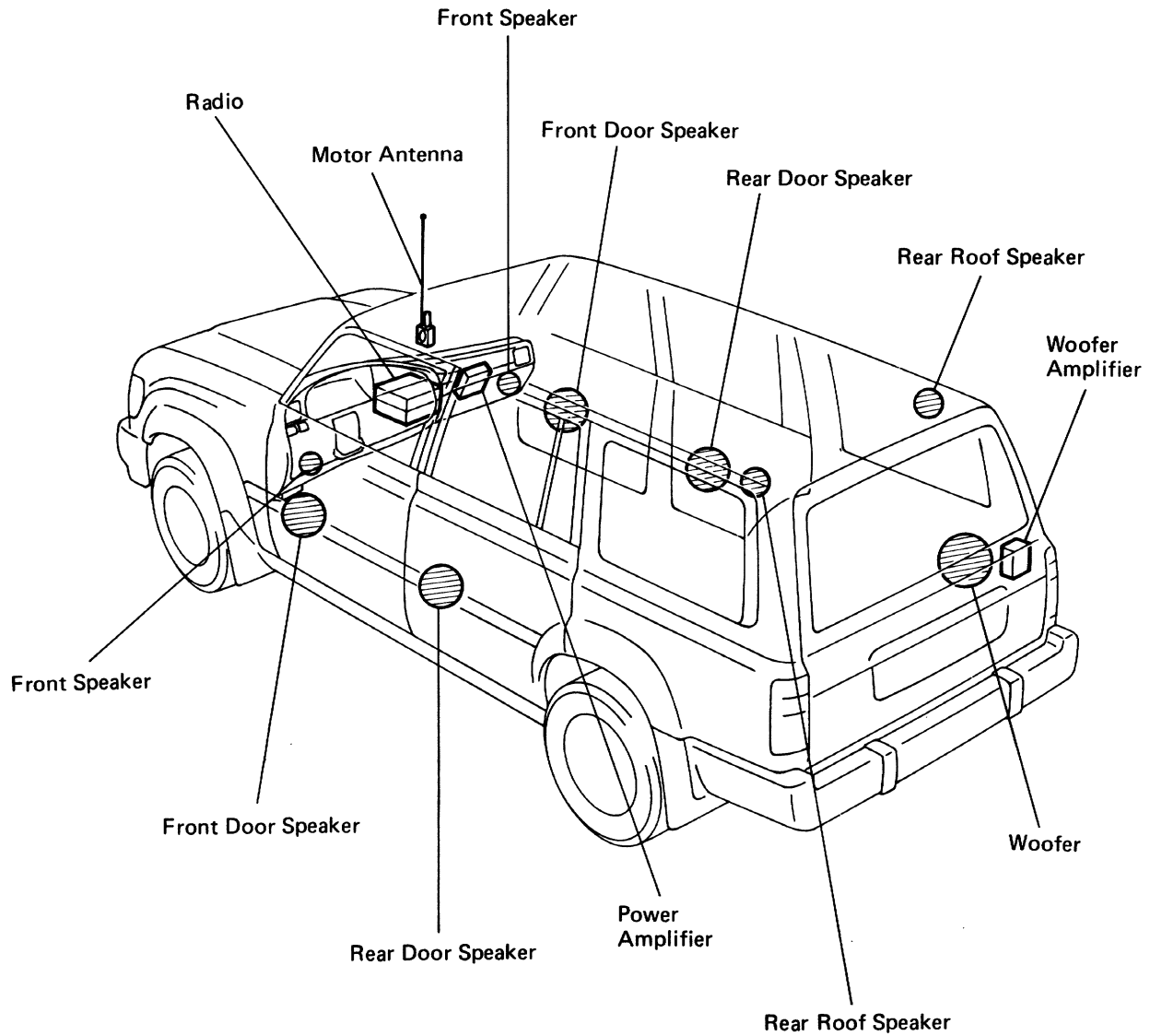


AUDIO SYSTEM PARTS LOCATION



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

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.

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".

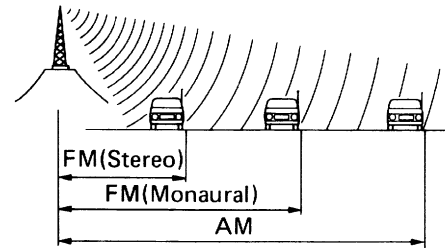
Multipath

One type of interference caused by the bouncing of radio waves off of obstructions is called "multipath".

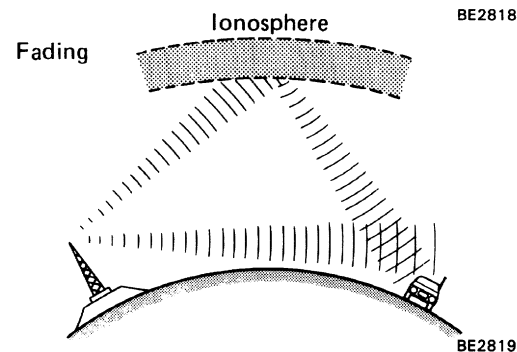
Multipath occurs when a signal from the broadcast transmitter antenna bounces off of buildings and mountains and interferes with the signal that is received directly.

Fade Out

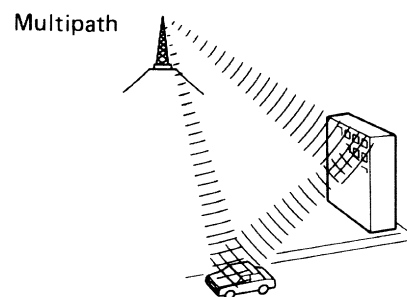
Because FM radio waves are of higher frequencies than AM radio waves, they bounce off of buildings, mountains, and other obstructions. For this reason, FM signals often seem to gradually disappear or fade away as the vehicle goes behind a building or other obstruction. This is called "fade out".



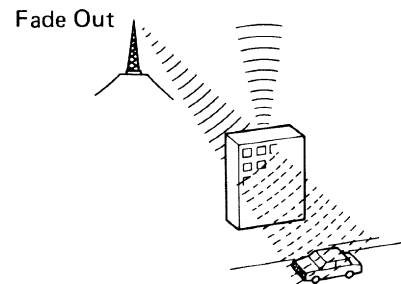
BE2818



BE2819



BE2820



BE2821

COMPACT DISC PLAYER

Compact Disc (hereafter 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) CD available.

HINT: Never attempt to disassemble or oil any part of the player unit. Do not insert any object other than a disc into the slot.

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

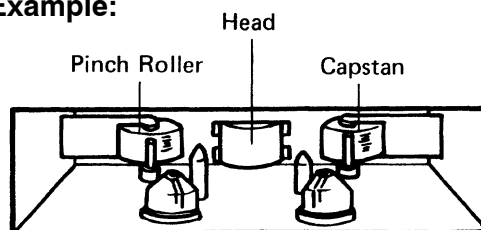
MAINTENANCE

(Tape Player)

Head Cleaning

- (a) Raise the cassette door with your finger.
Next using a pencil or 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:

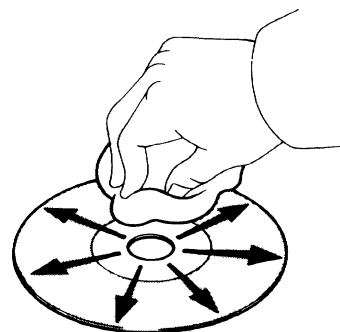


(CD Player)

Disc Cleaning

If the Disc gets dirty, clean the Disc 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.



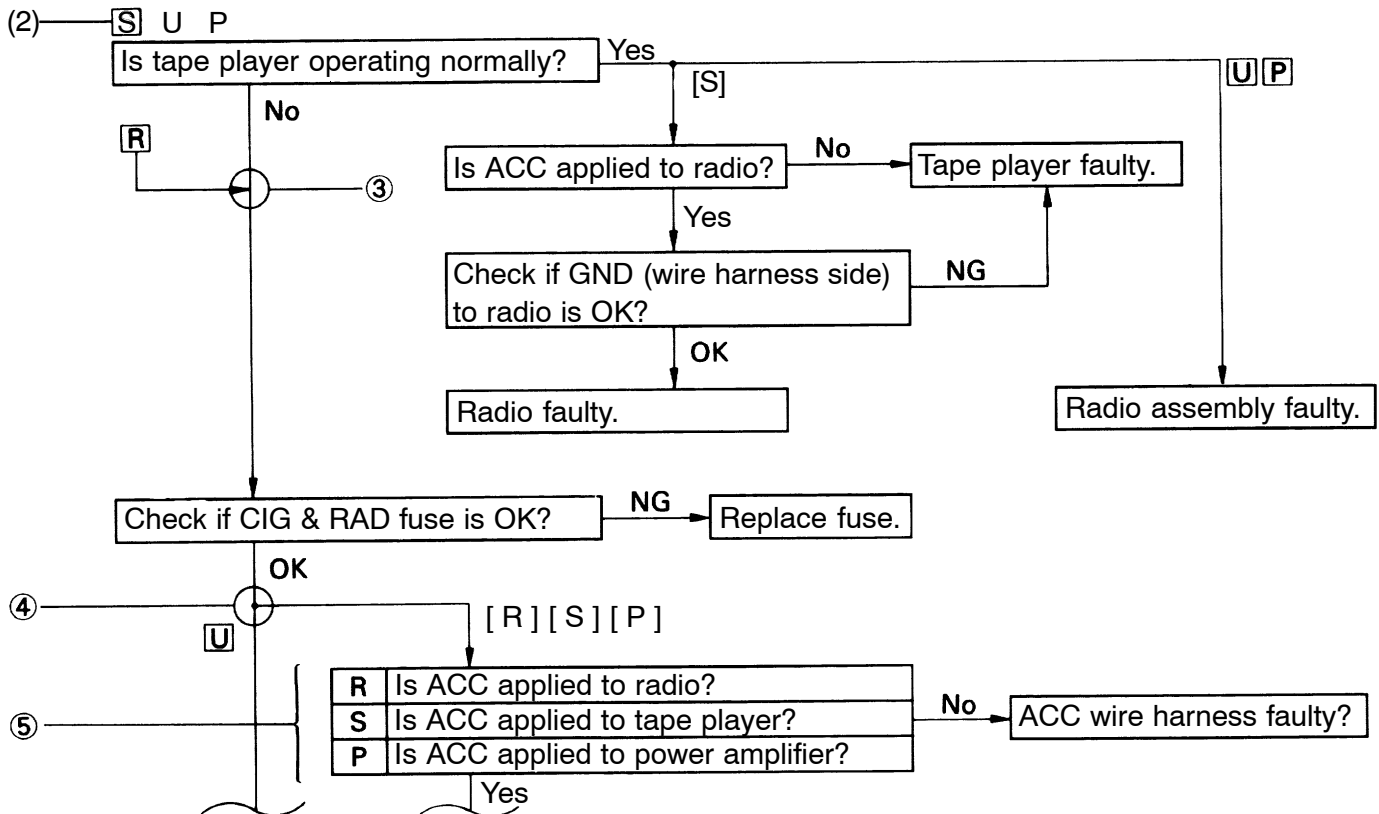
CO192

BE4331

HOW TO USE DIAGNOSTIC CHART

1	Radio	NO POWER COMING IN
----------	--------------	---------------------------

- (1) { [R]: w/o Tape Player [S]: Radio-Tape Player (Separate)
 [U]: Radio-Tape Player Unit w/o Power Amplifier [P]: w/ Power Amplifier



(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.

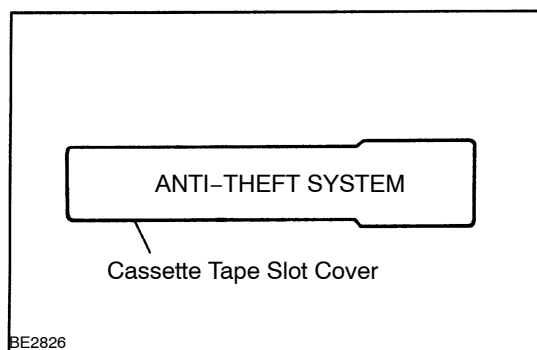
(3) Junction without black circle.

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 systems 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).

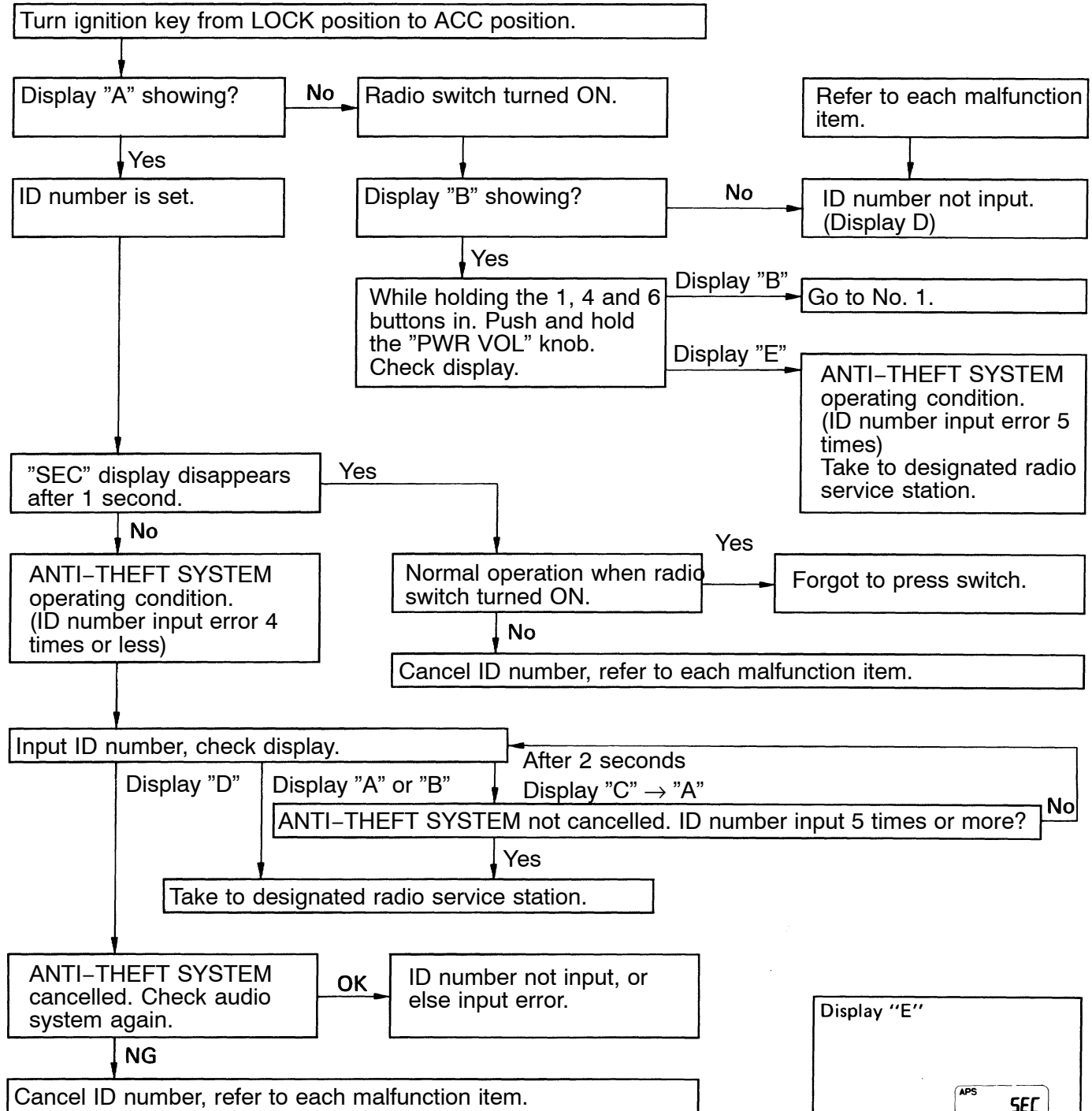
HINT: This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

Always inspect the trouble taking the following items into consideration.

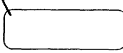
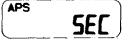
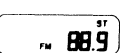
- Open or short circuit of the wire harness
- Connector or terminal connection fault
- For audio systems with anti-theft system, troubleshooting items marked (*) indicate that "Troubleshooting for ANTI-THEFT SYSTEM" should be carried out first.

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 bands.	5
	Sound quality poor.	6
	Cannot set station select button.	7
	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 – related.	23
Noise	Noise produced by vibration or shock while driving.	24
	Noise produced when engine starts.	25

Troubleshooting for ANTI-THEFT SYSTEM



(Liquid Crystal Display (LCD) for Audio System)

Display "A"  BE2814	Display "B" Blank, No. Illumination  BE2815	Display "C" Error Times  BE2816	Display "E"  BE3923 Display "D" Exemplary: Radio Display  BE2817
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HINT:

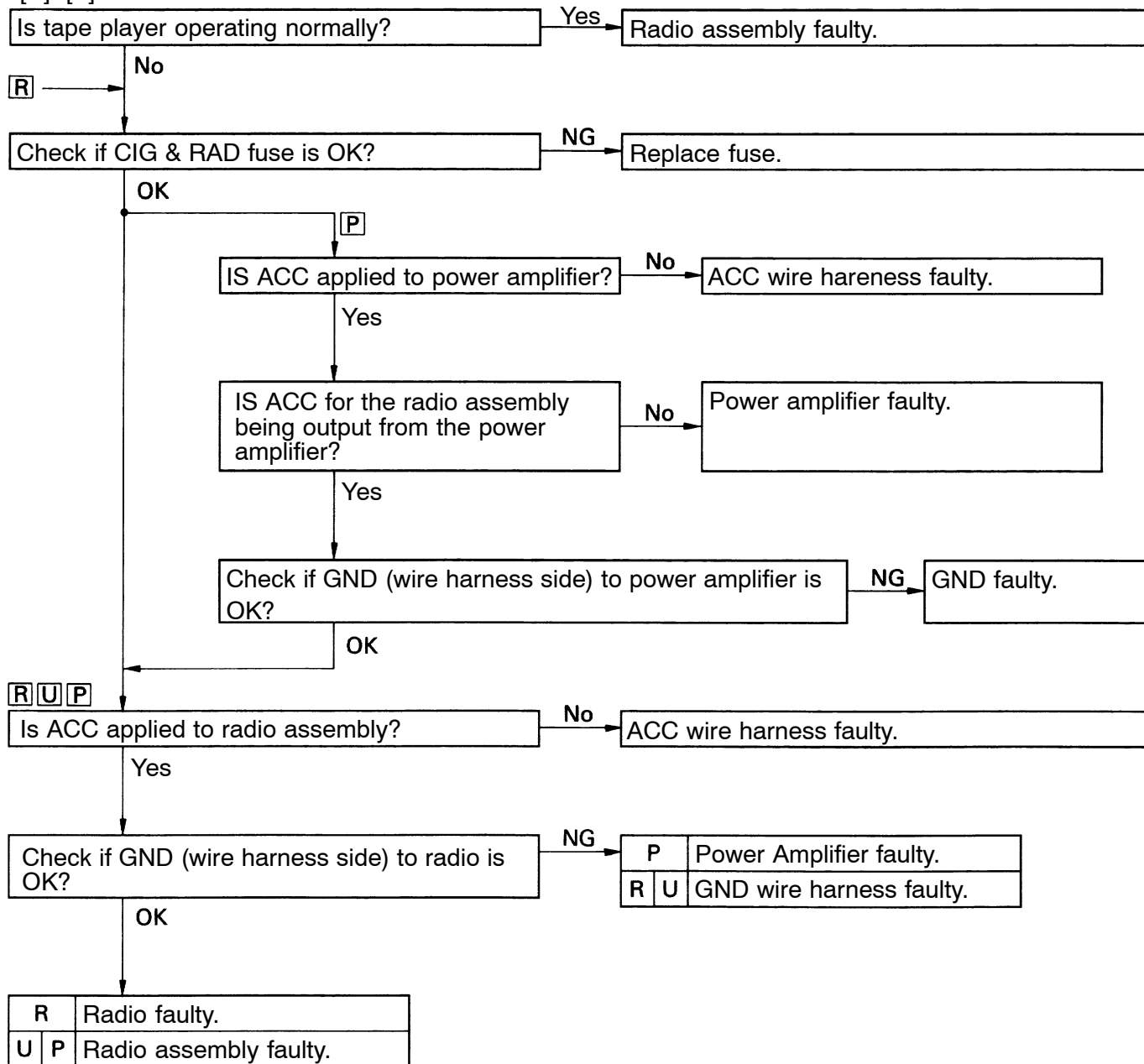
- Refer to Owner's Manual for operation details of ANTI-THEFT SYSTEM.
- When the ID number has been cancelled, reset the same number after completing the operation, or inform the customer that it has been cancelled.

1	Radio	NO POWER COMING IN
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[R] : Radio, 5 Speaker [U]: Radio – Tape Player, 5 Speaker

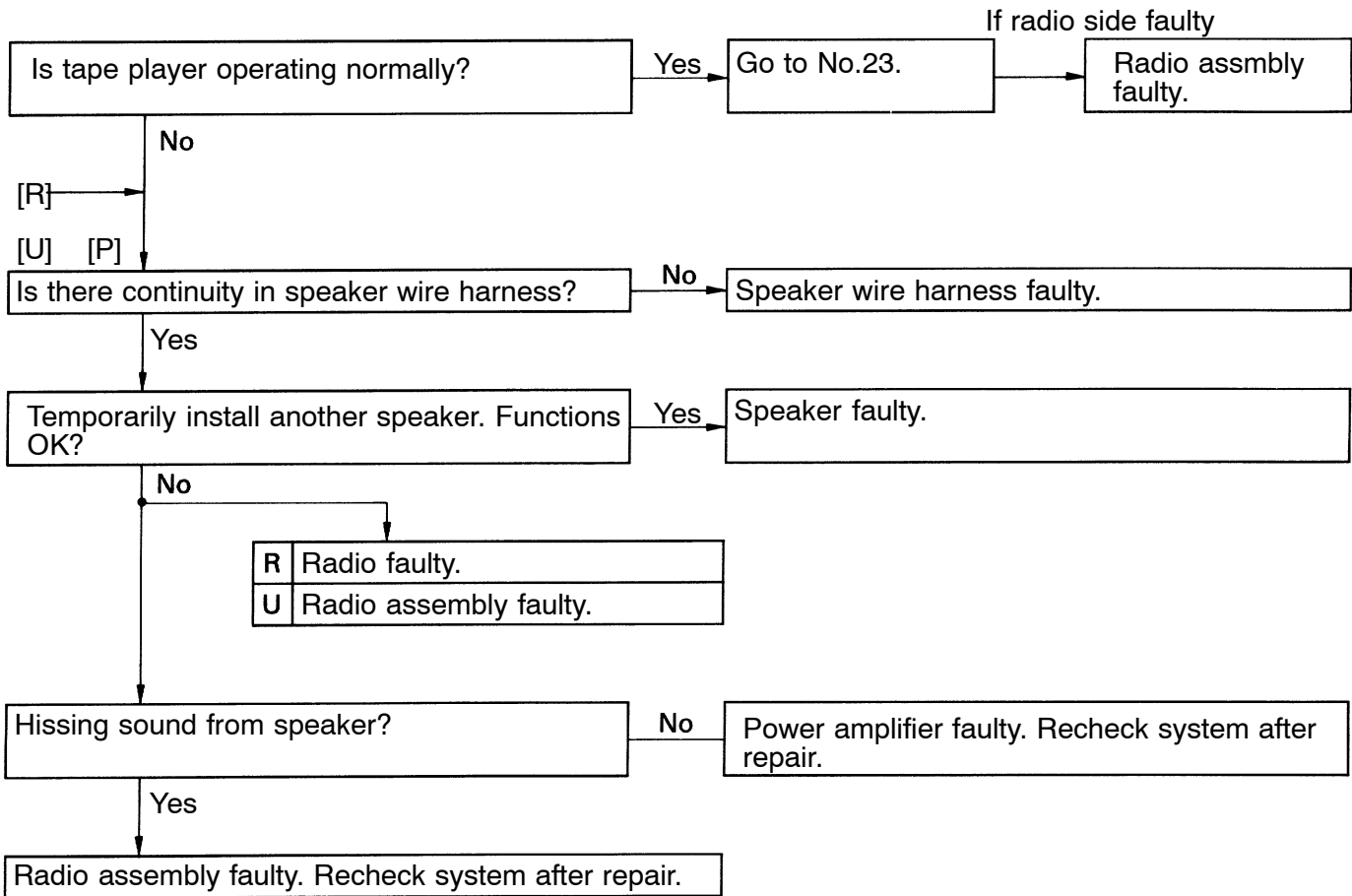
[P] : Radio – Tape Player, 9 Speaker

[U] [P]



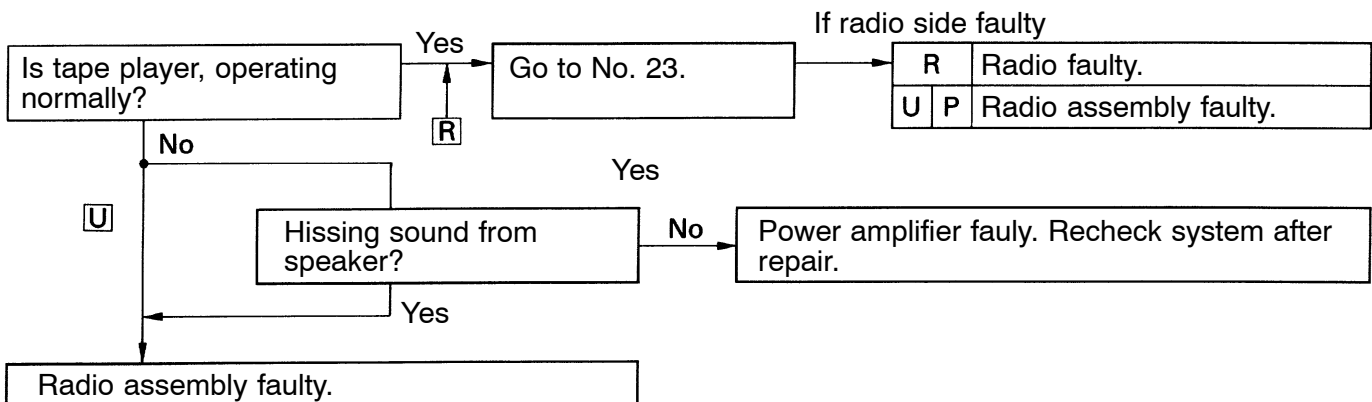
2	Radio	POWER COMING IN, BUT RADIO NOT OPERATING
----------	--------------	---

[R]: Radio, 5 Speaker [U] : Radio-Tape Player, 5 Speaker
 [P]: Radio-Tape Player, 9 Speaker



3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING
----------	--------------	---

[R]: Radio, 5 Speaker [U]: Radio-Tape Player, 5 Speaker
 [P]: Radio-Tape Player, 9 Speaker

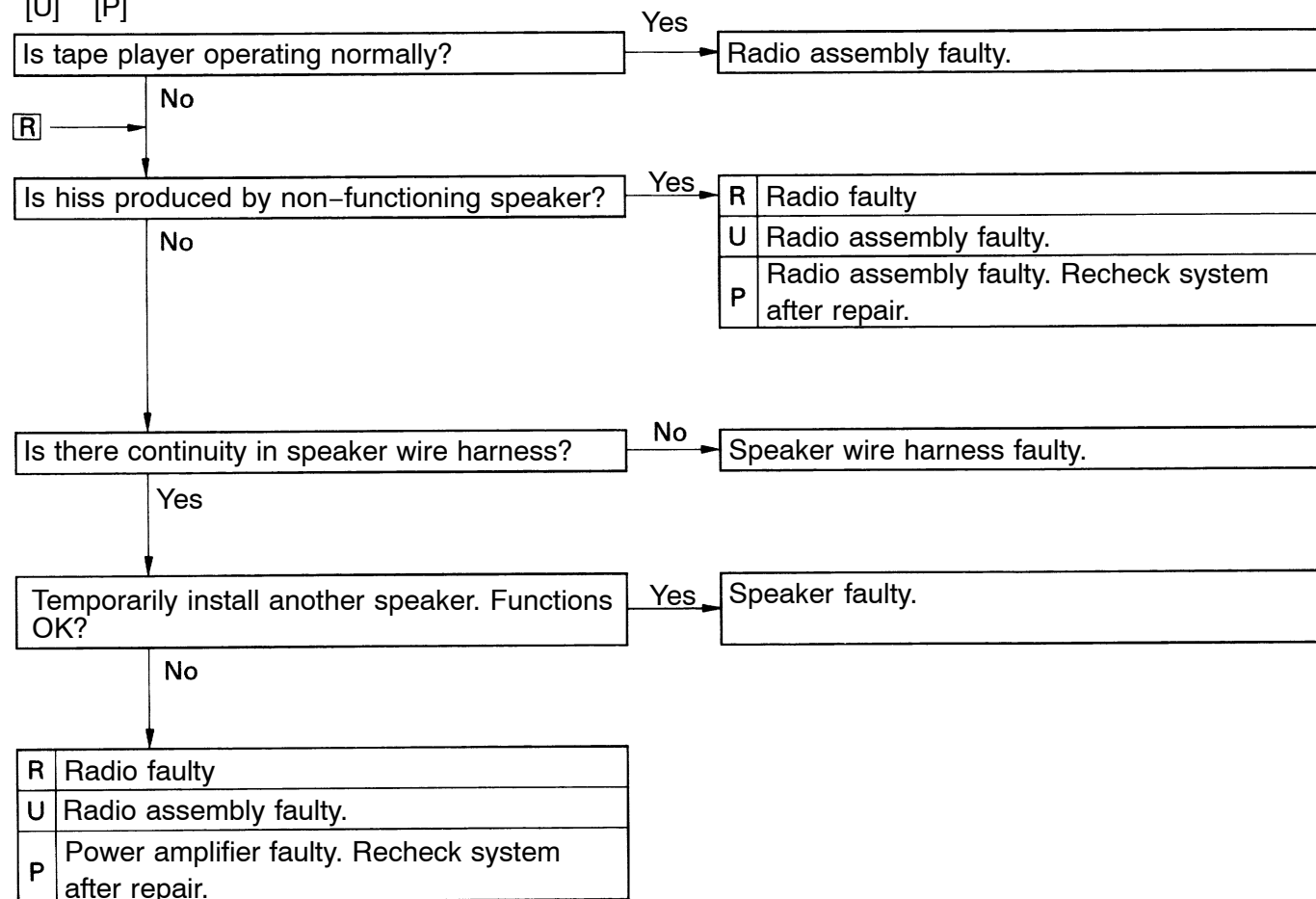


4	Radio	EITHER SPEAKER DOES NOT WORK
----------	--------------	-------------------------------------

[R]: Radio, 5 Speaker [U]: Radio-Tape Player, 5 Speaker

[P]: Radio-Tape Player, 9 Speaker

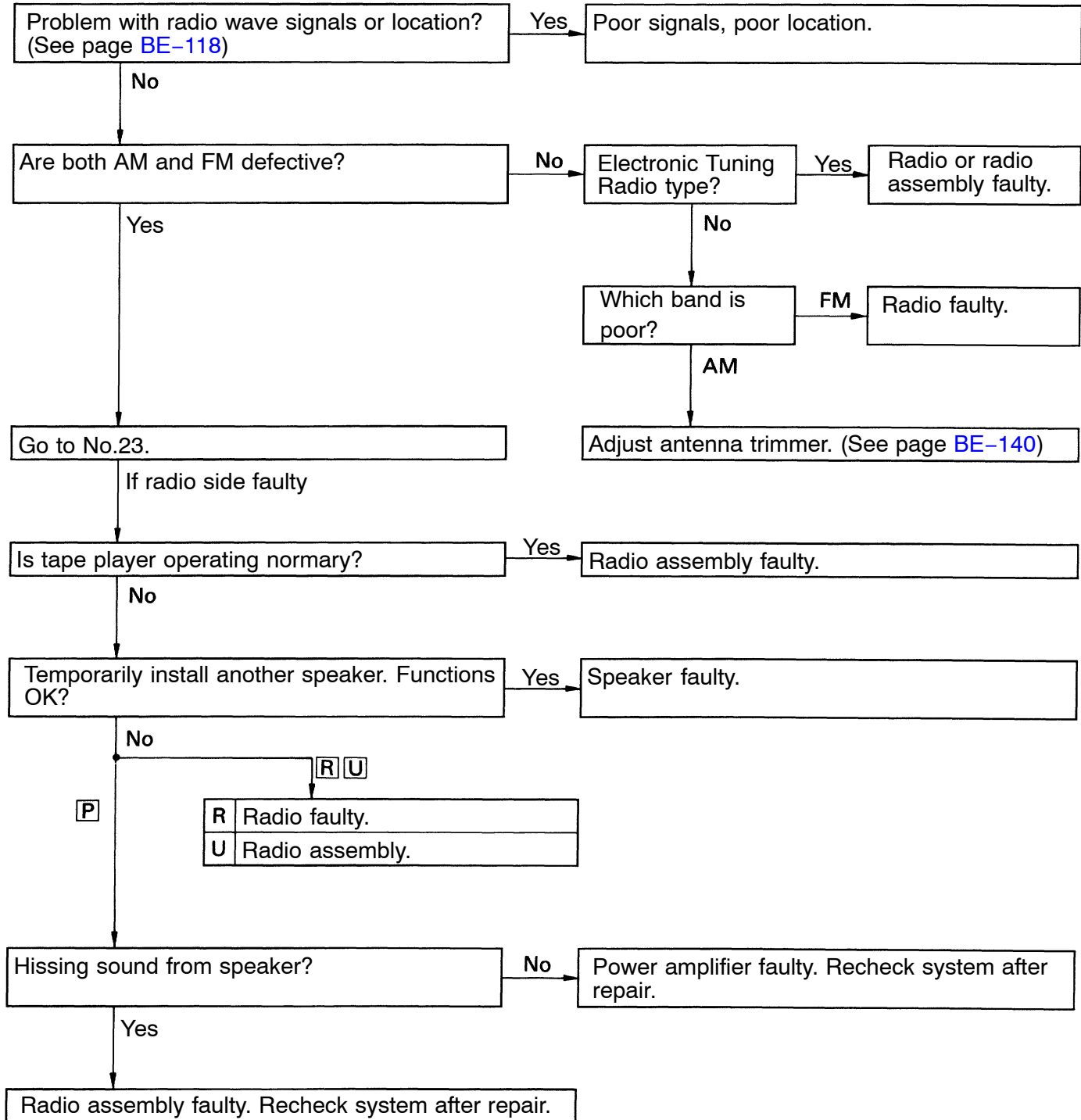
[U] [P]



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

[R]: Radio, 5 Speaker [U]: Radio – Tape Player, 5 Speaker

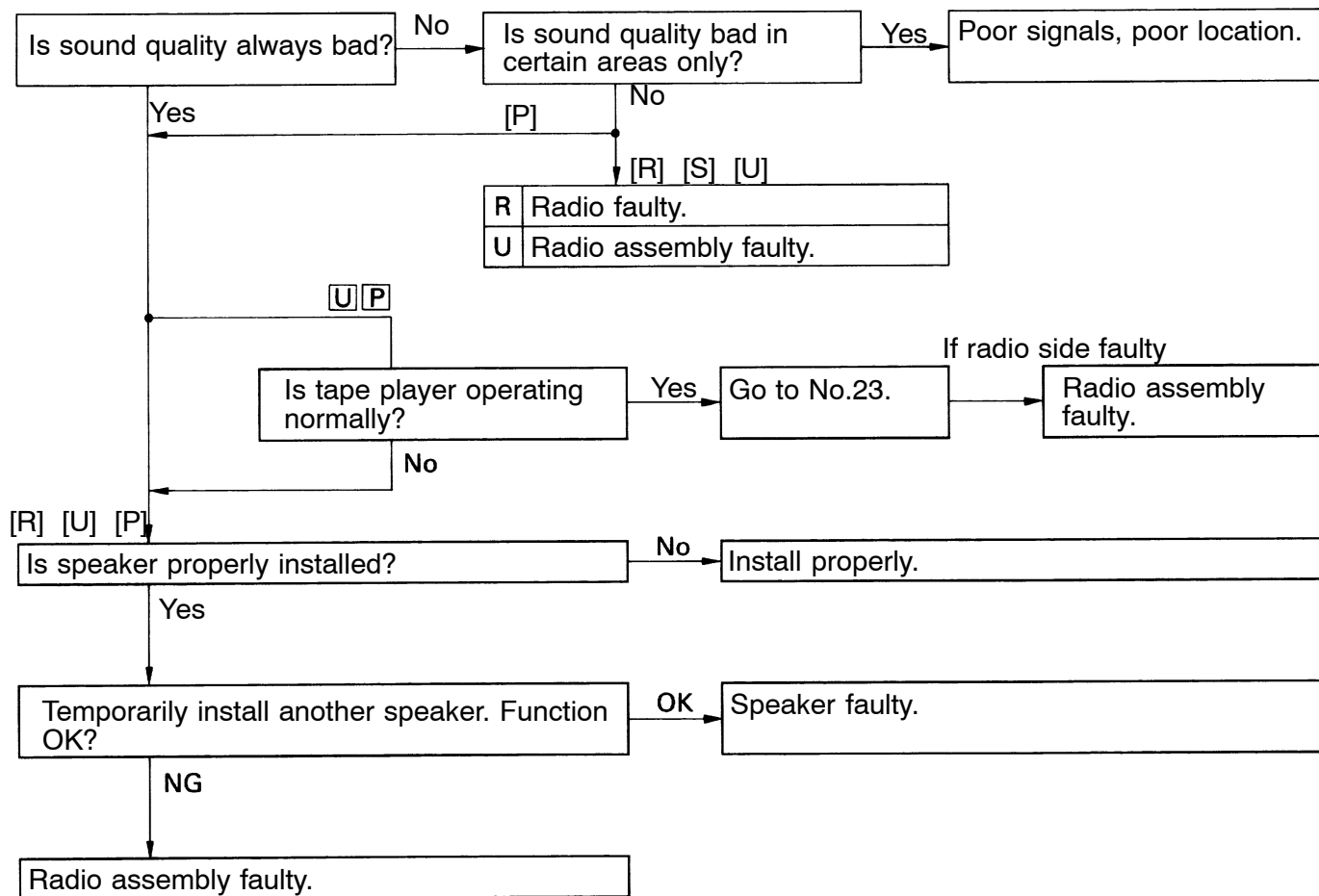
[P]: Radio–Tape Player, 9 Speaker



6	Radio	SOUND QUALITY POOR
----------	--------------	---------------------------

[R]: Radio, 5 Speaker [U]: Radio-Tape Player, 5 Speaker

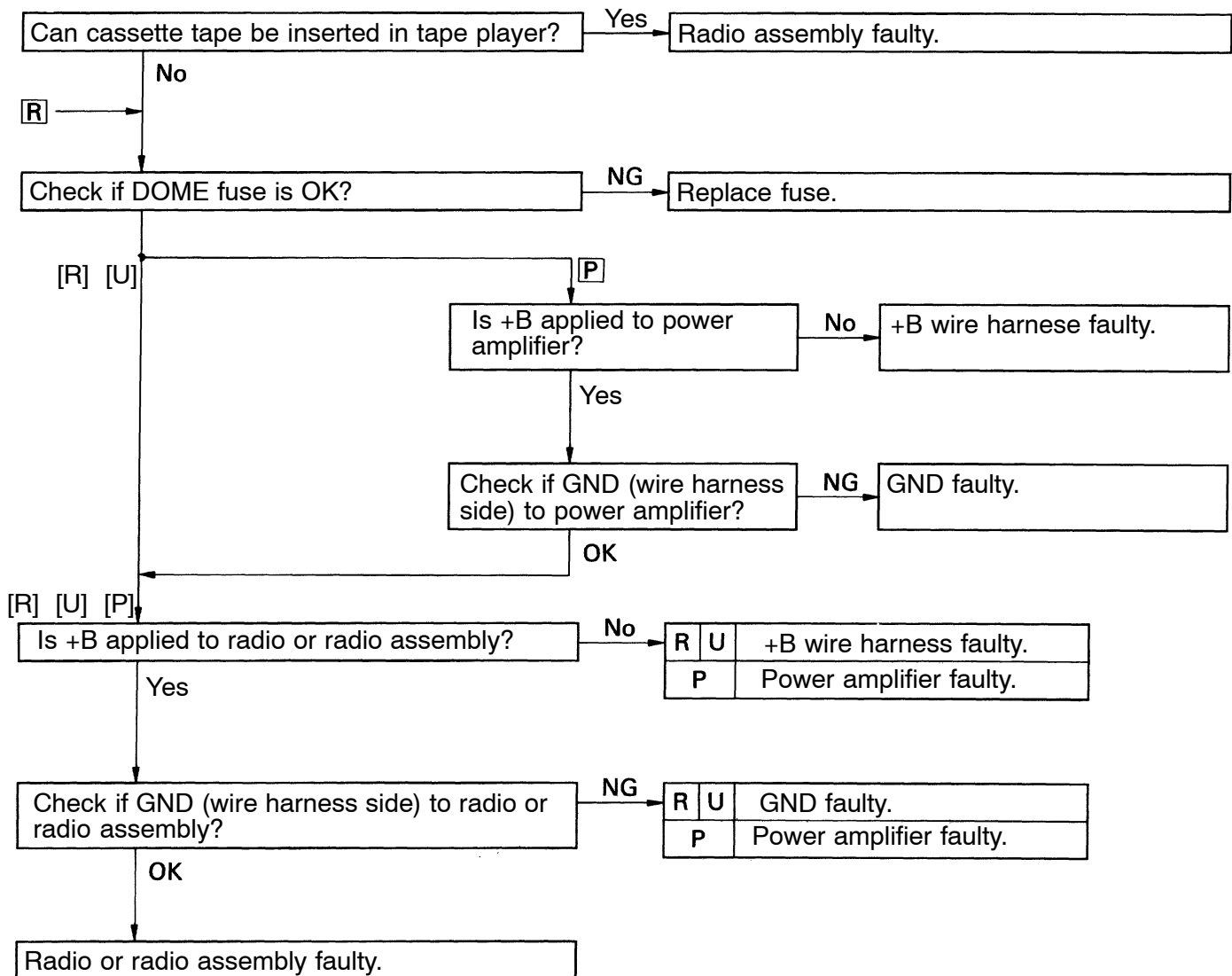
[P]: Radio-Tape Player, 9 Speaker



7	Radio	CANNOT SET STATION SELECT BUTTON, PRESET MEMORY DISAPPEARS
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[R]: Radio, 5 Speaker [U]: Radio - Tape Player, 5 Speaker

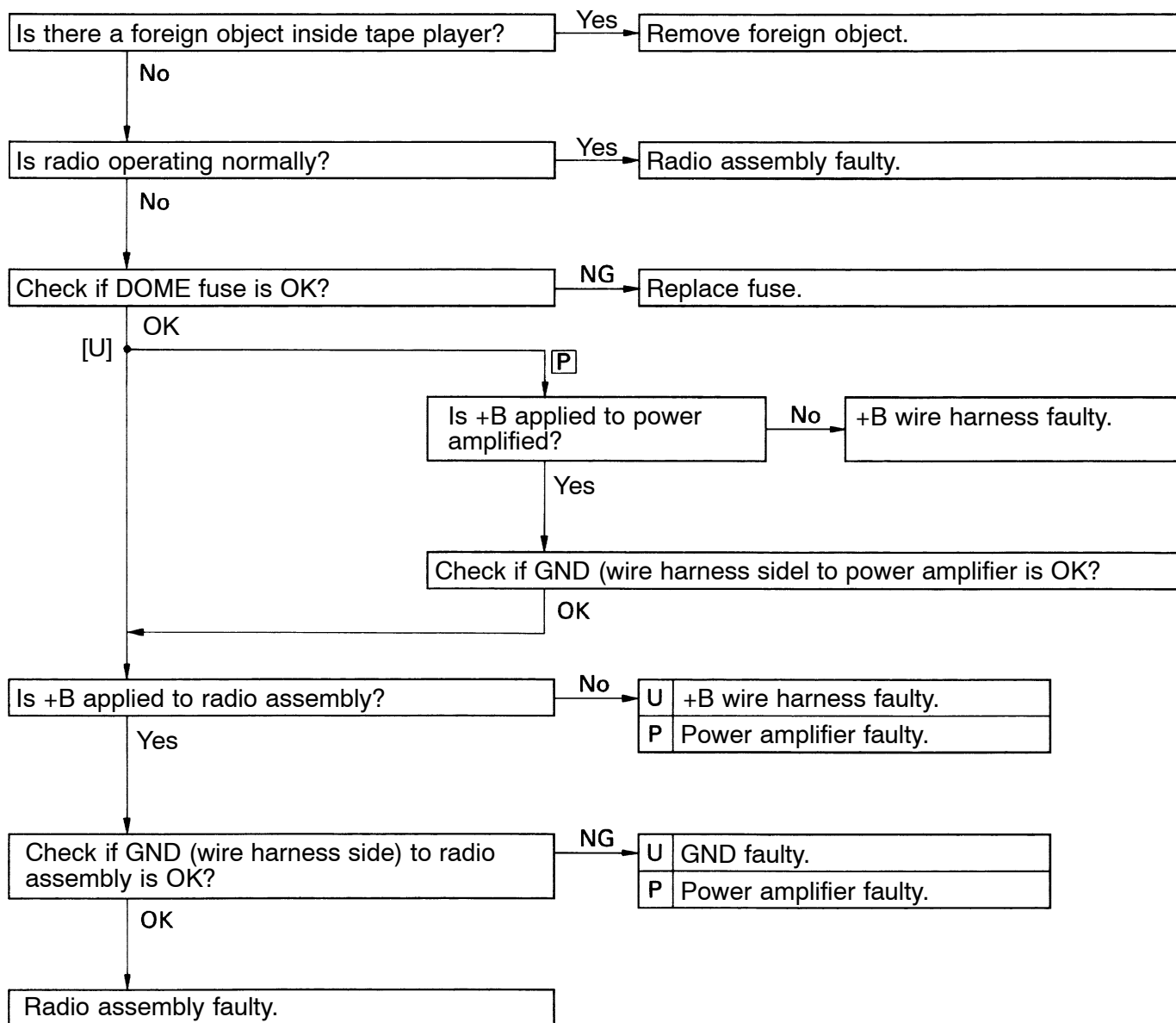
[P]: Radio - Tape Player, 9 Speaker



8 Tape Player CASSETTE TAPE CANNOT BE INSERTED

[R]: Radio – Tape Player, 5 Speaker

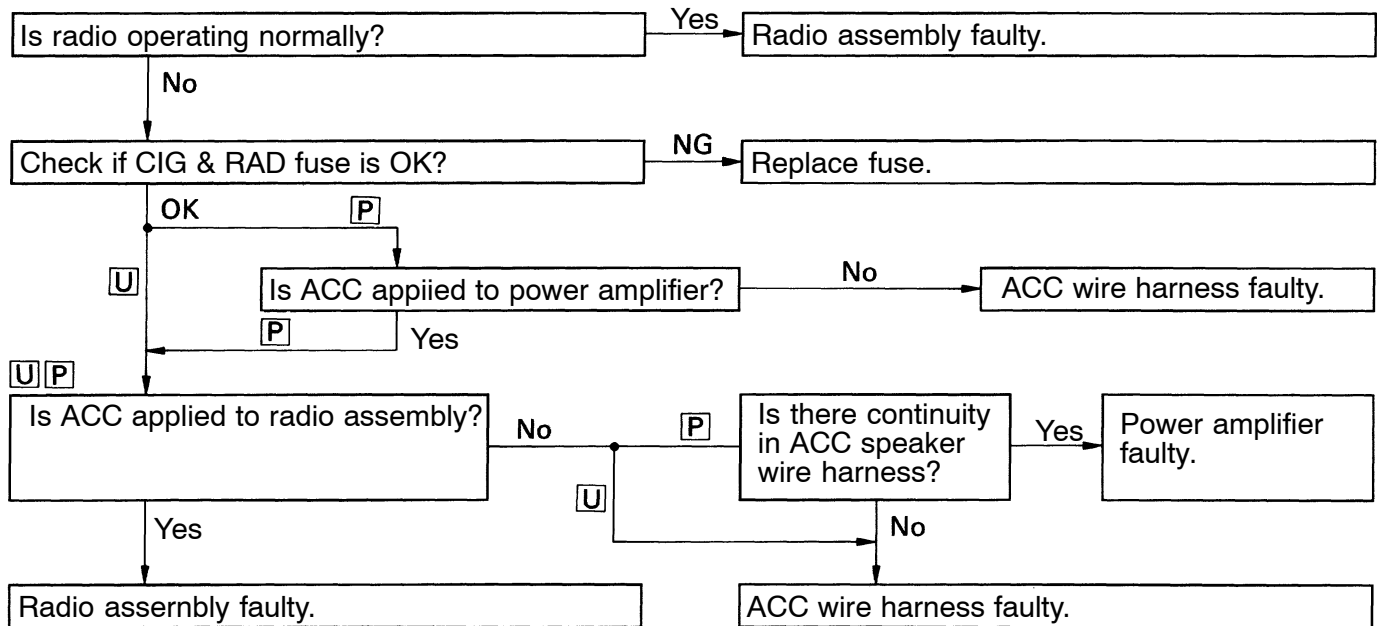
[P]: Radio – Tape Player, 9 Speaker



9 Tape Player CASSETTE TAPE INSERTS, BUT NO POWER

[U]: Radio – Tape Player, 5 Speaker

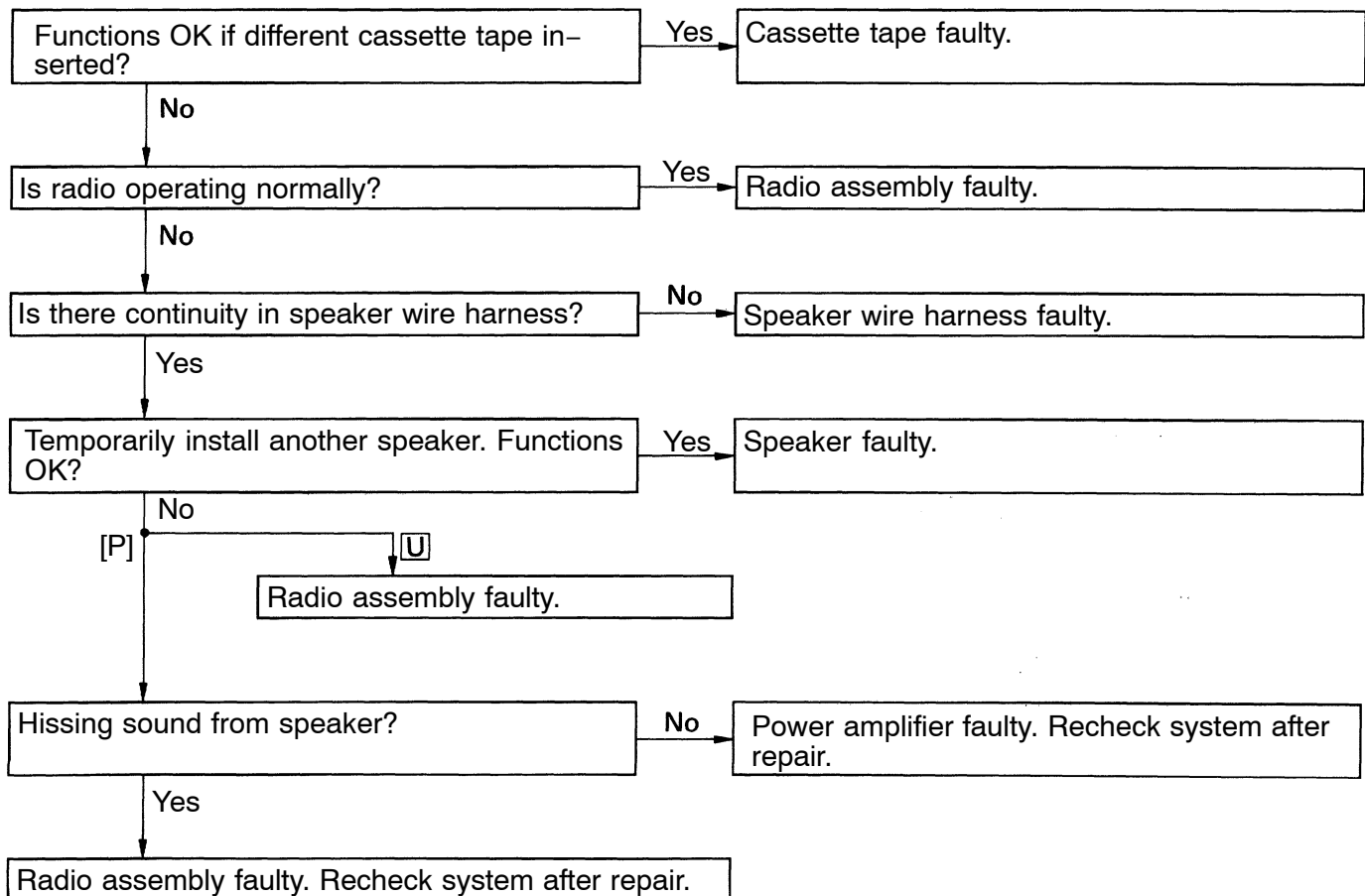
[P]: Radio – Tape Player, 9 Speaker



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

[U]: Radio – Tape Player, 5 Speaker

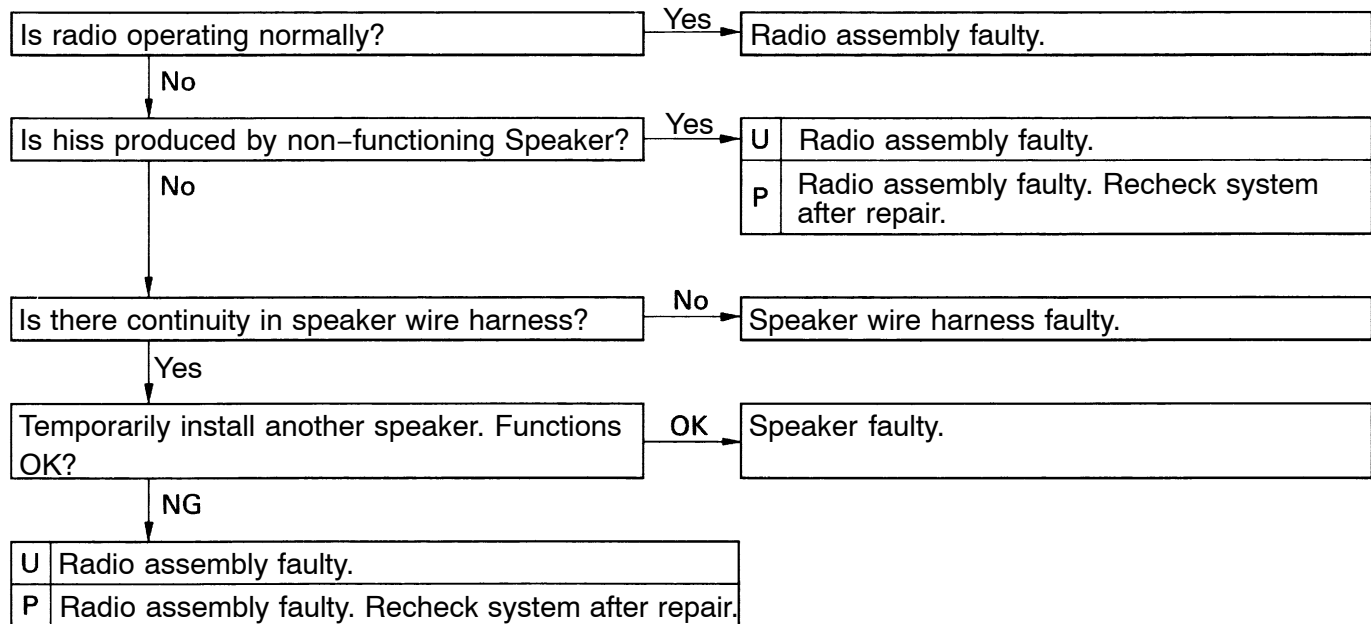
[P]: Radio – Tape Player, 9 Speaker



11 Tape Player EITHER SPEAKER DOES NOT WORK

[U]: Radio-Tape Player, 5 Speaker

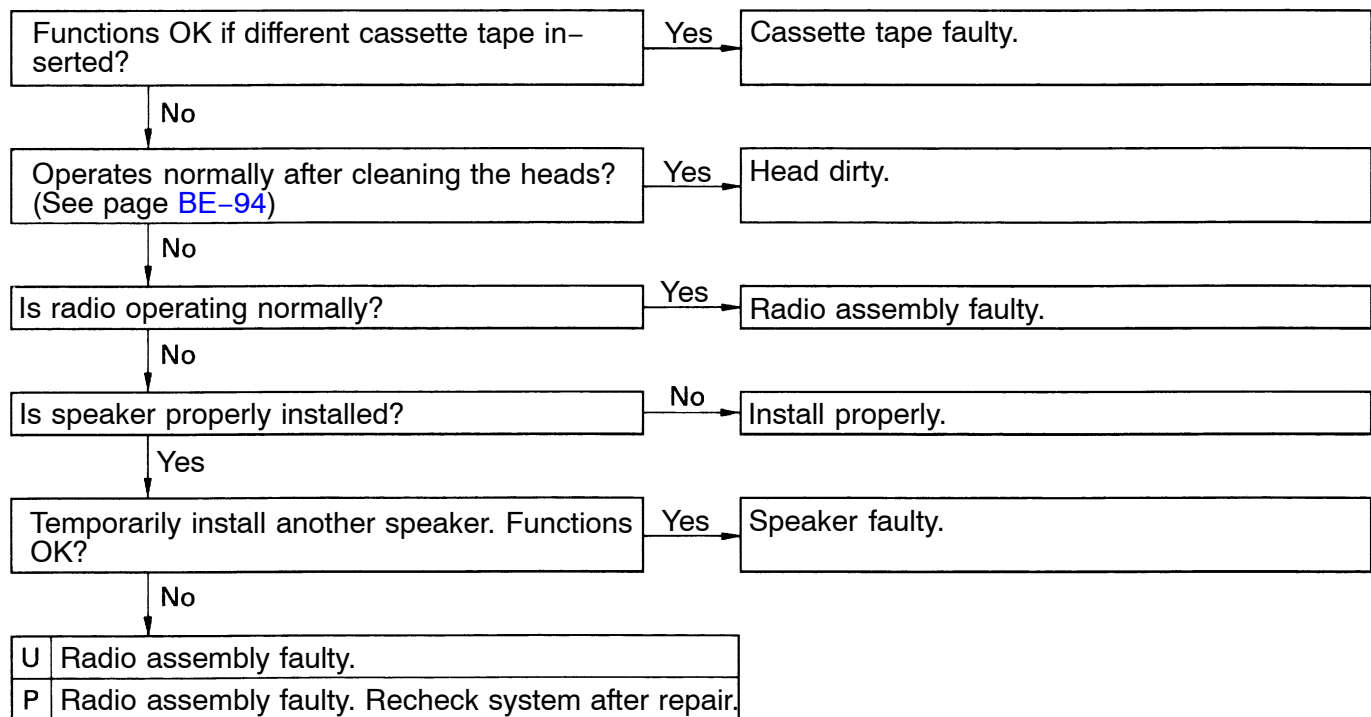
[P]: Radio-Tape Player, 9 Speaker

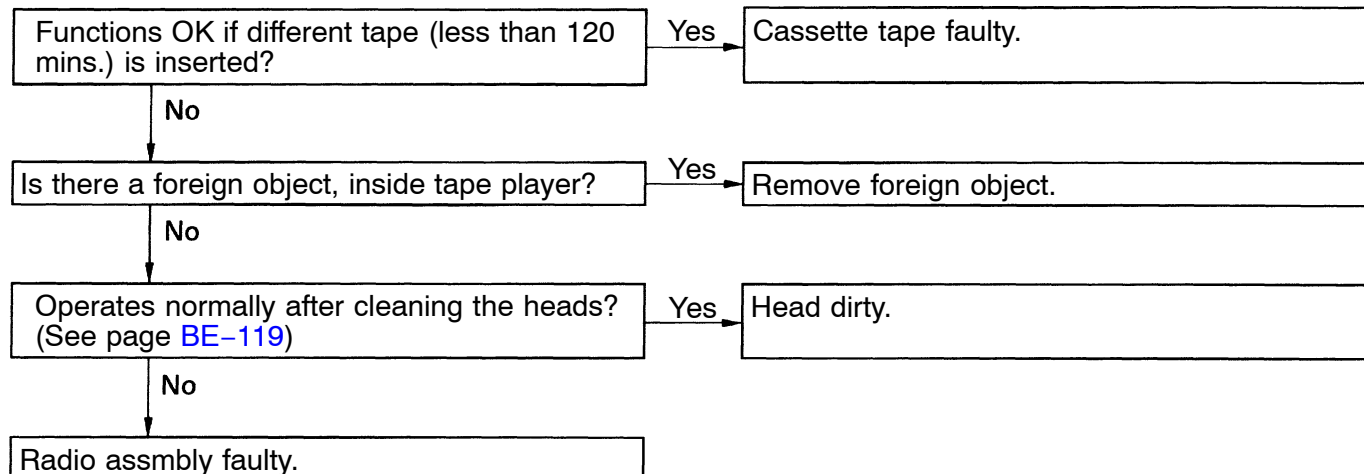
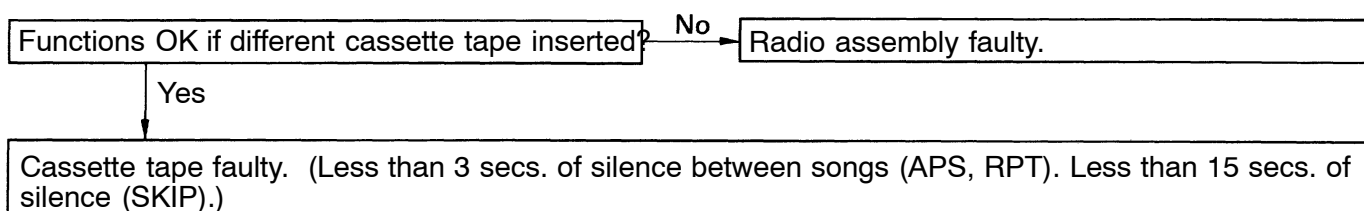


12 Tape Player SOUND QUALITY POOR (VOLUME FAINT)

[U]: Radio-Tape Player, 5 Speaker

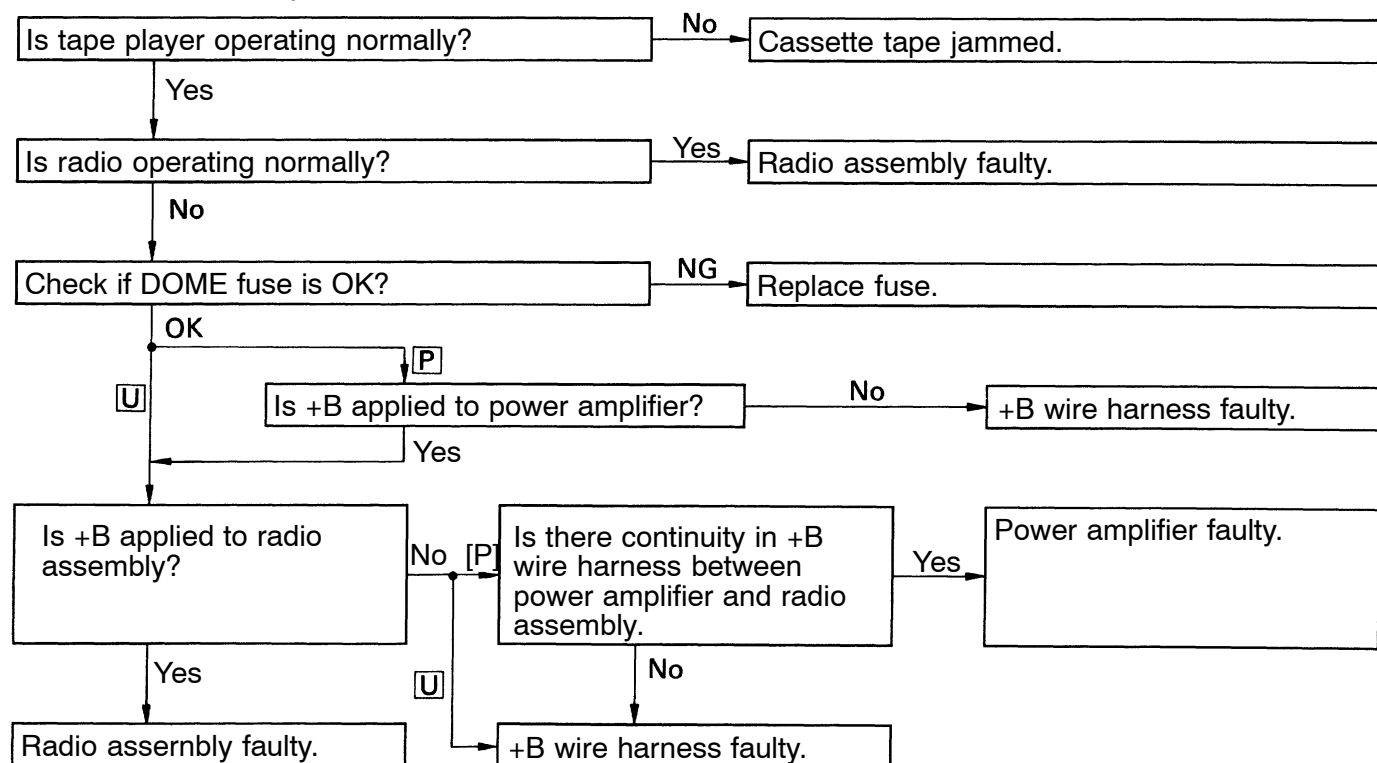
[P]: Radio-Tape Player, 9 Speaker



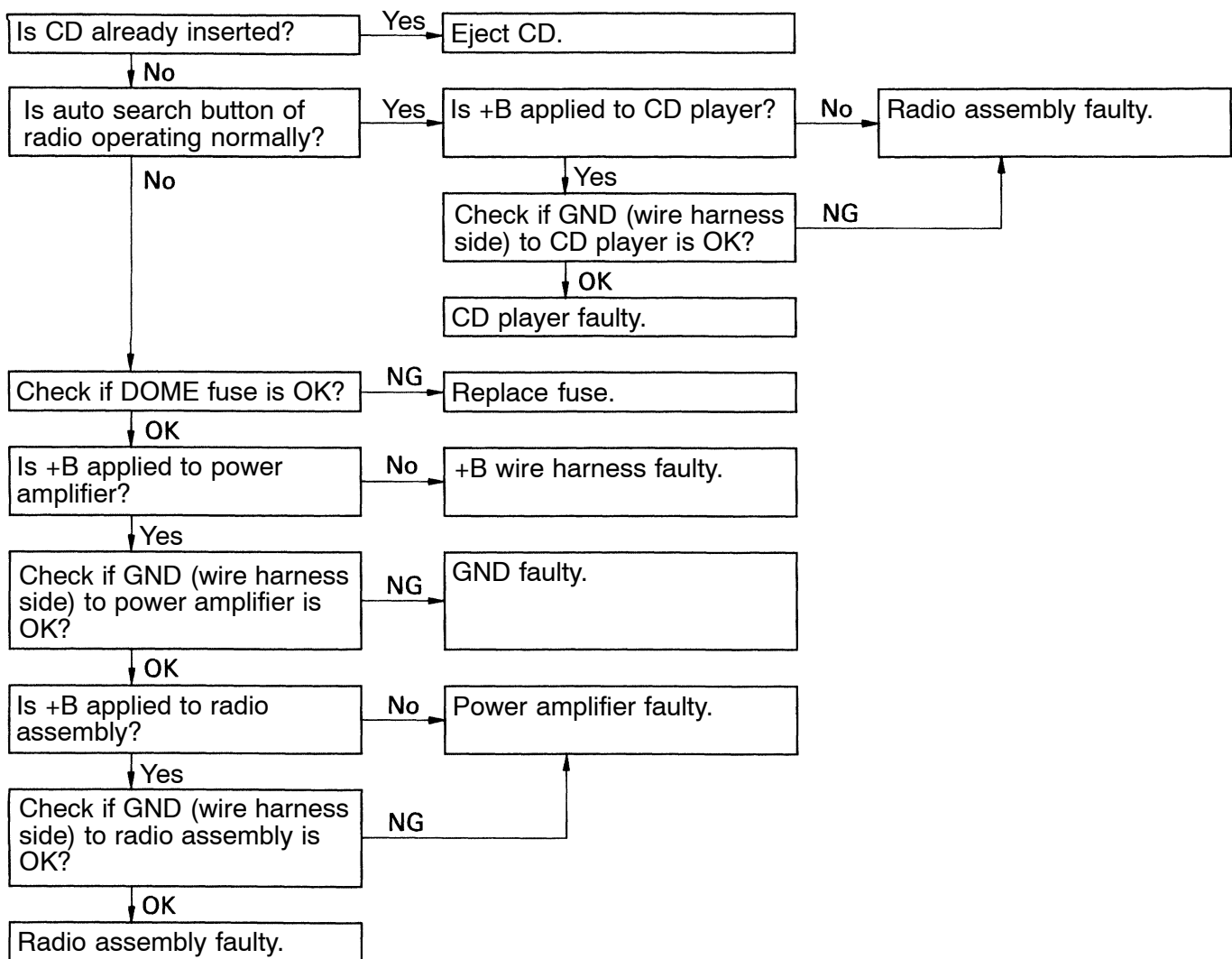
13 Tape Player**TAPE JAMMED, MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE****14 Tape Player****APS, SKIP, RPT BUTTONS NOT OPERATING****15 Tape Player****CASSETTE TAPE WILL NOT EJECT**

[R]: Radio, 5 Speaker [U]: Radio - Tape Player, 5 Speaker

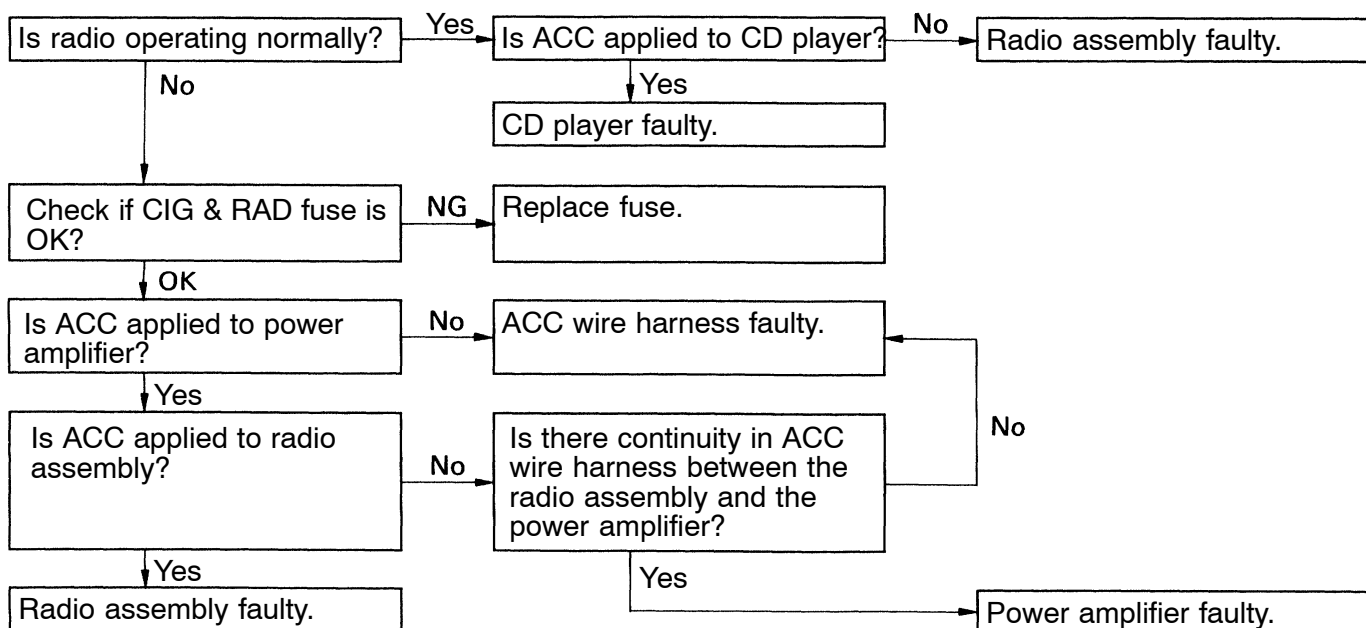
[P]: Radio - Tape Player, 9 Speaker



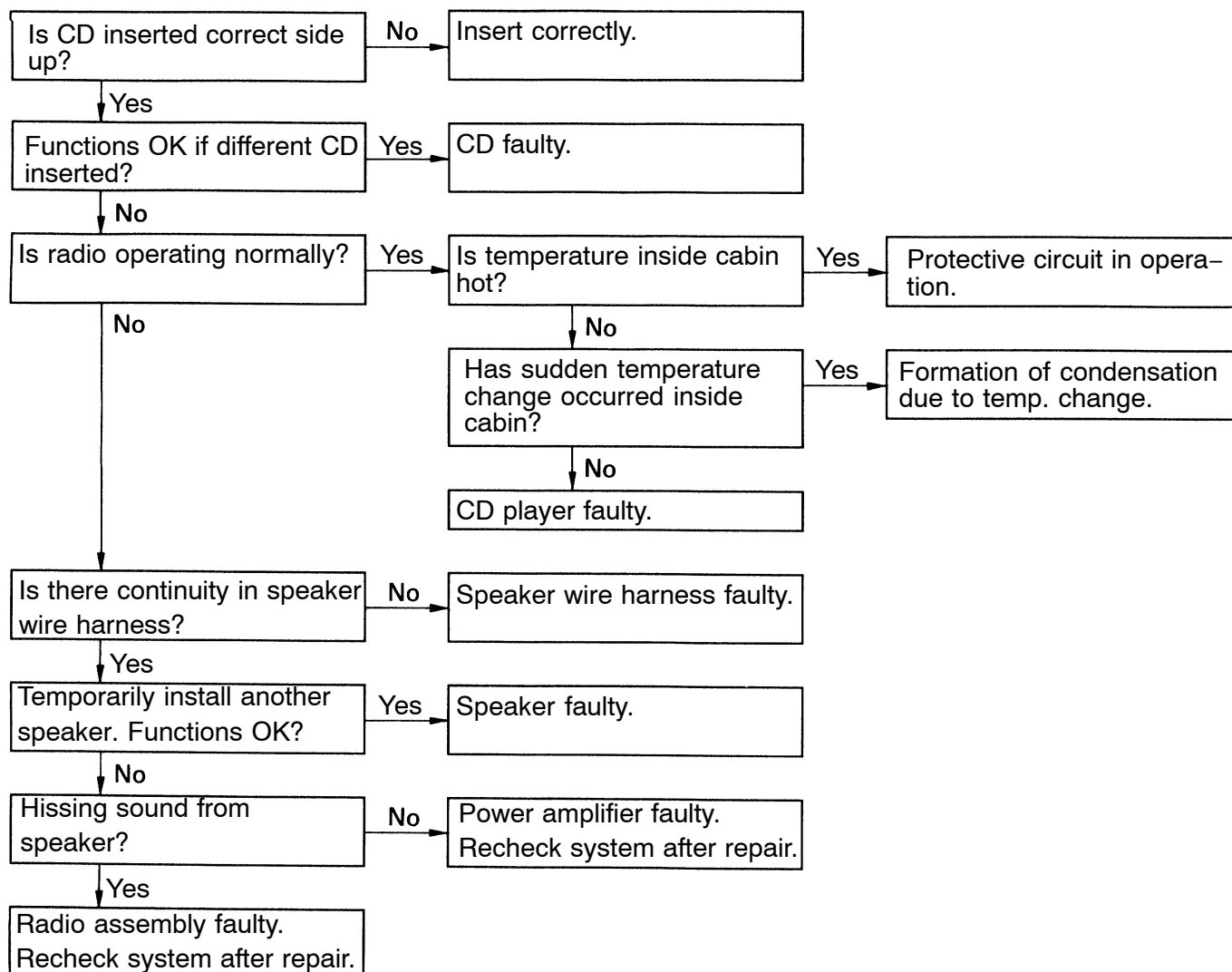
16 CD Player CD CANNOT BE INSERTED



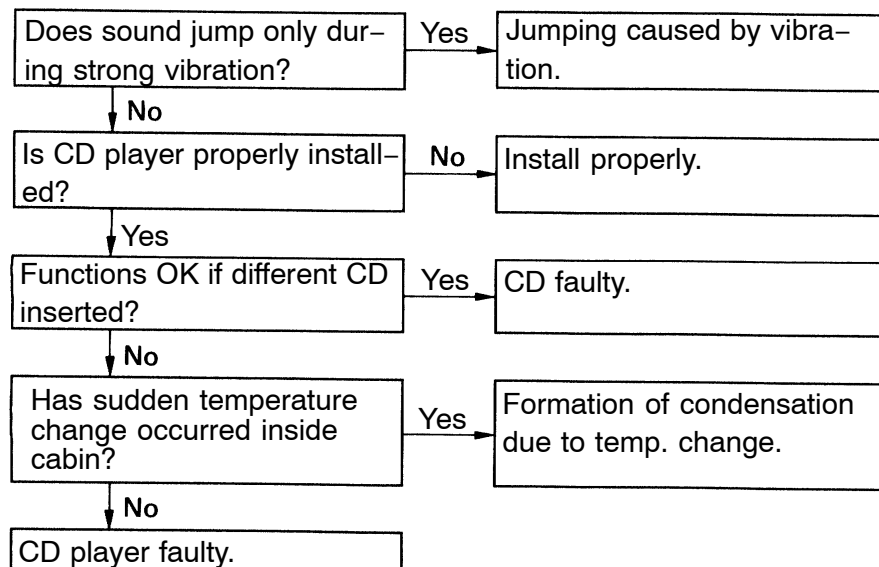
17 CD Player CD INSERTS, BUT NO POWER



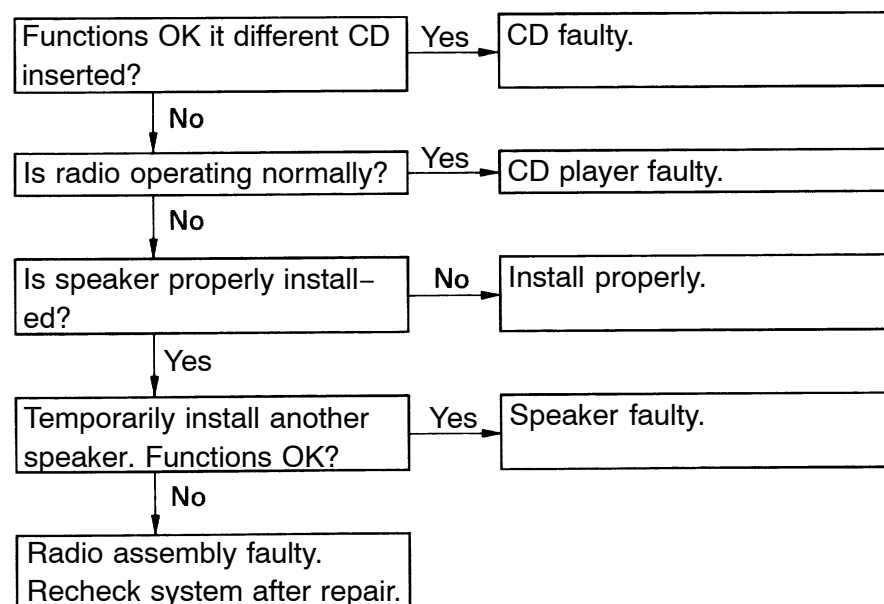
18	CD Player	POWER COMING IN, BUT CD PLAYER NOT OPERATING
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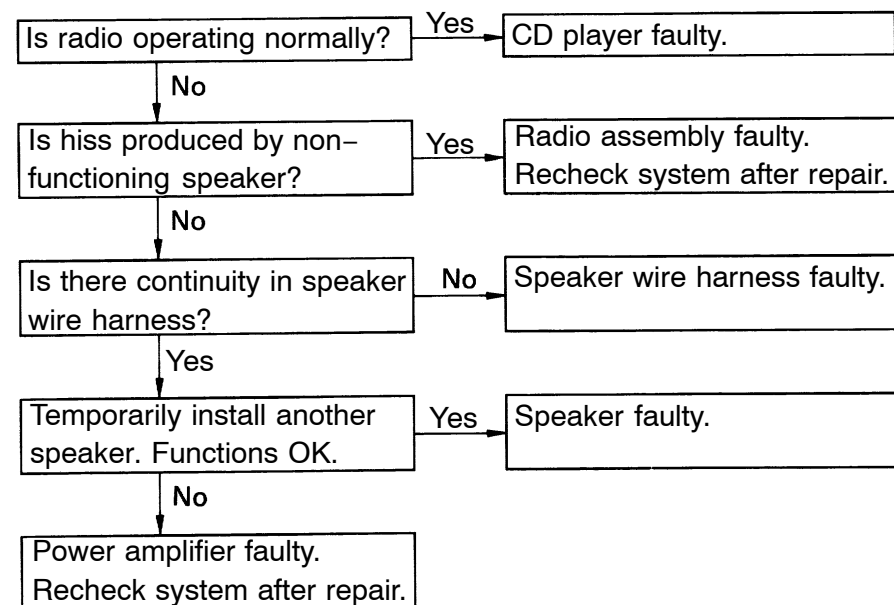
19	CD Player	SOUND JUMPS
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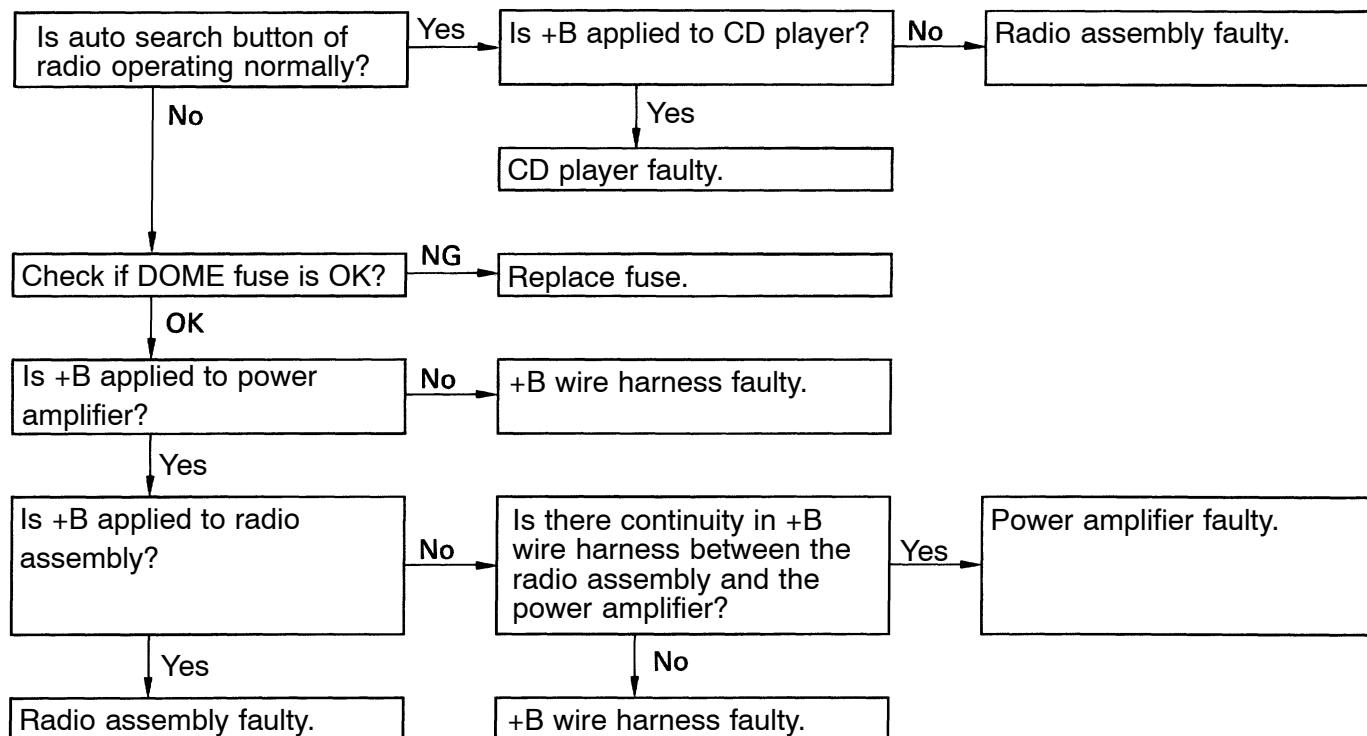
20	CD Player	SOUND QUALITY POOR (VOLUME FAINT)
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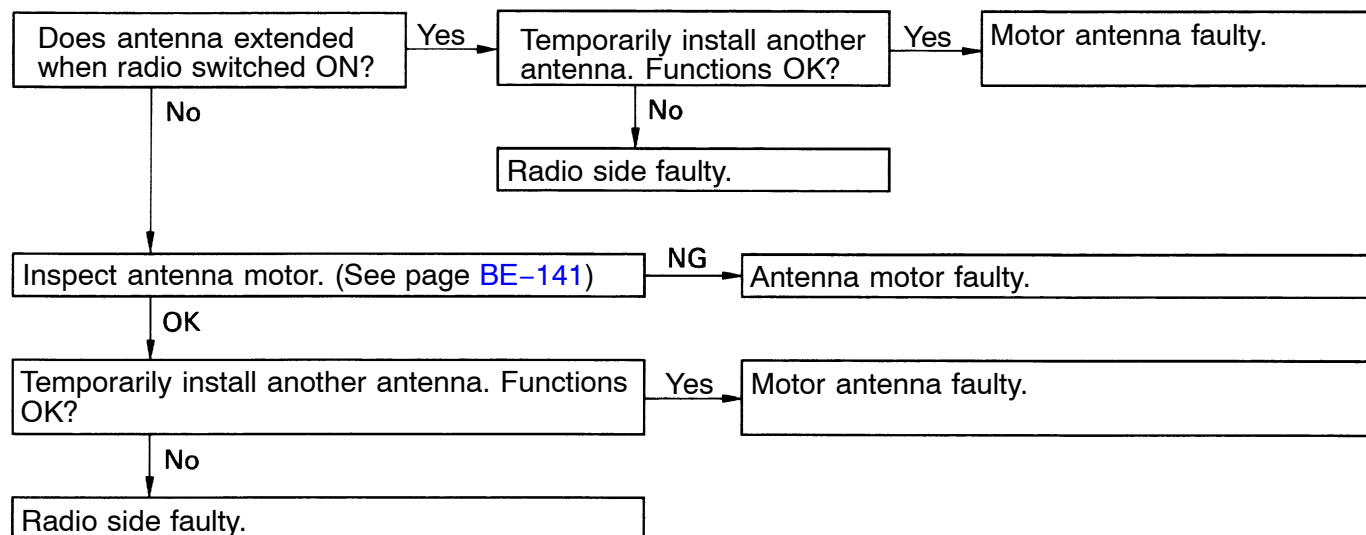
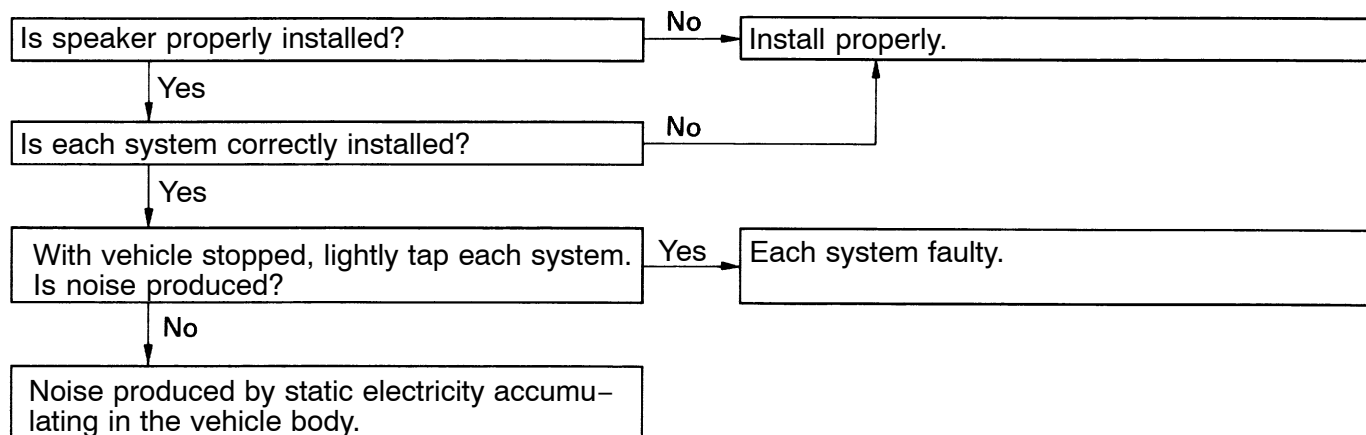


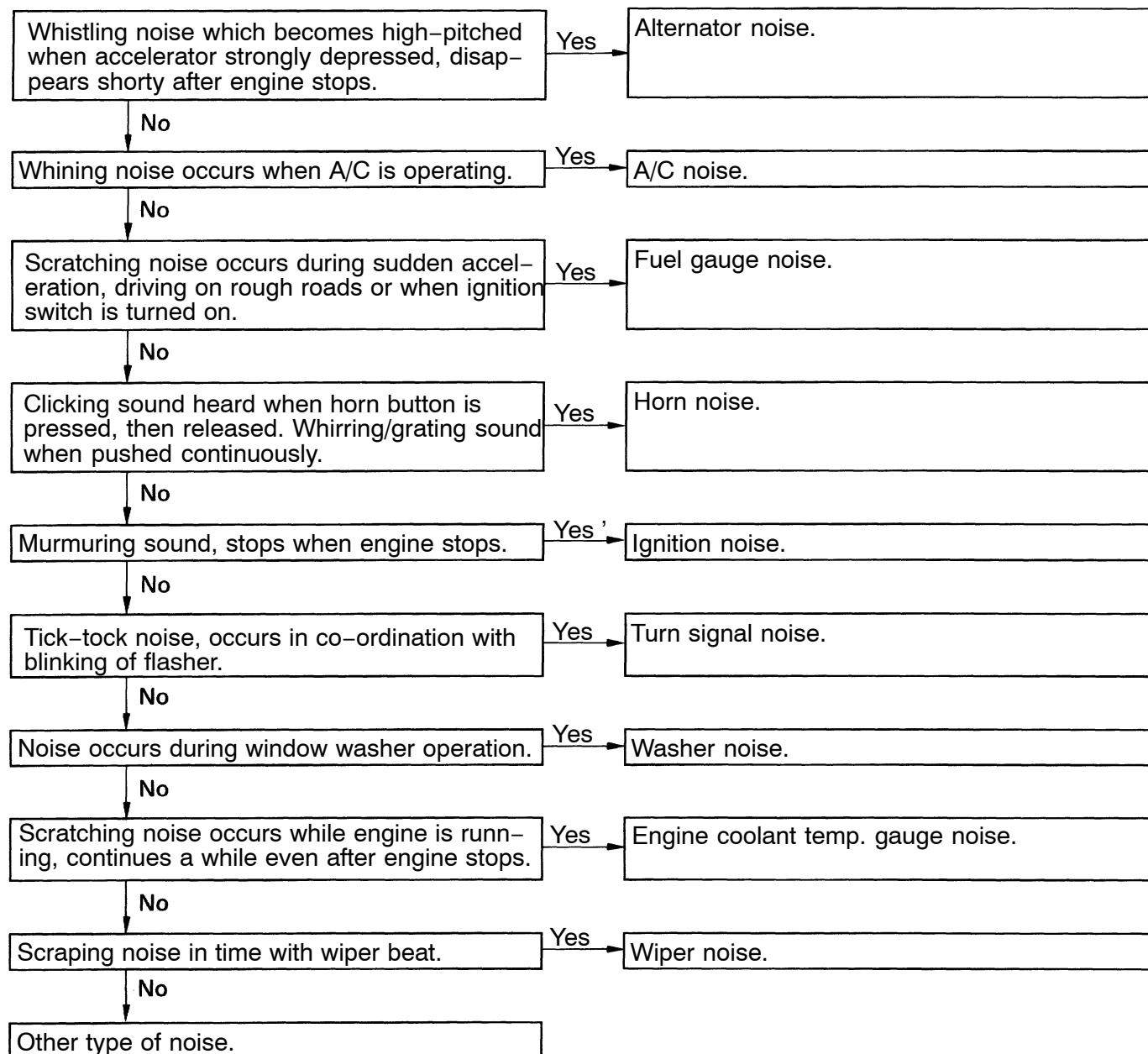
21	CD Player	EITHER SPEAKER DOES NOT WORK
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22	CD Player	CD WILL NOT EJECT
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23**Antenna****ANTENNA-RELATED****24****Noise****NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING**

25**Noise****NOISE PRODUCED WHEN ENGINE STARTS**

ANTENNA SWITCH

ANTENNA SWITCH INSPECTION

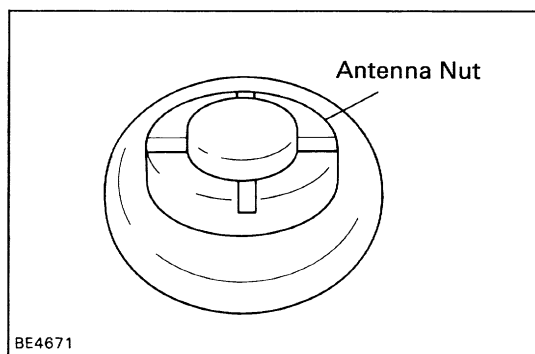
(w/ MOTOR ANTENNA)

Except RADIO-LINKED TYPE/CONTINUITY

Terminal Switch position		4	5	7	8	Illumination	
						1	2
UP Button	Free	○	○			○	○
	Pushed in		○	○		○	○
DOWN Button	Free	○			○	○	○
	Pushed in			○	○	○	○

BE4972 S-8.2

If continuity is not as specified, replace the switch.



BE4671

ANTENNA MOTOR

ANTENNA ROD REMOVAL AND INSTALLATION

1. REMOVE ANTENNA ROD

HINT: Perform this operation with the battery negative (-) cable connected to the battery terminal.

- Turn the ignition switch to "LOCK" position
- Remove the antenna nut.

- Press the "AM" or "FM" 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 at "ACC".

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

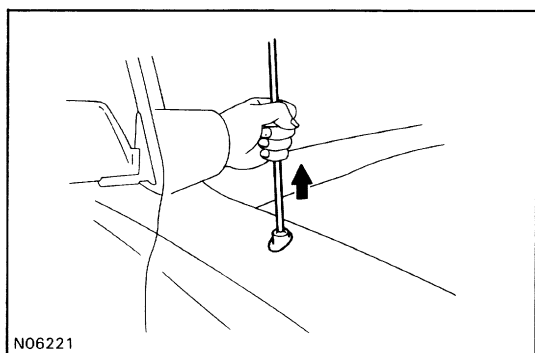
2. INSTALL ANTENNA ROD

- Insert the cable of the rod until it reaches the bottom.

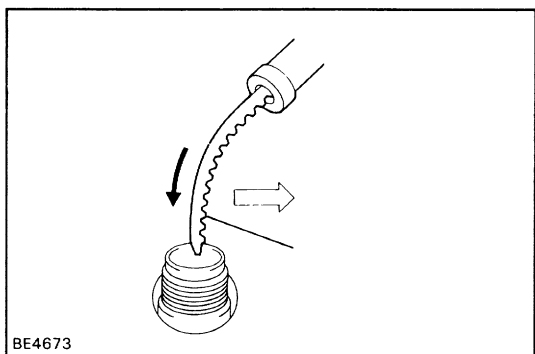
HINT:

- When inserting the cable, the teeth on the cable must face toward the rear of the vehicle.
- Insert the cable approx. 400 mm

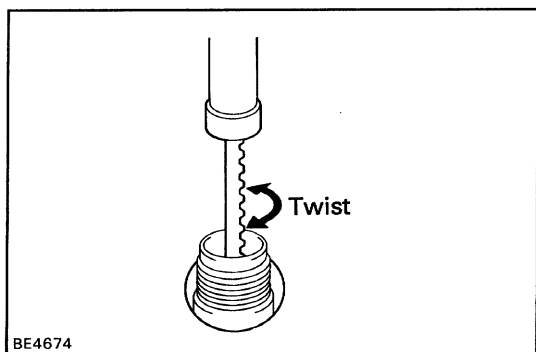
 - Wind the cable to retract the rod by turning the ignition switch to "LOCK" position.



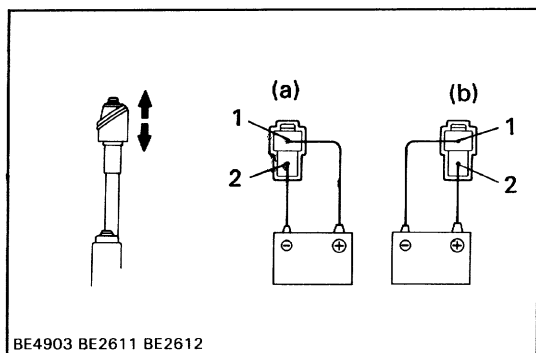
N06221



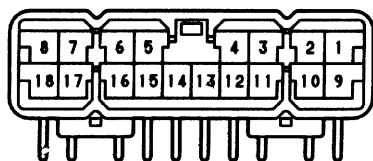
BE4673

**HINT:**

- If the ignition switch is already in "LOCK" position, perform 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.

**ANTENNA MOTOR INSPECTION****INSPECT ANTENNA MOTOR**

- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns (moves upward.)
 - Then, reverse the polarity, check that the motor turns the opposite way (moves downward.)
- If operation is not as specified, replace the motor.

Wire Harness Side**ANTENNA MOTOR CONTROL RELAY****ANTENNA MOTOR CONTROL RELAY INSPECTION CONTINUITY**

Disconnect the connector from the relay and inspect the connector on wire harness side as shown in the chart.

Check for	Tester connection	Condition		Specified value
Continuity	3 — 6	Constant		Continuity
	5 — Ground	Constant		Continuity
Voltage	4 — Ground	Constant		Battery positive voltage
	7 — Ground	Ignition switch position	LOCK or ACC	No voltage
			ON	Battery positive voltage
	17 — Ground	Ignition switch position	LOCK	No voltage
			ACC or ON	Battery positive voltage

Check for	Tester connection	Condition				Specified value
		Ignition SW	Radio SW	Radio band	Cassette	
Voltage	13 — Ground	LOCK	—	—	—	No voltage
		ACC or ON	OFF	—	OFF	No voltage
		ACC or ON	ON	—	—	Battery positive voltage
		ACC or ON	—	—	ON	Battery positive voltage
	14 — Ground	LOCK	—	—	—	No voltage
		ACC or ON	OFF	—	—	No voltage
		ACC or ON	ON	—	OFF	Battery positive voltage
		ACC or ON	ON	—	ON	No voltage
	15 — Ground	LOCK	—	—	—	No voltage
		ACC or ON	OFF	—	—	No voltage
		ACC or ON	ON	AM	OFF	Battery positive voltage
		ACC or ON	ON	AM	ON	No voltage
		ACC or ON	ON	FM	OFF	No voltage
	16 — Ground	LOCK	—	—	—	No voltage
		ACC or ON	OFF	—	—	No voltage
		ACC or ON	ON	—	OFF	Battery positive voltage
		ACC or ON	ON	—	ON	No voltage

If continuity is not as specified, replace the relay.