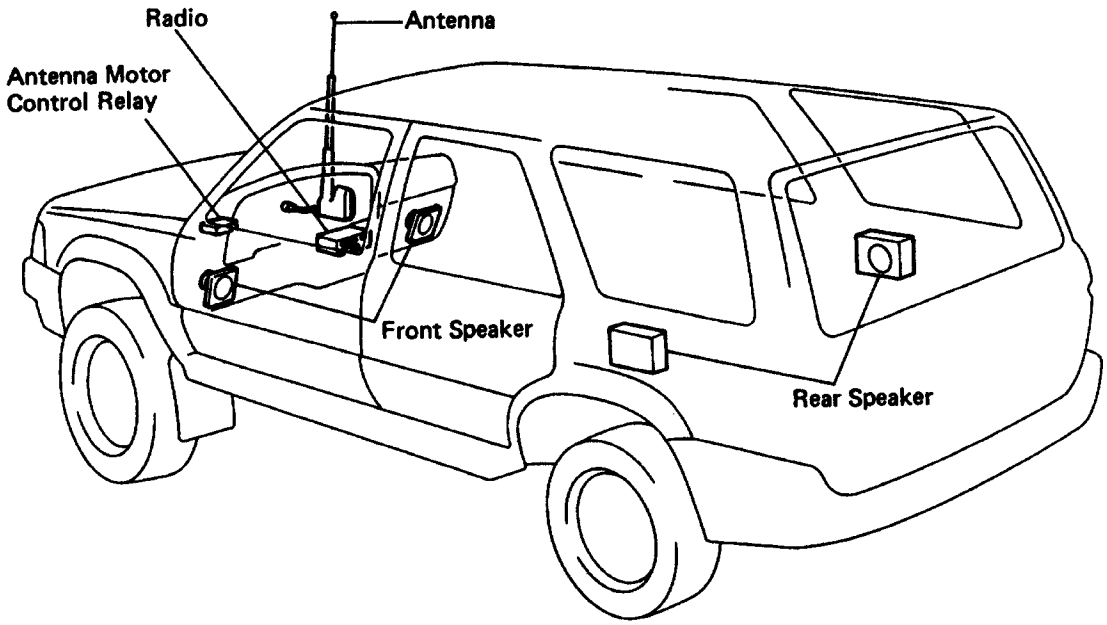
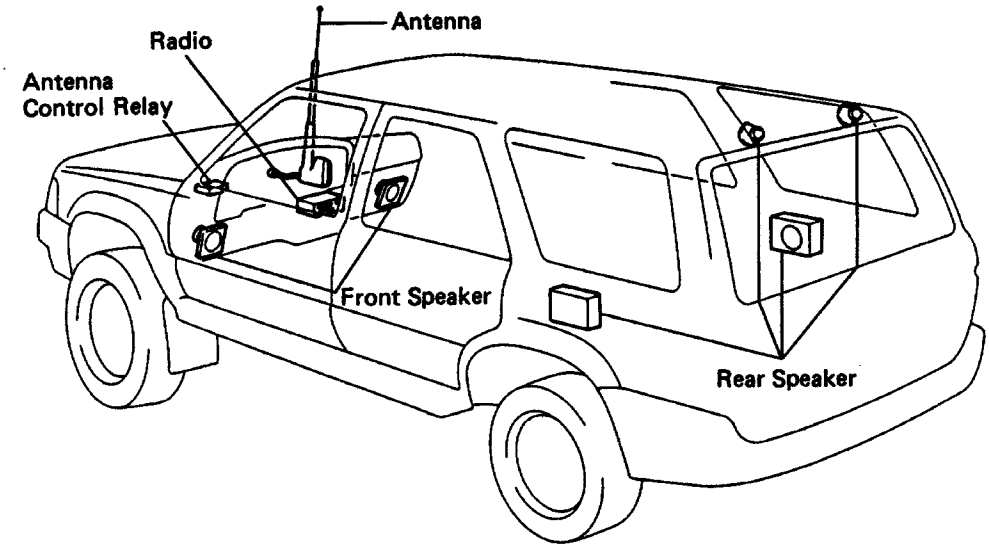
AUDIO SYSTEM

PARTS LOCATION





BE5856
N03183

Z08687

SYSTEM DESCRIPTION

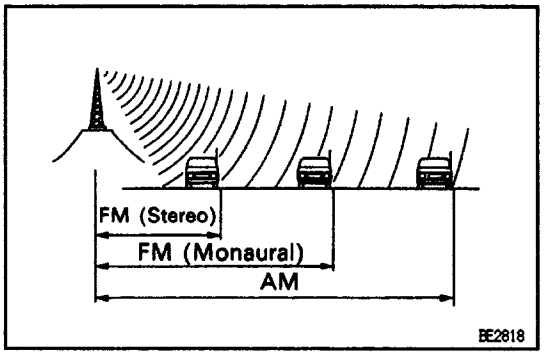
1. RADIO WAVE BAND

RADIO WAVE BAND

The radio wave bands used in radio broadcasting are as follows:

Frequency	30kHz	300kHz	3M Hz	30M Hz	300M Hz
Designation		LF	MF	HF	VHF
Radio wave		LW	AM (MW)	SW	FM (UKW)
Modulation method		Amplitude modulation			Frequency modulation

LF: Low Frequency MR Medium Frequency HF: High Frequency VHF: Very High Frequency
HINT: In this section, the term ”AM” includes LW, MW and SW, and the term ”FM” includes UKW.

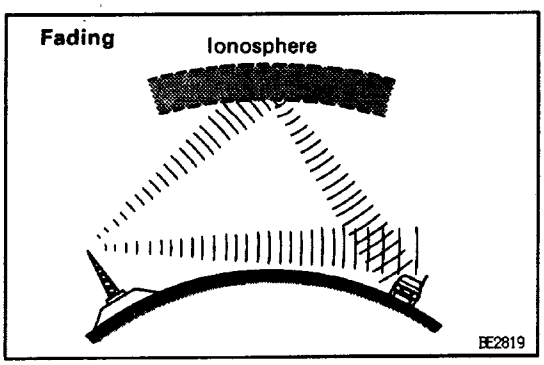


2. SERVICE AREA

There is great difference in the size of the service area for AM, FM monaural, and FM stereo broadcasting. Thus it may happen that FM broadcast cannot be received even though AM comes in very clearly.
Not only does FM stereo have the smallest service area, but it also picks up static and other types of interference (”noise”) the most easily.

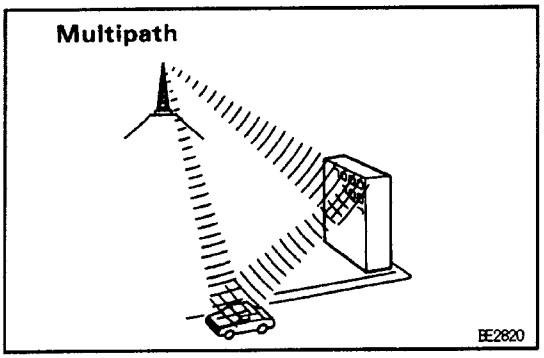
3. RECEPTION PROBLEMS

Besides the problem of static, there are also the problems called ”fading”, ”multipath” and ”fade out”. These problems are caused not by electrical noise but by the nature of the radio waves themselves.



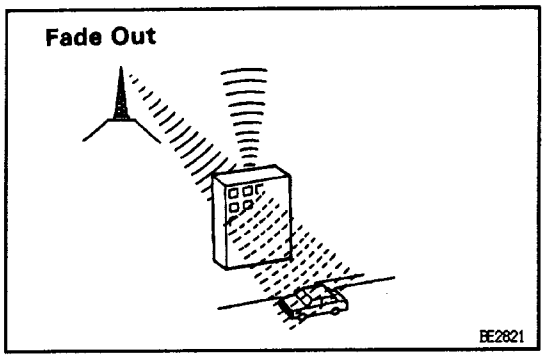
Fading

Besides electrical interference, AM broadcasts are also susceptible to other types of interference, especially at night. This is because AM radio waves bounce off the ionosphere at night. These radio waves then interfere with the signals from the same transmitter that reach the vehicle's antenna directly. This type of interference is called "fading".



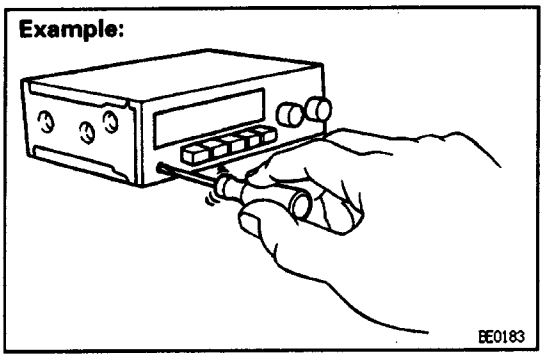
Multipath

One type of interference caused by the bouncing of radio waves off of obstructions is called "rnultipath". Multipath occurs when a signal from the broadcast transmitter antenna bounces off buildings and mountains and interferes with the signal that is received directly.



Fade out

Because FM radio waves are of higher frequencies than AM radio waves, they bounce off buildings, mountains, and other obstructions. For this reason, FM signals often seem to gradually disappear or fade away as the vehicle goes behind a building or other obstruction. This is called "fade out".



4. ADJUST ANTENNA TRIMMER

Except Electronic Tuning Radio

(a) Fully lengthen antenna.

(b) With volume and tone at maximum, turn the dial to around 1,400 kHz where there is no reception.

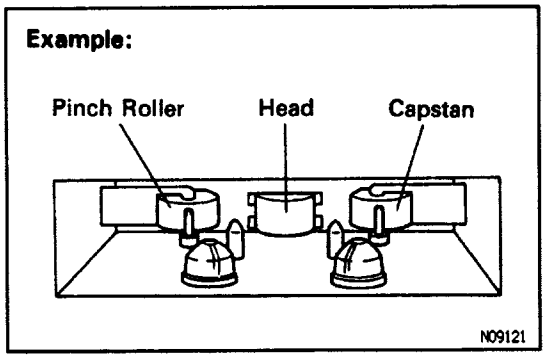
(c) Adjust the trimmer to where static is loudest.

HINT: The position of the antenna trimmer may vary according to the type of radio, but is always on the front side.

5. COMPACT DISC PLAYER

Compact Disc (here after called ”CD”) Players use a laser beam pick–up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc. There are 4.7 in. (12 cm) and 3.2 in. (8 cm) CDs available.
HINT: Never attempt to disassemble or oil any part of the player unit. Do not insert any object other than a CD into the slot.

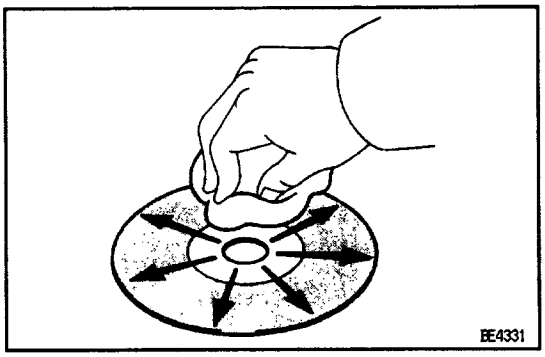
NOTICE: CD players use an Invisible laser beam which could cause hazardous radiation exposure if directed. Be sure to operate the player correctly as instructed.



MAINTENANCE

Tape Player/Head Cleaning

(a) Raise the cassette door with your finger.
Next using a pencil or similar object, push in the guide.
(b) Using a cleaning pen or cotton applicator soaked in cleaner, clean the head surface, pinch rollers and capstans.

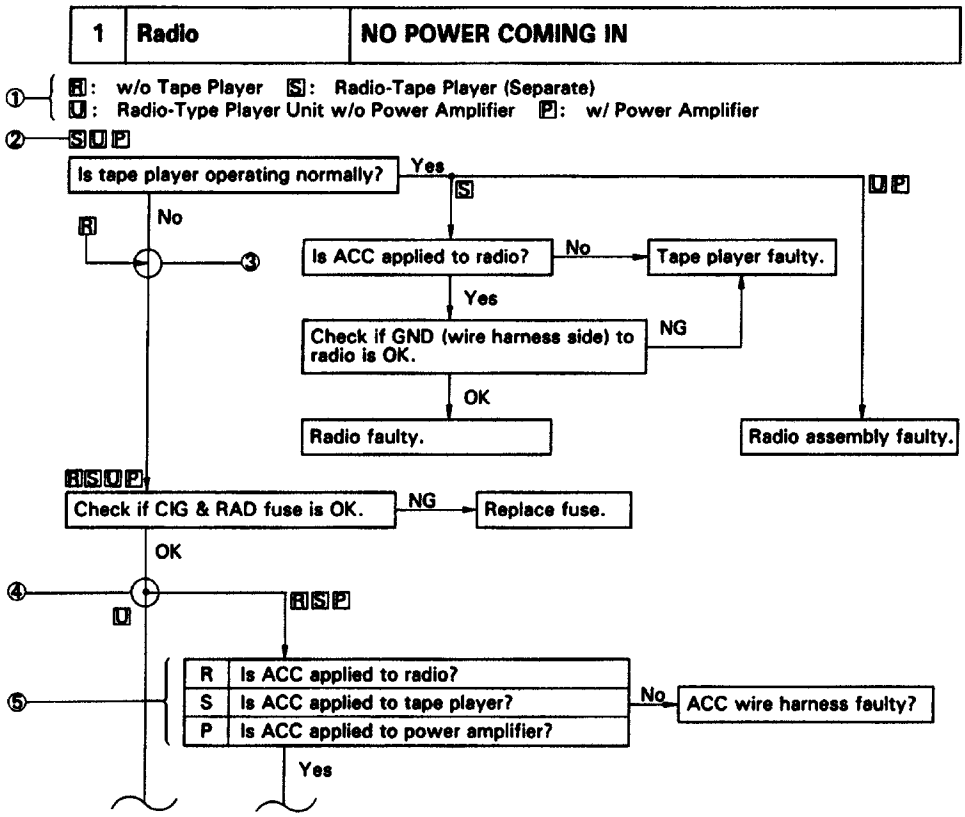


CD Player/CD Cleaning

If the CD gets dirty, clean the CD by wiping the surfaces from the center to outside in the radial directions with a soft cloth.

NOTICE: Do not use a conventional record cleaner or anti–static record preservative.

HOW TO USE DIAGNOSTIC CHART



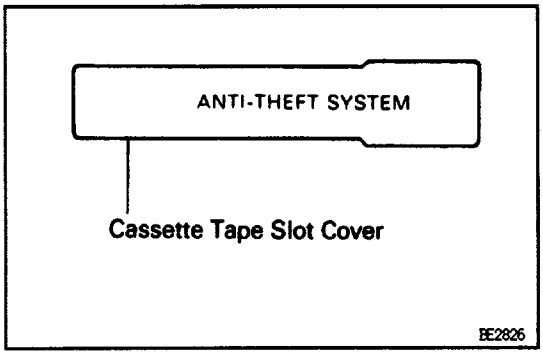
① Audio system type and symbol used.
HINT: Confirm the applicable type of audio system.

② Symbol for type of audio system the question applies to.
HINT: If the audio system type is not applicable, proceed to next question below.

③ Junction without black circle.
HINT: Proceed to next question below.

④ Junction with black circle.
HINT: Proceed to question for applicable audio system type.

⑤ HINT: Select question for applicable audio system type.



ANTI–THEFT SYSTEM

The anti–theft system is only provided for audio system equipped with an Acoustic Flavor function.

HINT: The words ”ANTI–THEFT SYSTEM” are displayed on the cassette tape slot cover.

For operation instructions for the anti–theft system, please consult the audio system section in the Owner’s Manual.

1. SETTING SYSTEM

The system is in operation once the customer has pushed the required buttons and entered the customer–selected 3–digit ID number.(Refer to the Owner’s Manual, ”SETTING THE ANTI–THEFT SYSTEM”).

HINT:

- When the audio system is shipped the ID number has not been input, so the anti–theft system is not in operation.
- If the ID number has not been input, the audio system remains the same as a normal audio system.

2. ANTI–THEFT SYSTEM OPERATION

If the normal electrical power source (connector or battery terminal) is cut off, the audio system becomes inoperable, even if the power supply resumes.

3. CANCELLING SYSTEM

The ID number chosen by the customer is input to cancel the anti–theft system.

(Refer to the Owner’s Manual, “IF THE SYSTEM IS ACTIVATED”).

HINT: To change or cancel the ID number, please refer to the Owner’s Manual, ” CANCELLING THE SYSTEM”.

TROUBLESHOOTING

NOTICE: When replacing the internal mechanism (ECU 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).

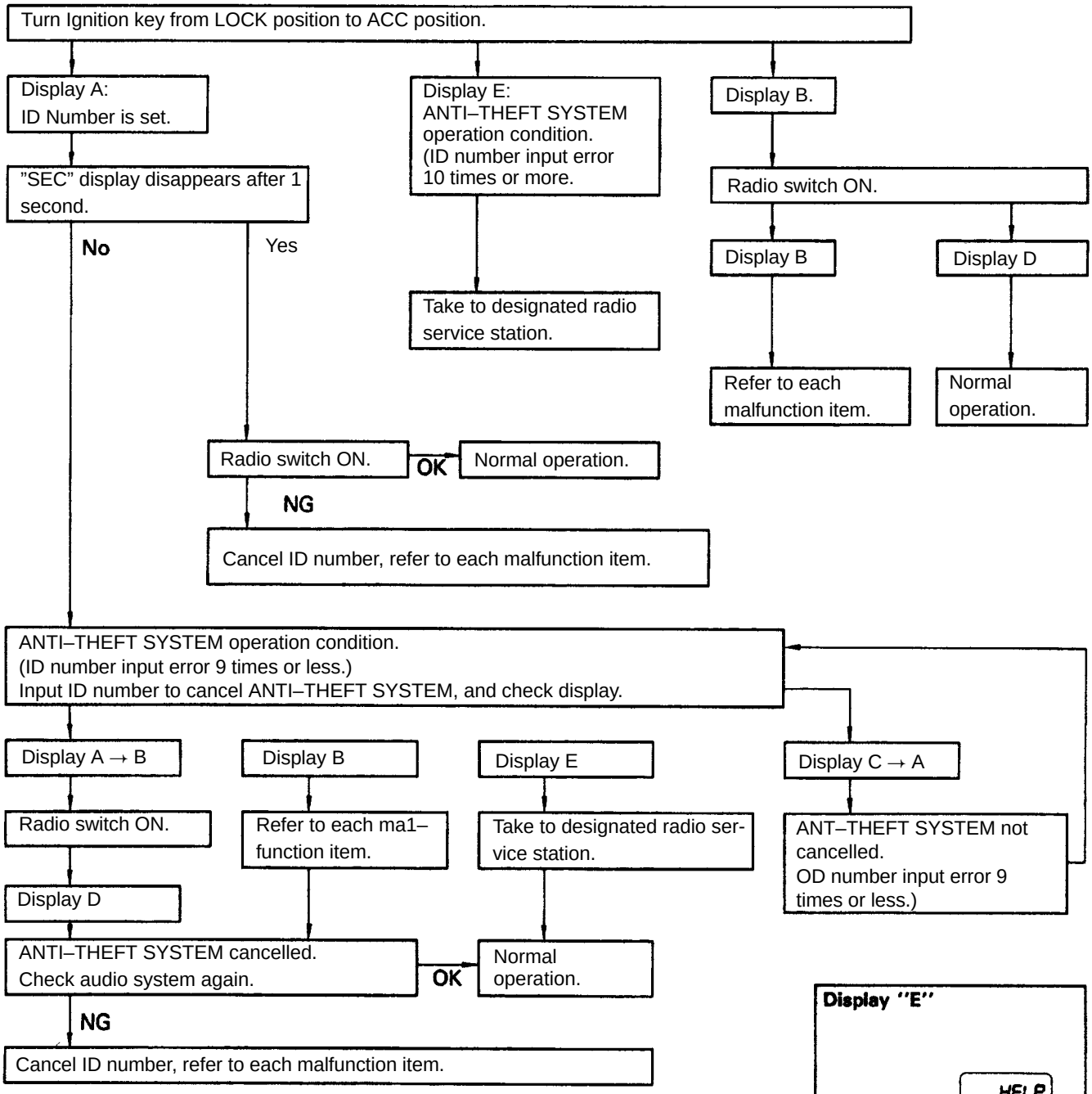
'HINT: This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

Always inspect the trouble taking the following items into consideration.

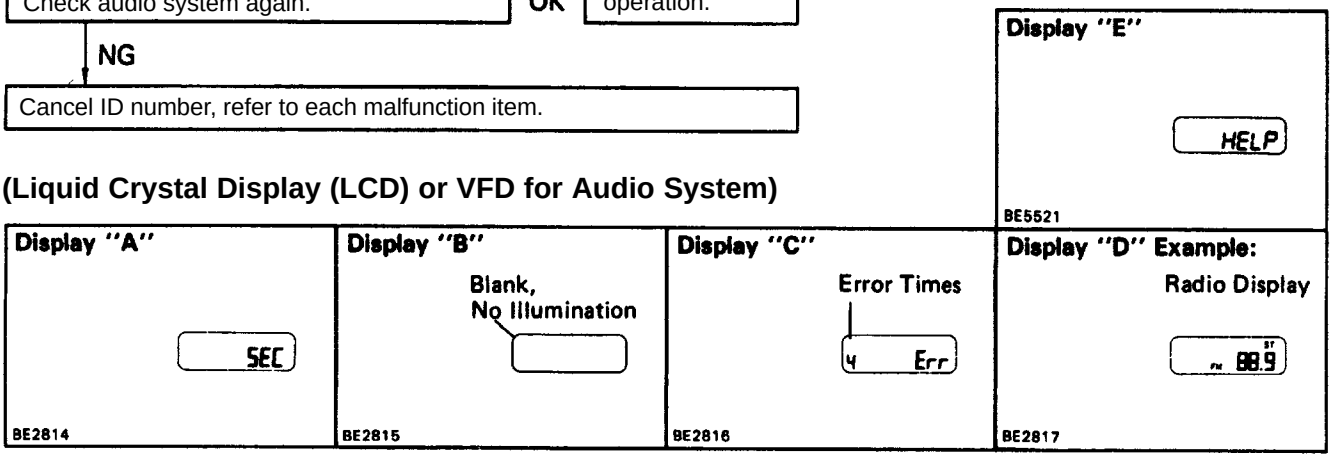
- Open or short circuit of the wire harness
- Connector or terminal connection fault
- For audio systems with anti–theft system, troubleshooting items marked (*) indicate that " Troubleshooting for ANTI–THEFT SYSTEM" should be carried out first.

	Problem	No.
Radio	No power coming in.	*1
	Power coming in, but radio not operating.	*2
	Noise present, but AM – FM not operating.	3
	Either speaker does not work	4
	Either AM or FM does not work.	5
	Reception poor (Volume faint).	5
	Few preset tuning bonds.	5
	Sound quality poor.	6
	Cannot set station select button.	6
	Preset memory disappears.	7
Tape Player	Cassette tape cannot be inserted.	8
	Cassette tape inserts, but no power.	*9
	Power coming in, but tape player not operating.	10
	Either speaker does not work.	11
	Sound quality poor (Volume faint).	12
	Tape jammed, malfunction with tape speed or auto–reverse.	13
	APS, SKIP, RPT buttons not operating.	14
	Cassette tape will not eject.	'15
CD Player	CD cannot be inserted.	16
	CD inserts, but no power.	17
	Power coming in, but CD player not operating.	18
	Sound jumps.	19
	Sound quality poor (Volume faint).	20
	Either speaker does not work.	21
	CD will not eject.	22
Antenna	Antenna does not fully extended or fully retract.	23
	Antenna – related.	24
Noise	Noise produced by vibration or shock while driving.	25
	Noise produced when engine starts.	26

Troubleshooting for ANTI–THEFT SYSTEM



(Liquid Crystal Display (LCD) or VFD for Audio System)

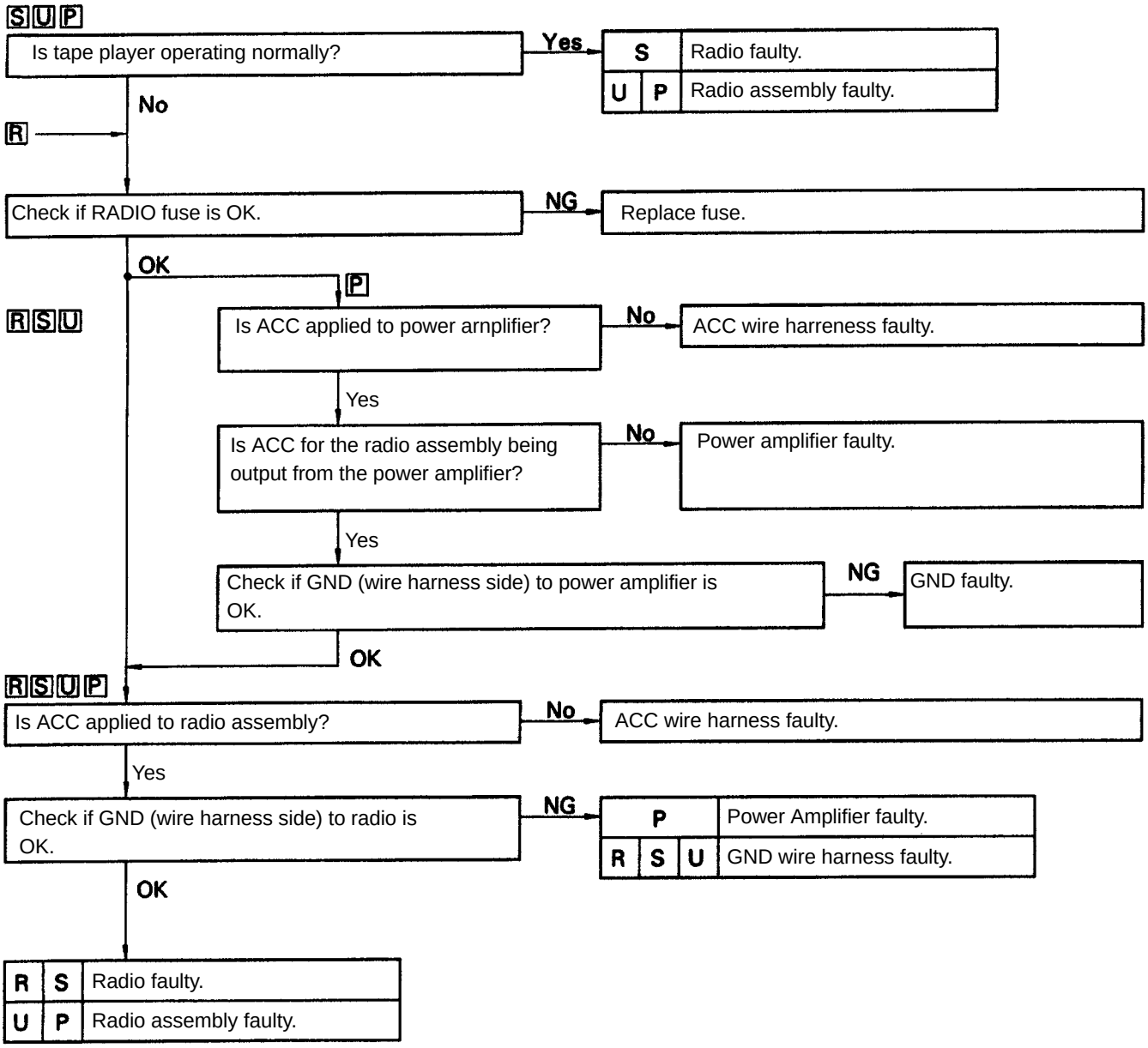


HINT:

- Refer to Owner's Manual for operation details of ANTI–THEFT SYSTEM.
- When the ID number has been cancelled, reset the same number after completing the operation, or inform the customer that it has been cancelled.

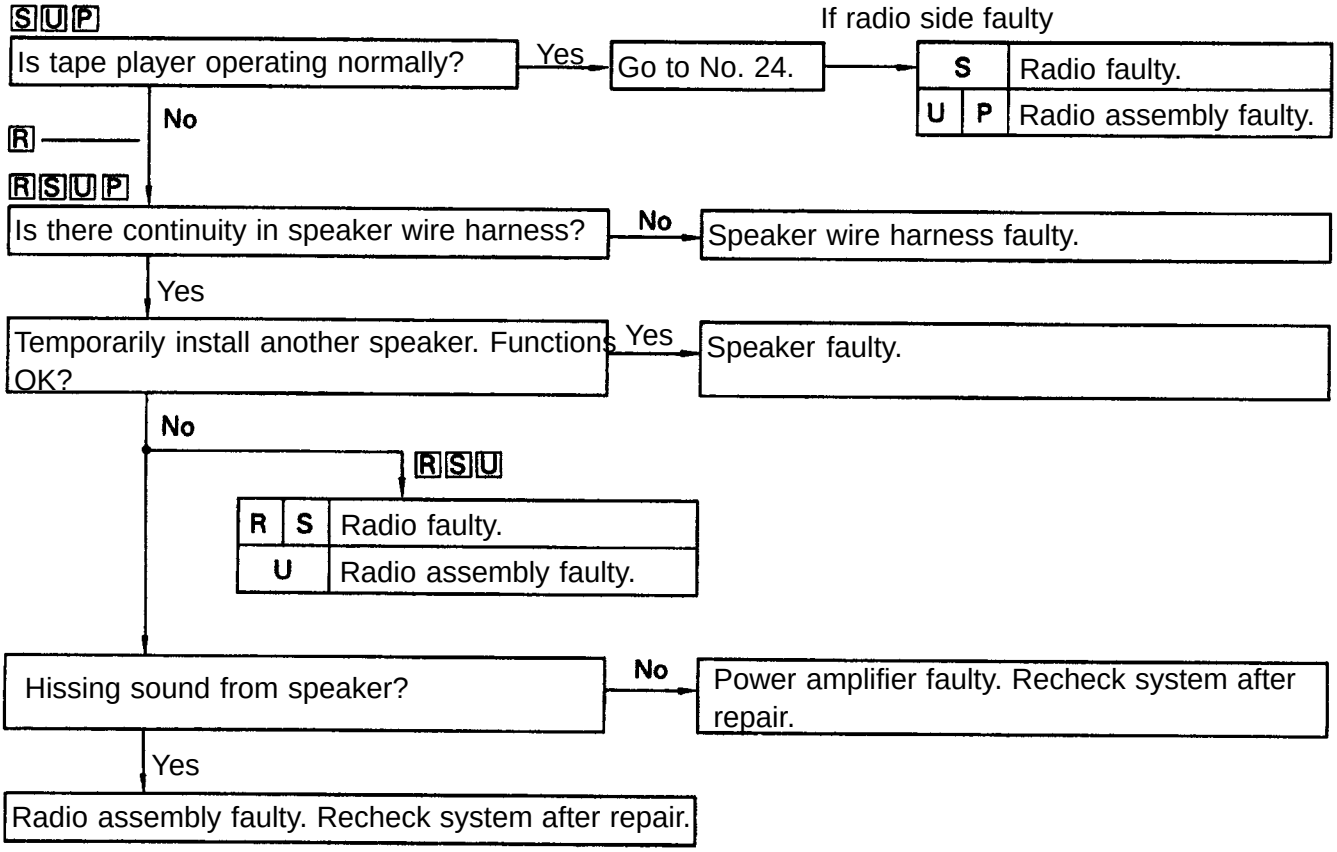
1 Radio NO POWER COMING IN

[R]: Radio [S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



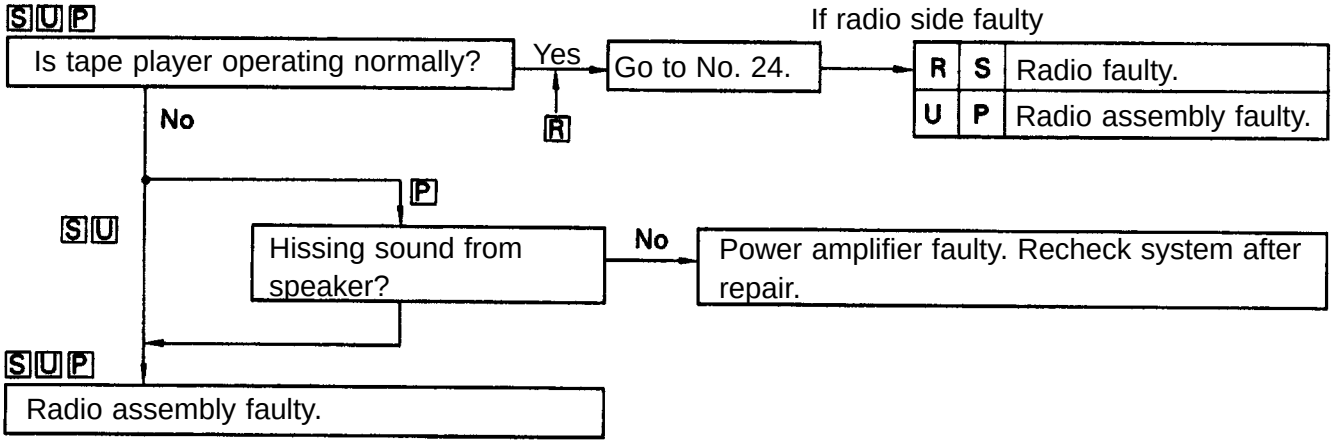
2 Radio — POWER COMING IN, BUT– RADIO NOT OPERATING

[R]: Radio [S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



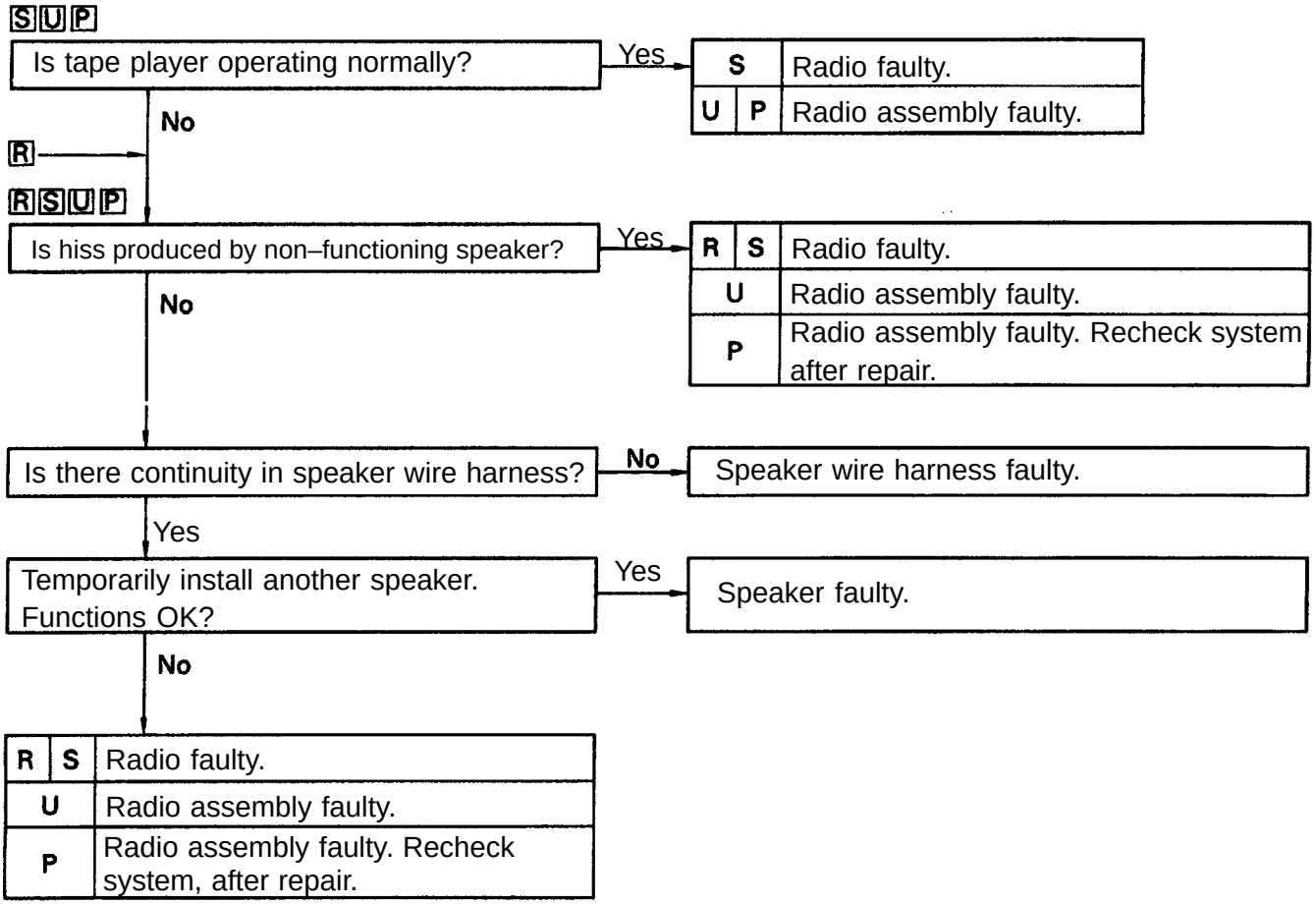
3 Radio — NOISE PRESENT, BUT AM–FM NOT OPERATING

[R]: Radio [S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Type–CD Player (Separate Power Amplifier)



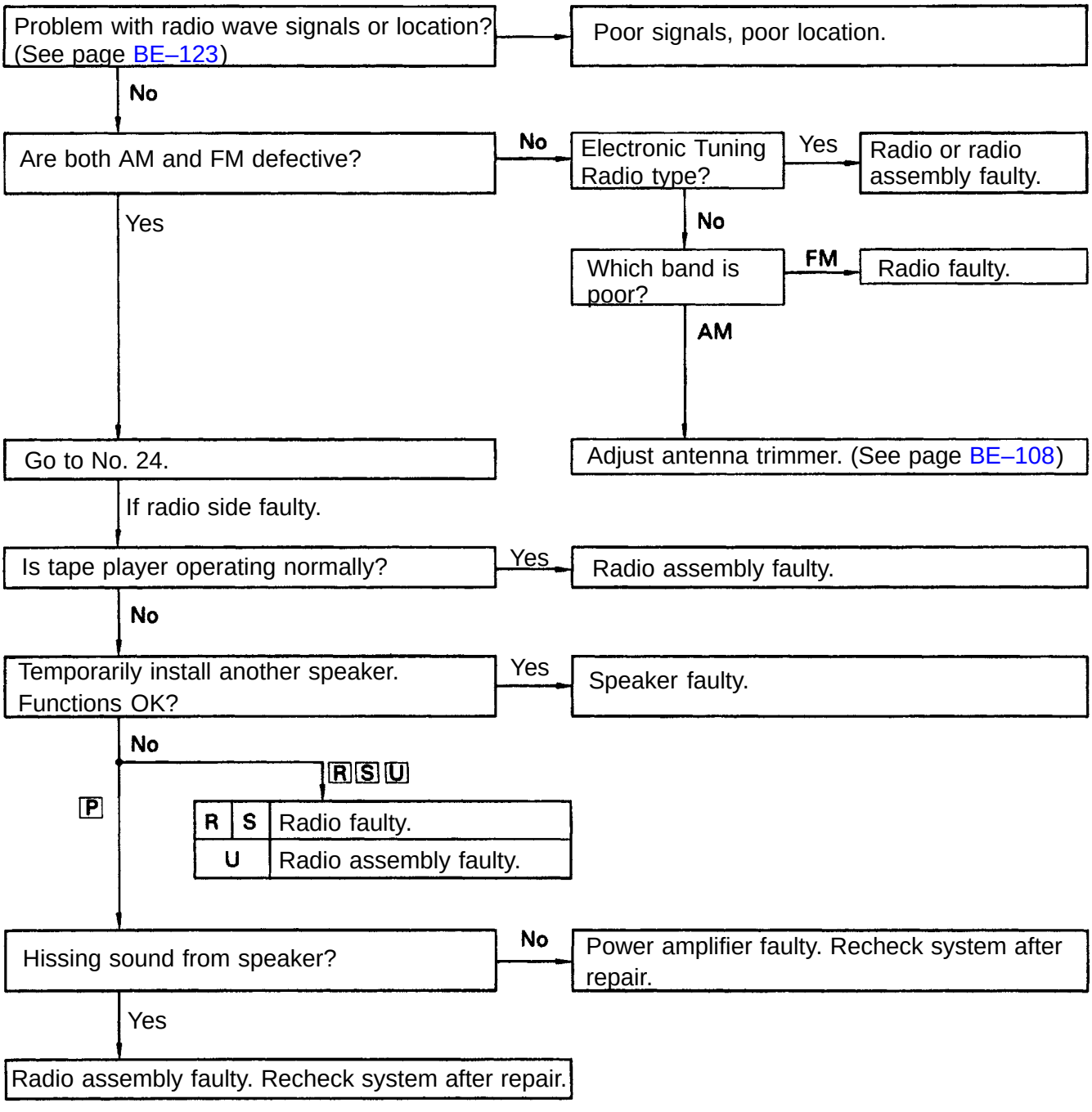
4	Radio	EITHER SPEAKER DOES NOT WORK

[R]: Radio [S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



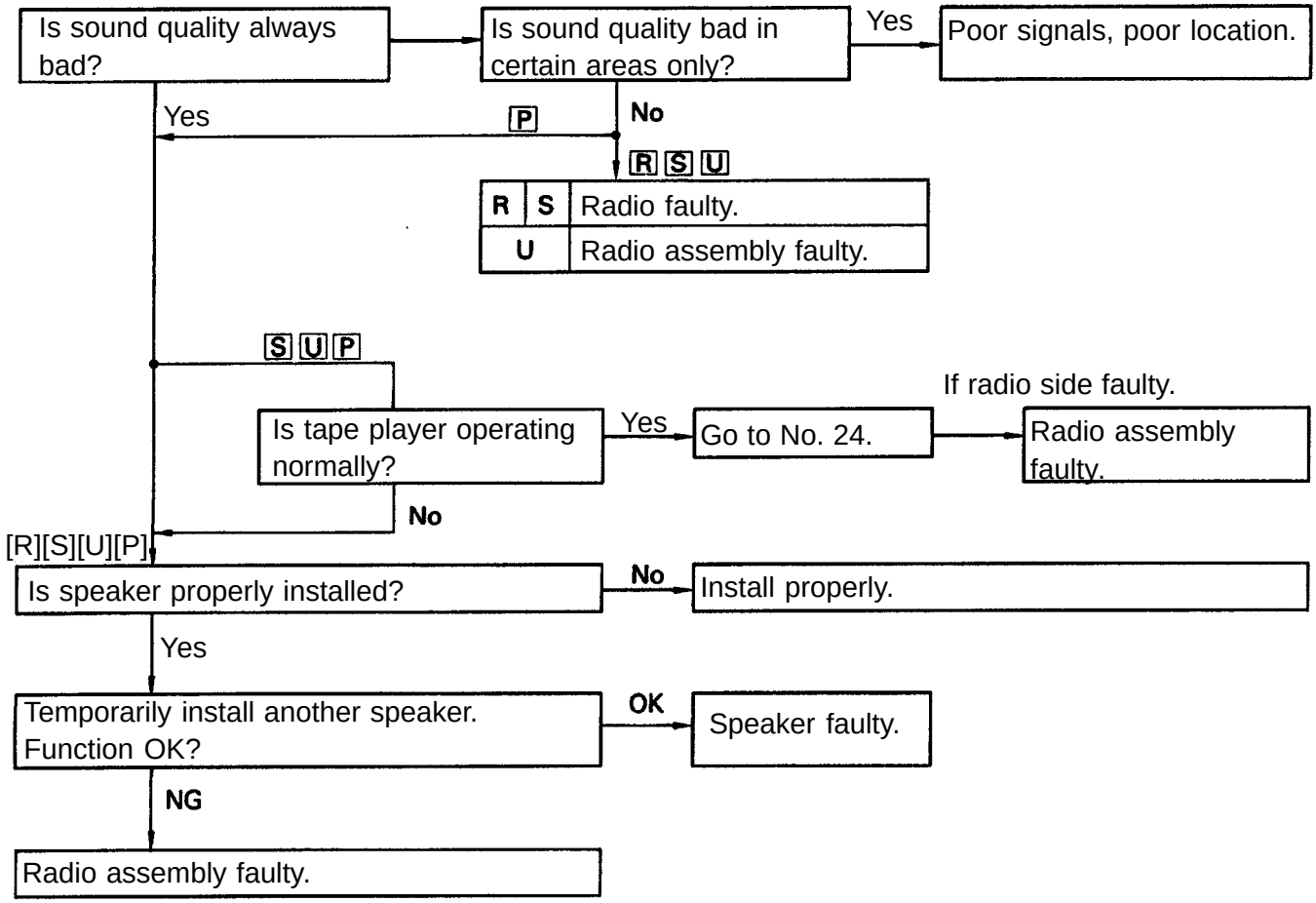
5	Radio	EITHER AM OR FM DOES NOT WORK, RECEPTION POOR (VOLUME FAINT), FEW PRESET TUNING BANDS

[R]: Radio [S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



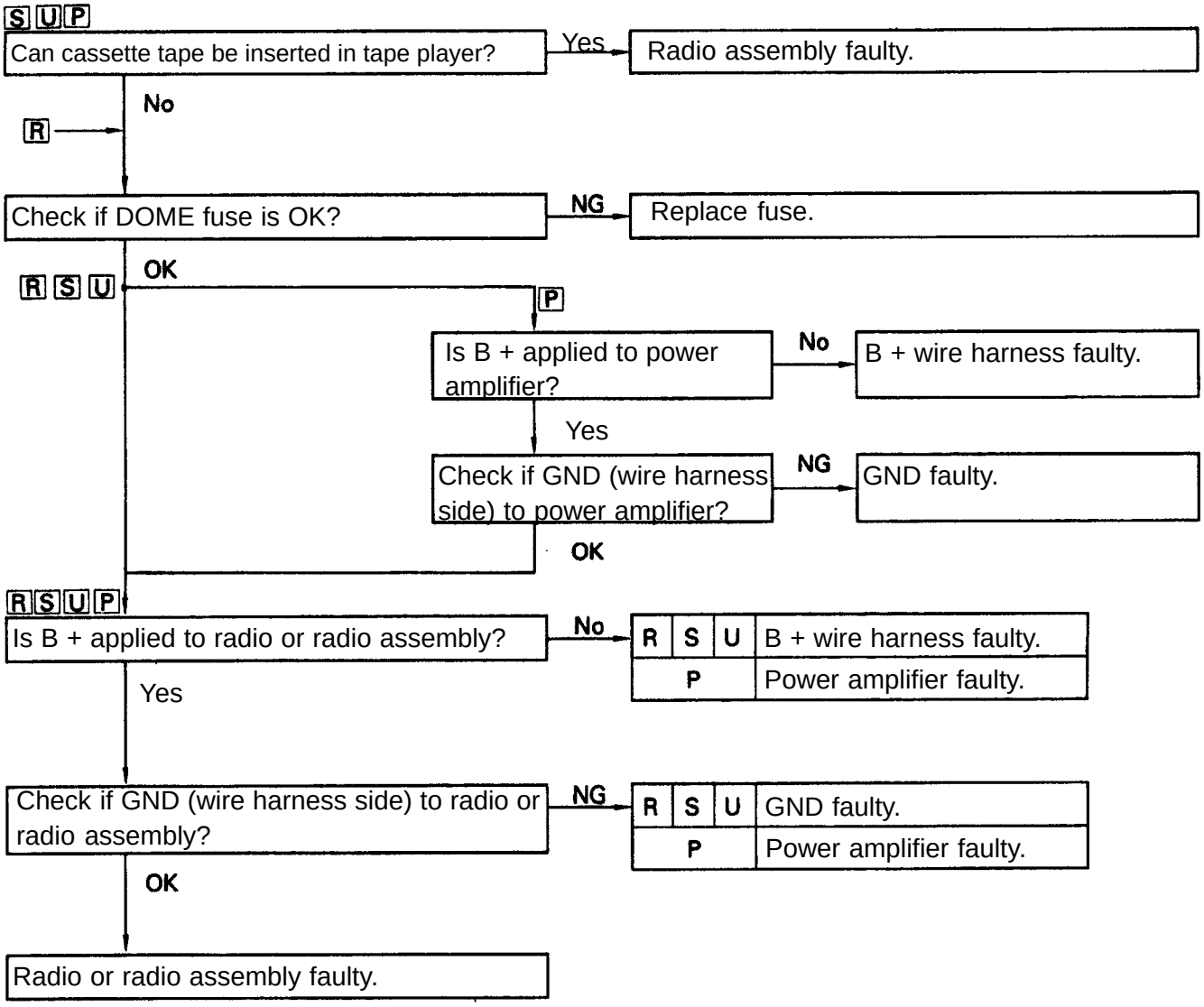
6	Radio	SOUND QUALITY POOR

[R]: Radio [S]: Radio + Tape Player [U]:Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



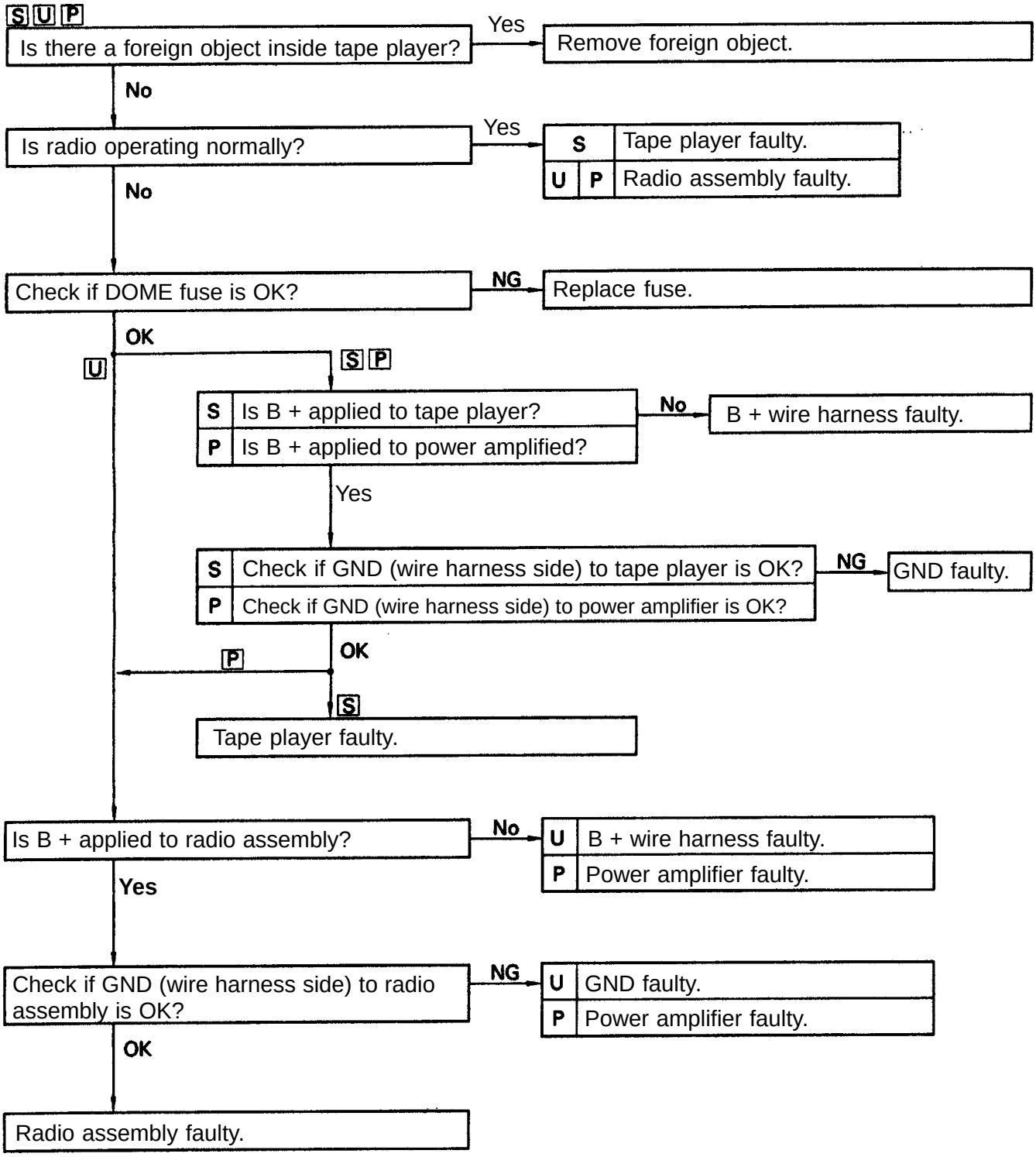
7	Radio	CANNOT SET STATION SELECT BUTTON, PRESET MEMORY DISAPPEARS

[R]: Radio [S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



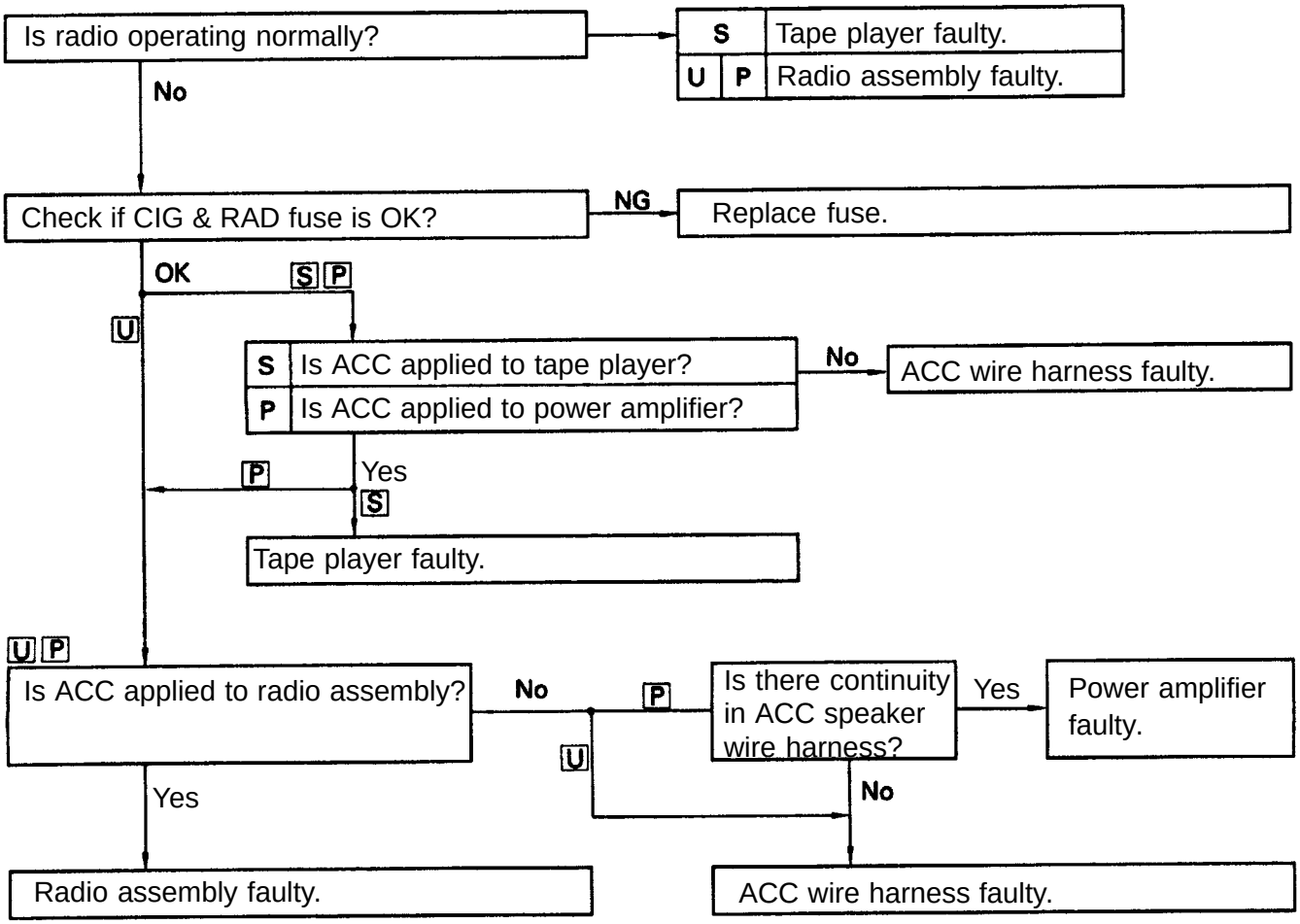
8	Tape Player	CASSETTE TAPE CANNOT BE INSERTED

[S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



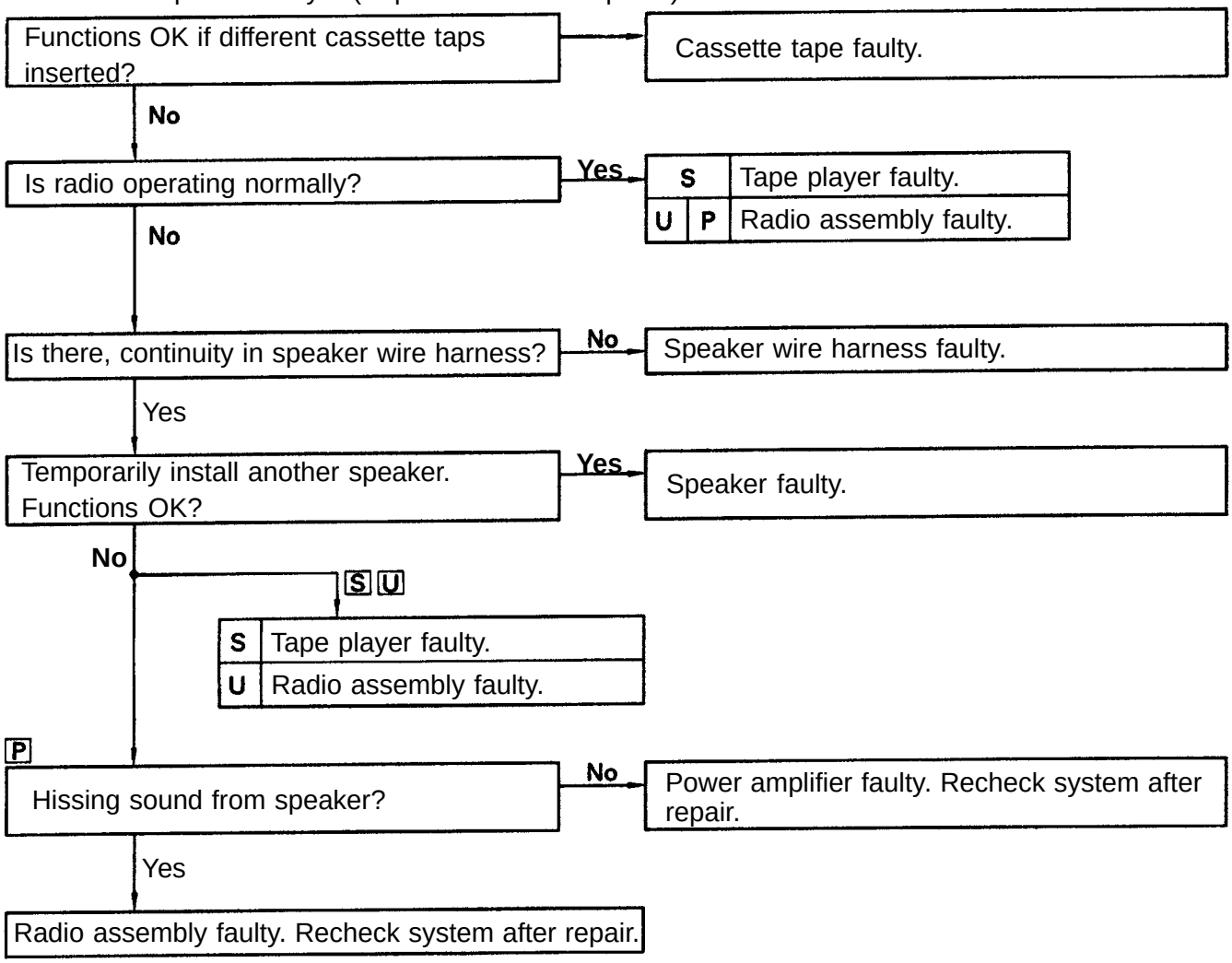
9	Tape Player	CASSETTE TAPE INSERTS, BUT NO POWER

[S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



10	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING

[S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier
[P]: Radio–Tape–CD Player (Separate Power Amplifier)



11	Tape Player	EITHER SPEAKER DOES NOT WORK

S: Radio + Tape Player U: Radio–Tape Player (Built–in Power Amplifier)
P: Radio–Tape–CD Player (Separate Power Amplifier)

Is radio operating normally?

es →

S		Tape player faulty.
U	P	Radio assembly faulty.

No ↓

Is hiss produced by non–functioning speaker?

Yes →

S	Tape player faulty.
U	Radio assembly faulty.
P	Radio assembly faulty. Recheck system after repair.

No ↓

Is there continuity in speaker wire harness?

No → Speaker wire harness faulty.

Yes ↓

Temporarily instal! another speaker.
Functions OK?

OK → Speaker faulty.

NG ↓

S	Tape player faulty?
U	Radio assembly faulty.
P	Radio assembly faulty. Recheck system after repair.

12	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)

[S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)

Functions OK if different cassette tape inserted?
→ Yes: Cassette tape faulty.
↓ No

Operates normally after cleaning the heads? (See page BE–124)
→ Yes: Head dirty.
↓ No

Is radio operating normally?
→ Yes: Radio assembly faulty.
↓ No

Is speaker properly installed?
→ No: Install properly.
↓ Yes

Temporarily install another speaker. Functions OK?
→ Yes: Speaker faulty.
↓ No

S	Tape player faulty.
U	Radio assembly faulty.
P	Radio assembly faulty. Recheck system after repair.

13	Tape Player	TAPE JAMMED, MALFUNCTION WITH TAPE SPEED OR AUTO–REVERSE

[S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio –Type –CD Player (Separate Power Amplifier)

Functions OK if different tape (less than 120 mins.) is inserted?
→ Yes: Cassette tape faulty.
↓ No

Is there a foreign object inside tape player?
→ Yes: Remove foreign object.
↓ No

Operates normally after cleaning the heads? (See page BE–124)
→ Yes: Head dirty.
↓ No

S		Tape player faulty.
U	P	Radio assembly faulty.

14 Tape Player — APS, SKIP, RPT BUTTONS NOT OPERATING

[S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)

Functions OK if different cassette tape inserted?
- No → Radio assembly faulty.
- Yes → Cassette tape faulty. (Less than 3 secs. of silence between songs (APS, RPT). Less than 15 secs. of silence (SKIP).)

15 Tape Player — CASSETTE TAPE WILL NOT EJECT

[S]: Radio + Tape Player [U]: Radio–Tape Player (Built–in Power Amplifier)
[P]: Radio–Tape–CD Player (Separate Power Amplifier)

Is tape player operating normally?
- No → Cassette tape jammed.
- Yes →

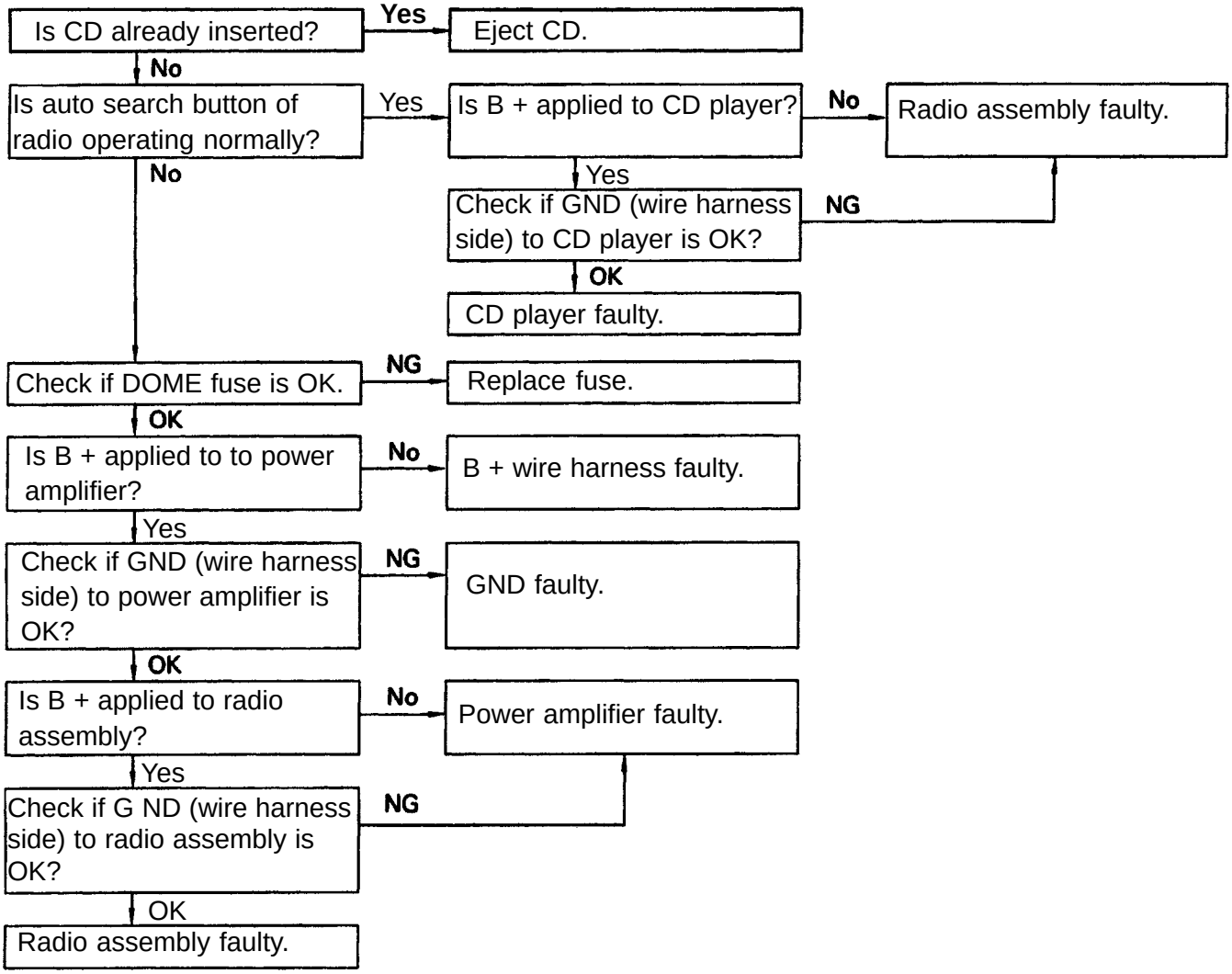
Is radio operating normally?
- Yes →
  - S: Tape player faulty.
  - U P: Radio assembly faulty.
- →

Check if DOME fuse is OK?
- NG → Replace fuse.
- OK →

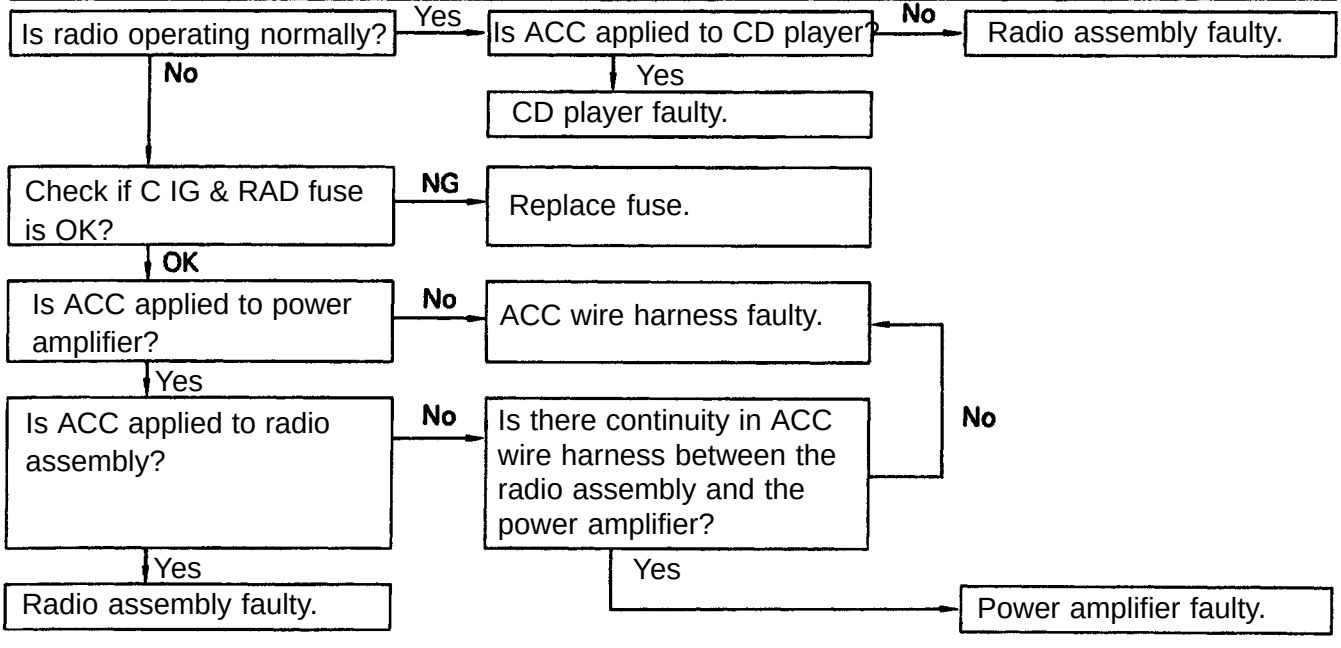
Is B + applied to power amplifier?
- No → B + wire harness faulty.
- Yes →

S: Is6 + applied to tape player?
U P: Is B + applied to radio assembly?
- No [P] [S] [U] → Is there continuity in B + wire harness between power amplifier and radio assembly?
  - Yes → Power amplifier faulty.
  - No → B + wire harness faulty.
- Yes →
  - S: Tape player faulty.
  - U P: Radio assembly faulty.

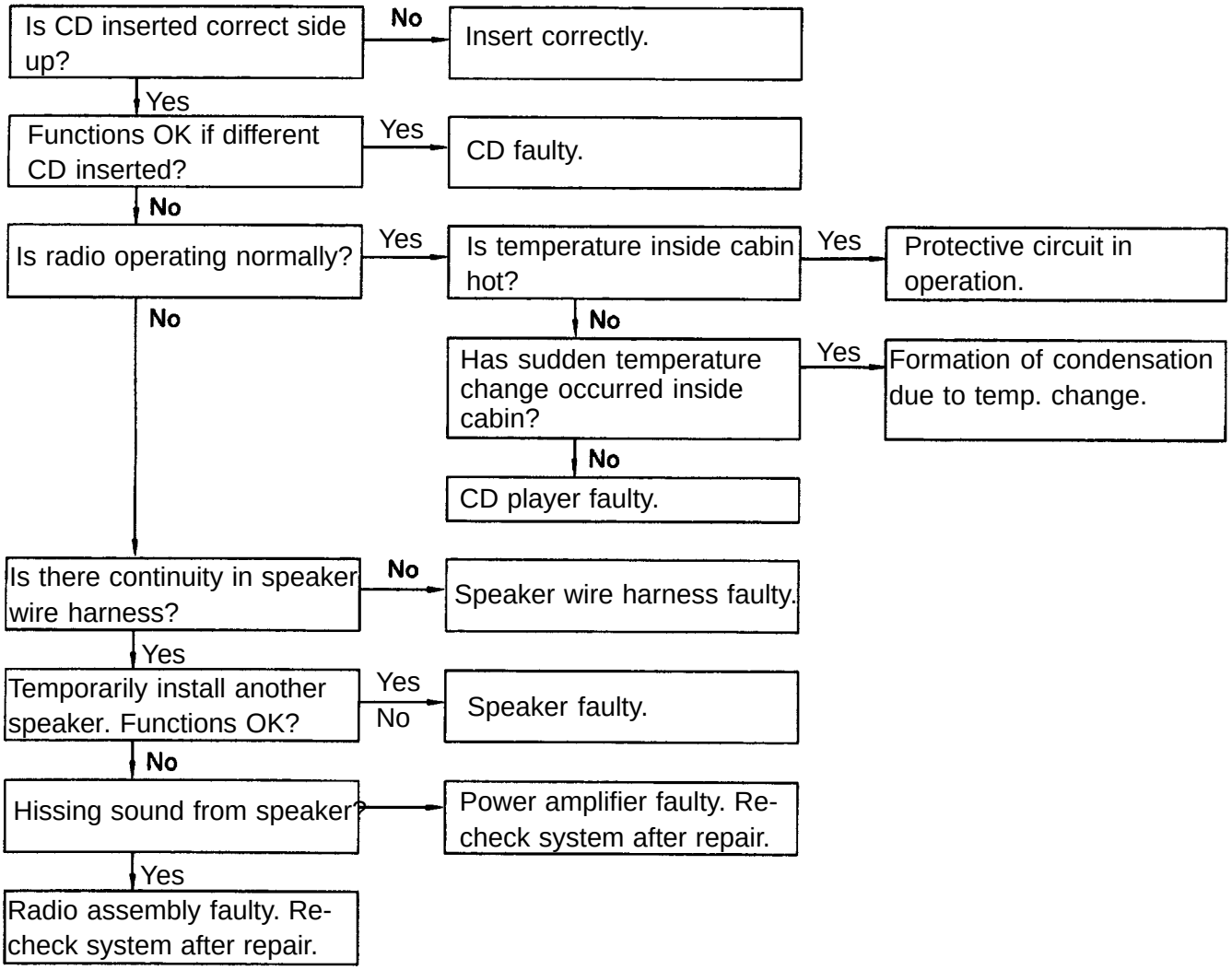
16 CD Player — CD CANNOT BE INSERTED



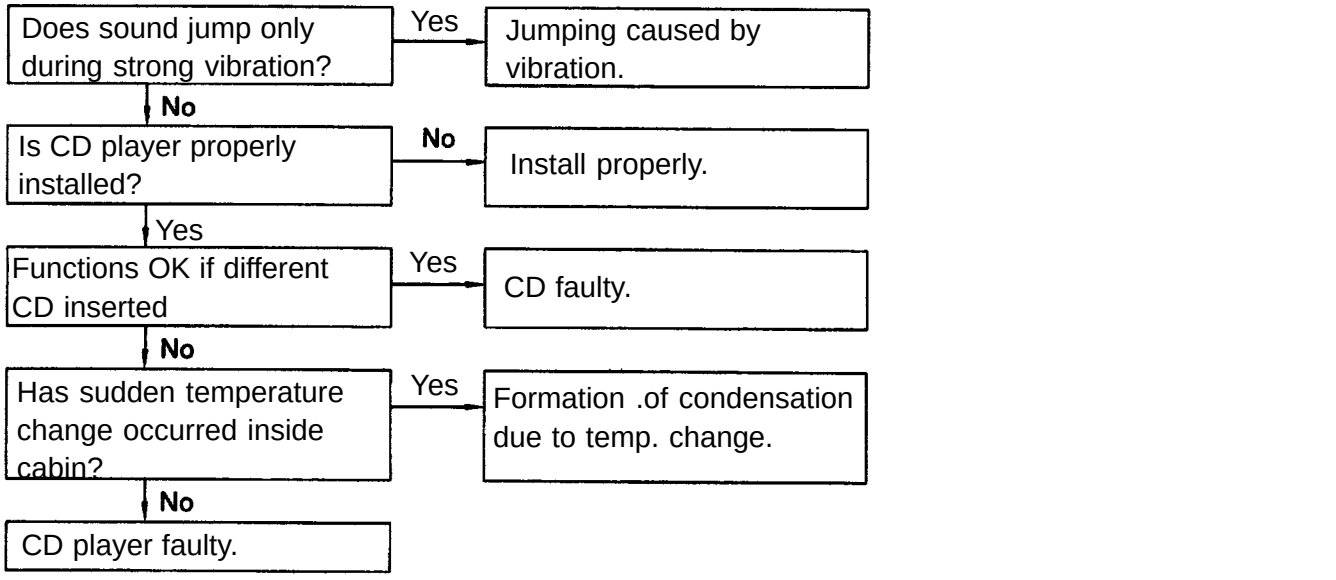
17 CD Player — CD INSERTS, BUT NO POWER



18 CD Player — POWER COMING IN, BUT CD PLAYER NOT OPERATING



19 CD Player — SOUND JUMPS

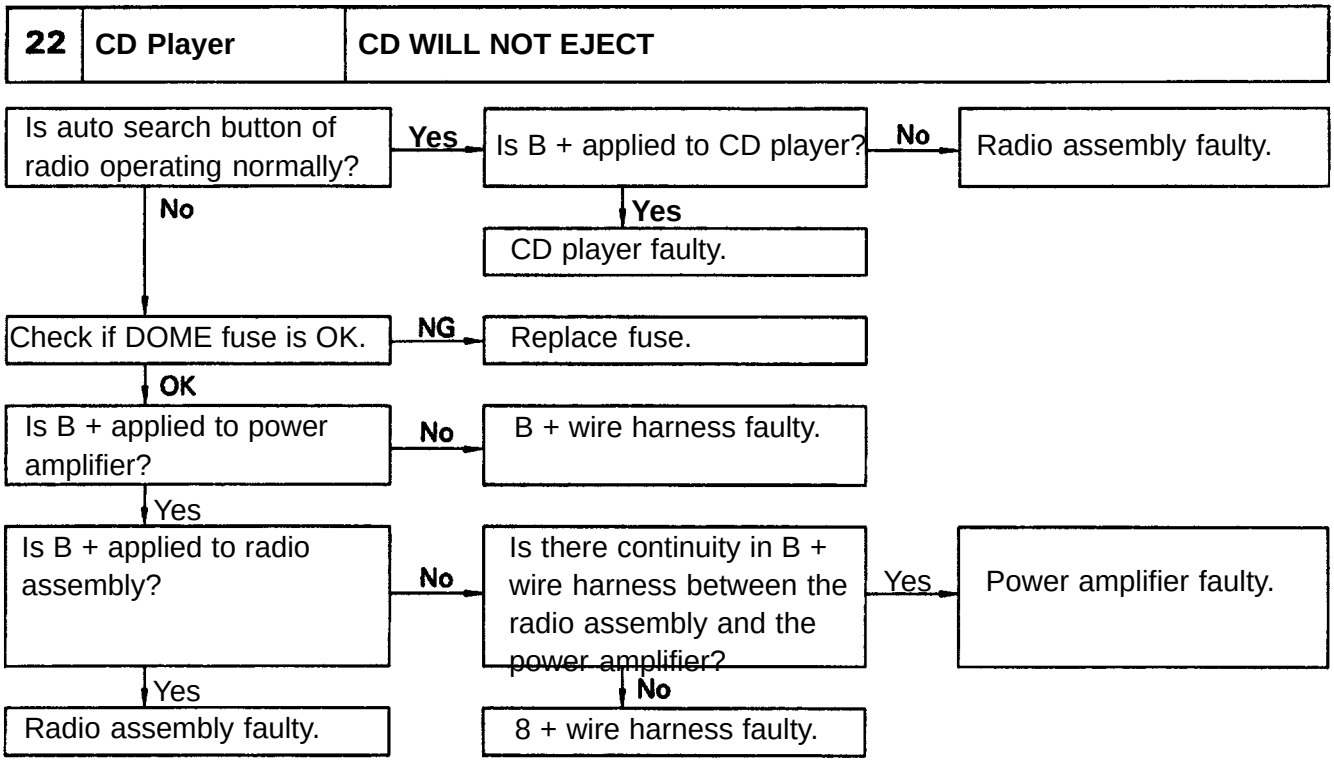


20 CD Player SOUND QUALITY POOR (VOLUME FAINT)

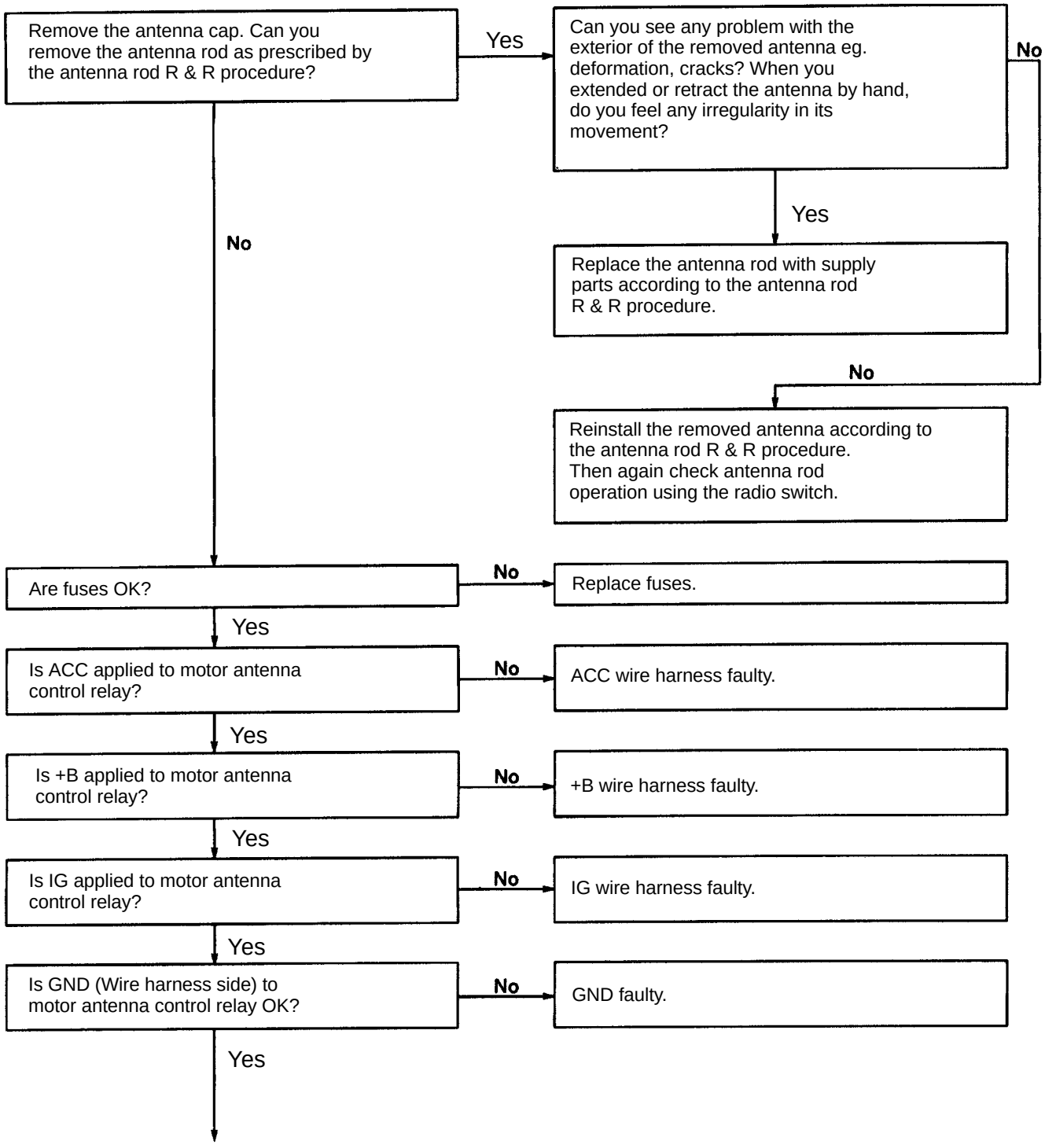
Functions OK if different CD inserted? — Yes → CD faulty.
No
Is radio operating normally? — Yes → CD player faulty.
No
Is speaker properly installed? — No → Install properly.
Yes
Temporarily install another speaker. Functions OK? — Yes → Speaker faulty.
No
Radio assembly faulty. Re–check system after repair.

21 CD Player EITHER SPEAKER DOES NOT WORK

Is radio operating normally? — Yes → CD player faulty.
No
Is hiss produced by non-functioning speaker? — Yes → Radio assembly faulty. Recheck system after repair.
No
Is there continuity 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.


22
CD Player
CD WILL NOT EJECT
Is auto search button of radio operating normally?
Yes
Is B + applied to CD player?
No
Radio assembly faulty.
No
Yes
CD player faulty.
Check if DOME fuse is OK.
NG
Replace fuse.
OK
Is B + applied to power amplifier?
No
B + wire harness faulty.
Yes
Is B + applied to radio assembly?
No
Is there continuity in B + wire harness between the radio assembly and the power amplifier?
Yes
Power amplifier faulty.
Yes
No
Radio assembly faulty.
8 + wire harness faulty.

23	Antenna	ANTENNA DOES NOT FULLY EXTENDED OR FULLY RETRACT



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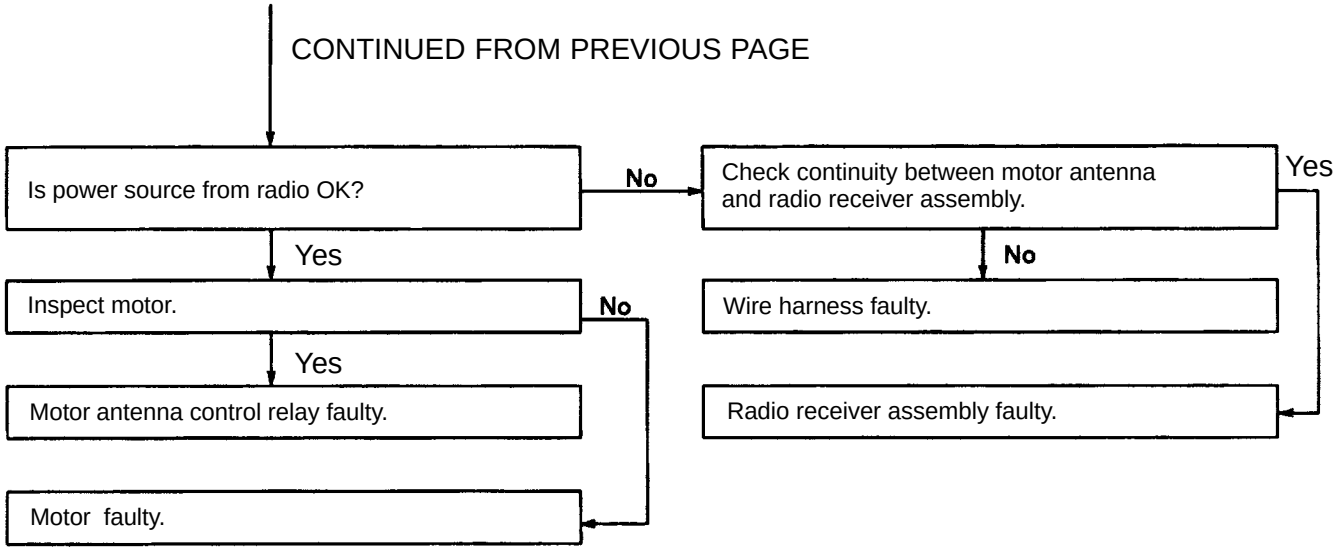
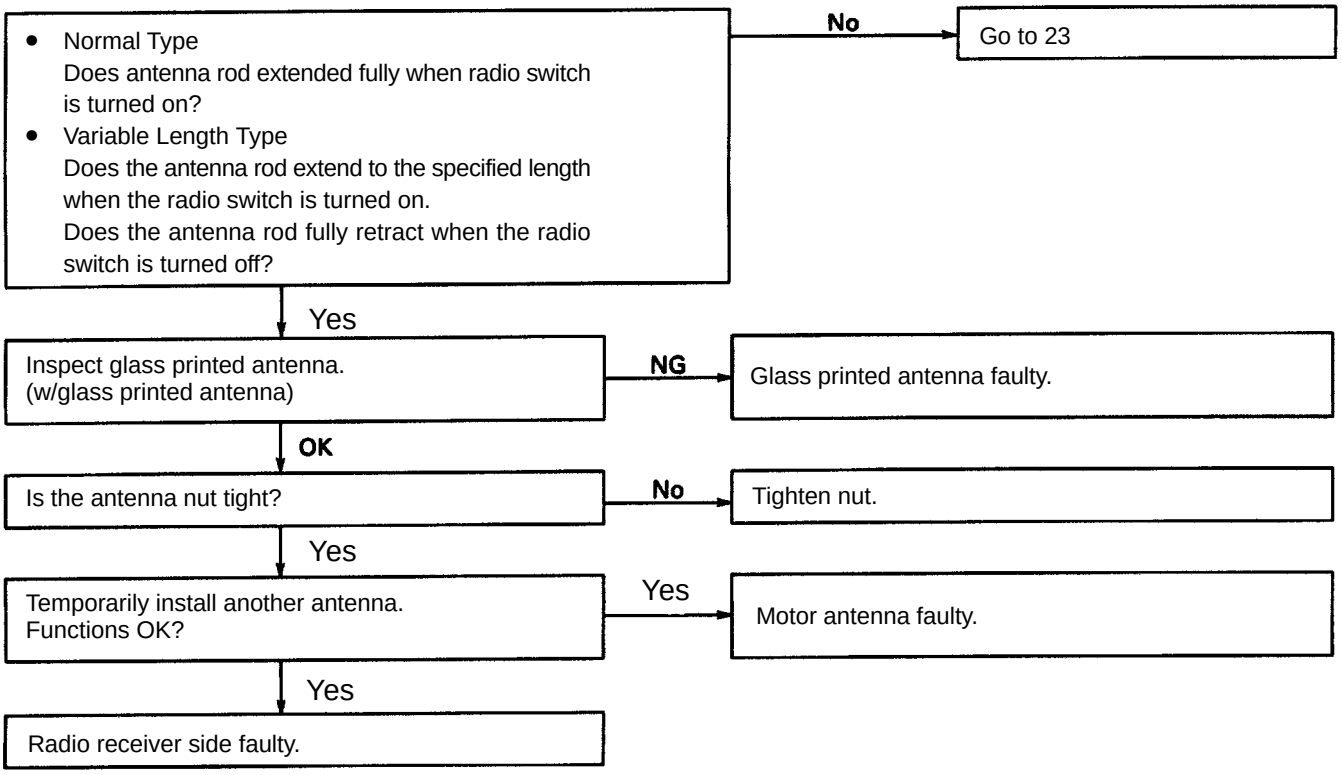
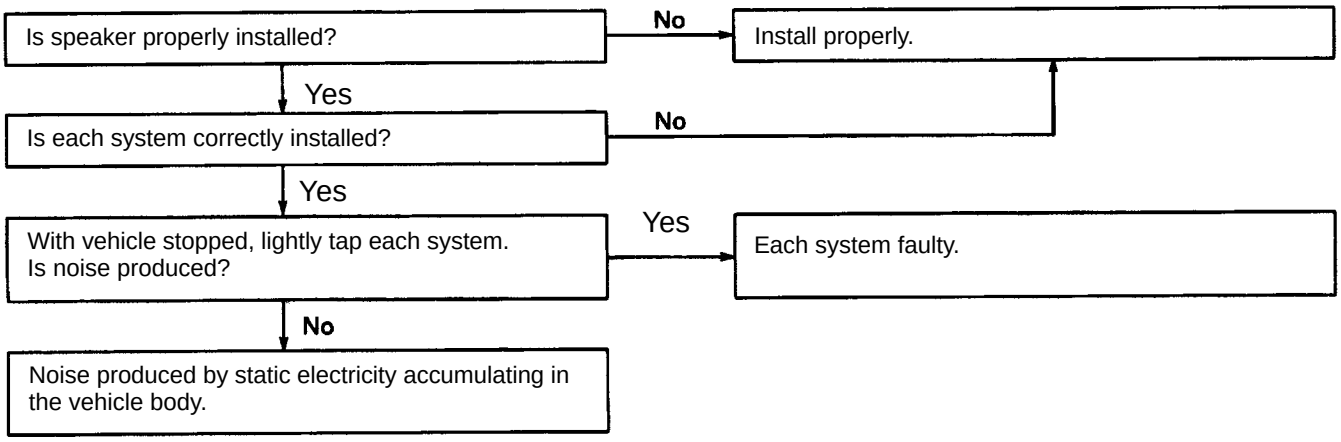

CONTINUED FROM PREVIOUS PAGE
Is power source from radio OK?
No
Check continuity between motor antenna and radio receiver assembly.
Yes
Yes
No
Inspect motor.
No
Wire harness faulty.
Yes
Motor antenna control relay faulty.
Radio receiver assembly faulty.
Motor faulty.

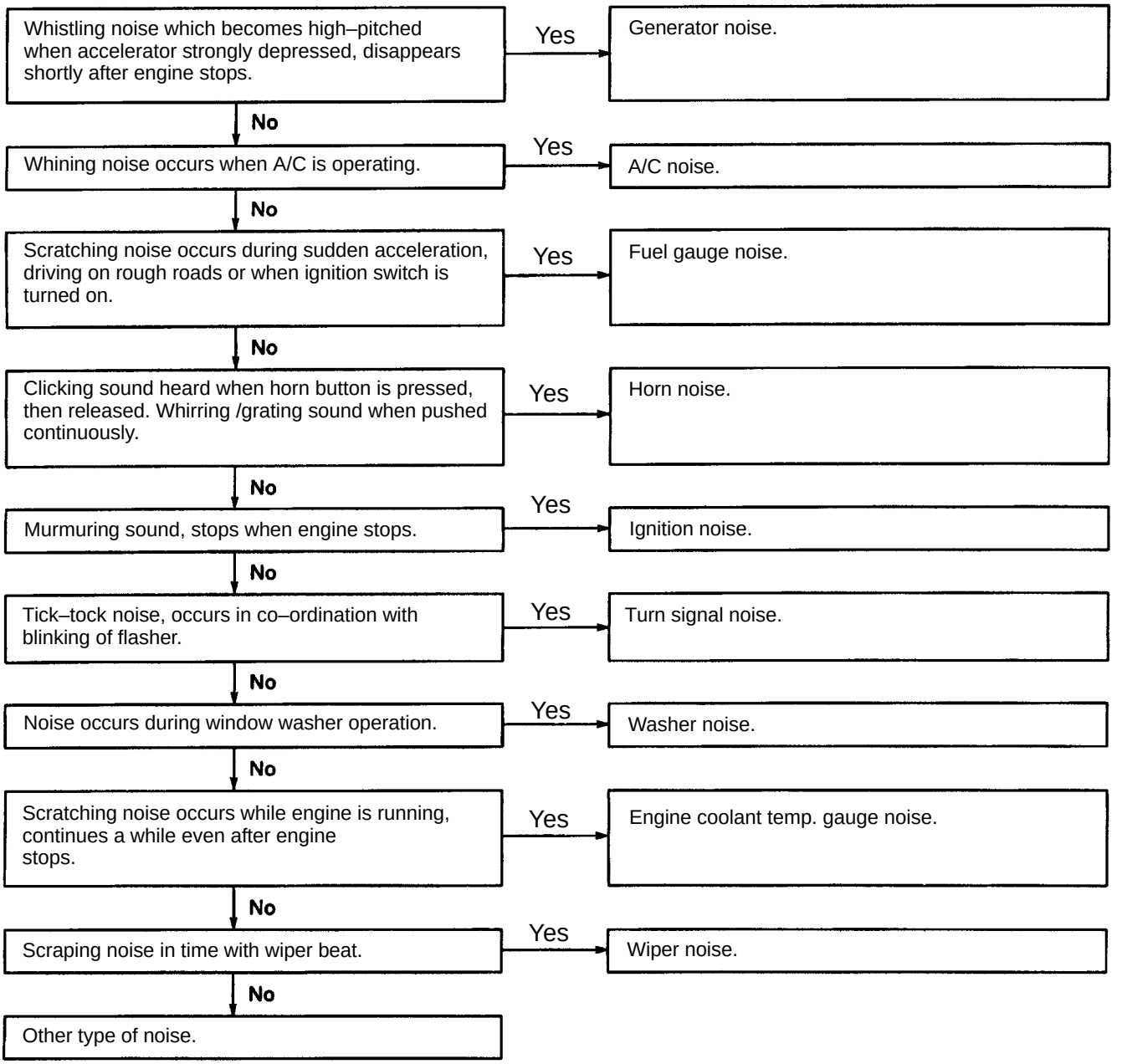
24	Antenna	ANTENNA–RELATED

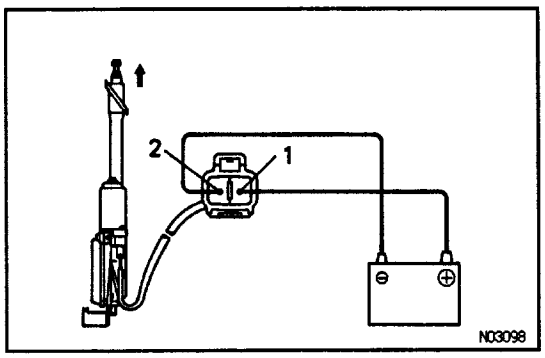


25	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING



26	Noise	NOISE PRODUCED WHEN ENGINE STARTS





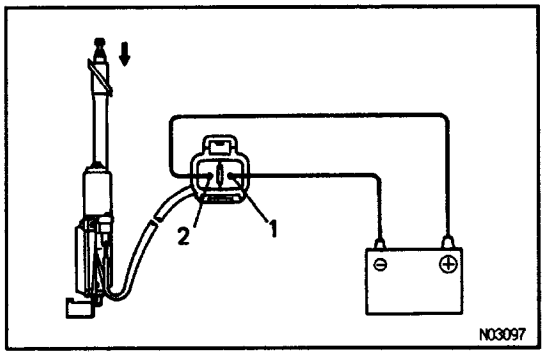
ANTENNA MOTOR INSPECTION

INSPECT ANTENNA MOTOR

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

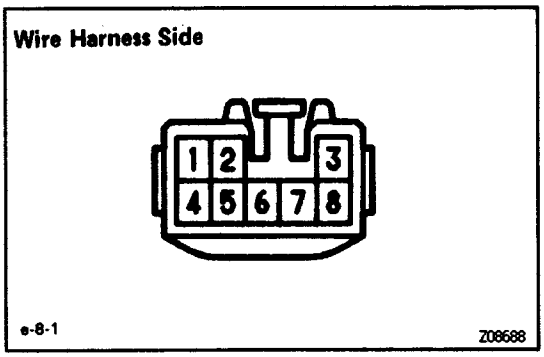
(b) Check that the motor turns (moves upward).

NOTICE: These teats must be done quickly (within 3 – 5 seconds) to prevent the coil from burning out.



(c) Then, reverse the polarity, check that the motor turns the opposite way (moves downward).

NOTICE: These tests must be done quickly (within 3 – 5 seconds) to prevent the coil from burning out.



ANTENNA MOTOR CONTROL RELAY INSPECTION

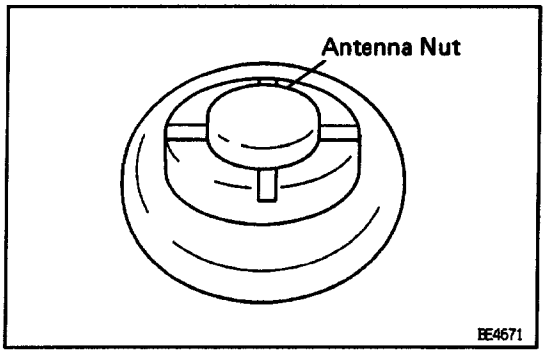
INSPECT ANTENNA MOTOR CONTROL RELAY CIRCUIT

Disconnect the connector from the relay and inspect the connector onwire harness side, as shown in the chart below.

Tester connection to terminal number	Condition	Specified condition
2 — 3	**Constant**	**Continuity**
6 — Ground	**Constant**	**Continuity**

Tester connection to terminal number	Condition	Specified condition
3 – Ground	Constant	**Battery positive voltage**
4 – Ground	Ignition switch position LOCK or ACC	**No voltage**
4 – Ground	Ignition switch position ON	**Battery positive voltage**
5 – Ground	Ignition switch position LOCK	**No voltage**
5 – Ground	Ignition switch position ACC or ON	**Battery positive voltage**
7 – Ground	Ignition switch position LOCK	**No voltage**
7 – Ground	Ignition switch position ACC or ON (Radio switch and cassette OFF)	**No voltage**
7 – Ground	Ignition switch position ACC or ON (Radio switch or cassette ON)	**Battery positive voltage**
8 – Ground	Ignition switch position LOCK	**No voltage**
8 – Ground	Ignition switch position ACC or ON (Radio switch OFF or cassette ON)	**No voltage**
8 – Ground	Ignition switch position ACC or ON (Radio switch ON and cassette OFF)	**Battery positive voltage**

If circuit is as specified, replace the relay.



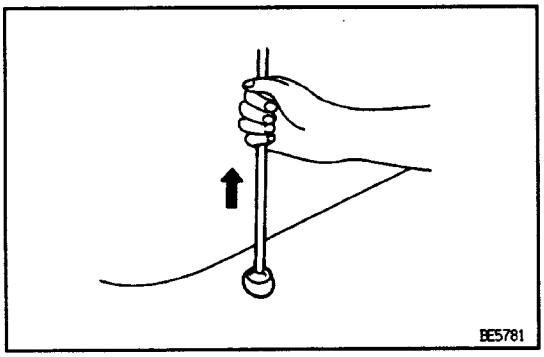
ANTENNA ROD REMOVAL AND INSTALLATION

1. REMOVE ANTENNA ROD

HINT: Do this operation with the battery negative (–) cable connected to the battery terminal.

(a) Turn the ignition switch to ”LOCK” position.

(b) Remove the antenna nut.



(c) w/ CD player:

Press the “AM, FM” buttons on the radio receiver, and simultaneously turn the ignition switch to ”ACC” position.

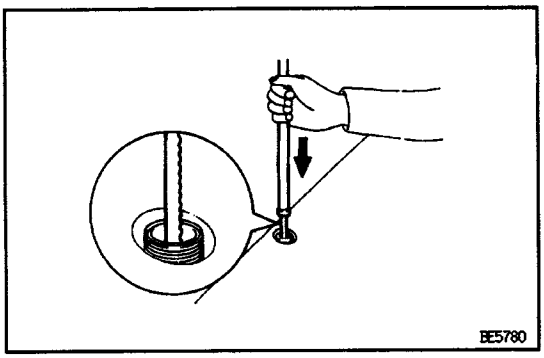
(d) w/o CD player:

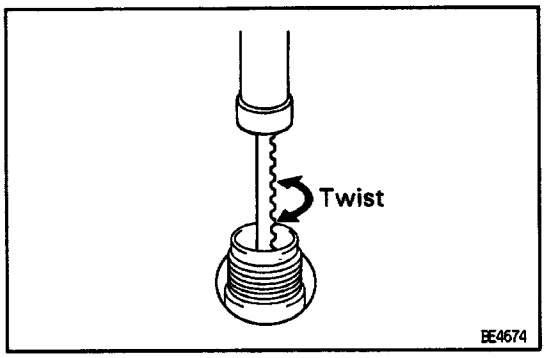
Press the ”AM” button on the radio receiver, and simultaneously turn the ignition switch to ”ACC” position.

HINT:

- The rod will extend fully and be released from the motor antenna.
- After removing the antenna rod, leave the ignition switch as “ACC”.

NOTICE: To prevent body damage when the antenna rod is released, hold the rod while it comes out.





2. INSTALL ANTENNA ROD

(a) Insert the cable of the rod until it reaches the bottom.

HINT:

- When inserting the cable, the teeth on the cable must face toward the rear of the vehicle.
- Insert the antenna approx. 300 mm (11.8 in).

(b) Wind the cable to retract the rod by turning the ignition switch to ”LOCK” position.

HINT:

- If the ignition switch is already in ”LOCK” position, do step 1 (c) first, then turn the ignition switch to “ACC” position.
- In case the cable is not wound, twist it, as shown in the illustration.
- Even if the rod has not retracted fully, install the antenna nut and inspect the antenna rod operation. It will finally retract fully.

(c) Inspect the antenna rod operation by pushing the radio wave band select buttons.