Body Electrical System

GENERAL

GENERAL TROUBLESHOOTING INFORMATION E60BE67C

BEFORE TROUBLESHOOTING

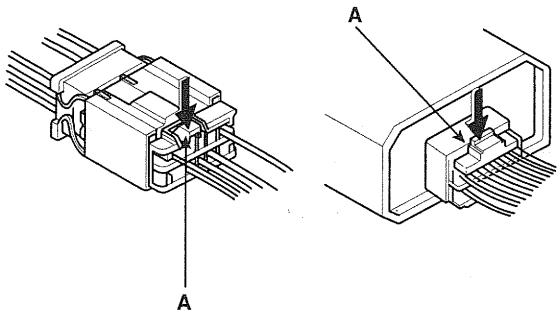
1. Check applicable fuses in the appropriate fuse/relay box.
2. Check the battery for damage, state of charge, and clean and tight connections.

   NOTE
   - *Do not quick-charge a battery unless the battery ground cable has been disconnected, otherwise you will damage the alternator diodes.*
   - *Do not attempt to crank the engine with the battery ground cable loosely connected or you will severely damage the wiring.*

3. Check the alternator belt tension.

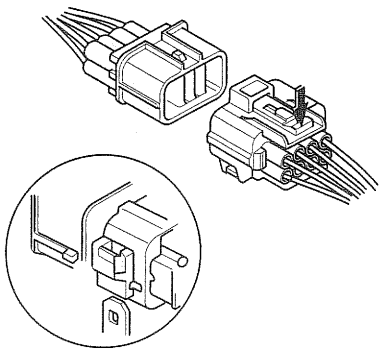
HANDLING CONNECTORS

1. Make sure the connectors are clean and have no loose wire terminals.
2. Make sure multiple cavity connectors are packed with grease (except watertight connectors).
3. All connectors have push-down release type locks (A).



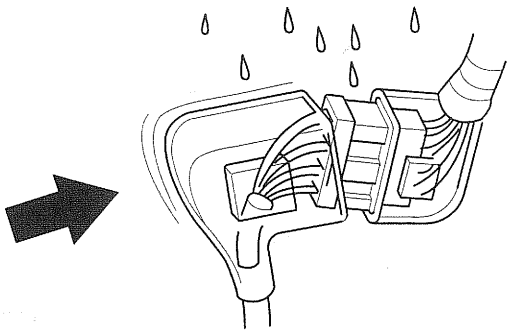
ETKD150A

4. Some connectors have a clip on their side used to attach them to a mount bracket on the body or on another component. This clip has a pull type lock.
5. Some mounted connectors cannot be disconnected unless you first release the lock and remove the connector from its mount bracket (A).



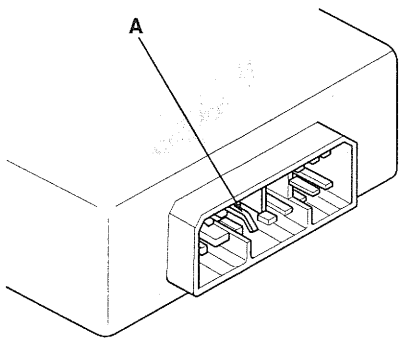
ETKD150B

6. Never try to disconnect connectors by pulling on their wires; pull on the connector halves instead.
7. Always reinstall plastic covers.



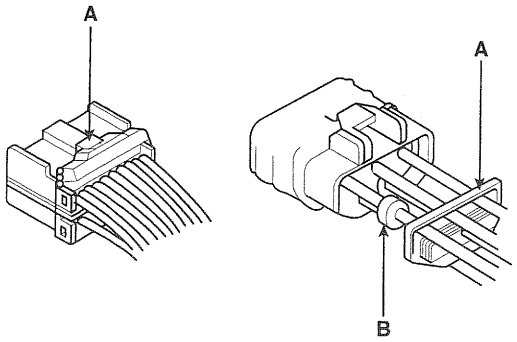
ETKD150C

8. Before connecting connectors, make sure the terminals (A) are in place and not bent.



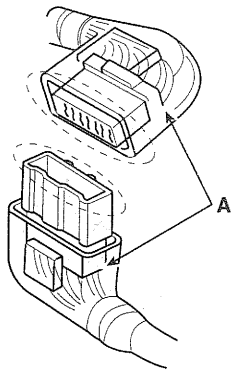
ETKD150D

9. Check for loose retainer (A) and rubber seals (B).



ETKD150E

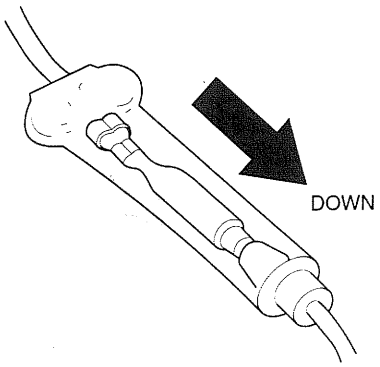
10. The backs of some connectors are packed with grease. Add grease if necessary. If the grease (A) is contaminated, replace it.



ETKD150F

11. Insert the connector all the way and make sure it is securely locked.

12. Position wires so that the open end of the cover faces down.

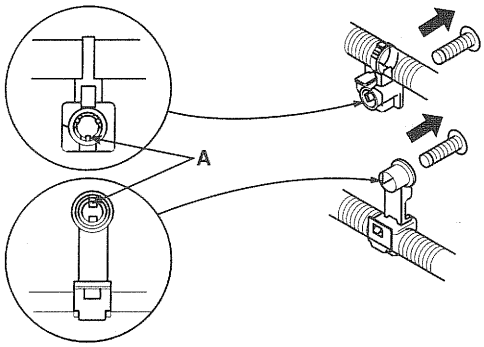


ETKD150G

HANDLING WIRES AND HARNESSES

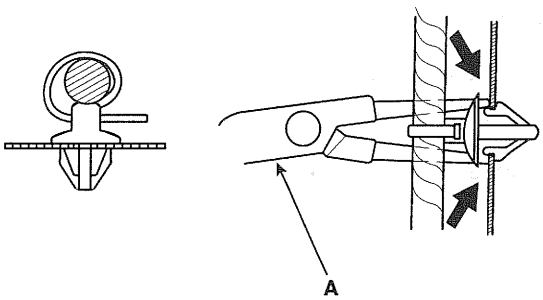
1. Secure wires and wire harnesses to the frame with their respective wire ties at the designated locations.

2. Remove clips carefully; don't damage their locks (A).



ETKD150H

3. Slip pliers (A) under the clip base and through the hole at an angle, and then squeeze the expansion tabs to release the clip.

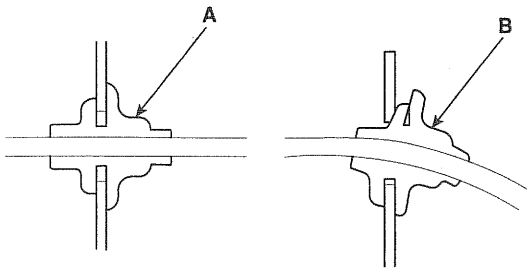


ETKD150I

4. After installing harness clips, make sure the harness doesn't interfere with any moving parts.

5. Keep wire harnesses away from exhaust pipes and other hot parts, from sharp edges of brackets and holes, and from exposed screws and bolts.

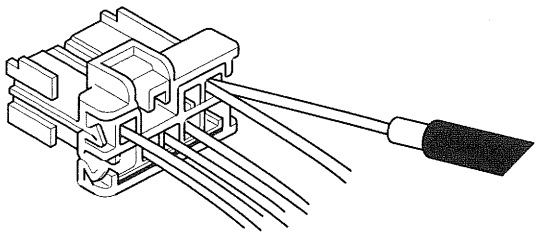
6. Seat grommets in their grooves properly (A). Do not leave grommets distorted (B).



ETKD150J

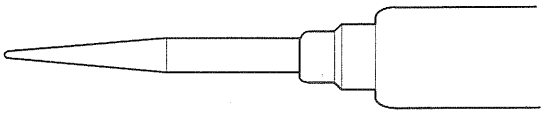
TESTING AND REPAIRS

1. Do not use wires or harnesses with broken insulation. Replace them or repair them by wrapping the break with electrical tape.
2. After installing parts, make sure that no wires are pinched under them.
3. When using electrical test equipment, follow the manufacturer's instructions and those described in this manual.
4. If possible, insert the probe of the tester from the wire side (except waterproof connector).



ETKD150K

5. Use a probe with a tapered tip.



ETKD150L

FIVE-STEP TROUBLESHOOTING

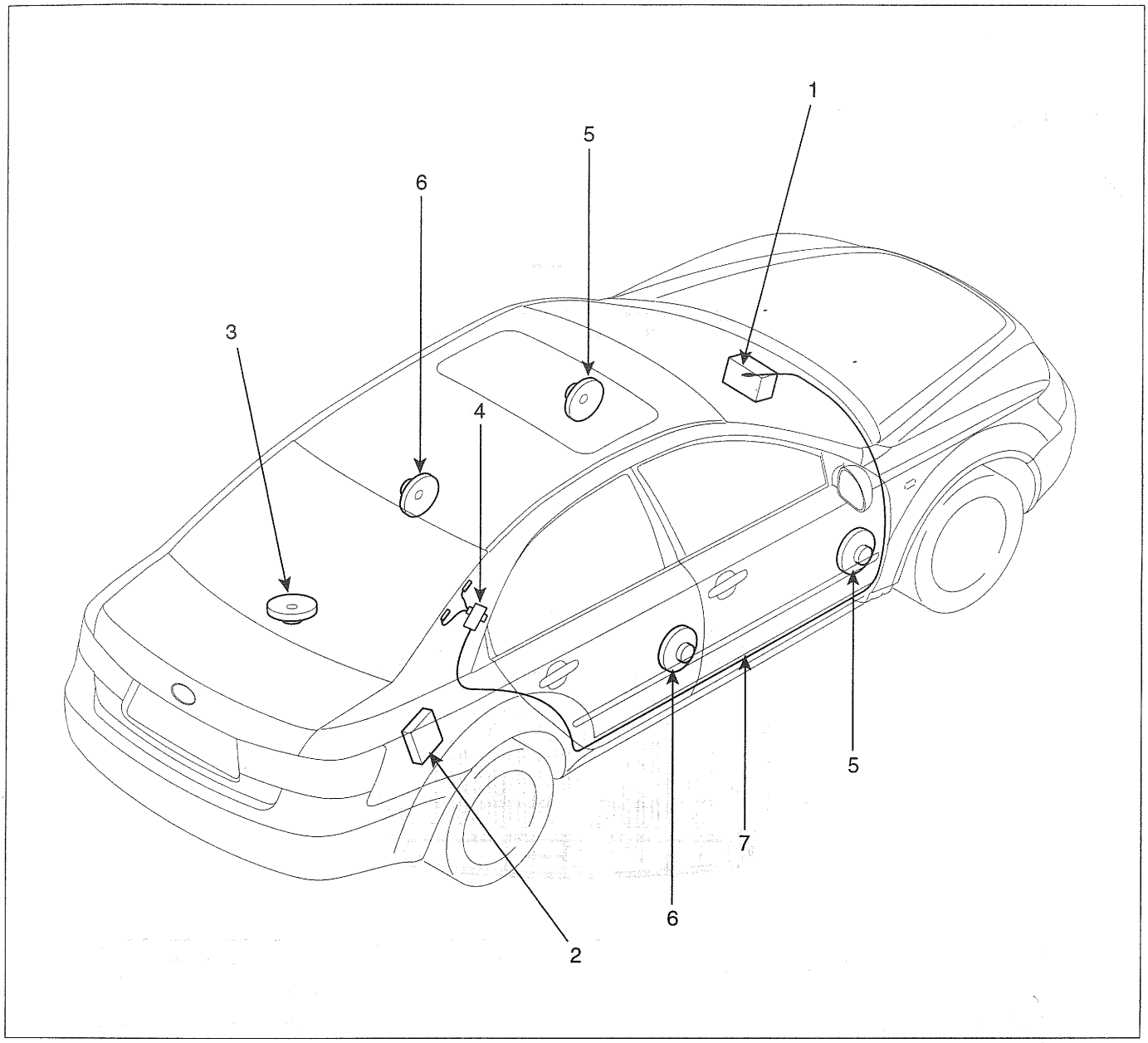
1. Verify the complaint
   Turn on all the components in the problem circuit to verify the customer complaint. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the problem area.
2. Analyze the schematic
   Look up the schematic for the problem circuit. Determine how the circuit is supposed to work by tracing the current paths from the power feed through the circuit components to ground. If several circuits fail at the same time, the fuse or ground is a likely cause. Based on the symptoms and your understanding of the circuit operation, identify one or more possible causes of the problem.
3. Isolate the problem by testing the circuit.
   Make circuit tests to check the diagnosis you made in step 2. Keep in mind that a logical, simple procedure is the key to efficient troubleshooting.
   Test for the most likely cause of failure first. Try to make tests at points that are easily accessible.
4. Fix the problem
   Once the specific problem is identified, make the repair. Be sure to use proper tools and safe procedures.
5. Make sure the circuit works
   Turn on all components in the repaired circuit in all modes to make sure you've fixed the entire problem. If the problem was a blown fuse, be sure to test all of the circuits on the fuse. Make sure no new problems turn up and the original problem does not recur.

AUDIO SYSTEM

SPECIFICATION EEAFCDBF

Item		Specification		
Model		AM/FM/Cassette (M440)	AM/FM/Cassette /MP3 (M455)	AM/FM/Cassette /6CDC (M465)
Power supply		DC 14.4V		
Rated output		Max 43W x 4		Maw 50W x 4
Speaker impedance		4Ω x 4		2Ω x 4
Antenna		80PF 75Ω		
Tuning type		PLL synthesized type		
The others		-		External amp, woofer speaker
Frequency range / Channel space	FM	87.5~108 MHz/ 100KHz (General), 50KHz(Europe)		
	AM	531~1602 KHz/ 9KHz (General)		
	MW	522~1620 KHz/ 9KHz (Europe)		
	LW	153~279 KHz/ 1KHz (Europe)		
	FM	76.0~90.0 MHz/ 100KHz (Japan)		
	AM	522~1629KHz/ 9KHz (Japan)		

COMPONENT LOCATION ED97CCA8



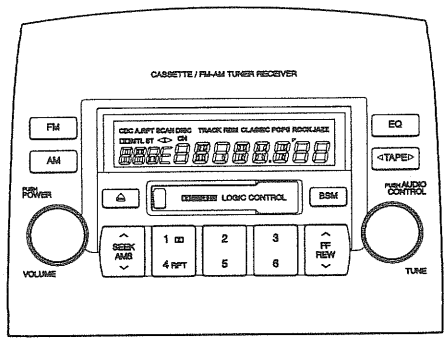
1. Audio unit
2. External amp
3. Woofer speaker
4. Glass antenna
5. Front door speaker
6. Rear door speaker
7. Antenna feeder cable

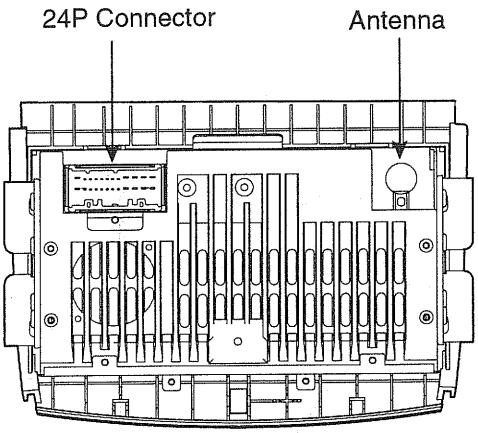
ETRF020A

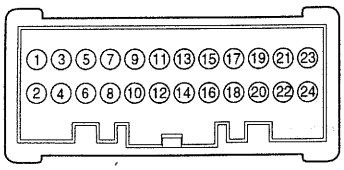
AUDIO UNIT

COMPONENT EF935C55

[AM/FM/Cassette-M440]

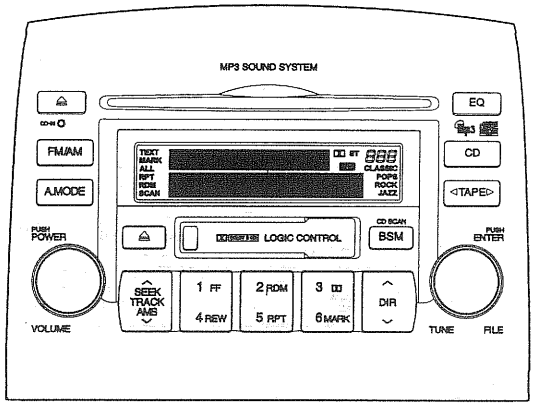


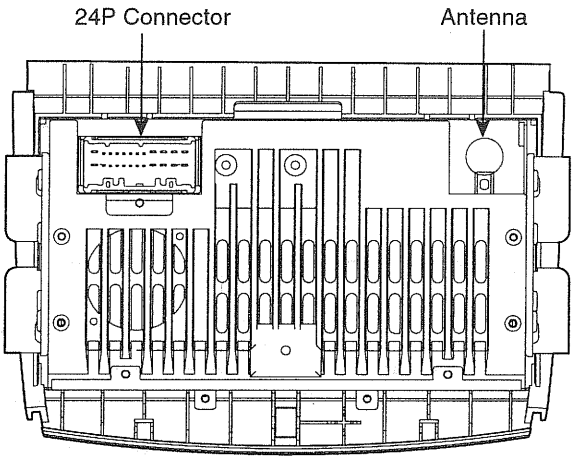


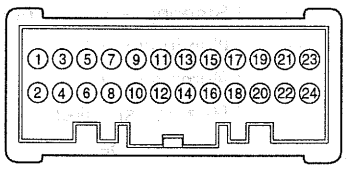
Audio connector	Terminal	Description	Terminal	Description
	1	Ground	13	Remote control ground
	2	Battery	14	Steering remote control
	3	Antenna B+	15	Illumination (-)
	4	ACC	16	Illumination (+)
	5	-	17	Rear left speaker (-)
	6	-	18	Rear left speaker (+)
	7	Tweeter in (R)	19	Rear right speaker (-)
	8	Tweeter in (L)	20	Rear right speaker (+)
	9	Ground	21	Front right speaker (-)
	10	Twiter ground	22	Front right speaker (+)
	11	MUTE	23	Front left speaker (-)
	12	Rear-arm remote control	24	Front left speaker (+)

ETRF010A

[AM/FM/Cassette/MP3-M455]

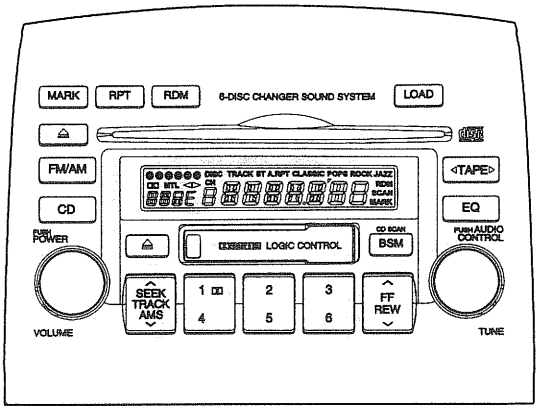


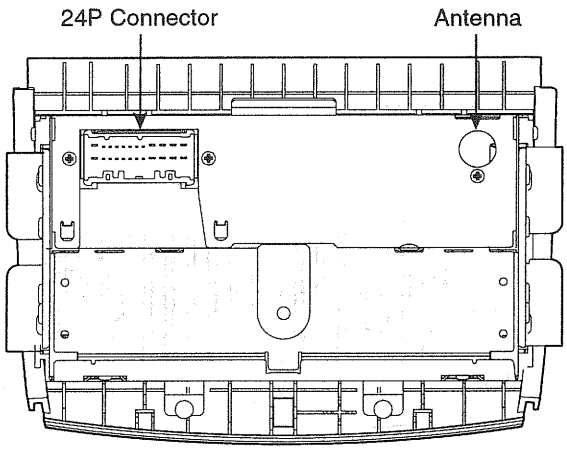


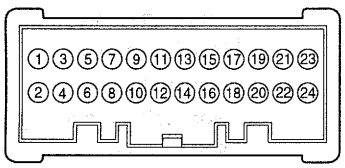
Audio connector	Terminal	Description	Terminal	Description
	1	Ground	13	Remote control ground
	2	Battery	14	Steering remote control
	3	Antenna B+	15	Illumination (-)
	4	ACC	16	Illumination (+)
	5	-	17	Rear left speaker (-)
	6	-	18	Rear left speaker (+)
	7	Tweeter in (R)	19	Rear right speaker (-)
	8	Tweeter in (L)	20	Rear right speaker (+)
	9	Ground	21	Front right speaker (-)
	10	Twiter ground	22	Front right speaker (+)
	11	MUTE	23	Front left speaker (-)
	12	Rear-arm remote control	24	Front left speaker (+)

ETRF010B

[AM/FM/Cassette/6CDC-M465]





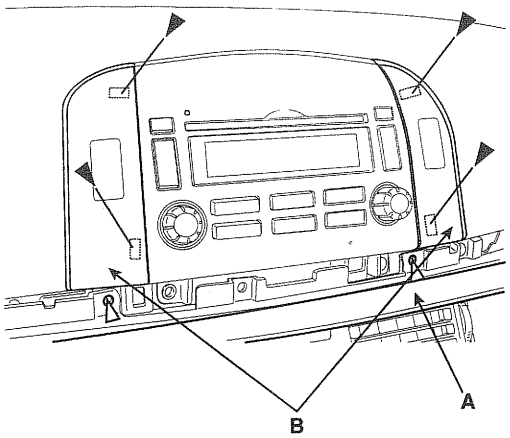
Audio connector	Terminal	Description	Terminal	Description
	1	Ground	13	Remote control ground
	2	Battery	14	Steering remote control
	3	Antenna B+	15	Illumination (-)
	4	ACC	16	Illumination (+)
	5	-	17	Rear left speaker (-)
	6	-	18	Rear left speaker (+)
	7	Tweeter in (R)	19	Rear right speaker (-)
	8	Tweeter in (L)	20	Rear right speaker (+)
	9	Ground	21	Front right speaker (-)
	10	Twiter ground	22	Front right speaker (+)
	11	MUTE	23	Front left speaker (-)
	12	Rear-arm remote control	24	Front left speaker (+)

REPLACEMENT E4A99BCB

1. Disconnect the negative (-) battery terminal.
2. Remove the crash pad garnish (A) after pulling it by using regular screw driver (-). Take care of fixing clips.
3. Remove the center facia panel (B) after loosening the screws.

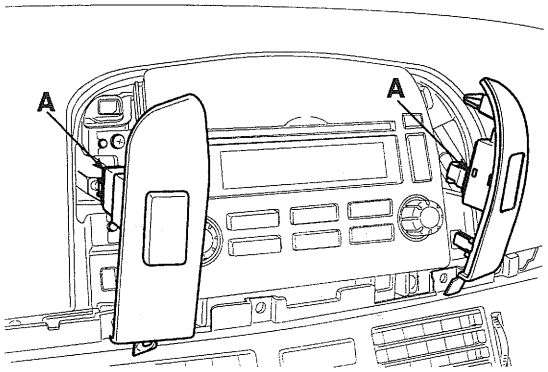
Fastener Locations

▷ : Screw, 2 | ▶ : Clip, 4



ETRF021A

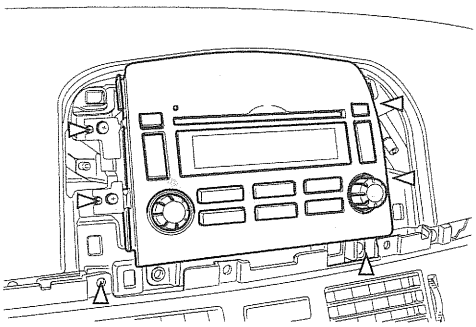
4. Remove the connectors(A).



LSRE170G

5. Remove the mounting screws then remove the audio unit (A).

▷ : Screw location, 6



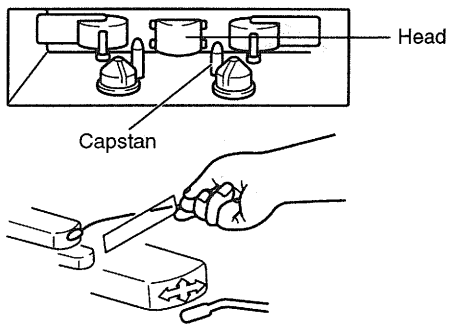
ETRF021E

6. Installation is the reverse of removal.

INSPECTION E06AC3AC

TAPE HEAD AND CAPSTAN CLEANING

1. To obtain optimum performance clean the head, and capstan as often as necessary, depending on frequency of use and tape cleanness.
2. To clean the tape head and capstan, use a cotton swab dipped in ordinary rubbing an alcohol. Wipe the head and capstan.



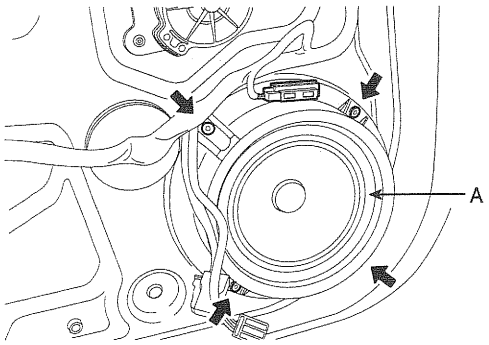
LTAC005A

SPEAKERS

REPLACEMENT E27DDFBF

FRONT SPEAKER

1. Remove the front door trim panel (Refer to the Body group - front door).
2. Remove the front speaker (A) after removing 4 rivets.

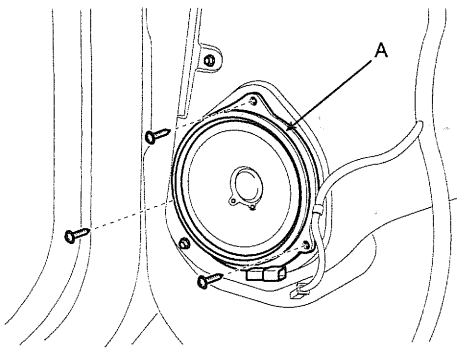


KTRE022B

3. Installation is the reverse of removal.

REAR SPEAKER

1. Remove the rear door trim panel (Refer to the Body group -- rear door).
2. Remove the rear speaker (A) after removing 4 rivets.

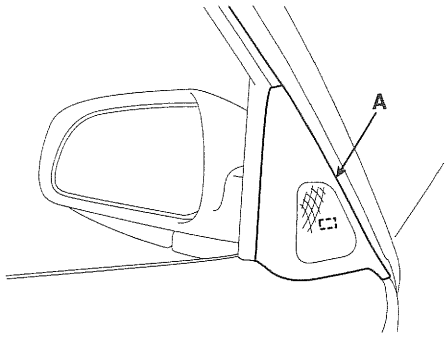


ATIE022C

3. Installation is the reverse of removal.

TWEETER SPEAKER

1. Remove the front door quadrant inner cover (A) (Refer to the Body group - front door).
2. Remove the tweeter speaker after disconnecting the connector.

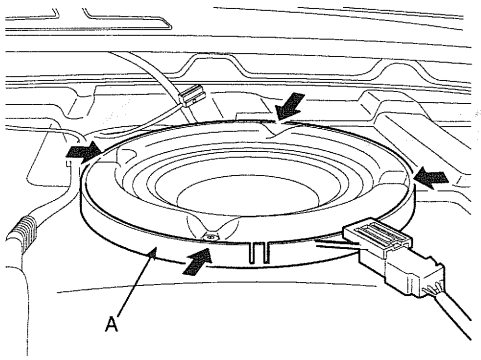


KTRE022D

3. Installation is the reverse of removal.

WOOFER SPEAKER

1. Remove the rear seat. (Refer to the Body group - rear seats)
2. Remove the rear package tray. (Refer to the Body group - package tray)
3. Remove the woofer speaker (A) after removing 4 bolts.

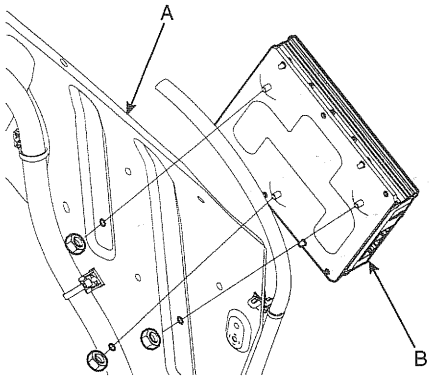


KTRE022E

4. Installation is the reverse of removal.

EXTERNAL AMP

1. Remove the luggage side trim.
2. Remove the external amp (B) from the quarter inner panel after removing 3 nuts.

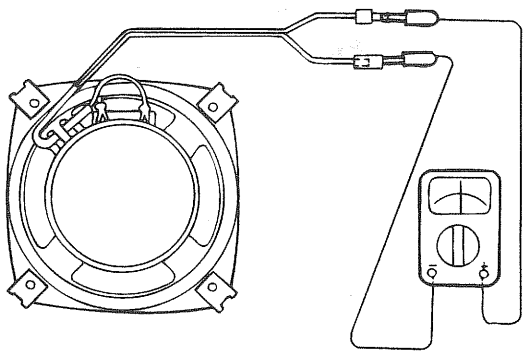


KTRE022F

3. Installation is the reverse of removal.

INSPECTION E4B4BBA0

1. Check the speaker with an ohmmeter. If an ohmmeter indicates the correct impedance of the speaker when checking between the speaker (+) and speaker (-) of the same channel, the speaker is OK.
2. If a clicking sound is emitted from the speaker when the ohmmeter is connected to the speaker terminals, the speaker is OK.



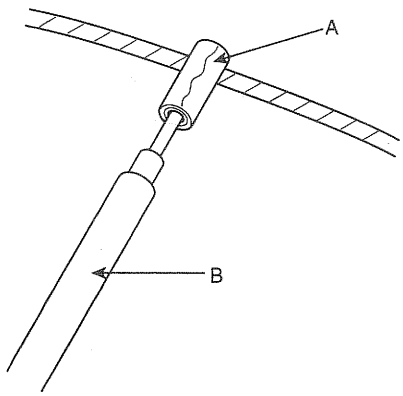
KTMB060A

ANTENNA

INSPECTION ED0ACAFA

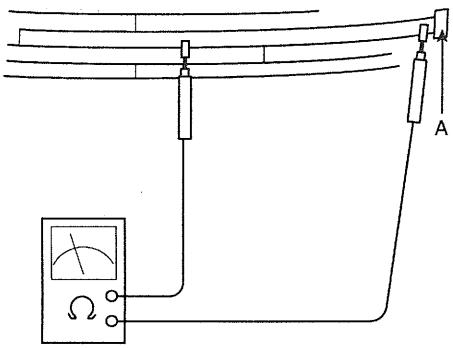
GLASS ANTENNA TEST

1. Wrap aluminum foil (A) around the tip of the tester probe (B) as shown.



ETRF023C

2. Touch one tester probe to the glass antenna terminal (A) hear, and move the other tester probe along the antenna wires to check that continuity exists.



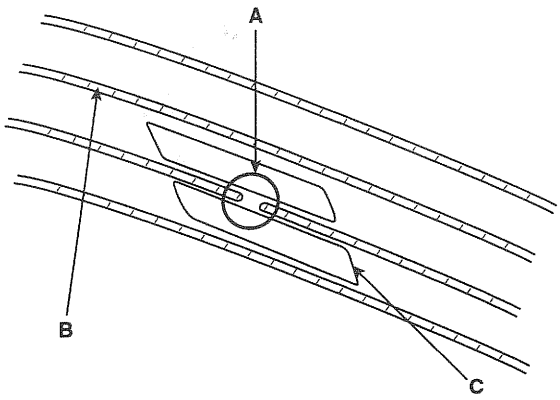
ETRF023D

GLASS ANTENNA REPAIR

NOTE

To make an effective repair, the broken section must be no longer than one inch.

1. Lightly rub the area around the broken section (A) with fine steel wool, and then clean it with alcohol.

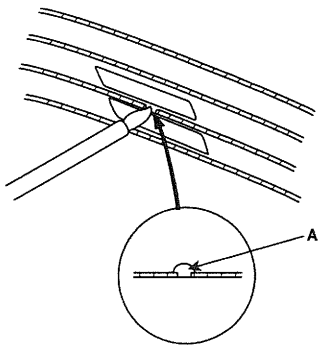


ETKD004K

2. Carefully mask above and below the broken portion of the glass antenna wire (B) with cellophane tape (C).
3. Using a small brush, apply a heavy coat of silver conductive paint (A) extending about 1/8˝ on both sides of the break. Allow 30 minutes to dry.

NOTE

Thoroughly mix the paint before use.



KTKD006Z

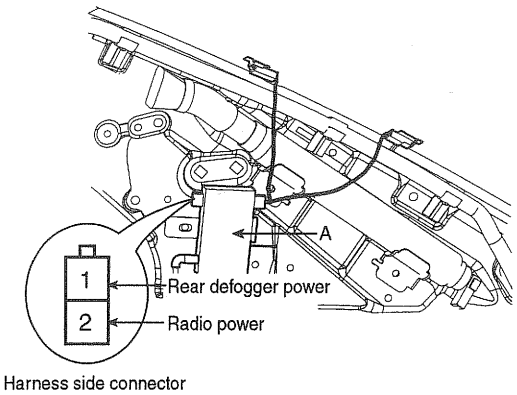
4. Check for continuity in the repaired wire.
5. Apply a second coat of paint in the same way. Let it dry three hours before removing the tape.

GLASS ANTENNA CIRCUIT INSPECTION

1. Remove the right side rear pillar trim. Then disconnect the 2P power connector from the glass antenna amp (A).

2. Turn the radio ON.
   Measure the voltage between terminal 2 of the harness side power connector (A) and body ground.

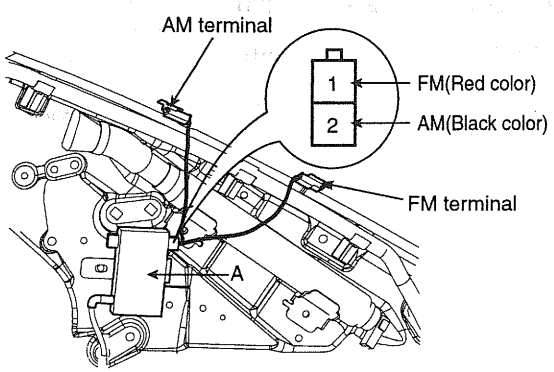
OK : approximately 12V (ACC+)



ETRF023A

3. Disconnect the 2P connector of radio wiring from the glass antenna amp (A).

4. Check for continuity between terminals of harness side connector and antenna grid terminals (AM, FM).



ETRF023B

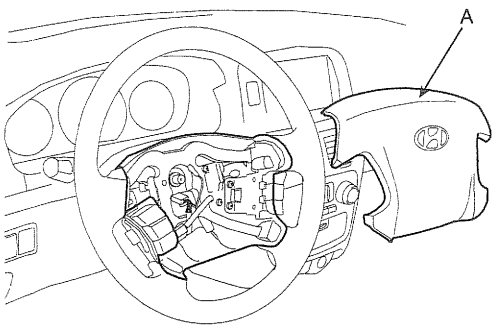
5. Check the grid lines that continuity exists.

6. When a poor radio reception is not repaired through the above inspection methods, replace the amp.
   If the radio reception is still poor, check the radio cable for short and radio head unit for failure.

AUDIO REMOTE CONTROL

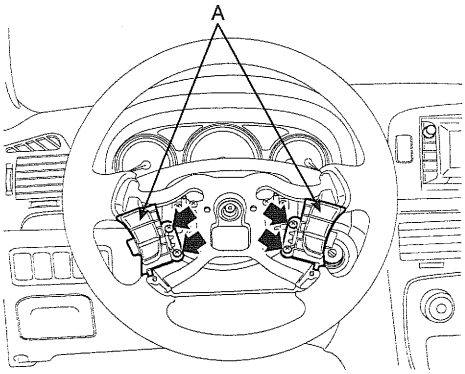
REPLACEMENT EBF43BD0

1. Disconnect the negative (-) battery terminal.
2. Remove the driver airbag module. (Refer to the airbag group)



KPRE201C

3. Remove the audio remote control switch (A) after remove the steering wheel remote control switch connector and 2 screws.

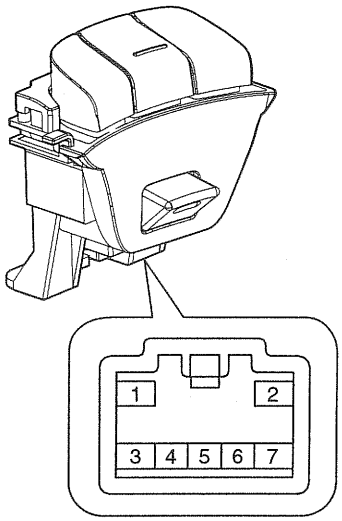


KTRE024A

4. Installation is the reverse of removal.

INSPECTION E5DFFC6A

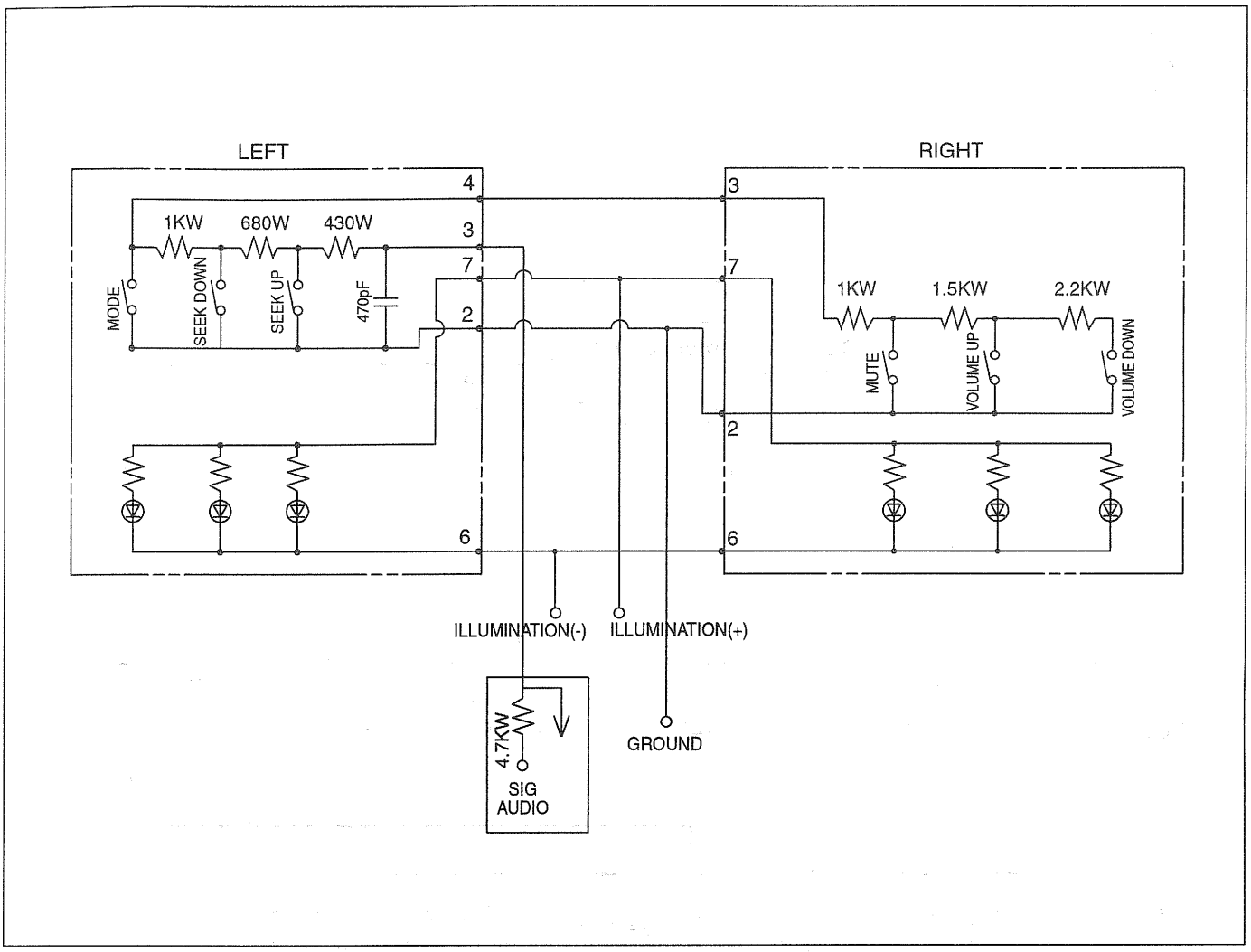
1. Check for resistance between No.2 and No.3 terminals in each switch position.



KTRE024B

Switch	Connector terminal	Resistance (±5%)
VOLUME DOWN	2 - 3 (Right)	6.81 kΩ
VOLUME UP	2 - 3 (Right)	4.61 kΩ
SEEK UP	2 - 3 (Left)	430 Ω
SEEK DOWN	2 - 3 (Right)	1.11 kΩ
MODE	2 - 3 (Left)	2.11 kΩ
MUTE	2 - 3 (Right)	3..11 kΩ

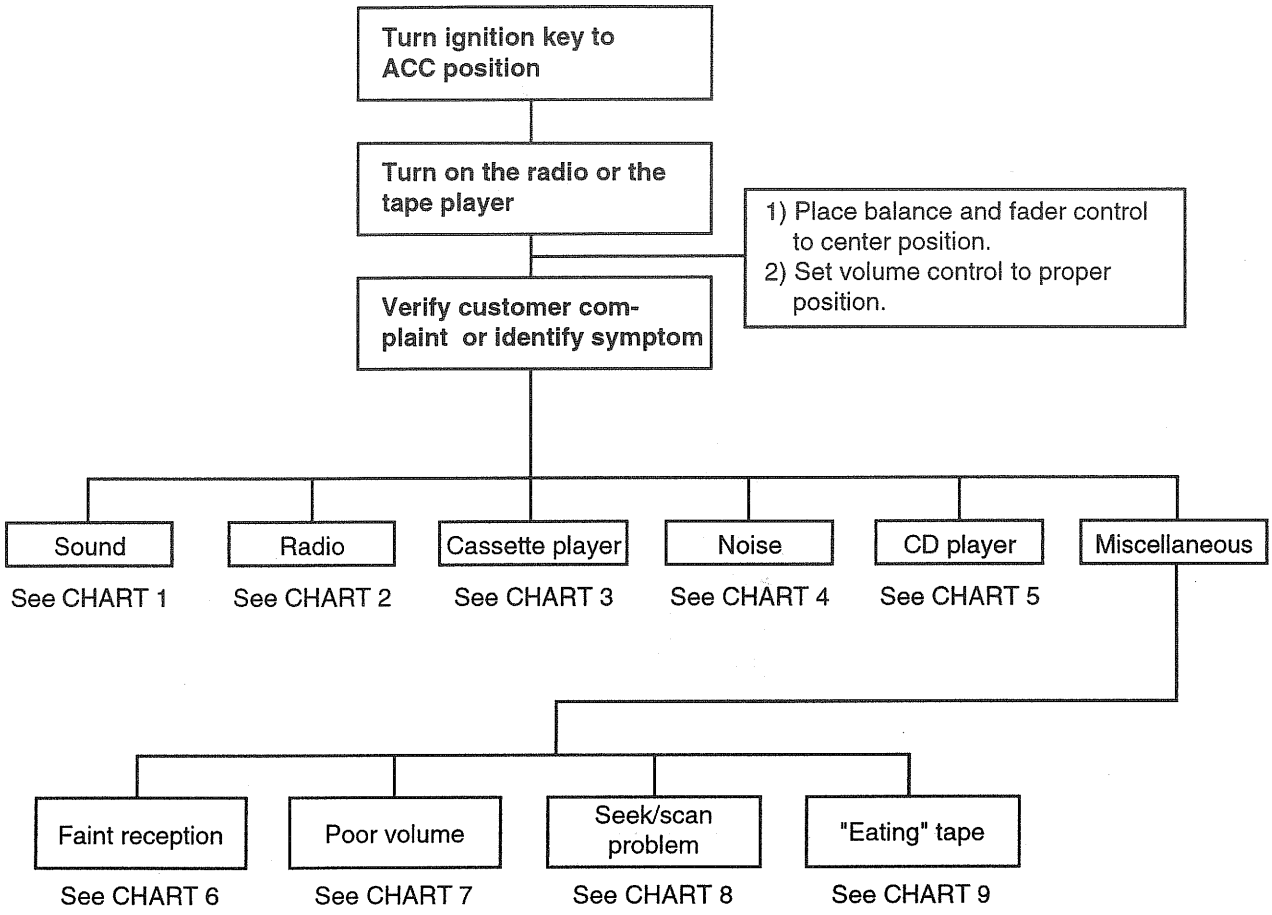
CIRCUIT DIAGRAM EA6859EE



ETRF024C

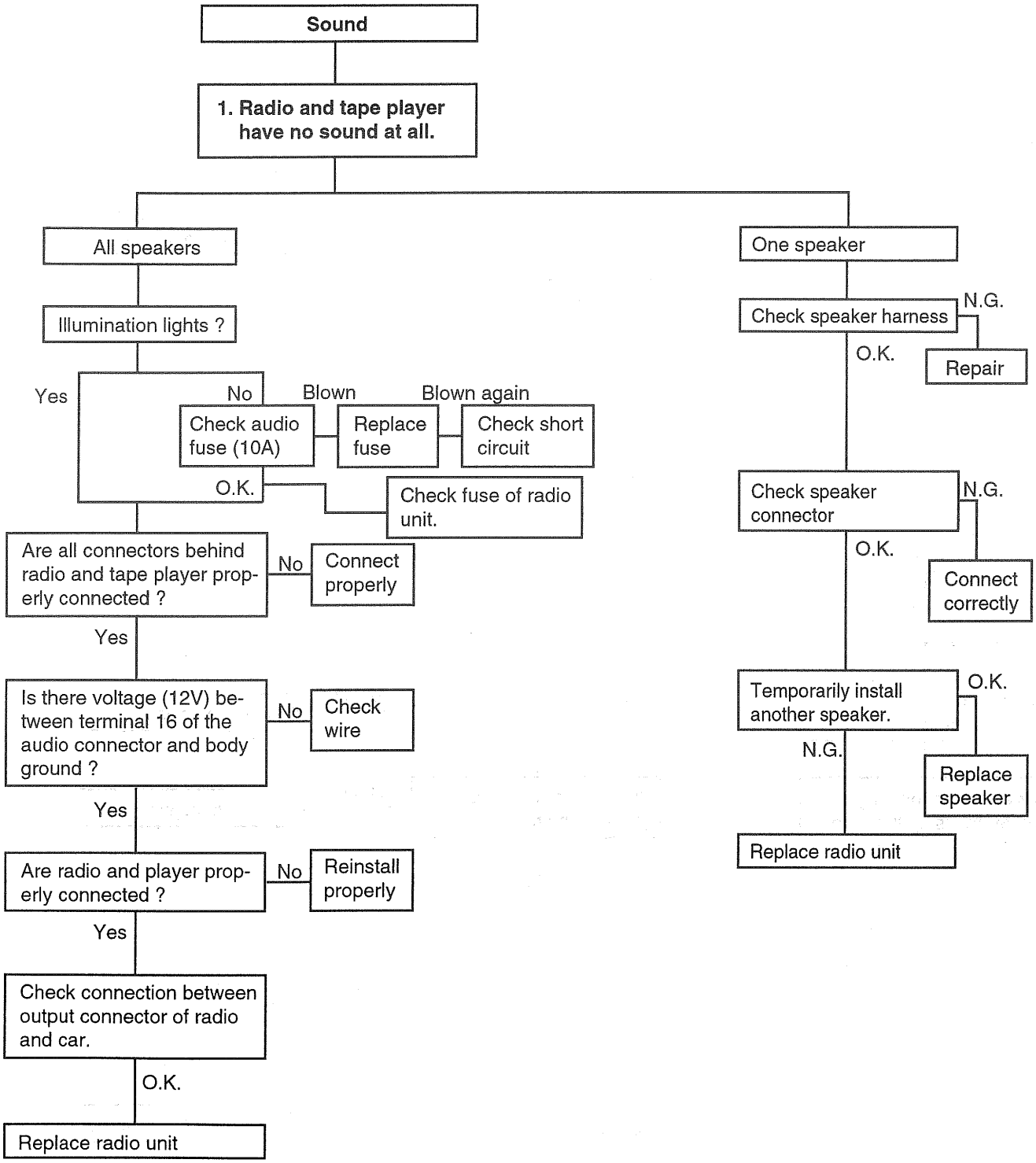
TROUBLESHOOTING ED6221A9

There are six areas where a problem can occur: wiring harness, the radio, the cassette tape deck, the CD player, and speaker. Troubleshooting enables you to confine the problem to a particular area.

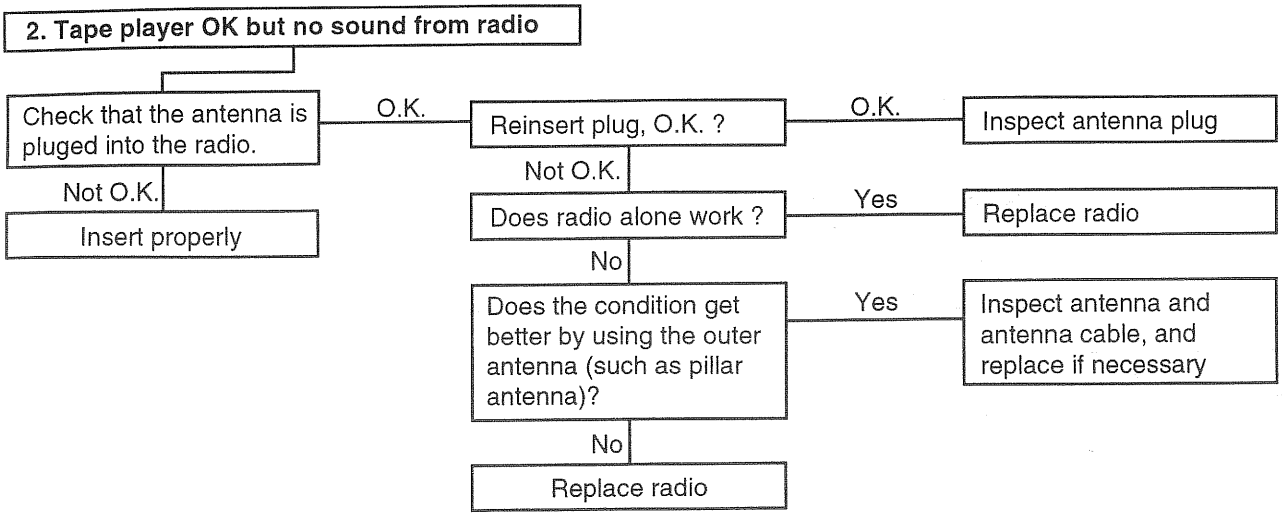


LTIF001A

CHART 1

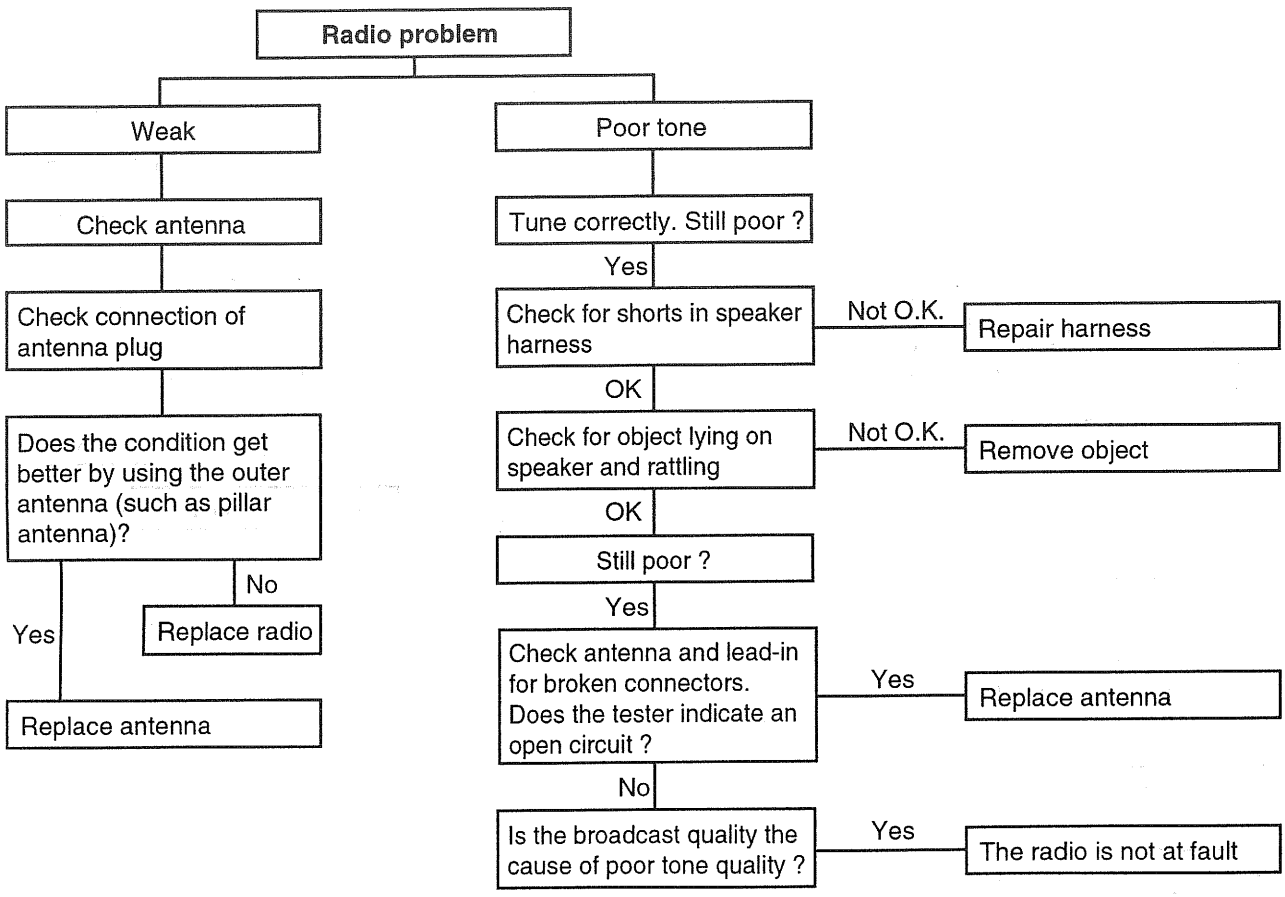


ETRF001B



LTIF001C

CHART 2



BTIF001D