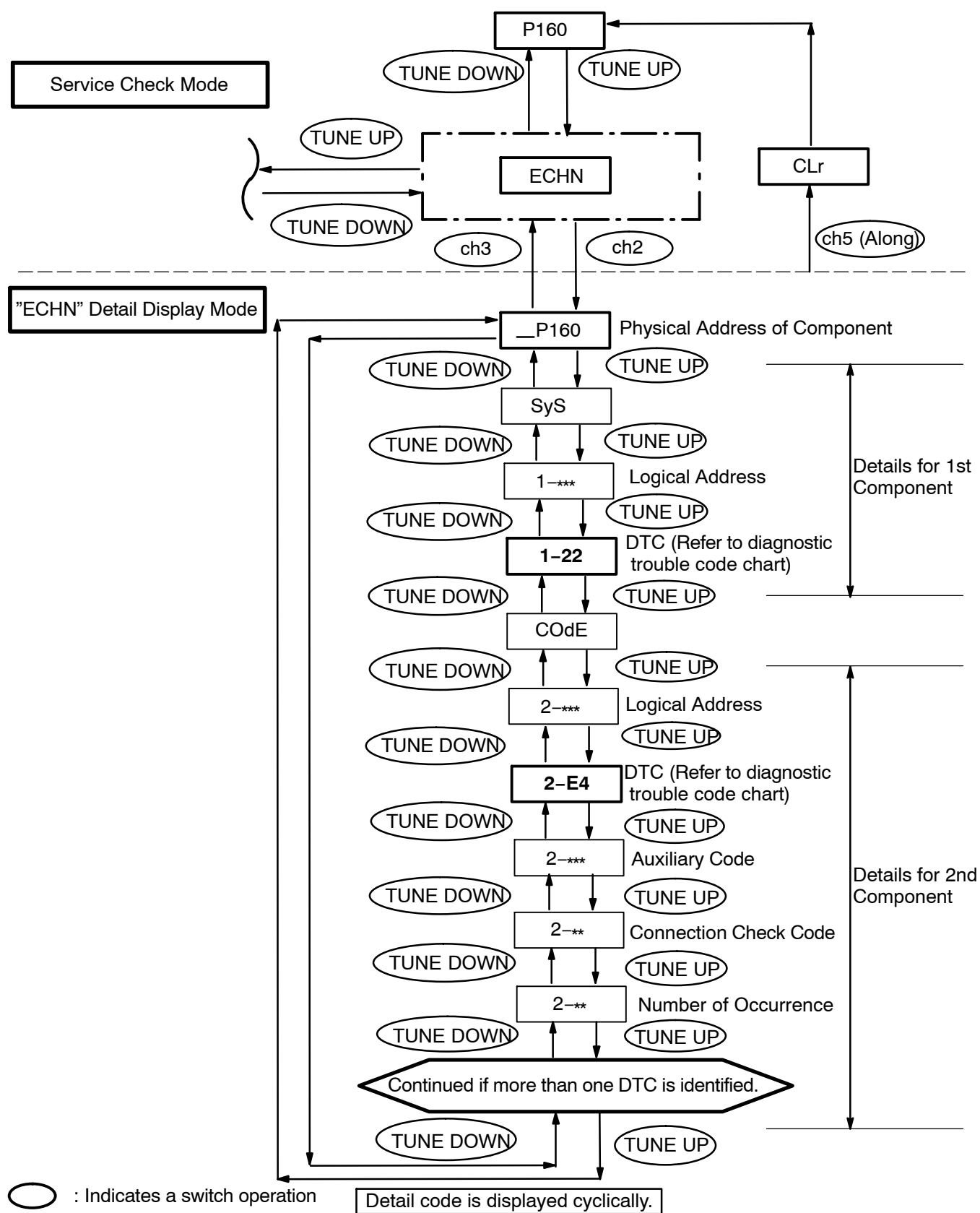
(c) Display Screen for Service Check.

Example:

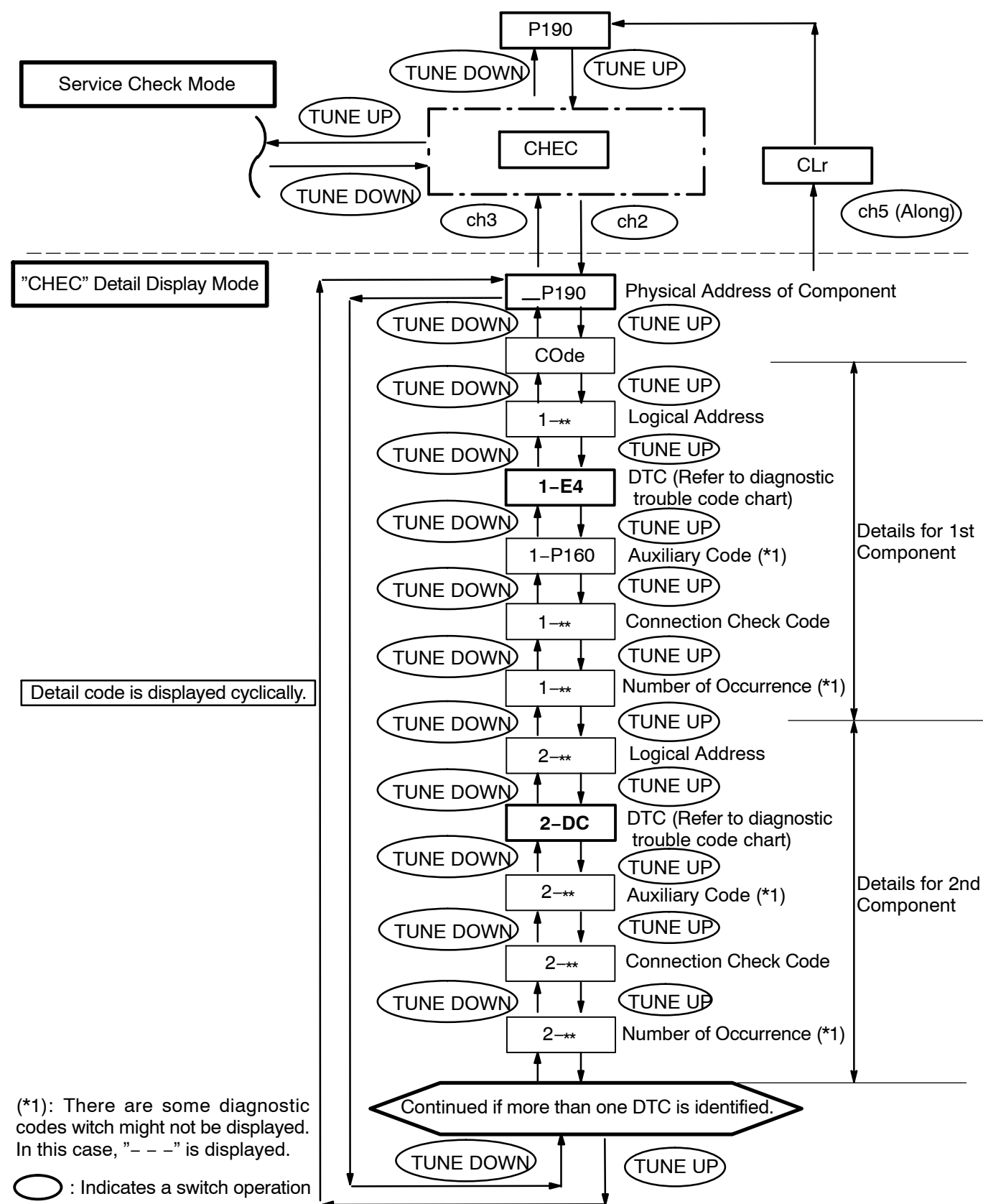
Connection parts (physical address): Multi Display (P160), Radio Receiver (P190), CD changer (P360)



(d) "ECHN" Detail Display Mode Screen



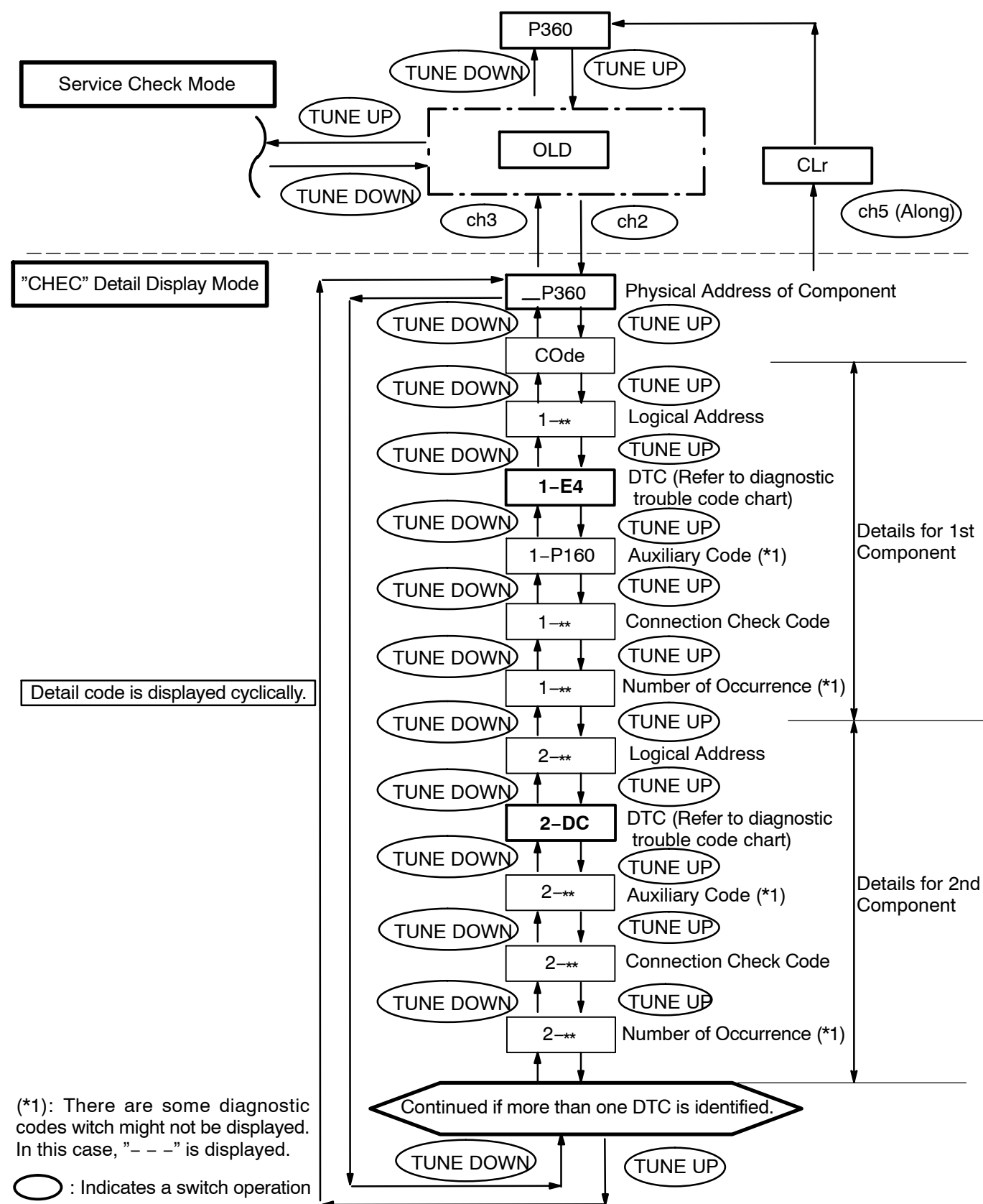
(e) "CHEC" Detail Display Mode Screen



(*1): There are some diagnostic codes which might not be displayed. In this case, "--" is displayed.

○ : Indicates a switch operation

(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

Physical address: 190 Radio receiver assembly

Logical address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	21	ROM Error	Error is detected in internal ROM.	Replace radio receiver assembly.
01 (Communication Control)	22	RAM Error	Error is detected in internal RAM.	Replace radio receiver assembly.
01 *2 (Communication Control)	D6	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 assembly was disconnected.	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly.
01 *3 (Communication Control)	D8	No Response to Connection Check	Component shown by auxiliary code is or had been disconnected from system after engine start. D9	● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *2 (Communication Control)	D9	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.	● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 (Communication Control)	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.	● Check harness for power supply 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.
01 *2 (Communication Control)	DB	Mode Status Error	Dual alarm is detected.	● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *4 (Communication Control)	DC	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 other component, check harness for power supply and communication system of components shown sub code.
01 *5 (Communication Control)	DD	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	● If this error occurs frequently, replace radio receiver assembly assembly.

01 *5 (Communication Control)	DE	Slave Reset (Momentary Interruption)	After engine is started, slave component was disconnected from system.	● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *6 (Communication Control)	DF	Master Error	Due to defective condition of radio receiver assembly, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and radio receiver assembly.	● Check harness for power supply of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly . ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
01 *2 (Communication Control)	E1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	● Check harness for power supply of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly.
01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from radio receiver assembly assembly.	● Replace radio receiver assembly .
01 (Communication Control)	E3	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.
01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
60 (Radio receiver assembly)	43	AM Tuner Error	Abnormal condition is detected in AM tuner. Inspect radio receiver assembly.	Replace radio receiver assembly.
60 (Radio receiver assembly)	44	FM Tuner Error	Abnormal condition is detected in FM tuner.	Replace radio receiver assembly.
61 (Cassette switch)	40	Mechanical or Media Error	Malfunction due to mechanical failure is identified. Or, cassette tape is cut or entangled.	Inspect cassette tape.
61 (Cassette switch)	41	EJECT Malfunction	Malfunction due to mechanical failure.	Replace radio receiver assembly.
63 (In-dash CD auto changer)	42	No Disc Readout	Disc cannot be read.	Inspect CD.
63 (In-dash CD auto changer)	44	CD Error	Error is detected in CD auto changer.	Replace radio receiver assembly.

Logimal address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspeced parts
63 (In-dash CD auto Changer)	45	EJECT Error	CD cannot be ejected.	Replace radio receiver assembly.
63 (In-dash CD auto Changer)	47	CD High Temp.	High temperature is detected in CD auto changer.	Replace radio receiver assembly.
63 (In-dash CD auto Changer)	48	CD Excess Current	Excess current is applied to CD auto changer.	Replace 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 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.

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.

Logimal address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspeced parts
01 (Communication Control)	21	ROM Error	Abnormal condition of ROM is detected.	Replace stereo component amplifier
01 (Communication Control)	22	RAM Error	Abnormal condition of RAM is detected.	Replace stereo component amplifier
01 (Communication Control)	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.	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of stereo component amplifier ● Check harness for communication system of stereo component amplifier.
01*6 (Communication Control)	D7	Connection Check Error	Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, radio receiver assembly was disconnected. D6	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of stereo component amplifier ● Check harness for communication system of stereo component amplifier.

01 (Communication Control)	DC *2	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.
01 (Communication Control)	DD *3	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	● Check harness for power supply system of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly assembly. ● If error occurs frequently, replace radio receiver assembly.
01 (Communication Control)	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.	● Check harness for power supply of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly assembly. ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
01 (Communication Control)	E1 *1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	● Check harness for power supply system of radio receiver assembly ● Check harness for communication system of radio receiver assembly.
01 (Communication Control)	E2	ON/OFF Instruction Parameter	Error is detected in ON/OFF control command from radio receiver assembly assembly.	Replace radio receiver assembly.
01 (Communication Control)	E3	Error Registration Request Transmission	● Registration Request command is output from slave component. ● By reception of connection check instruction, Registration Request command is output from sub-master component.	Since this DTC is provided for engineering, 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:

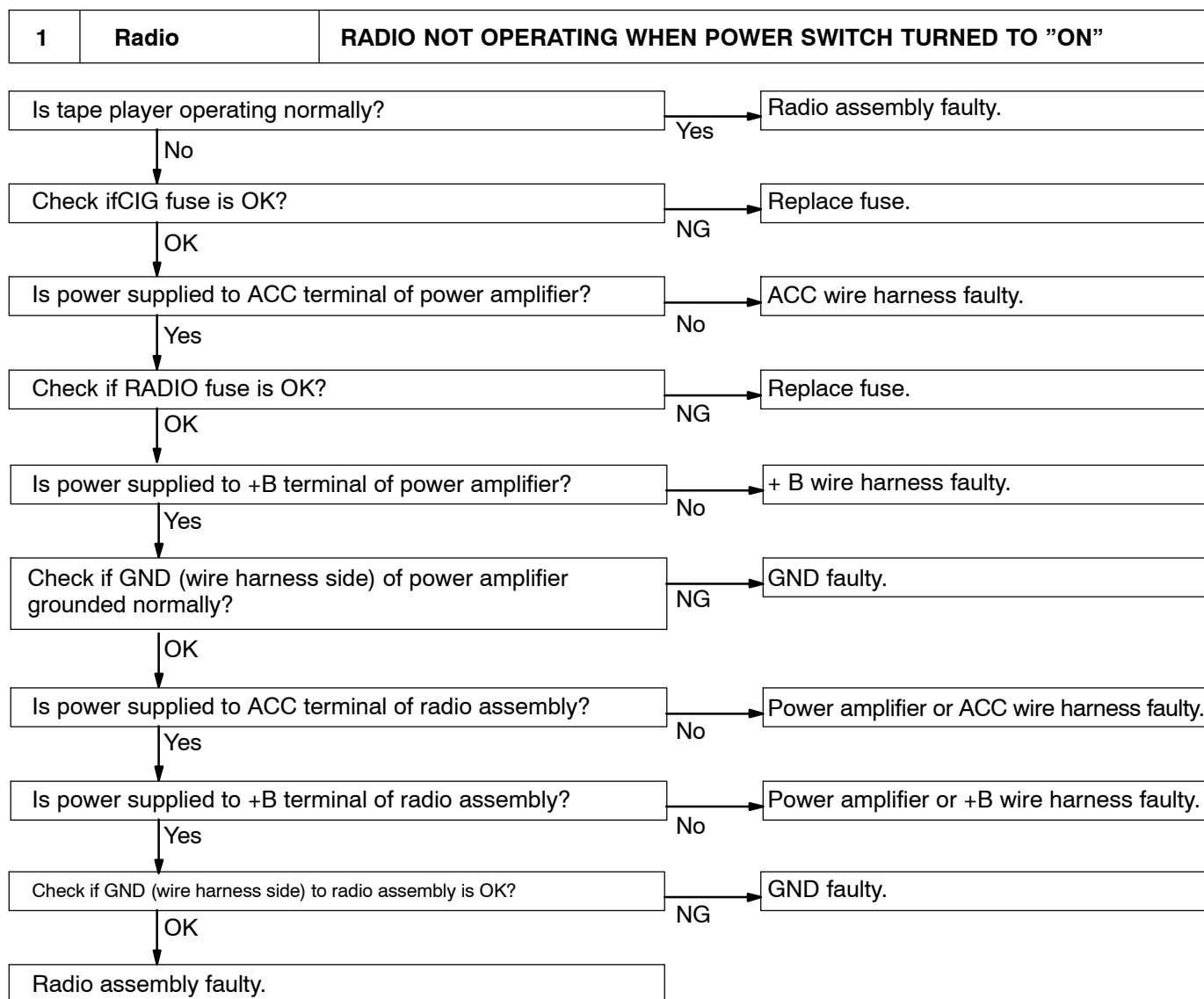
This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

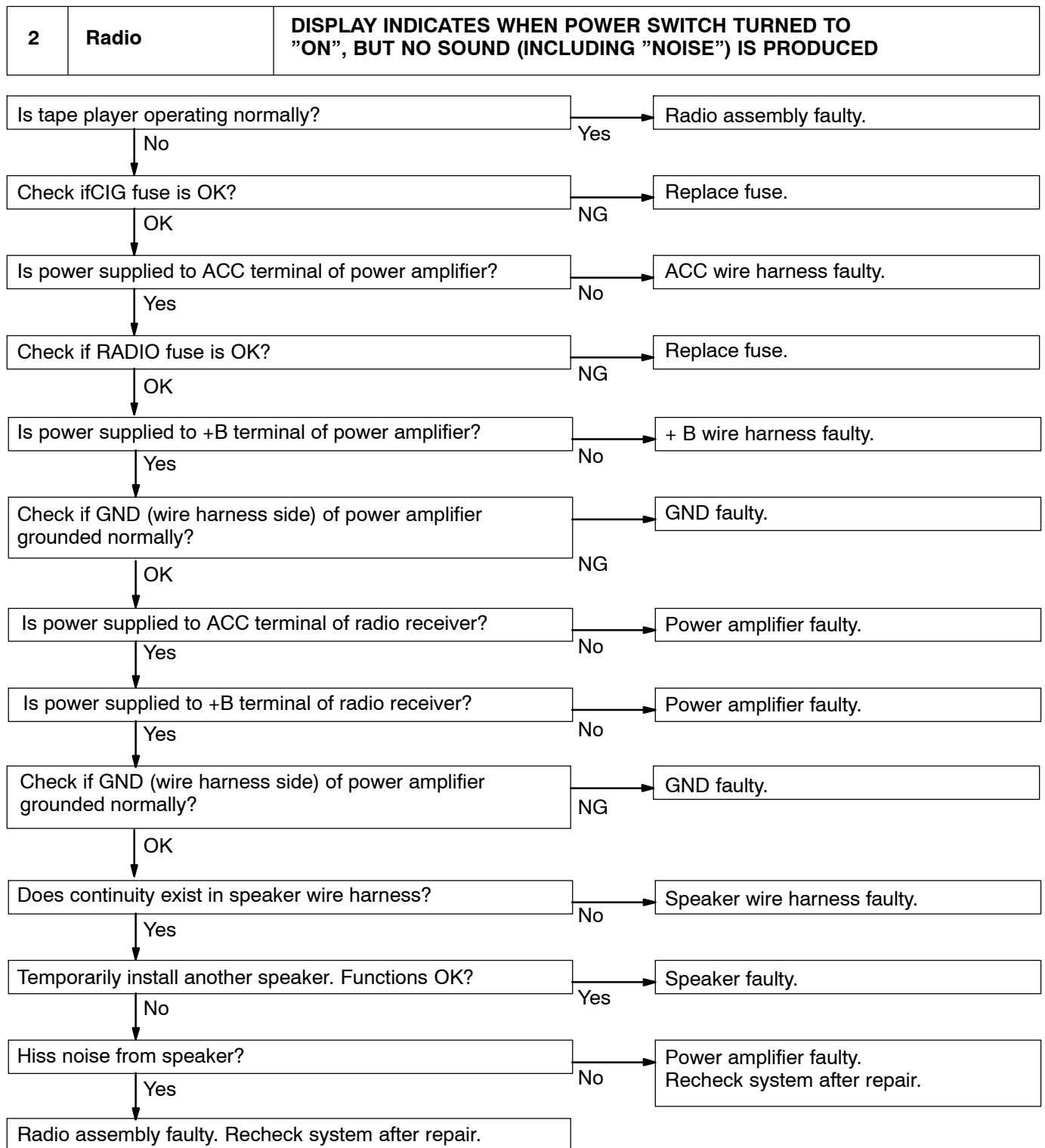
Always inspect the trouble taking the following items into consideration.

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

	Problem	Flow chart 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
	Preset memory disappears.	8
Tape Player	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
Power Amplifier	No power coming in.	16
	Power coming in, but power amplifier not operating.	17
	Any speaker does not work.	18
Noise	Noise occurs	19
	Noise produced by vibration or shock while driving.	20
	Noise produced when engine starts.	21

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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Go to No.25

If radio side faulty.

Radio faulty.

4	Radio	ANY SPEAKER DOES NOT WORK
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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

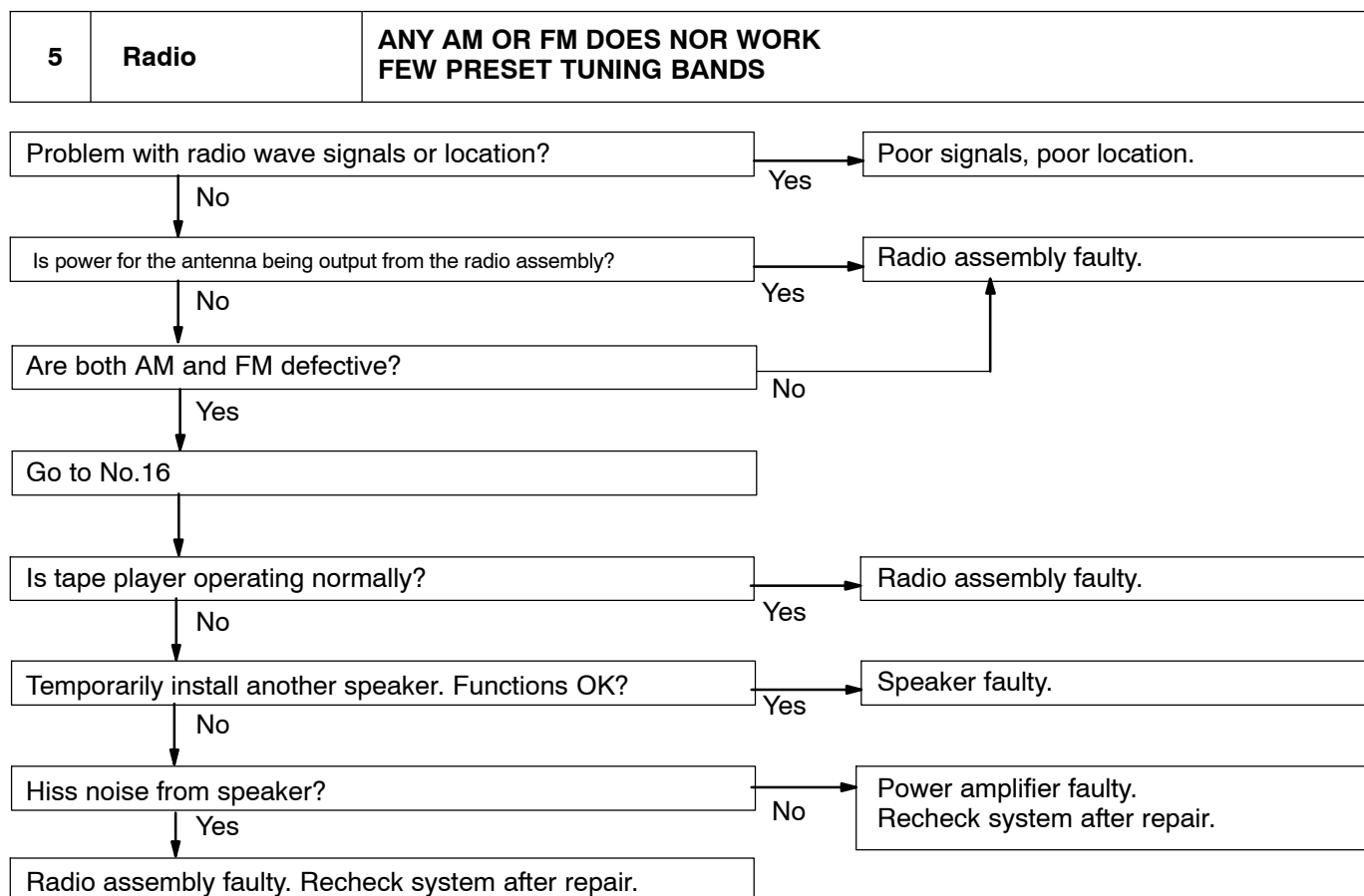
Temporarily install another speaker? Functions OK?

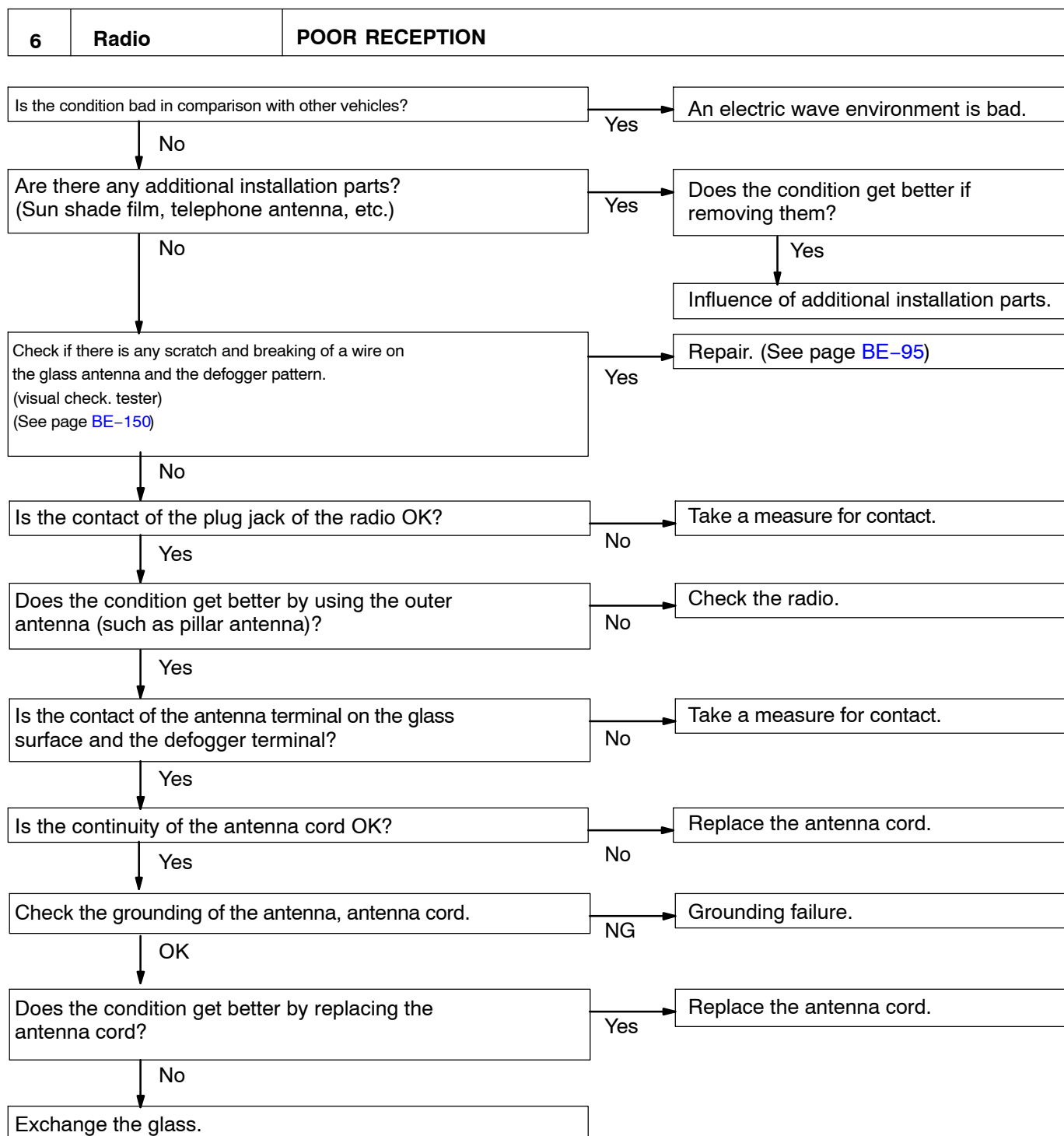
Yes

Speaker faulty.

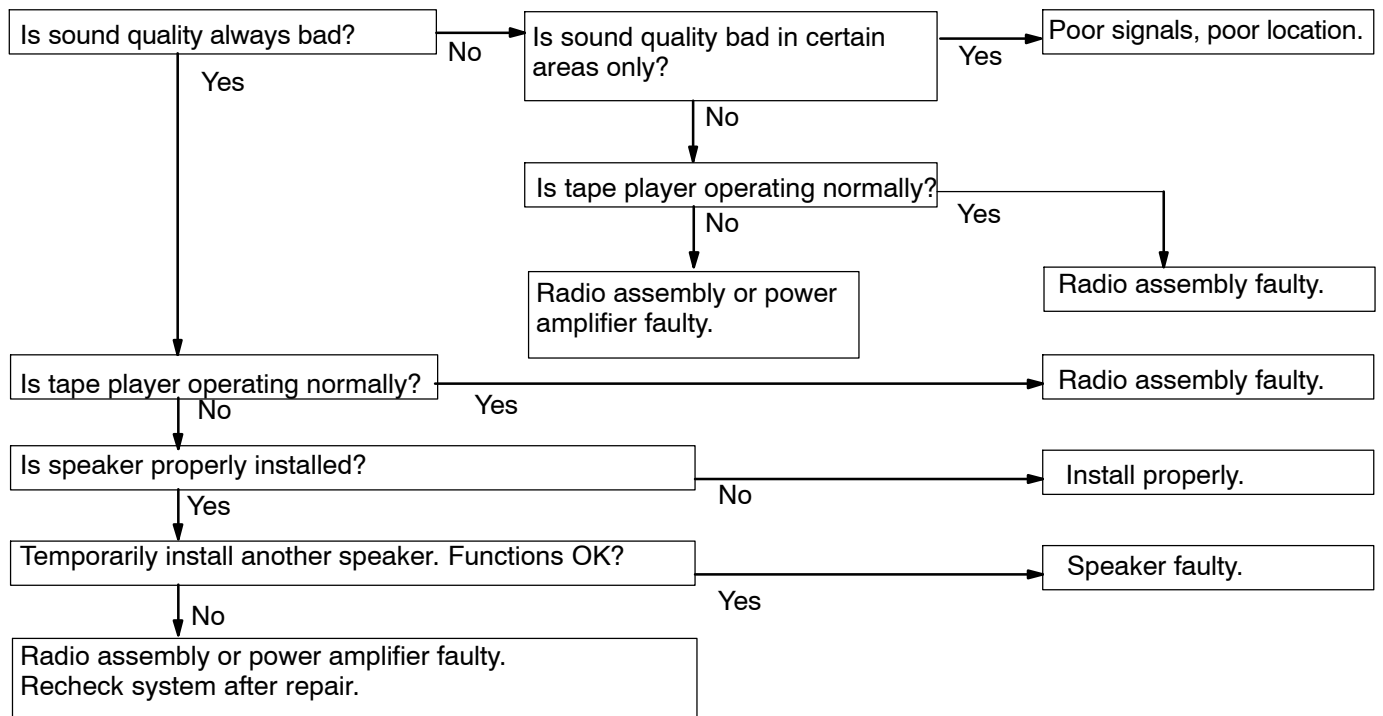
No

Power amplifier faulty. Recheck system after repair.

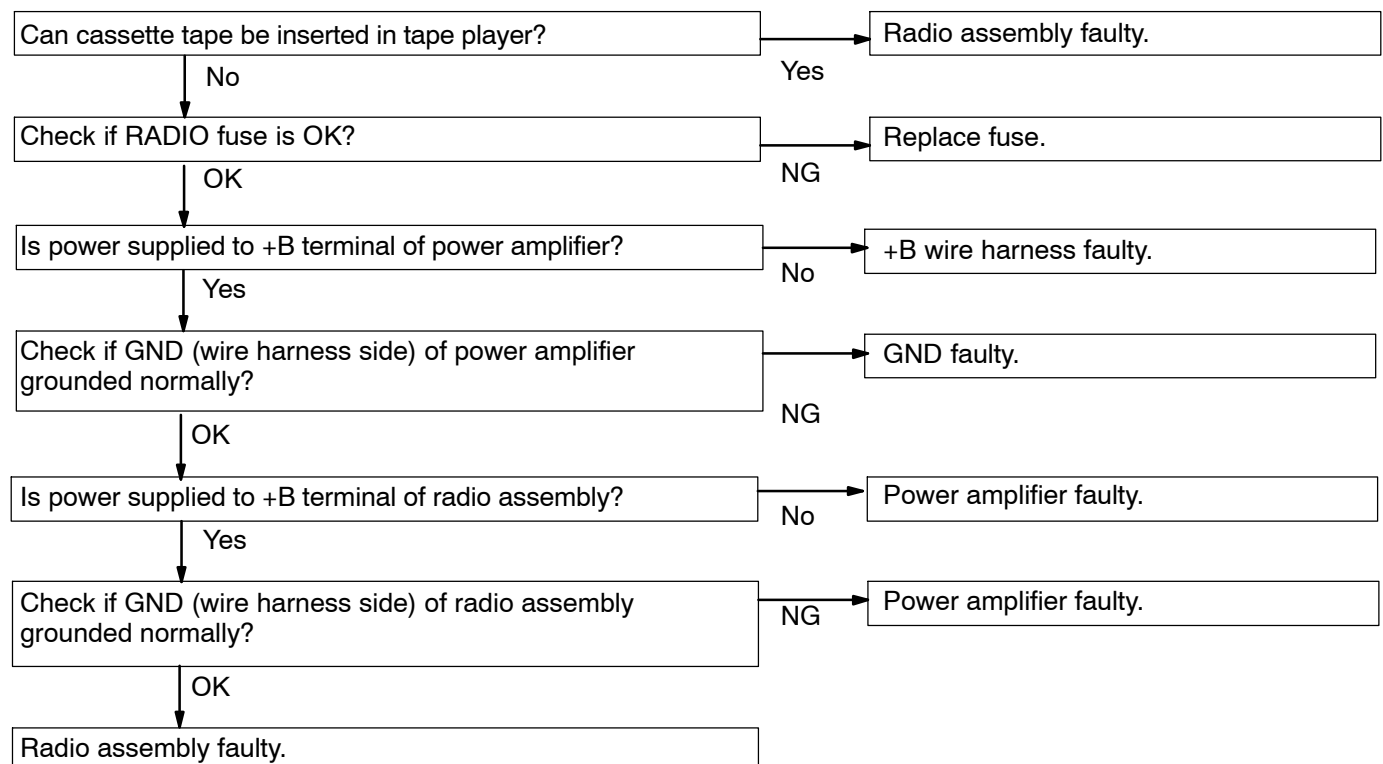




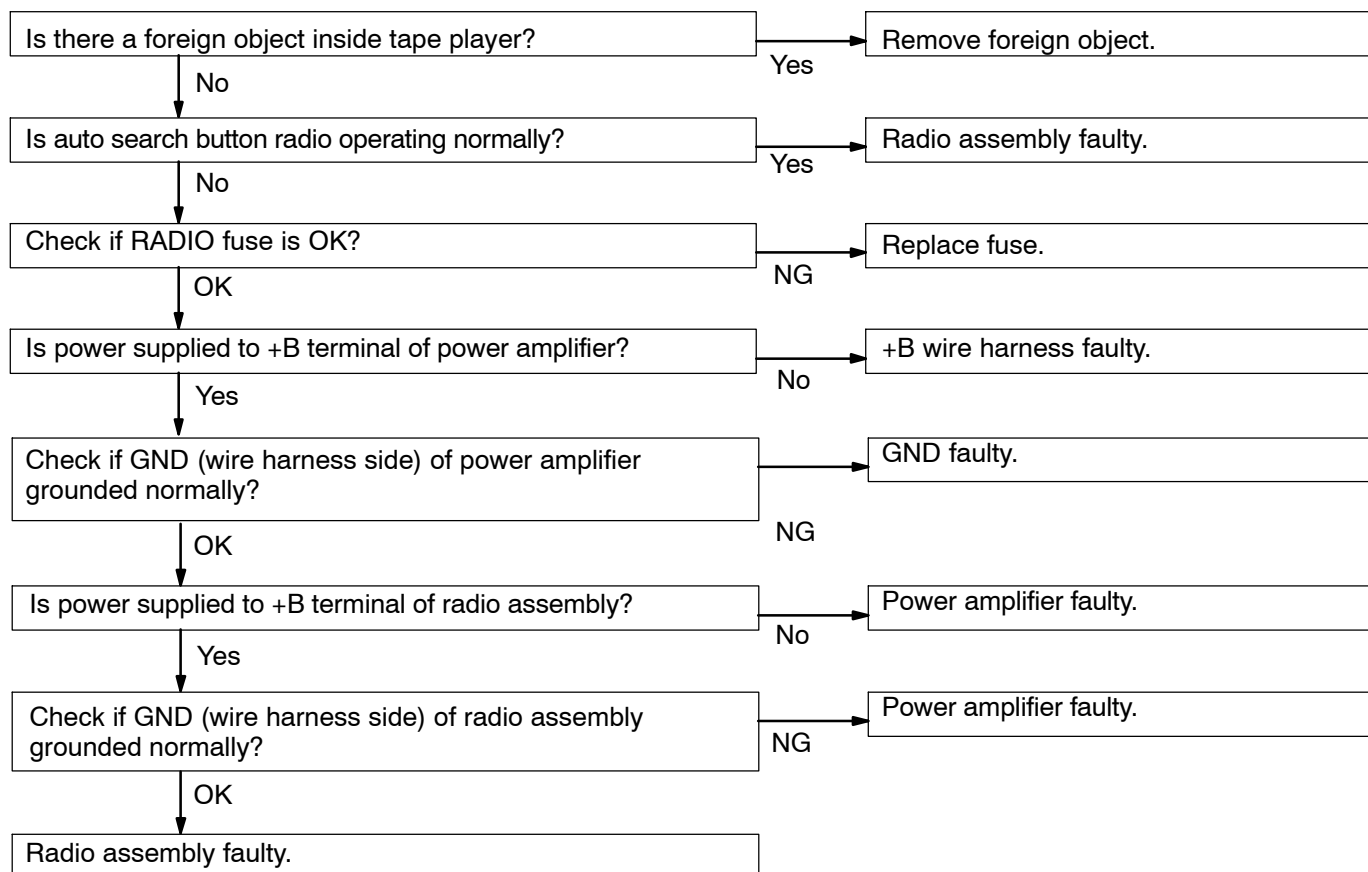
7	Radio	SOUND QUALITY POOR
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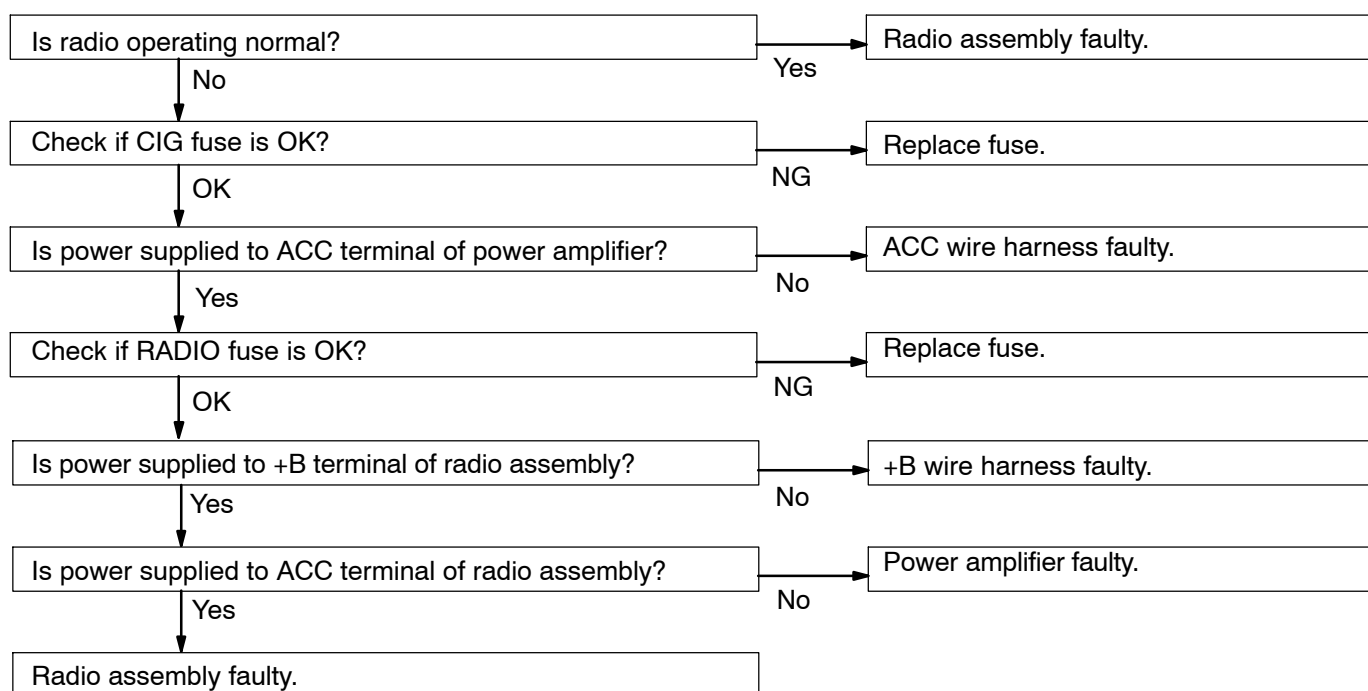
8	Radio	PRESET MEMORY DISAPPEARS
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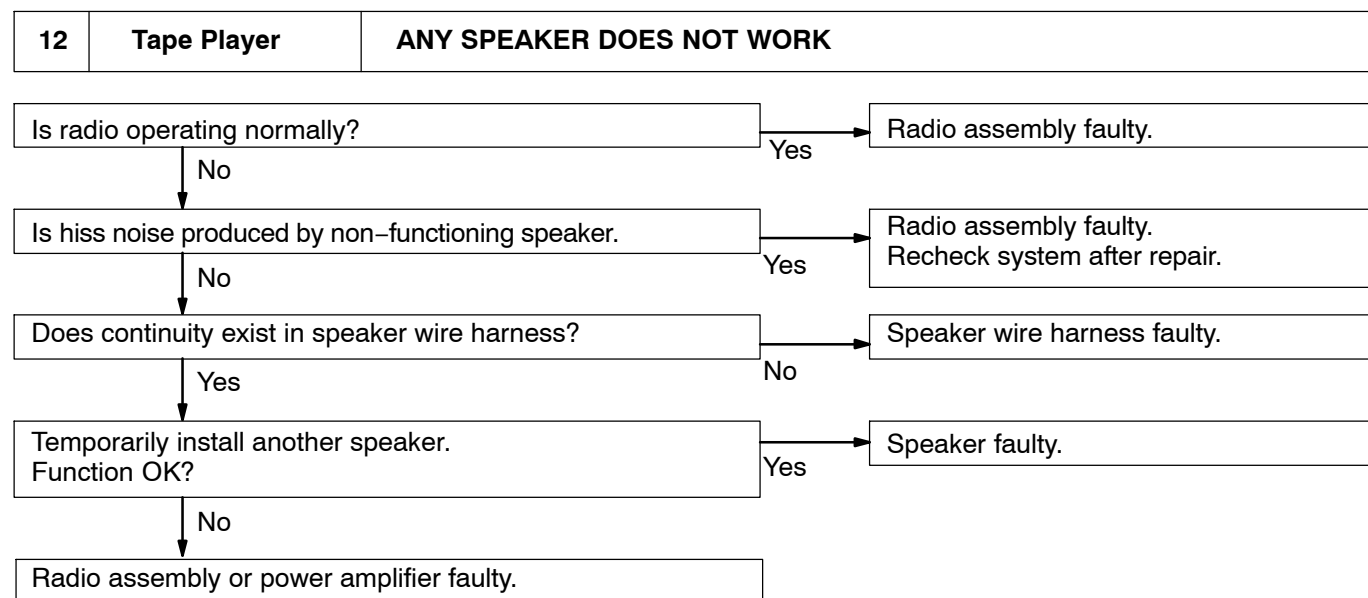
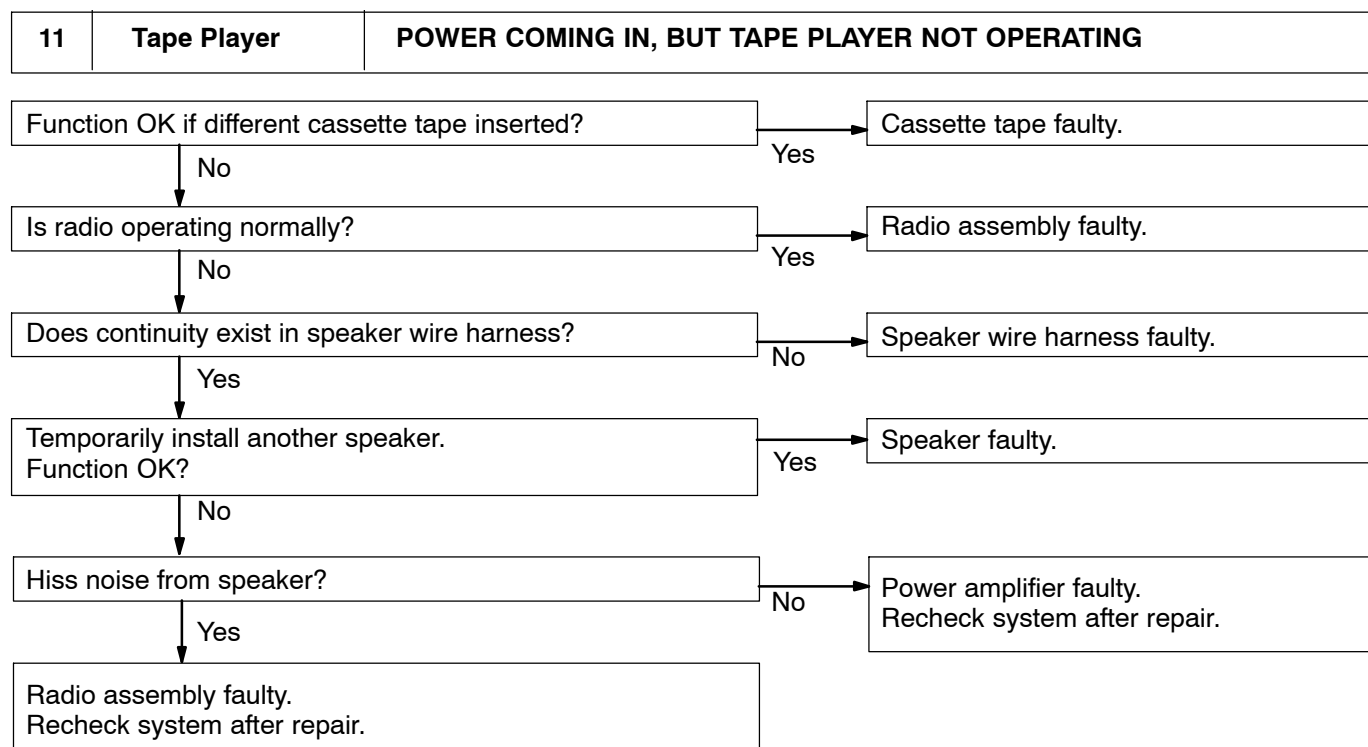


9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED
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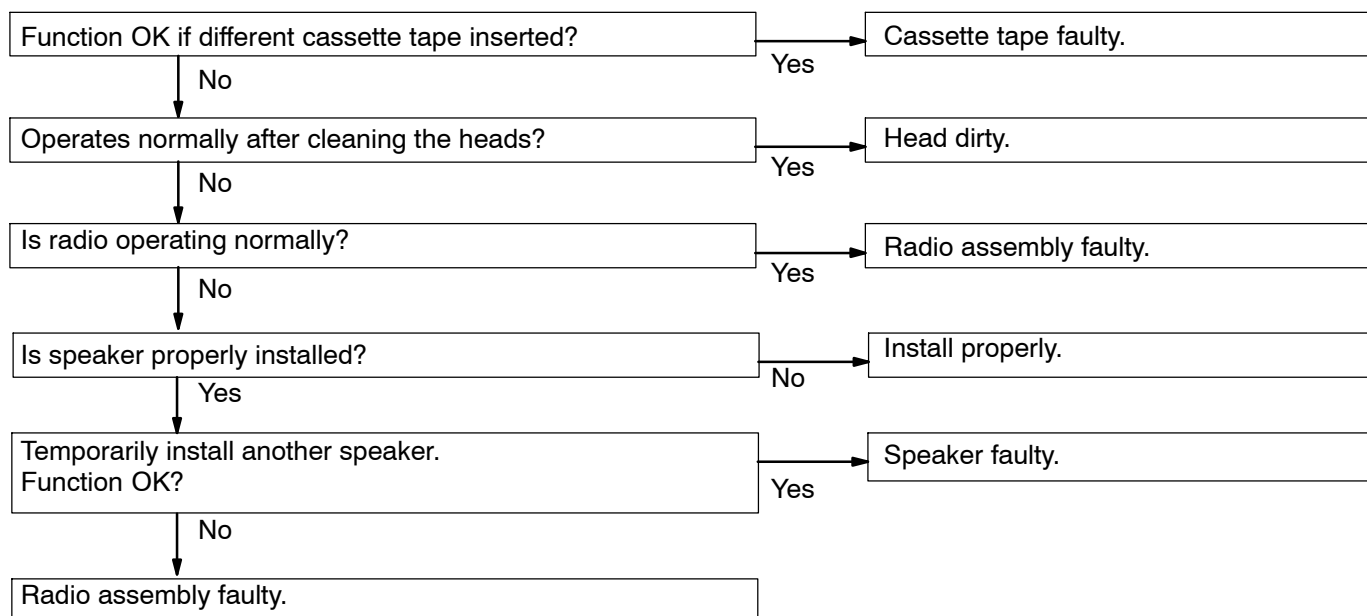


10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER
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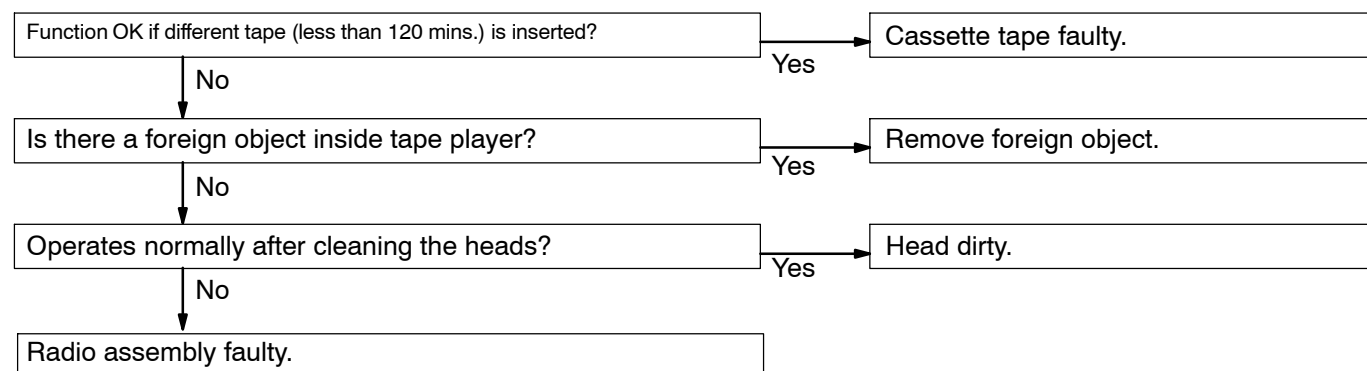




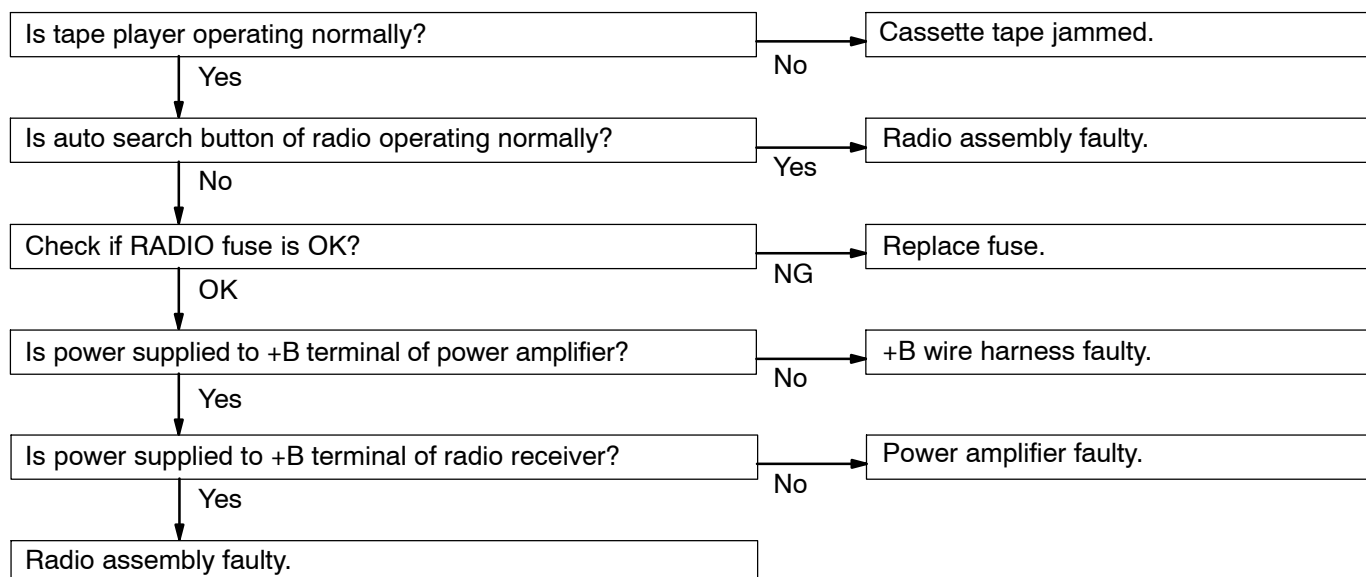
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)
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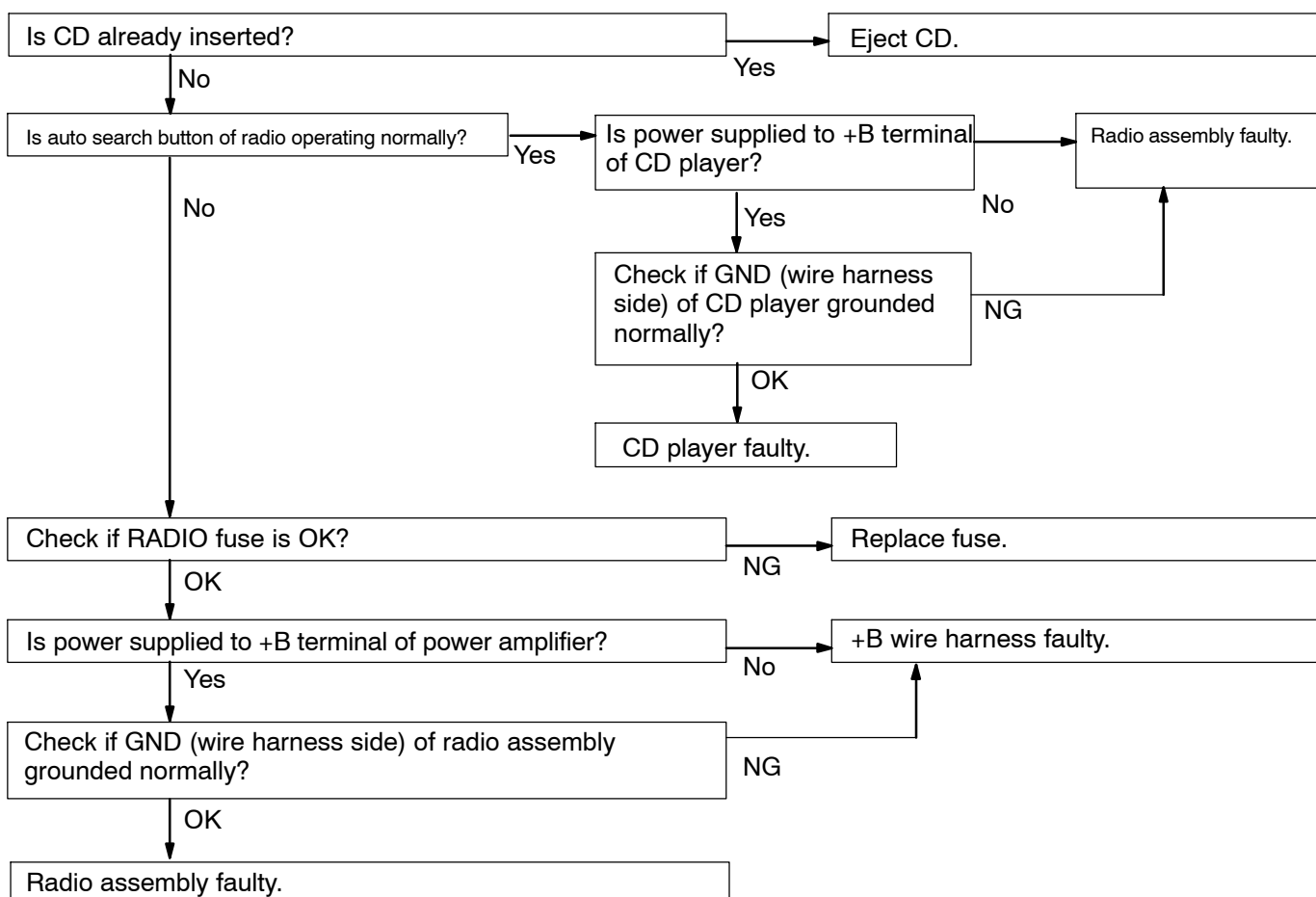
14	Tape Player	TAPE JAMMED MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE
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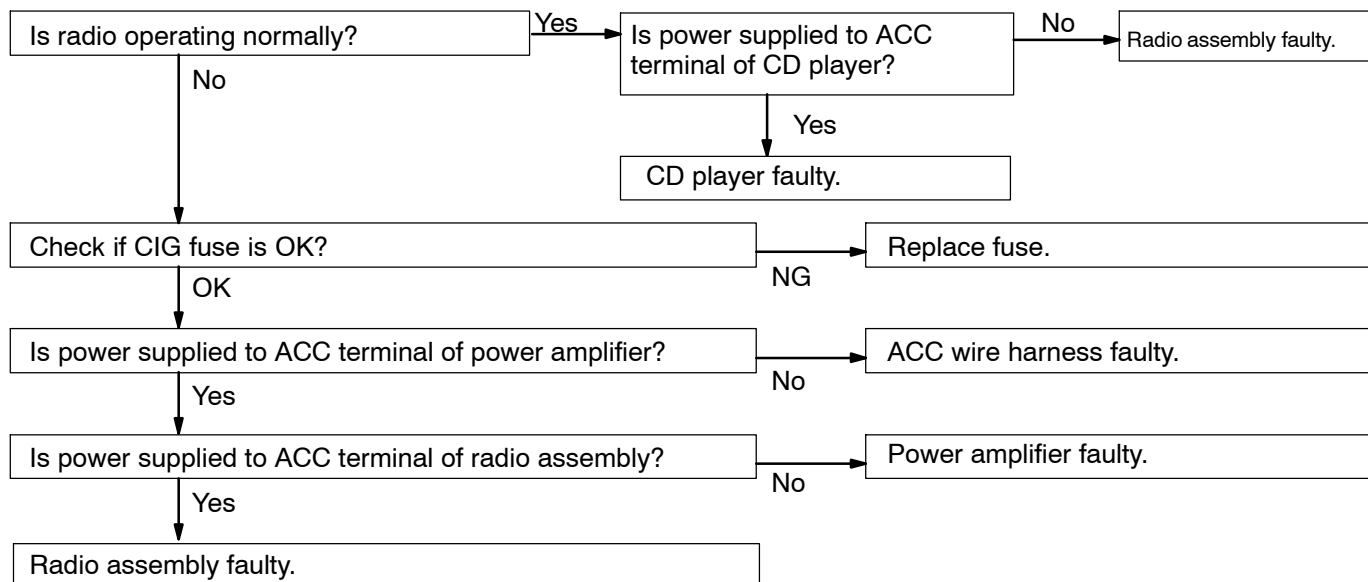
15	Tape Player	CASSETTE TAPE WILL NOT BE EJECTED
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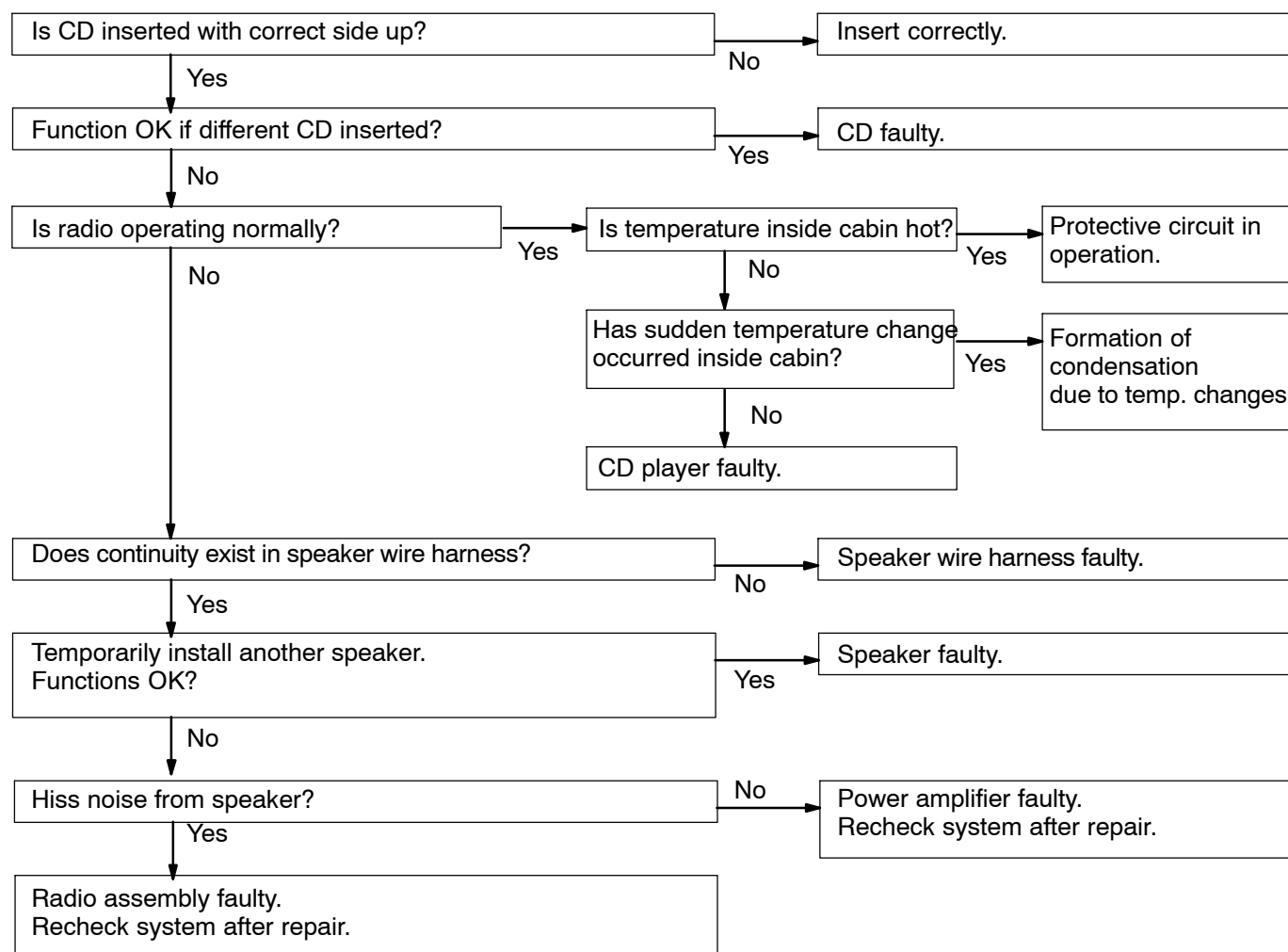
16	CD Player	CD CANNOT BE INSERTED
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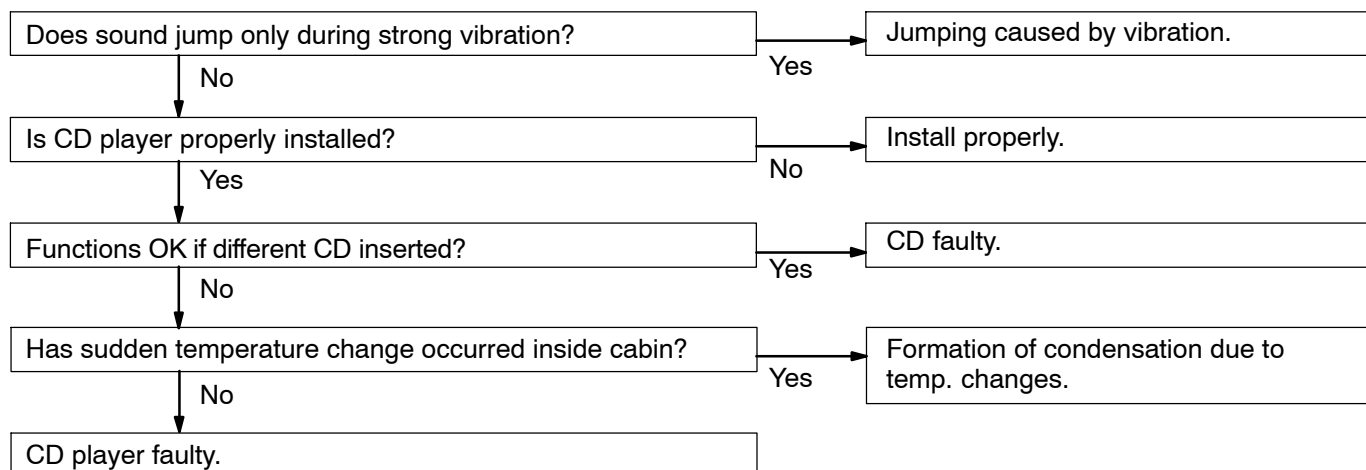
17	CD Player	CD INSERTED, BUT NO POWER
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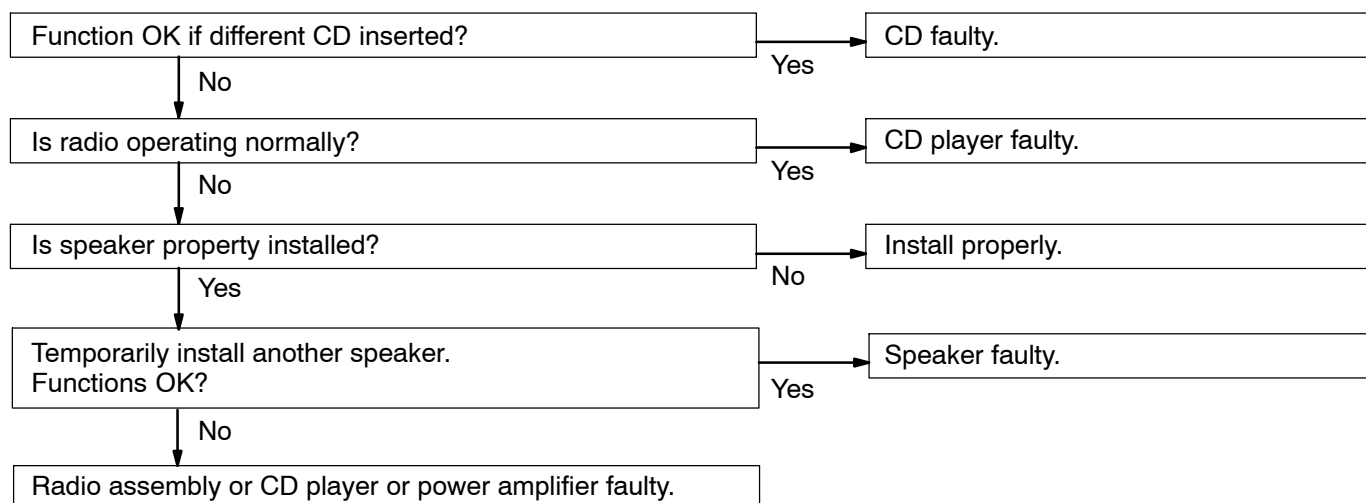
18	CD Player	POWER COMING IN, BUT CD PLAYER NOT OPERATING
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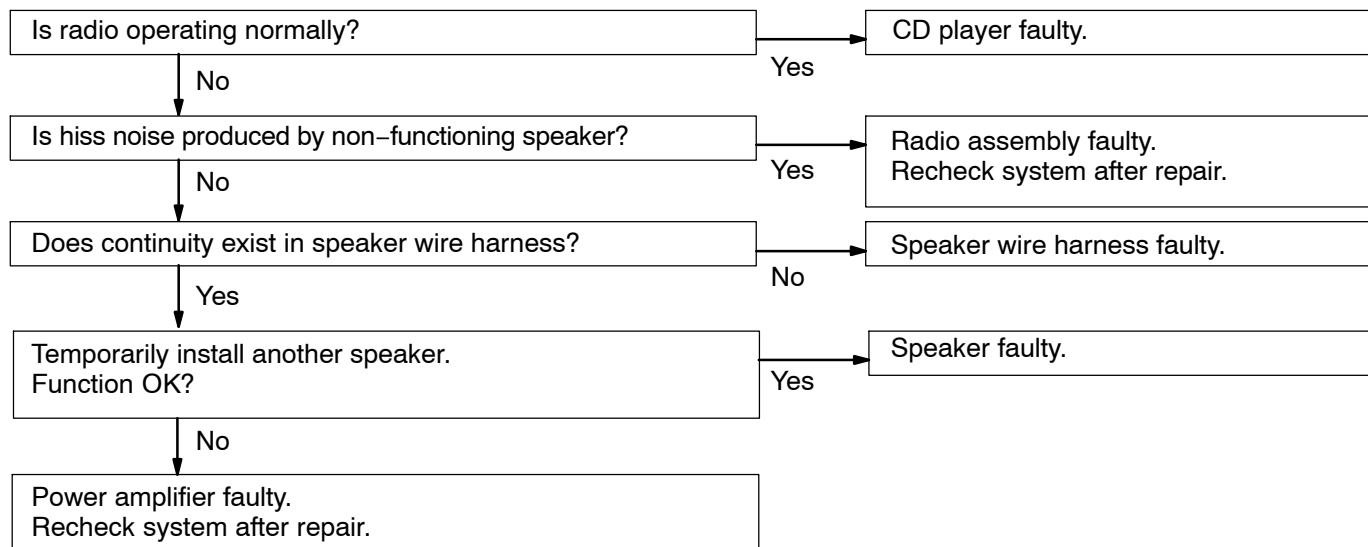
19	CD Player	SOUND JUMPS
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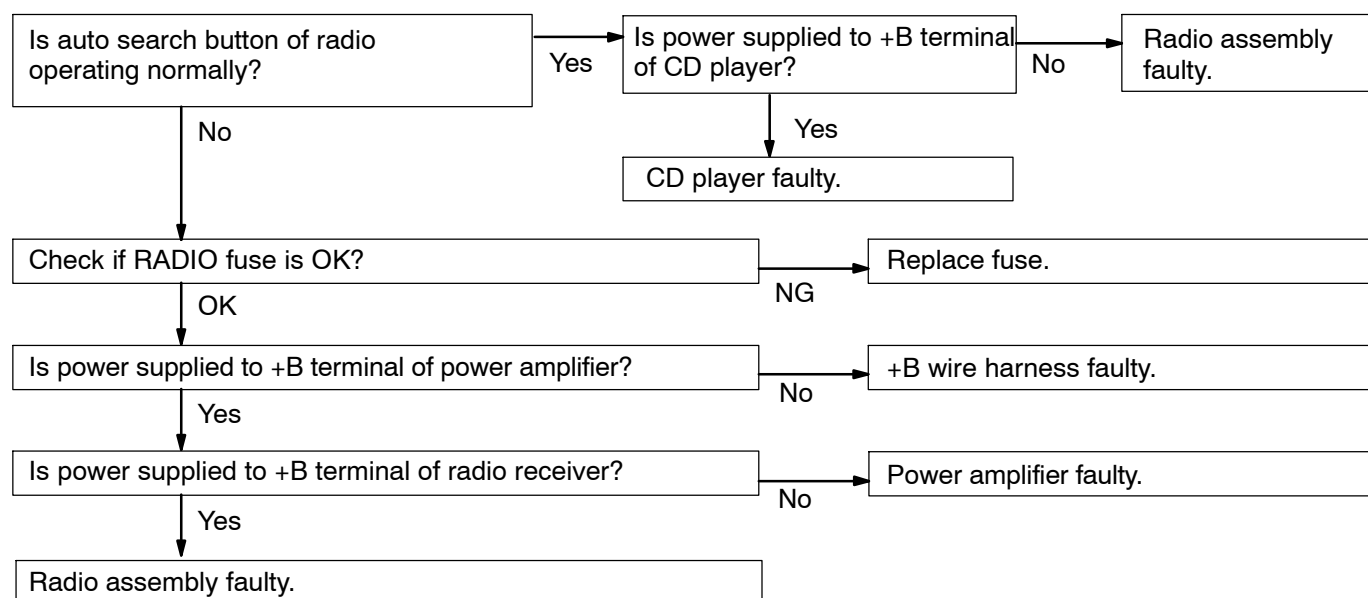
20	CD Player	SOUND QUALITY POOR (VOLUME FAINT)
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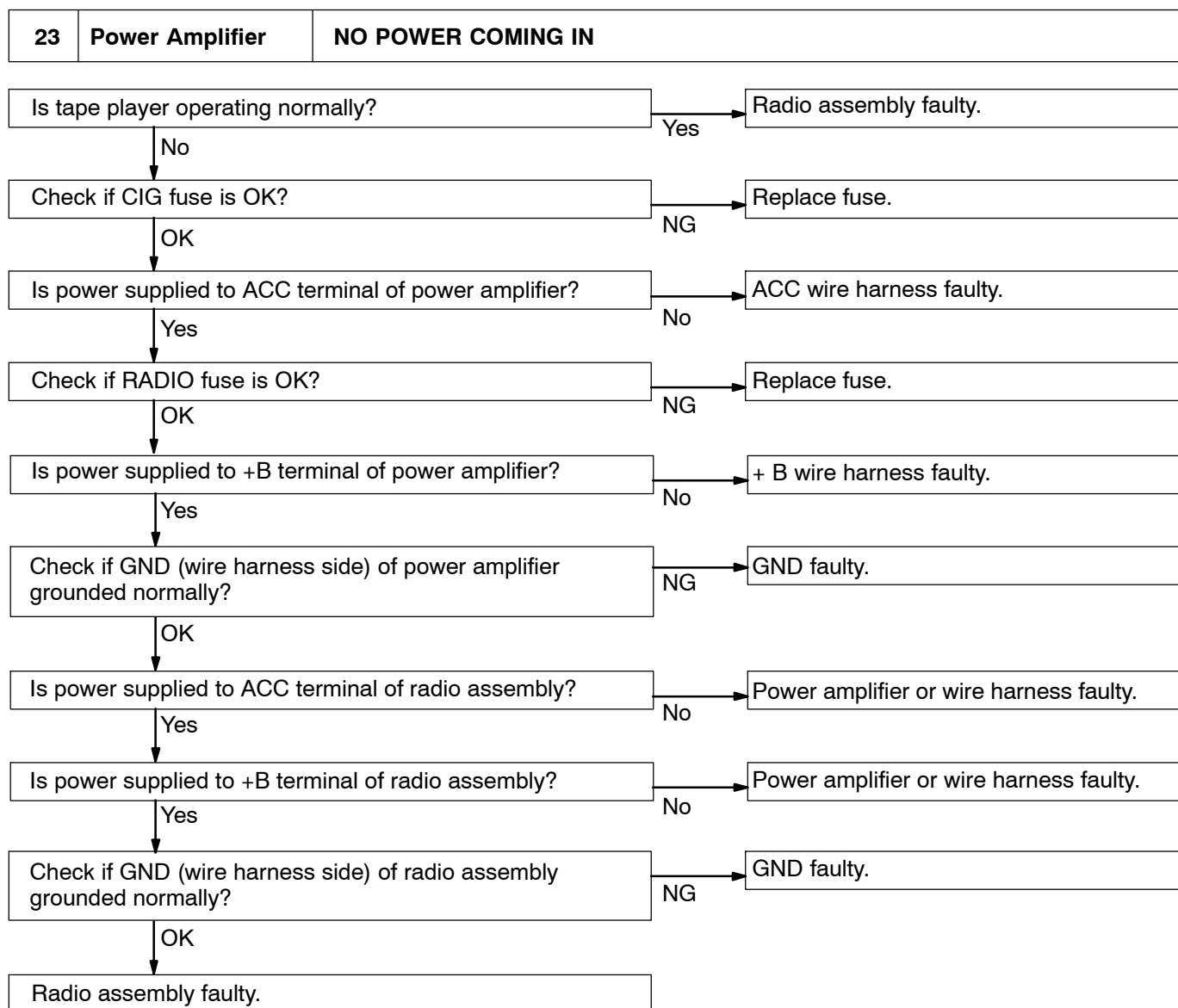


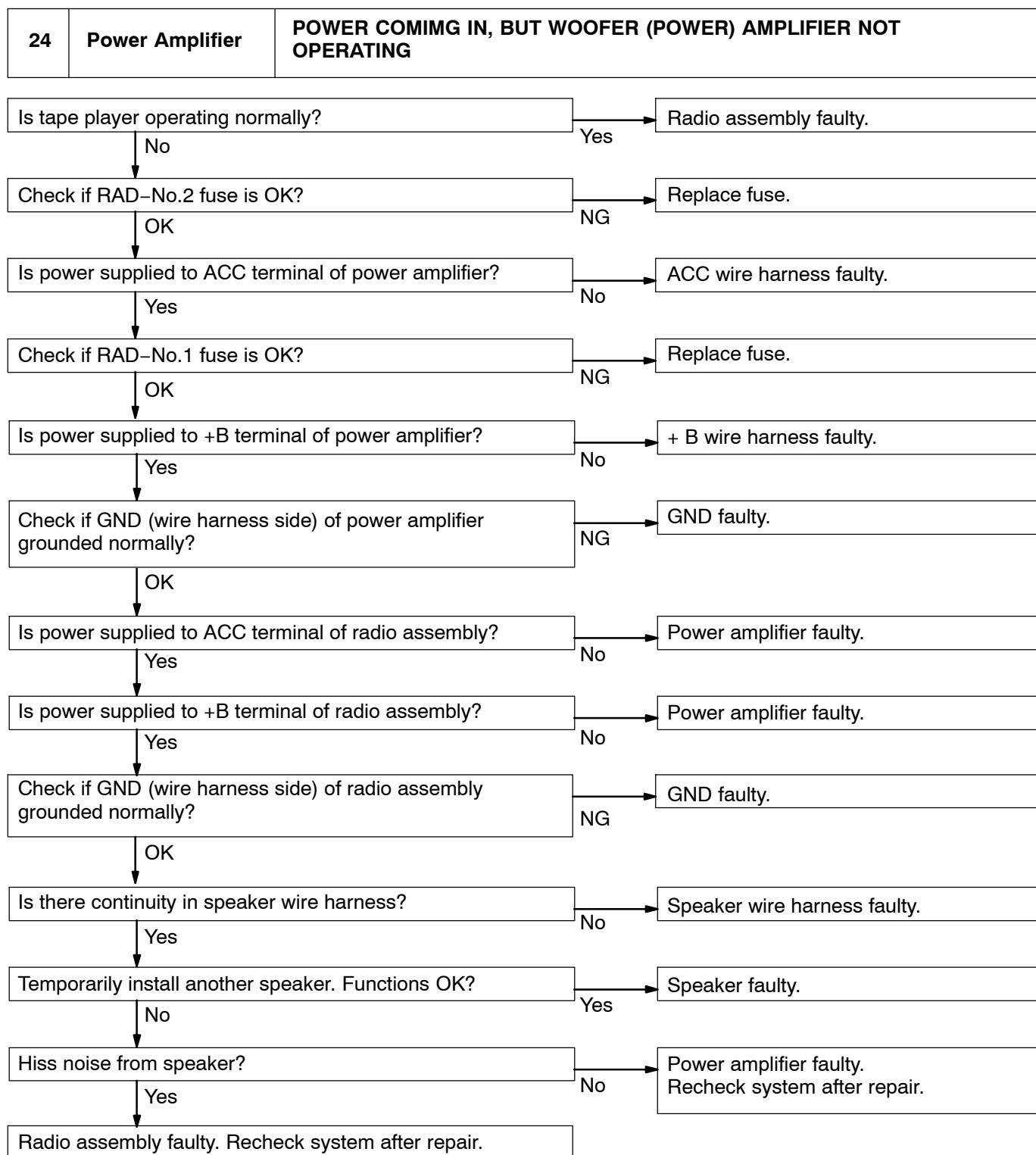
21	CD Player	ANY SPEAKER DOES NOT WORK
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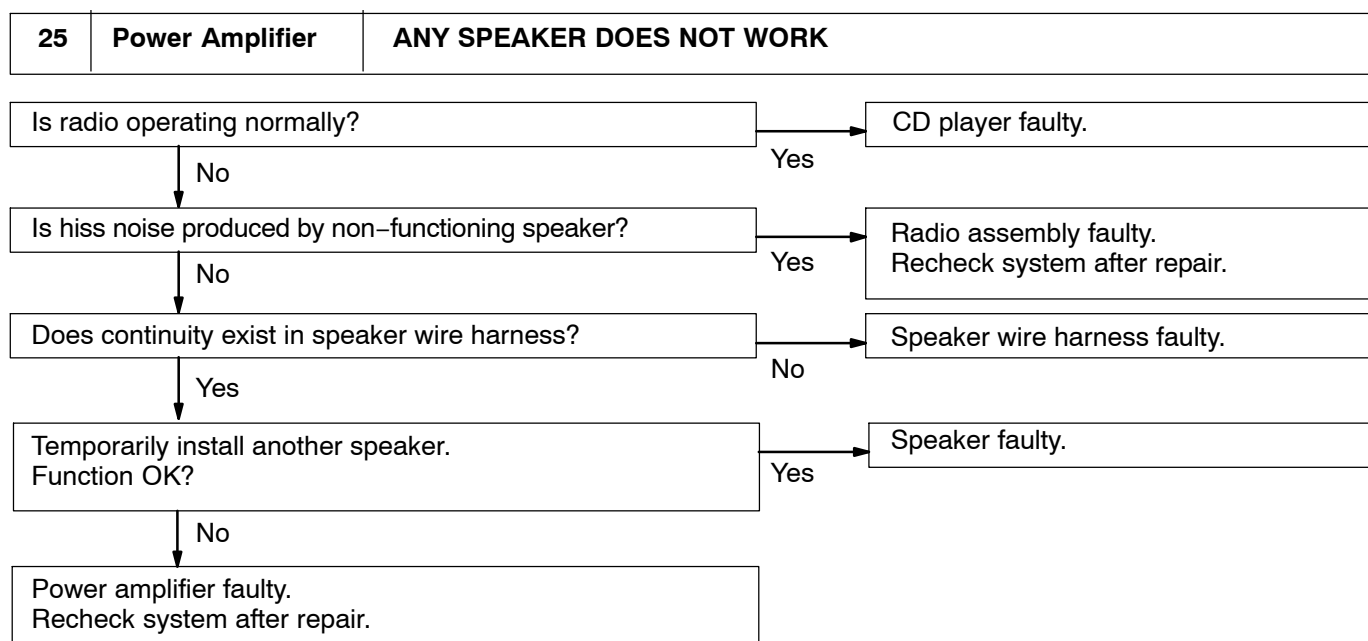


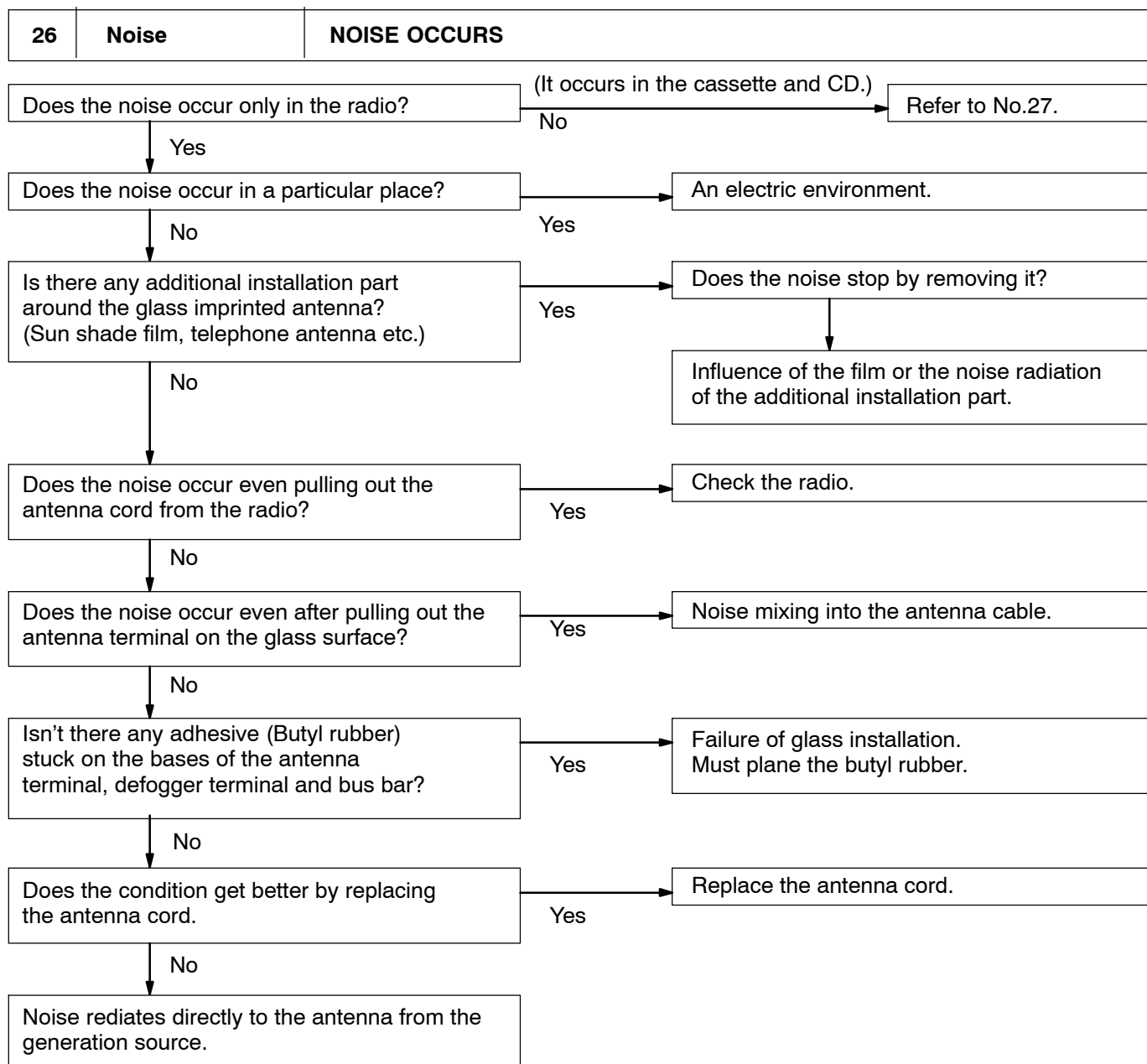
22	CD Player	CD WILL NOT BE EJECTED
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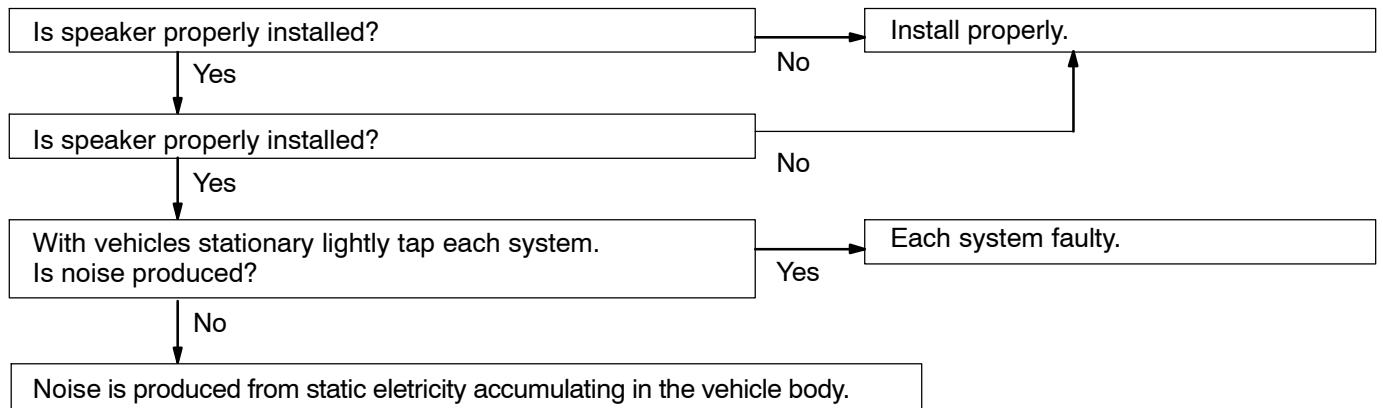








27	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING
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28	Noise	NOISE PRODUCED WHEN ENGINE STARTS
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