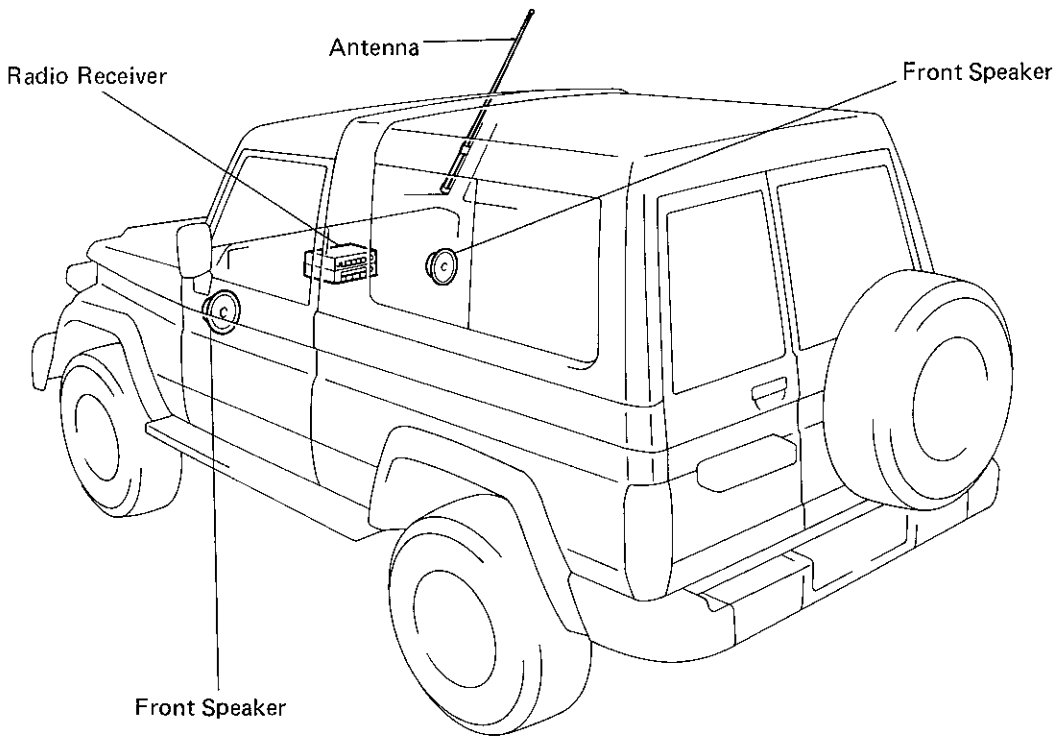
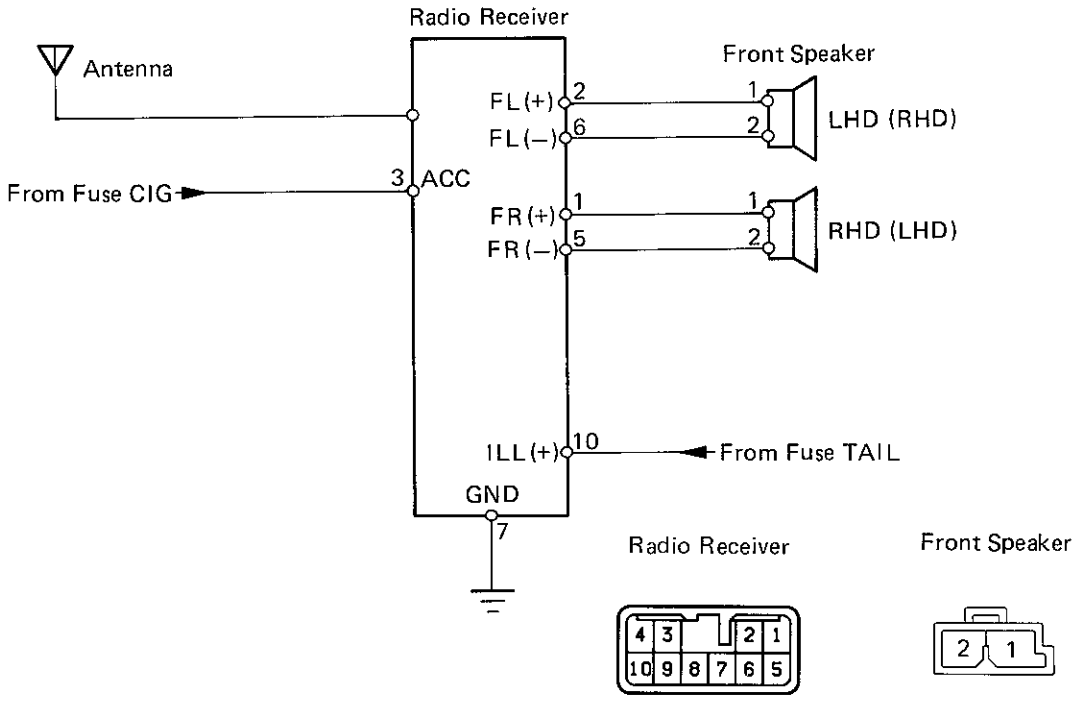
AUDIO SYSTEM

Parts Location



Wiring and Connector Diagrams

• **Radio, 1 Speaker: Symbol [R]**

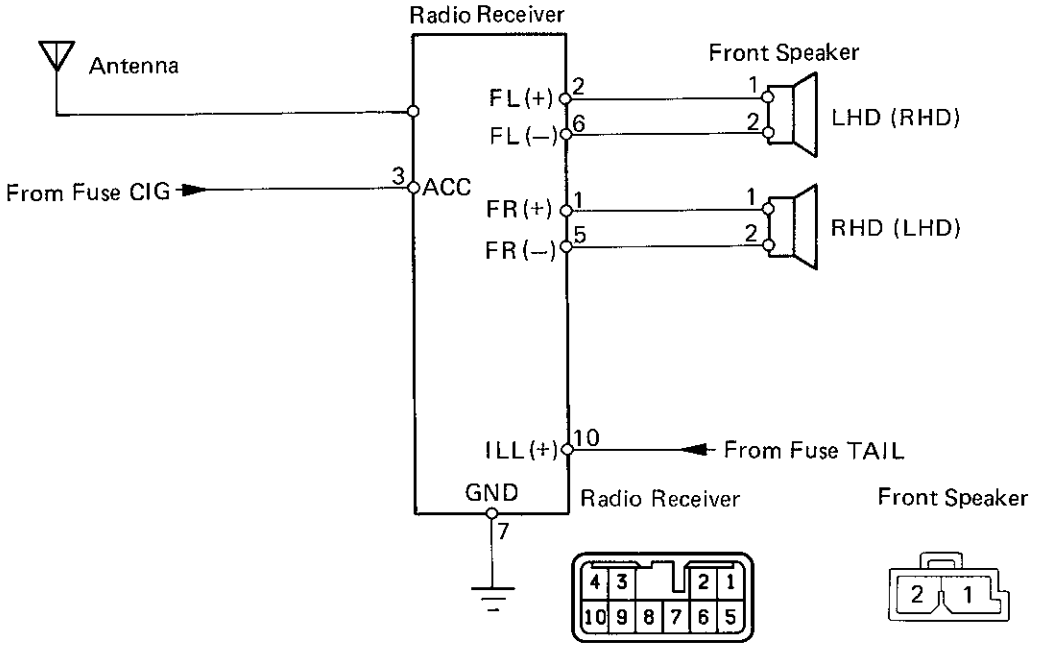


The POWER SOURCE CIRCUIT has been simplified. For full details, see pages BE-10, 11, 12.

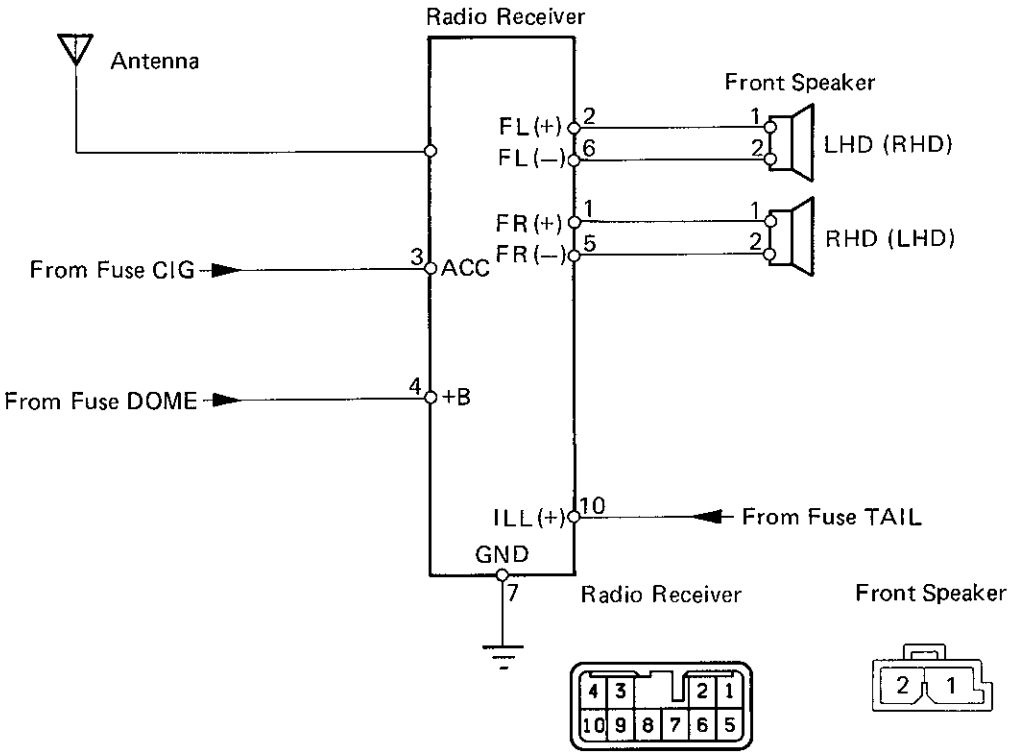
BE5367 S-10-2-A GA-2-2-A

Wiring and Connector Diagrams

• **Radio, 2 Speaker: Symbol R**



• **Radio, ETR, 2 Speaker: Symbol R**

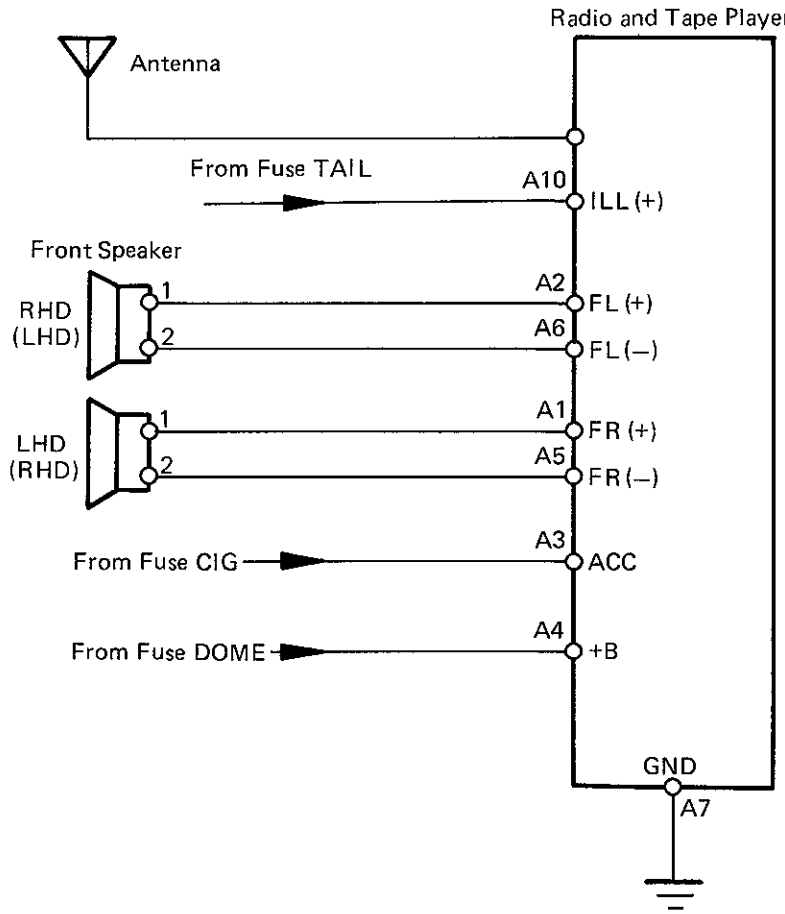


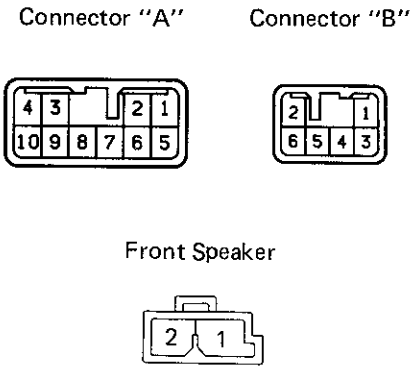
The POWER SOURCE CIRCUIT has been simplified. For full details, see pages BE-10, 11, 12.

BE5367 S-10-2-A GA-2-2-A
BE5368 S-10-2-A GA-2-2-A

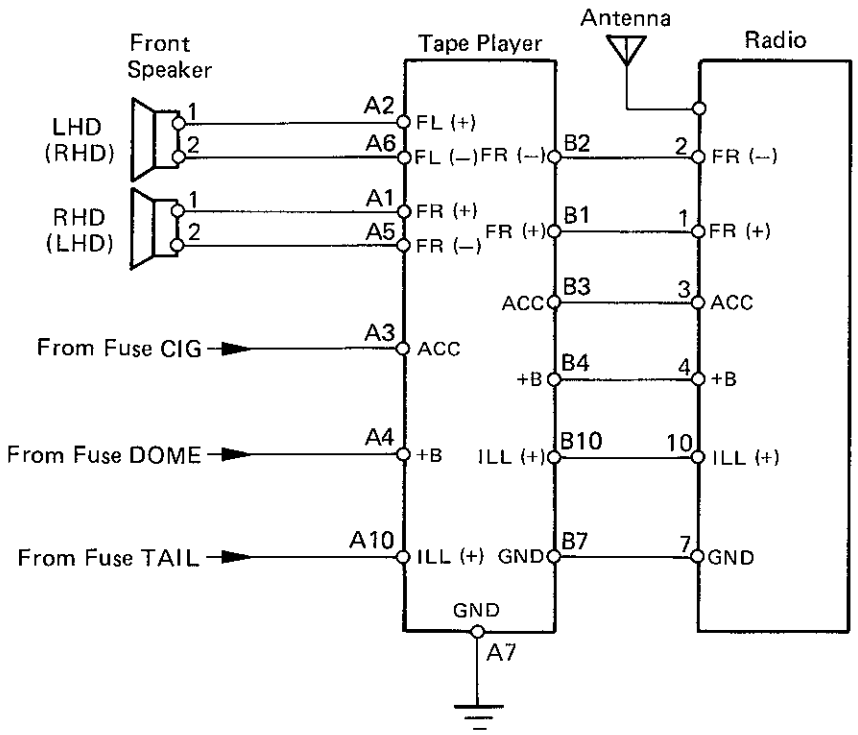
Wiring and Connector Diagrams (Cont'd)

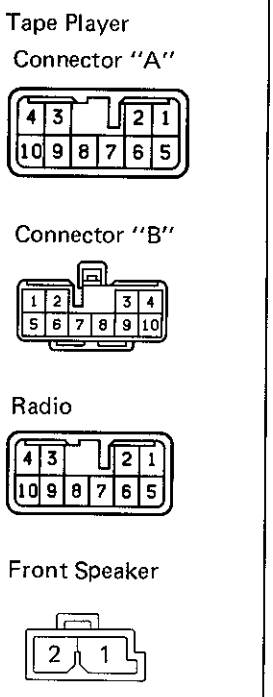
• Radio — Tape Player, 2 Speaker: Symbol U





• Radio, ETR, 2 Speaker + Tape Player: Symbol S





The POWER SOURCE CIRCUIT has been simplified. For full details, see pages BE-10, 11, 12.

S-10-2-A S-6-2-E
GA-2-2-A
S-10-2-A
S-10-1-A
BE5369 S-10-2-A
BE5370 GA-2-2-A

System Description

RADIO WAVE BAND

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

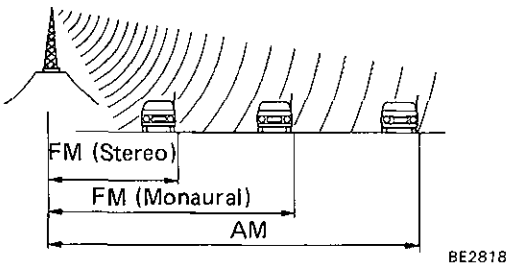
Frequency	30 kHz	300 kHz	3 MHz	30 MHz	300 MHz
Designation	LF	MF	HF	VHF	
Radio wave	LW	AM (MW)	SW	FM (UKW)	
Modulation method	Amplitude modulation			Frequency modulation	

LF: Low Frequency MF: 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.

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.



BE2818

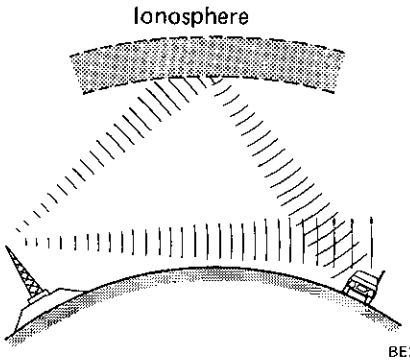
RECEPTION PROBLEMS

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".

Fading

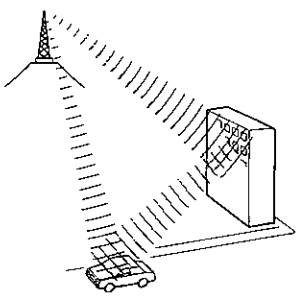


BE2819

Multipath

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

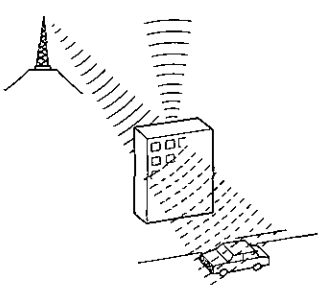
Multipath


BE2820

Fade Out

Because FM radio waves are of higher frequencies than AM radio waves, they bounce off the 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".

Fade Out


BE2821

ADJUST ANTENNA TRIMMER
(Ex. Electronic Tuning Radio)

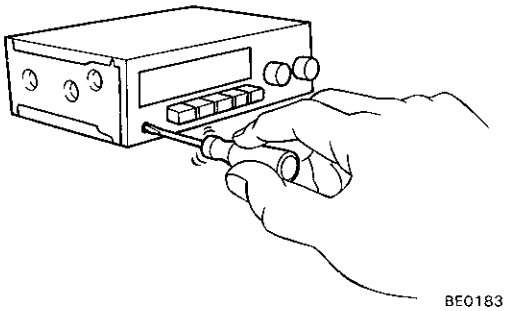
(a) Fully lengthen antenna.

(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.

Example:



BE0183

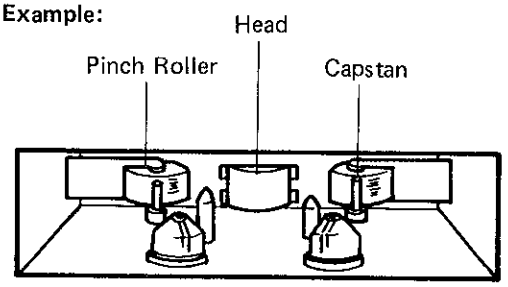
MAINTENANCE OF TAPE PLAYER

Head Cleaning

(a) Raise the cassette door with your finger.
Next using a pencil or like object, push in the guide.

(b) Using a cleaning pen or cotton applicator soaked in cleaner, clean the head surface, pinch rollers and capstans.

Example:



C0192

Troubleshooting

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).

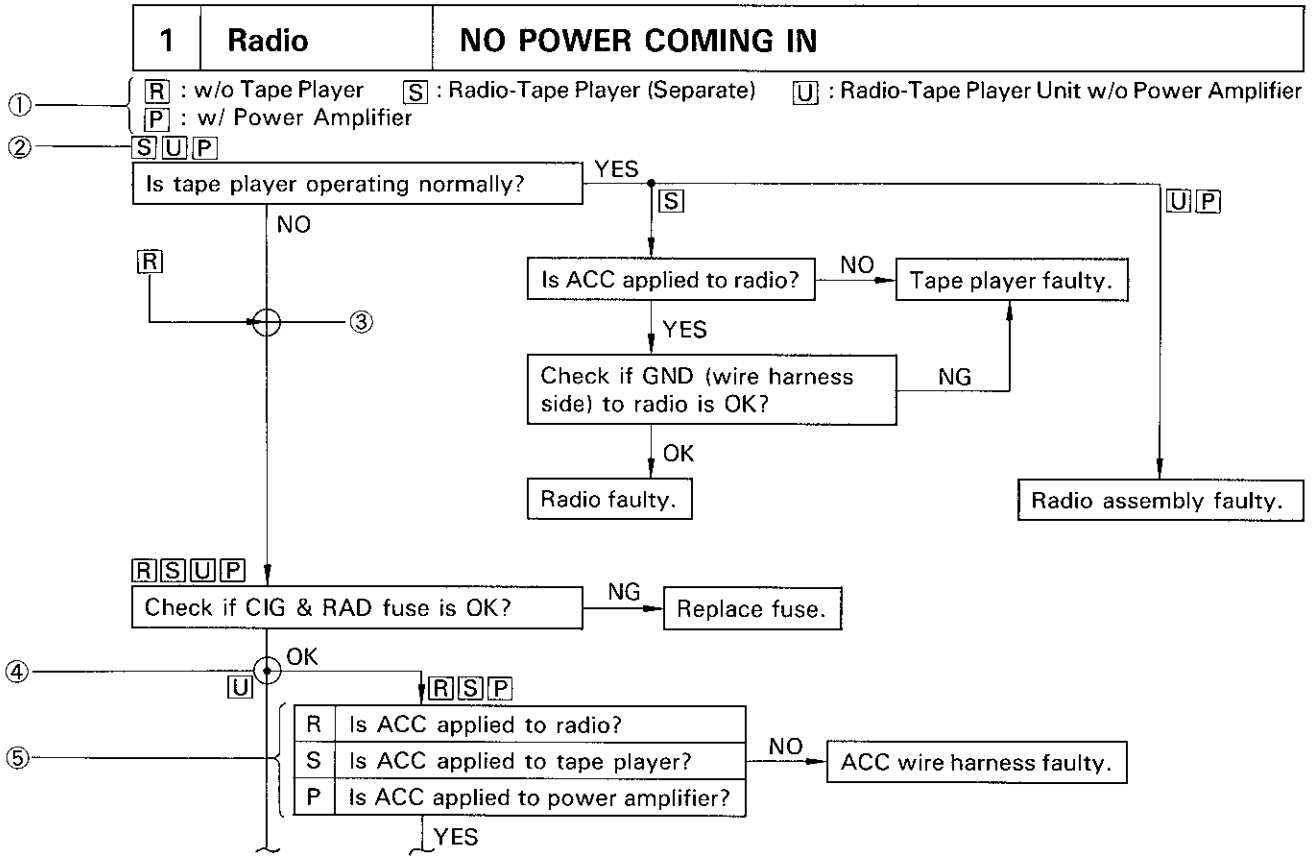
HINTS: This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

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	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 bands.	5
	Sound quality poor.	6
	Auto-Radio Information (ARI) not received.	7
	Cannot set station select button.	8
	Preset memory disappears.	8
Tape Player	Cassette tape cannot be inserted.	9
	Cassette tape inserts, but no power.	10
	Power coming in, but tape player not operating.	11
	Either speaker does not work.	12
	Sound quality poor (Volume faint).	13
	Tape jammed, malfunction with tape speed or auto-reverse.	14
	APS, SKIP, RPT buttons not operating.	15
	Cassette tape will not eject.	16
Noise	Noise produced by vibration or shock while driving.	17
	Noise produced when engine starts.	18
Antenna	Antenna-related.	19

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.

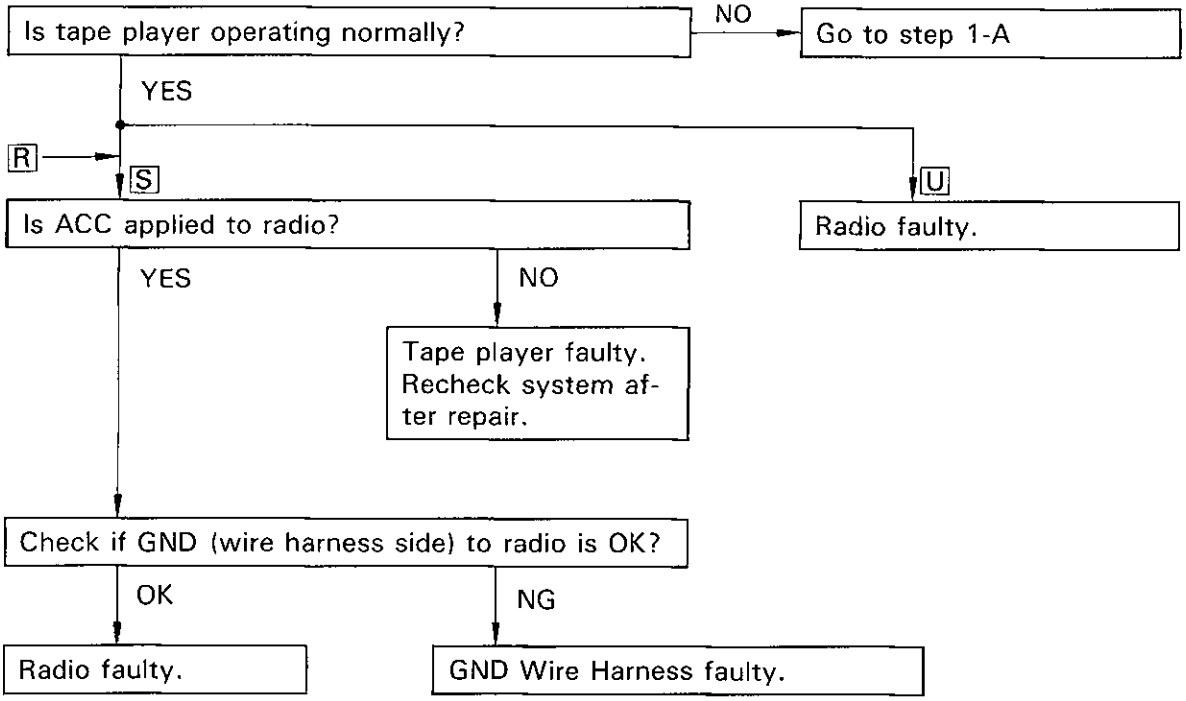
HINT: Proceed to question for applicable audio system type.

⑤ HINT: Select question for applicable audio system type.

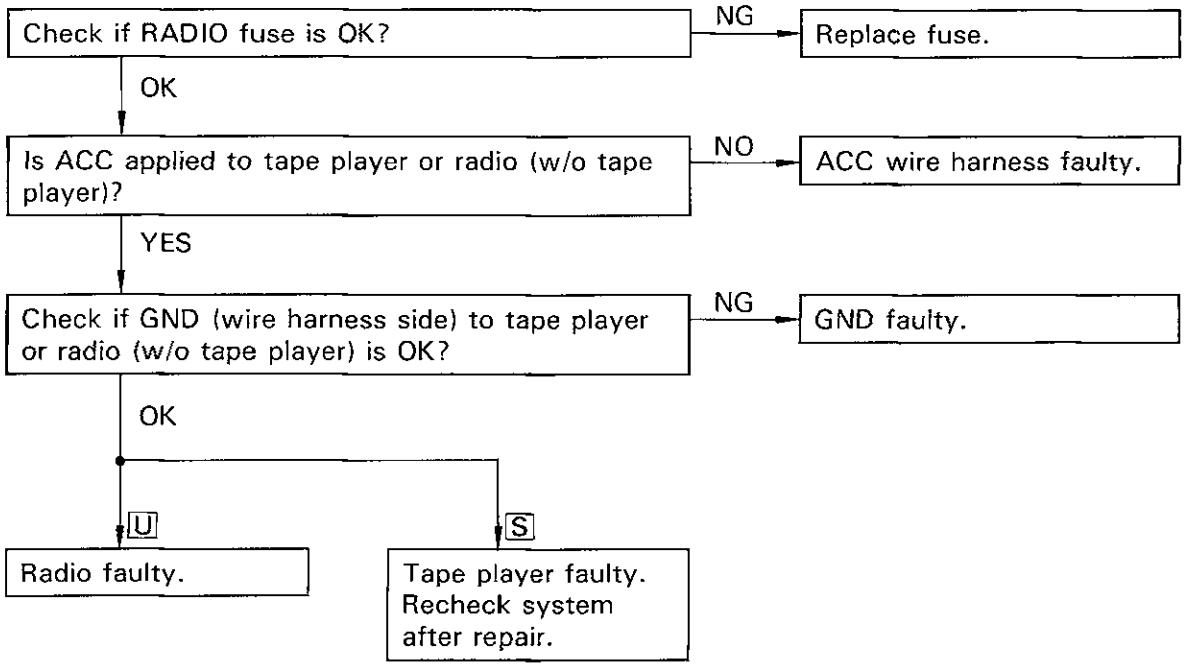
1 RADIO — NO POWER COMING IN

[R] : Radio [S] : Radio + Tape Player [U] : Radio — Tape Player

[S] [U]

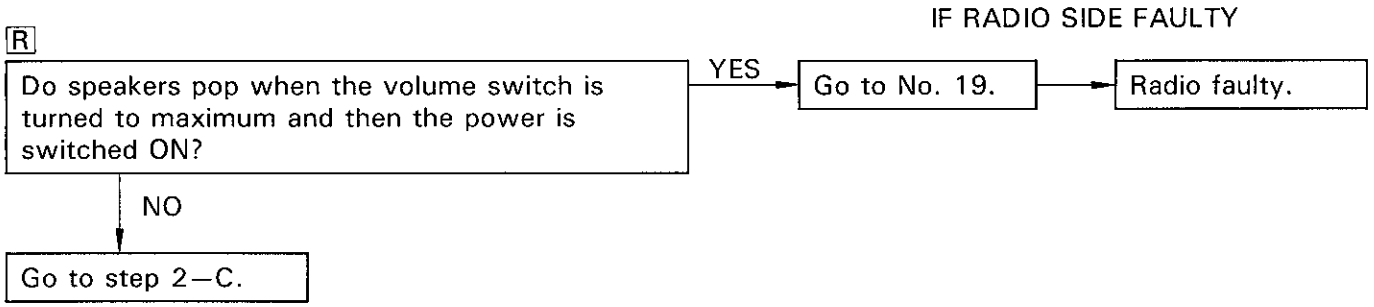


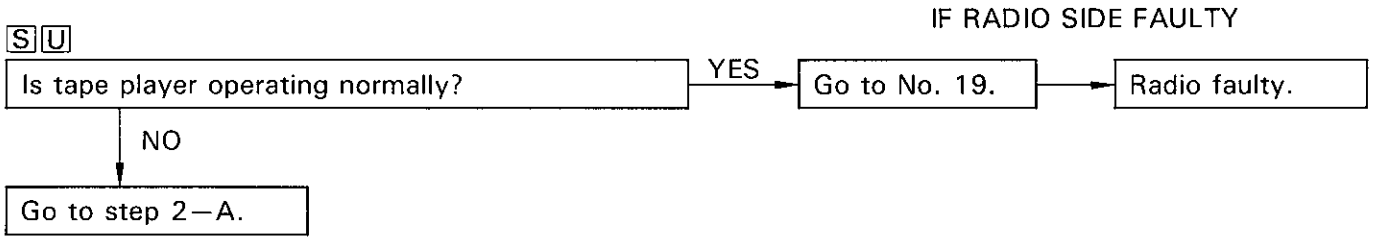
1—A.



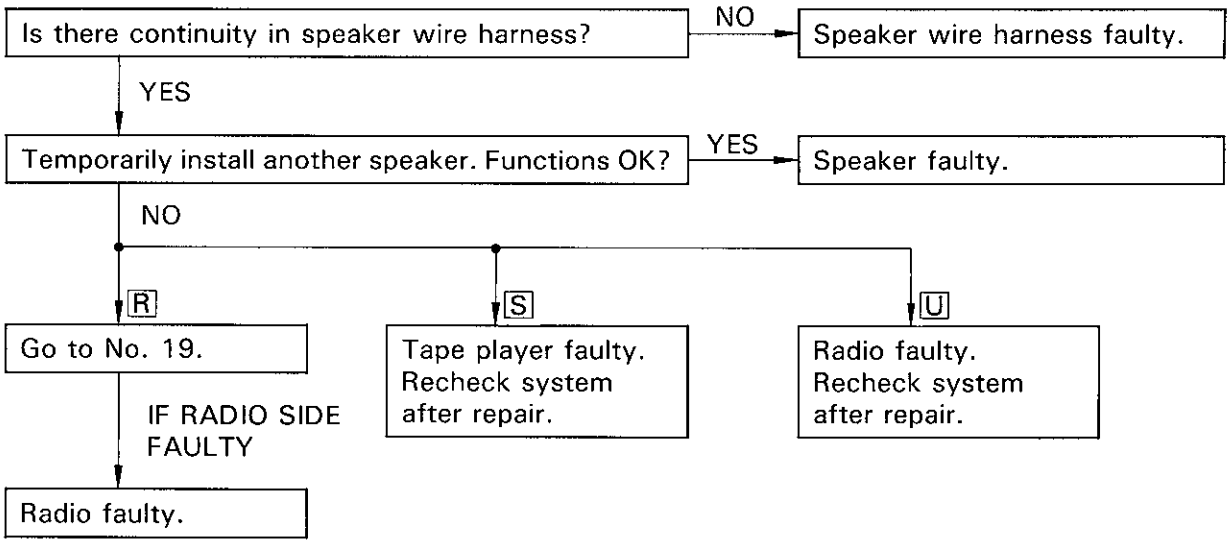
2	RADIO	POWER COMING IN, BUT RADIO NOT OPERATING

[R] : Radio [S] : Radio + Tape Player [U] : Radio + Tape Player



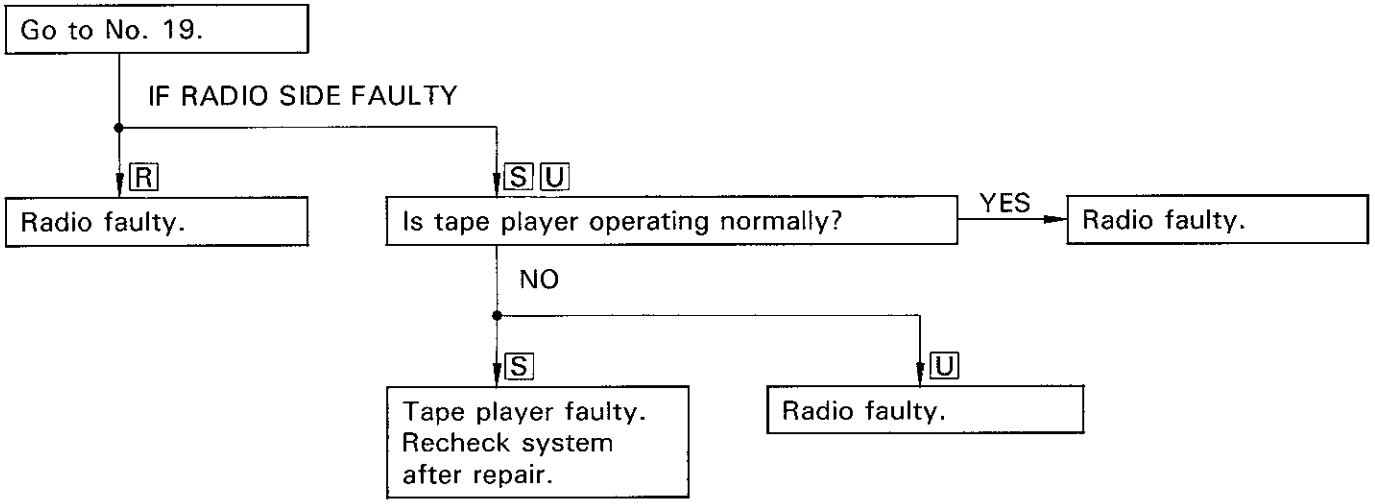


2—A.



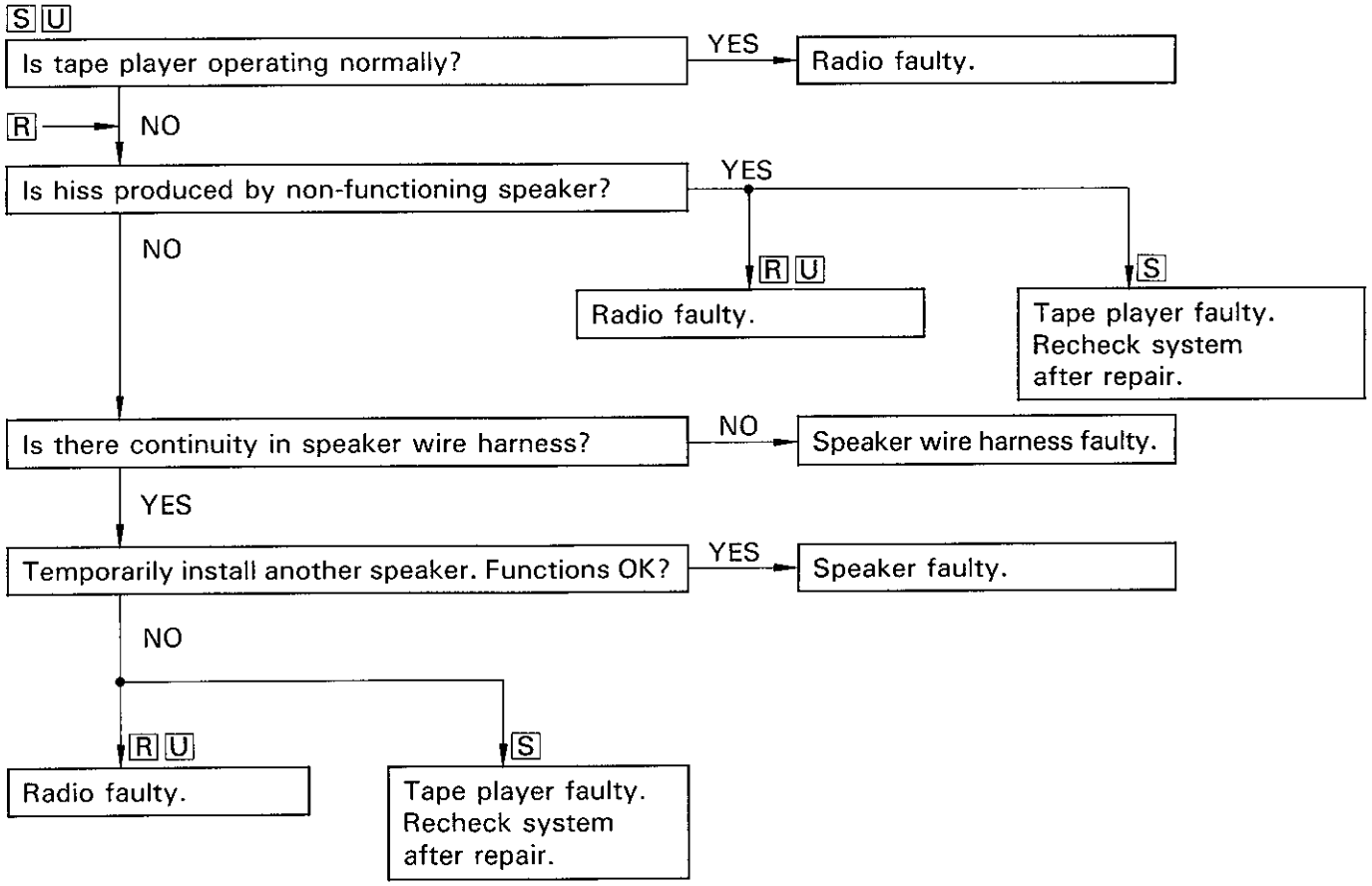
3 RADIO — NOISE PRESENT, BUT AM-FM NOT OPERATING

[R] : Radio [S] : Radio + Tape Player [U] : Radio — Tape Player



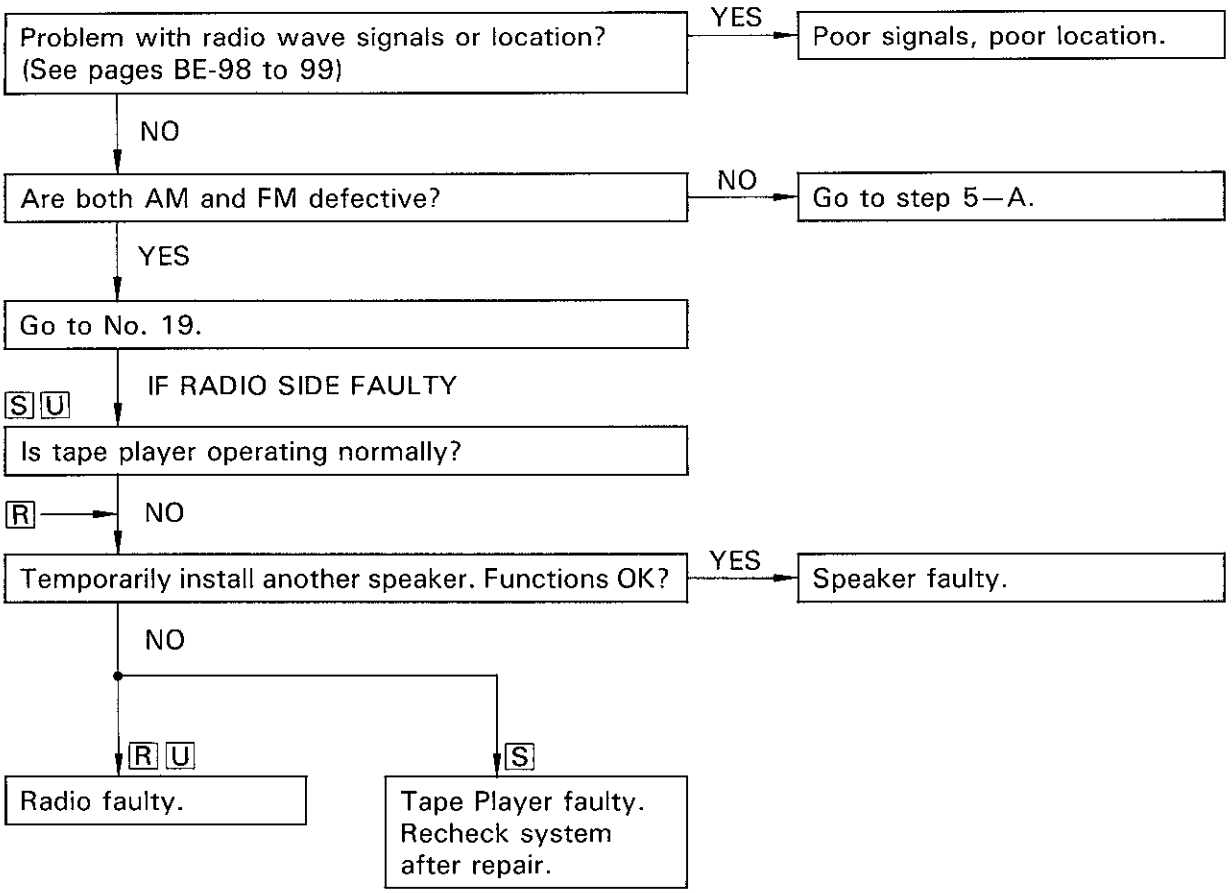
4 RADIO — EITHER SPEAKER DOES NOT WORK

[R] : Radio [S] : Radio + Tape Player [U] : Radio — Tape Player

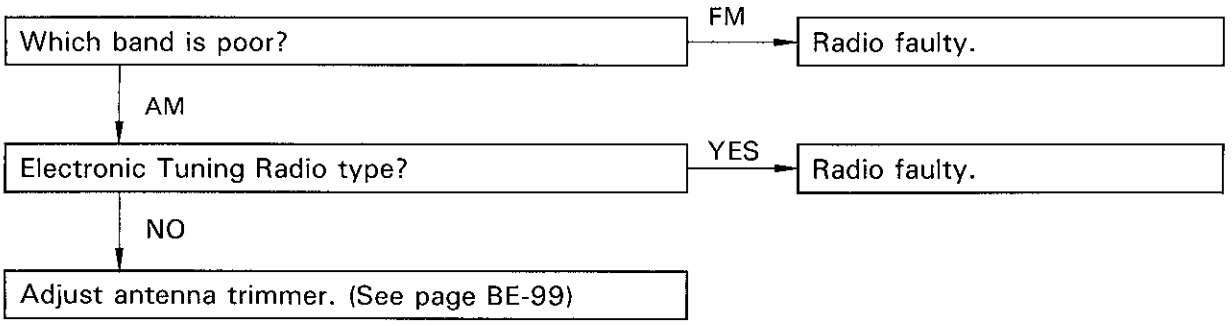


5 RADIO — EITHER AM OR FM DOES NOT WORK, RECEPTION POOR (VOLUME FAINT), FEW PRESET TUNING BAND

[R] : Radio [S] : Radio + Tape Player [U] : Radio — Tape Player

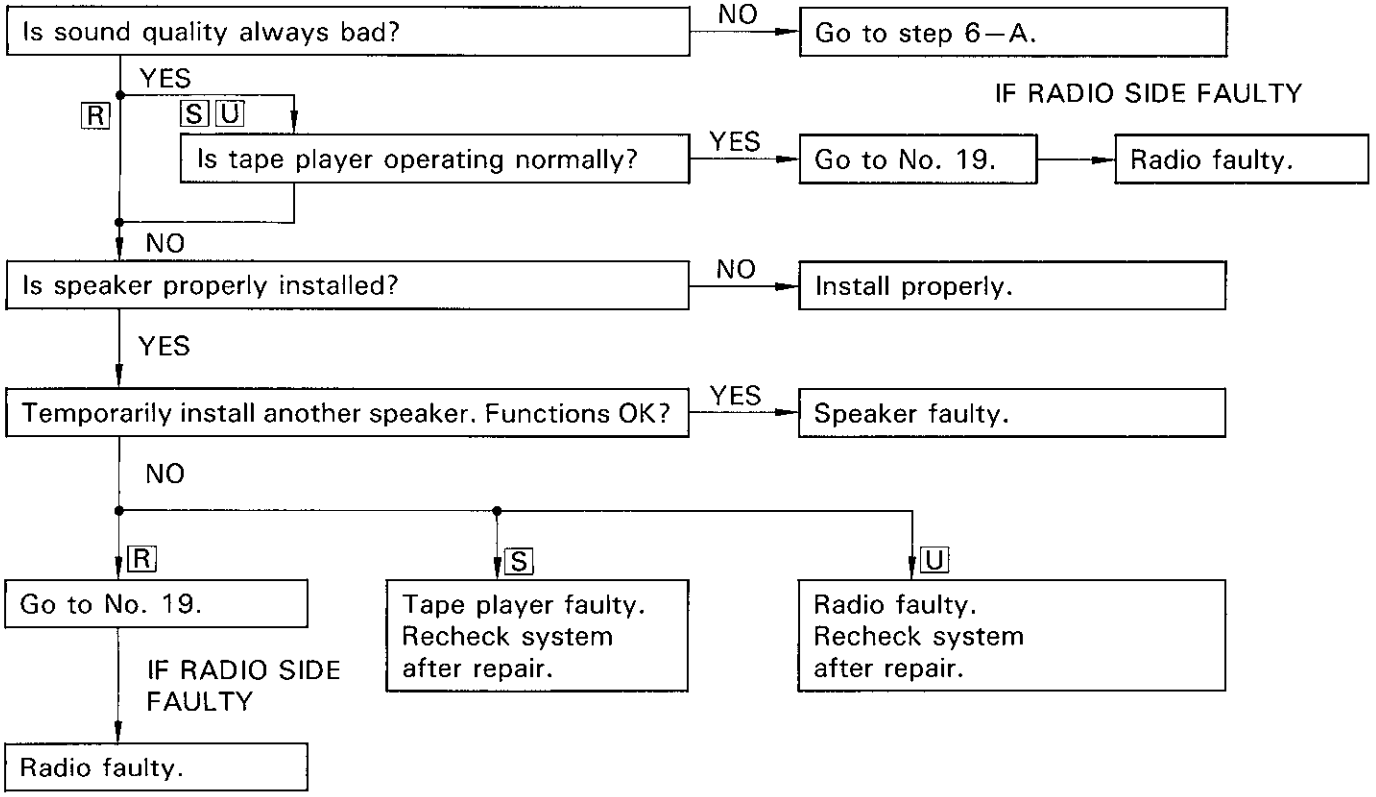


5—A.

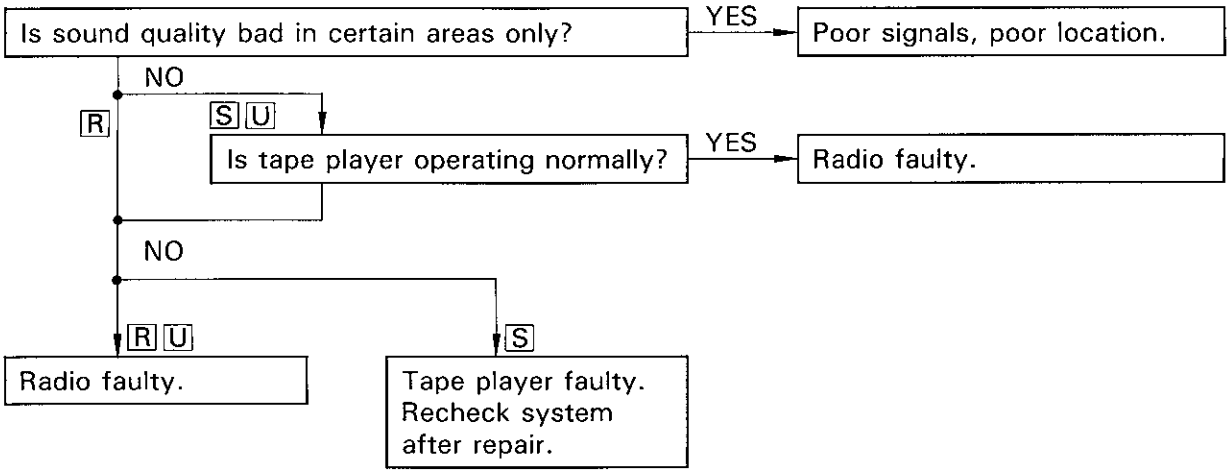


6 RADIO — SOUND QUALITY POOR

[R] : Radio [S] : Radio + Tape Player [U] : Radio — Tape Player



6—A.



7 RADIO — AUTO-RADIO INFORMATION (ARI) NOT RECEIVED

Is ARI being broadcast?
- NO → Non-broadcast region.
- YES ↓

Is radio operating normally?
- NO → Refer to appropriate troubleshooting chart depending on symptoms.
- YES ↓

Radio faulty.

8 RADIO — CANNOT SET STATION SELECT BUTTON, PRESET MEMORY DISAPPEARS

[R] : Radio [S] : Radio + Tape Player [U] : Radio — Tape Player

Electronic Tuning Radio type?
- NO → Radio faulty.
- YES ↓

[S] [U]

Can cassette tape be inserted in tape player?

[R] → NO

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

Is +B applied to tape player or radio
- NO → +B wire harness faulty.
- YES ↓

Check if GND (wire harness side) to tape player or radio is OK?
- NG → GND faulty.
- OK ↓

[R] [S]

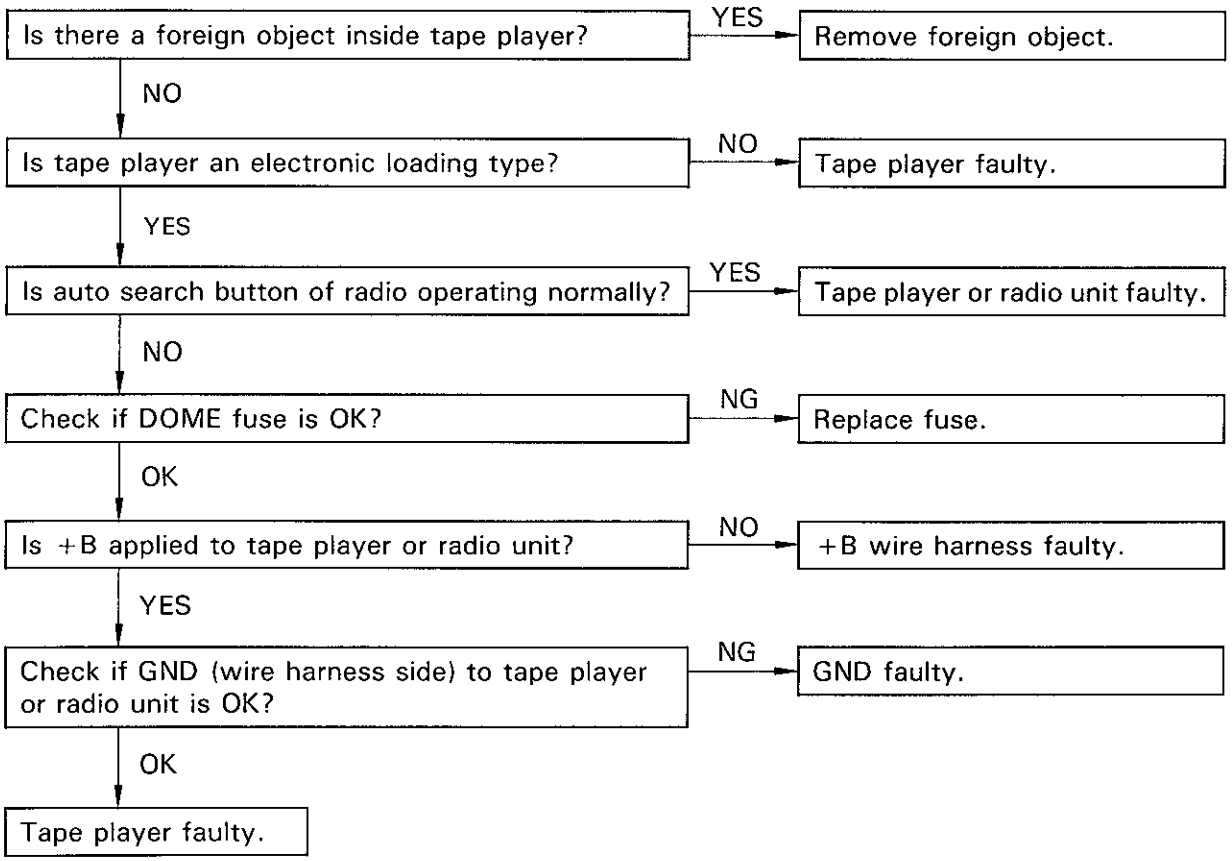
Is +B applied to radio?
- YES ↓
- NO → Tape player faulty. Recheck system after repair.

[U] → Radio faulty.

Check if GND (wire harness side) to radio from Tape Player is OK?
- OK → Radio faulty.
- NG → GND wire harness between Tape Player and radio

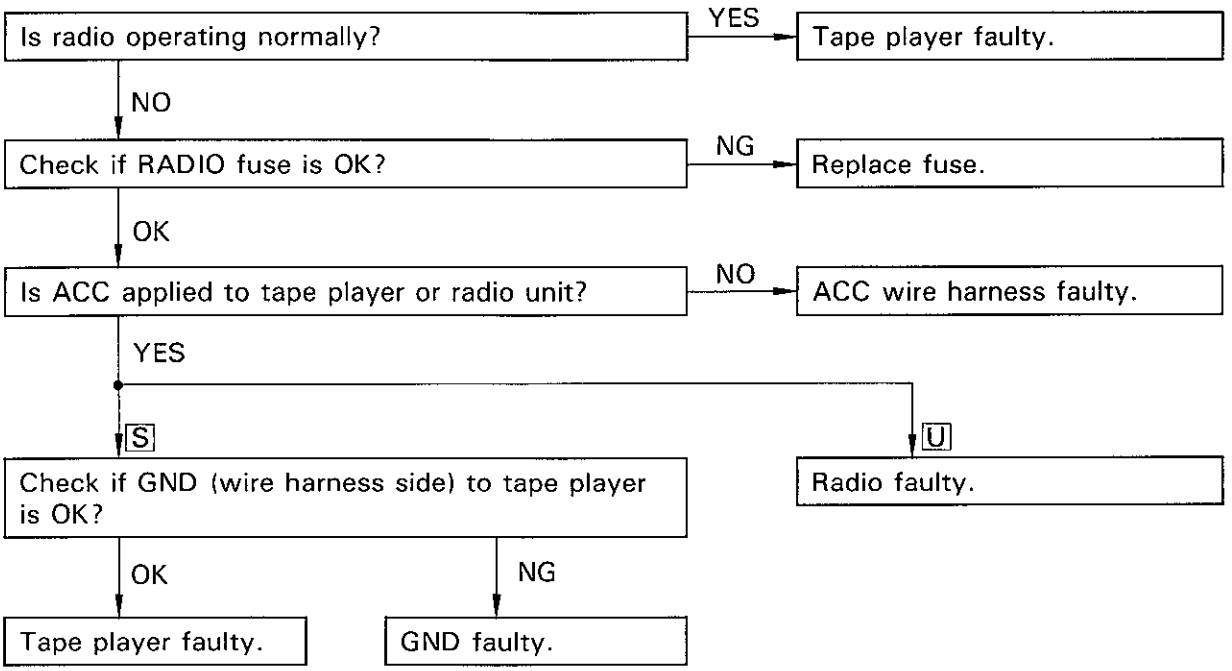
9 TAPE PLAYER CASSETTE TAPE CANNOT BE INSERTED

[S] : Radio + Tape Player [U] : Radio — Tape Player



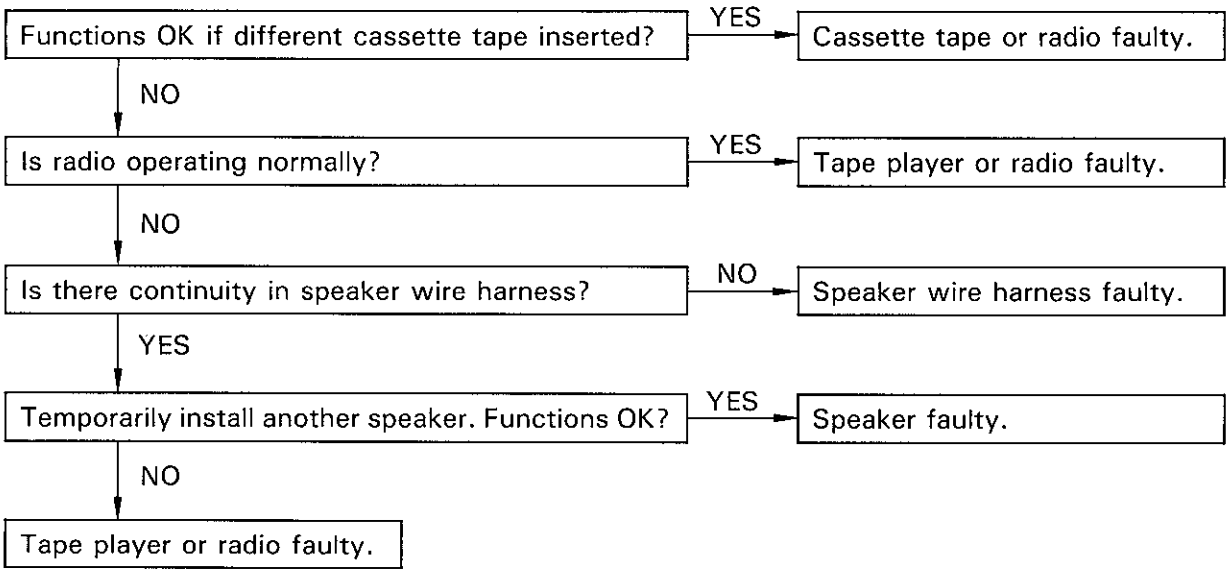
10 TAPE PLAYER CASSETTE TAPE INSERTS, BUT NO POWER

[S] : Radio + Tape Player [U] : Radio — Tape Player



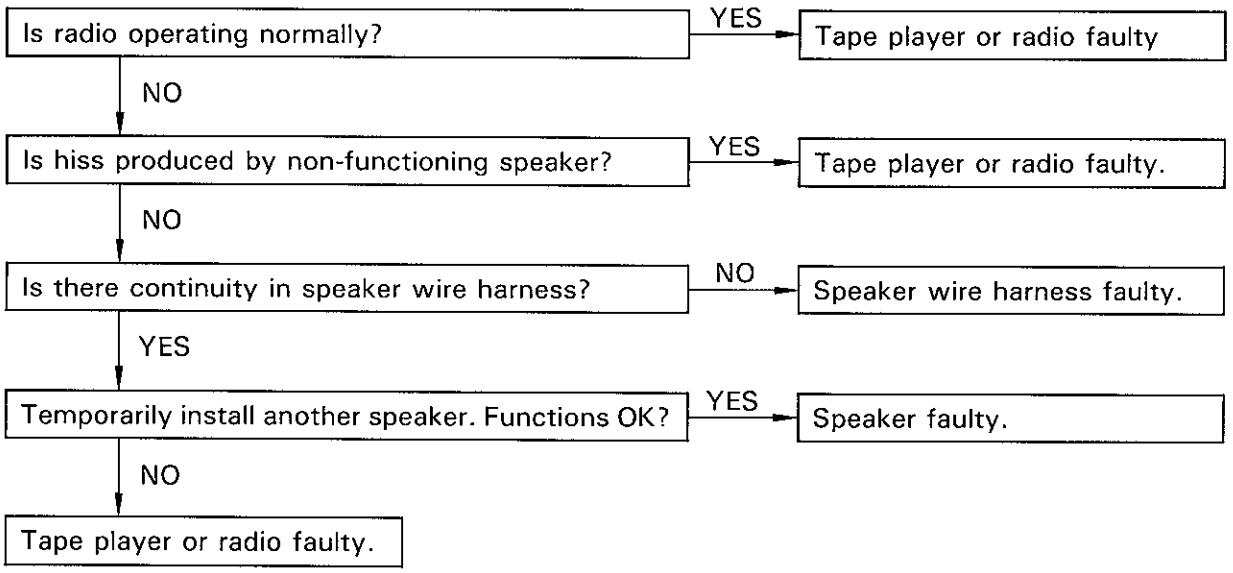
11 TAPE PLAYER — POWER COMING IN, BUT TAPE PLAYER NOT OPERATING

[S] : Radio + Tape Player [U] : Radio — Tape Player



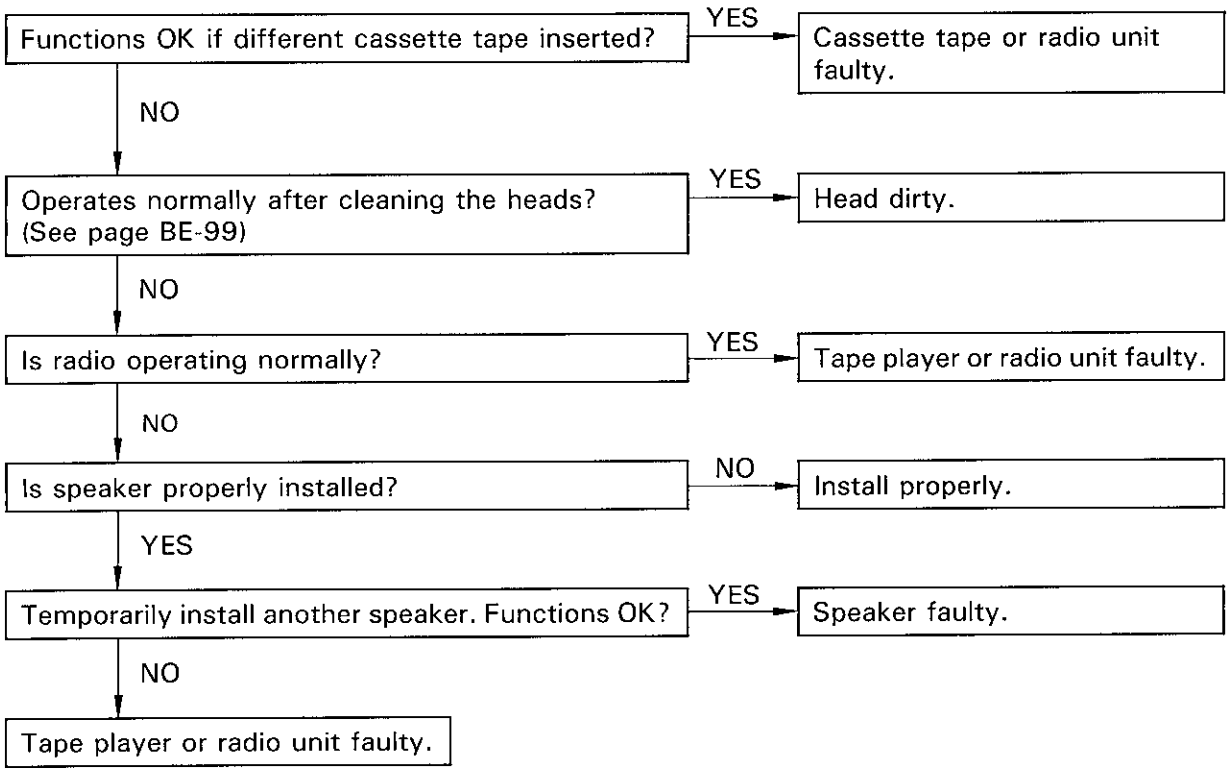
12 TAPE PLAYER — EITHER SPEAKER DOES NOT WORK

[S] : Radio + Tape Player [U] : Radio — Tape Player



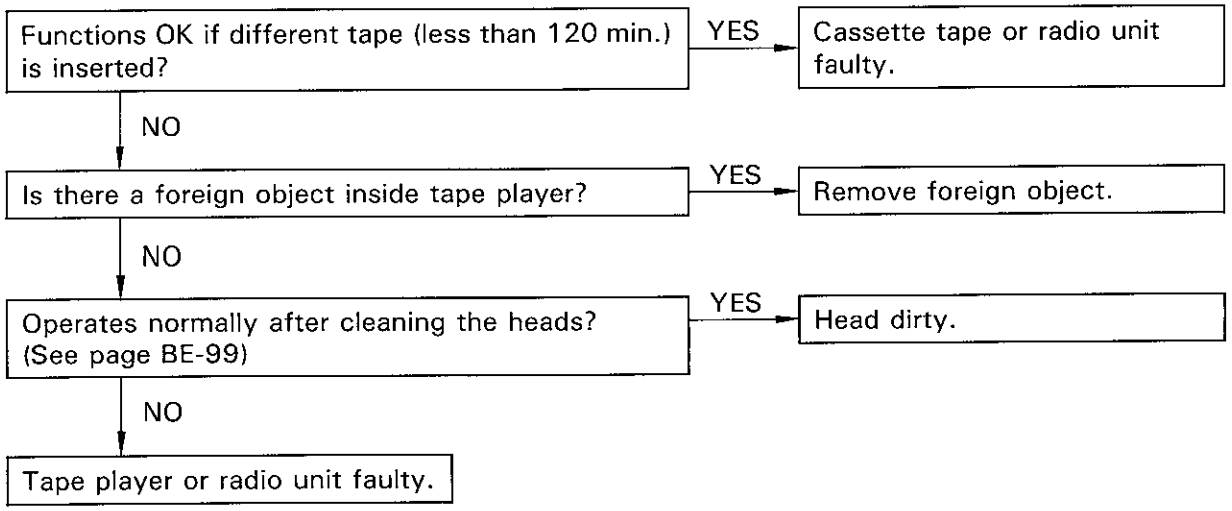
13 TAPE PLAYER SOUND QUALITY POOR (VOLUME FAINT)

[S] : Radio + Tape Player [U] : Radio — Tape Player



14 TAPE PLAYER TAPE JAMMED, MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE

[S] : Radio + Tape Player [U] : Radio — Tape Player



15 TAPE PLAYER APS, SKIP, RPT BUTTONS NOT OPERATING

Functions OK if different cassette tape inserted? NO → Tape player or radio unit faulty.

YES

Cassette tape faulty. (Less than 3 secs. of silence between songs (APS, RPT). Less then 15 secs. of silence (SKIP).)

16 TAPE PLAYER CASSETTE TAPE WILL NOT EJECT

[S] : Radio + Tape Player [U] : Radio — Tape Player

Is tape player operating normally? NO → Cassette tape jammed.

YES

Is tape player an electronic loading type? NO → Tape player or radio unit faulty.

YES

Is auto search button of radio operating normally? YES → Tape player or radio unit faulty.

NO

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

OK

Is +B applied to tape player? NO → +B wire harness faulty.

YES

Tape player or radio unit faulty.

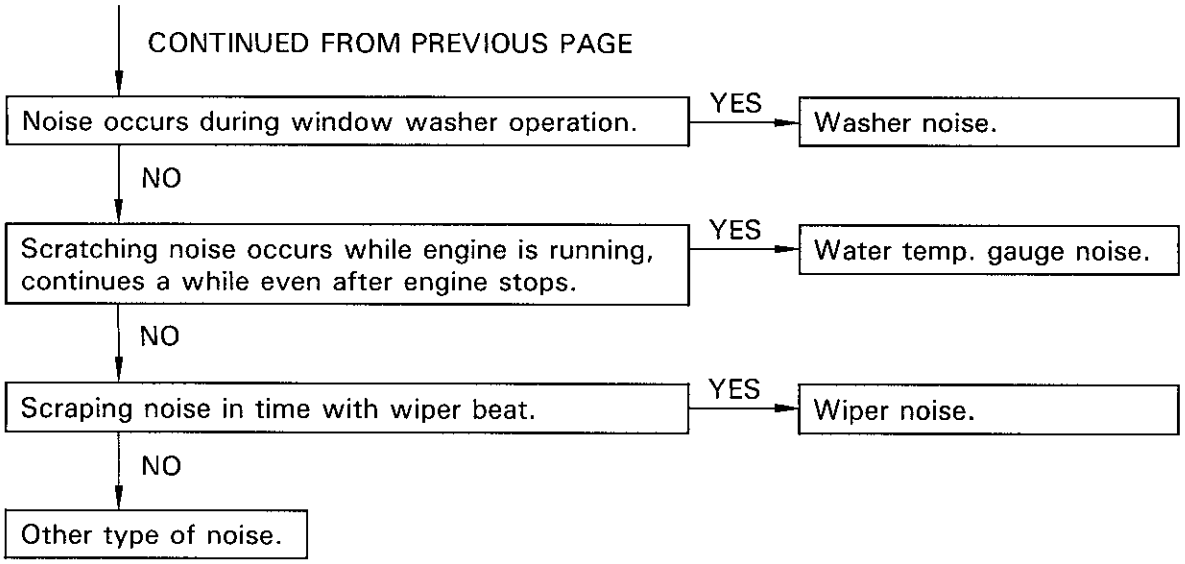
17 NOISE — NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING

- Is speaker properly installed?
  - NO → Install properly.
  - YES ↓
- Is each system correctly installed?
  - NO → Install properly.
  - YES ↓
- With vehicle stopped, lightly tap each system. Is noise produced?
  - YES → Each system faulty.
  - NO ↓
- Noise produced by static electricity accumulating in the vehicle body.

18 NOISE — NOISE PRODUCED WHEN ENGINE STARTS

- Whistling noise which becomes high-pitched when accelerator strongly depressed, disappears shortly after engine stops.
  - YES → Alternator noise.
  - NO ↓
- Whining noise occurs when A/C is operating.
  - YES → A/C noise.
  - NO ↓
- Scratching noise occurs during sudden acceleration, driving on rough roads or when ignition switch is turned on.
  - YES → Fuel gauge noise.
  - NO ↓
- Clicking sound heard when horn button is pressed, then released. Whirring/grating sound when pushed continuously.
  - YES → Horn noise.
  - NO ↓
- Murmuring sound, stops when engine stops.
  - YES → Ignition noise.
  - NO ↓
- Tick-tock noise, occurs in co-ordination with blinking of flasher.
  - YES → Turn signal noise.
  - NO ↓

CONTINUED ON NEXT PAGE



19 ANTENNA — ANTENNA-RELATED

