General Troubleshooting Information

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.
   (Refer to the Engine Electrical System - Battery)

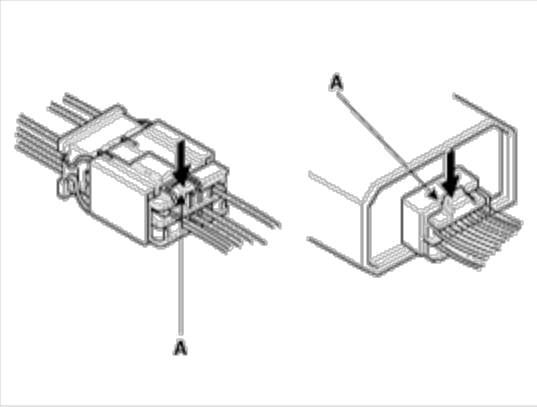
NOTICE

- 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.

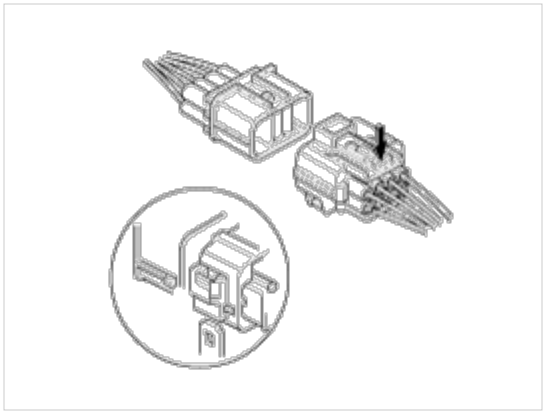
3. Check the alternator belt tension.

Handling Connectors

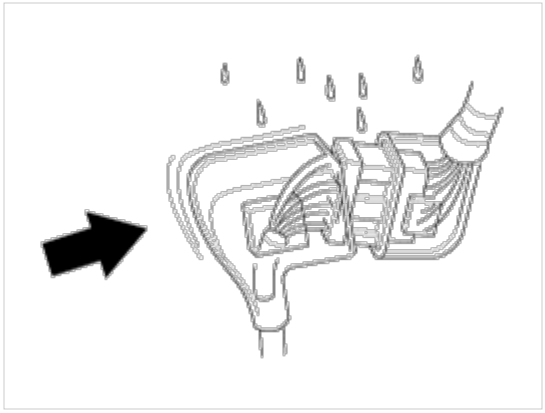
1. Make sure the connectors are clean and have no loose wire terminals.
2. Make sure multiple cavity connectors are packed with grease (except watertight connectors).
3. All connectors have push-down release type locks (A).



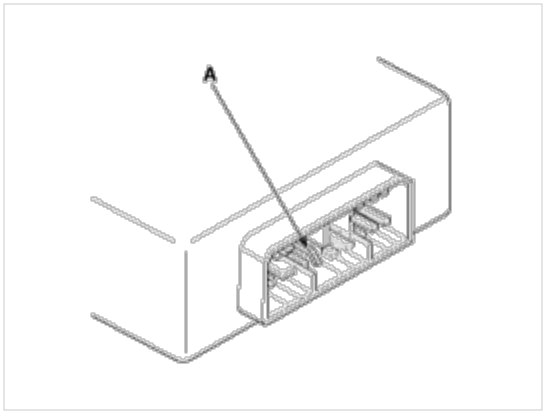
4. Some connectors have a clip on their side used to attach them to a mount bracket on the body or on another component. This clip has a pull type lock.
5. Some mounted connectors cannot be disconnected unless you first release the lock and remove the connector from its mount bracket (A).



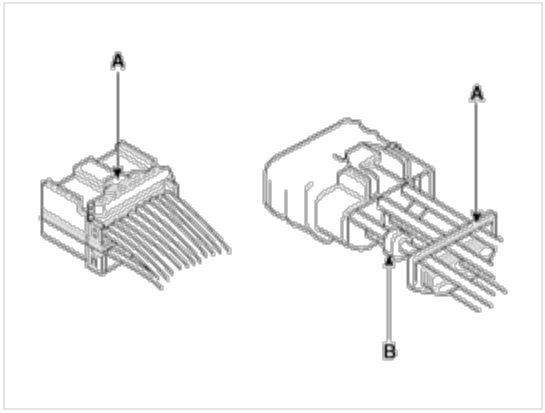
6. Never try to disconnect connectors by pulling on their wires; pull on the connector halves instead.
7. Always reinstall plastic covers.



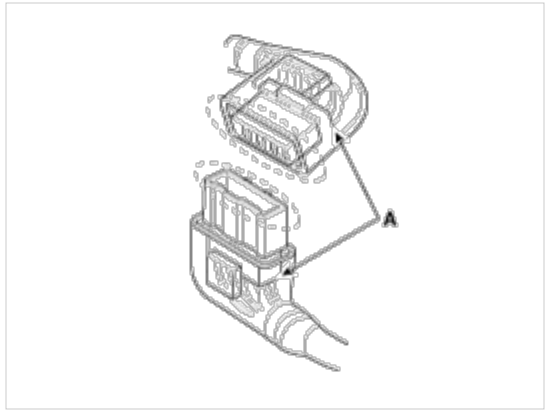
8. Before connecting connectors, make sure the terminals (A) are in place and not bent.



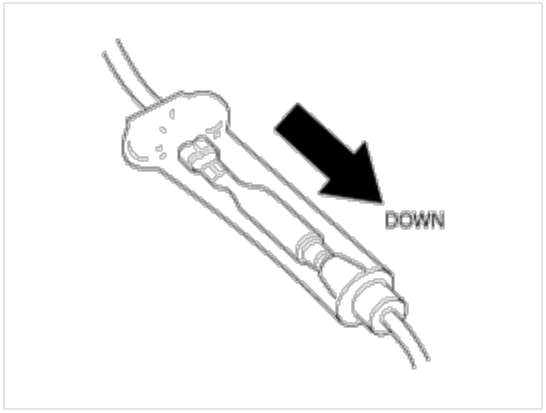
9. Check for loose retainer (A) and rubber seals (B).



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

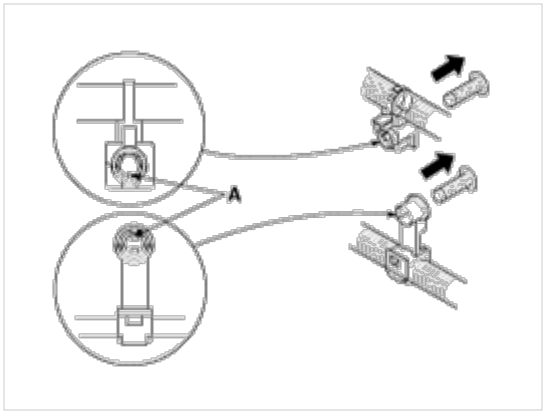


11. Insert the connector all the way and make sure it is securely locked.
12. Position wires so that the open end of the cover faces down.

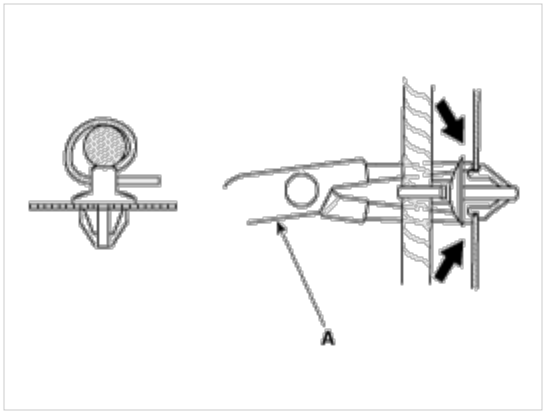


Handling Wires And Harnesses

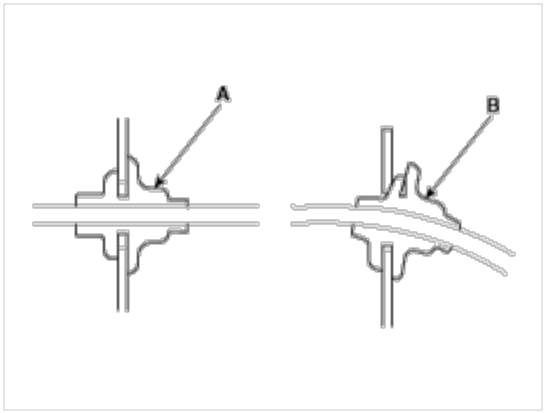
1. Secure wires and wire harnesses to the frame with their respective wire ties at the designated locations.
2. Remove clips carefully; don't damage their locks (A).



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.

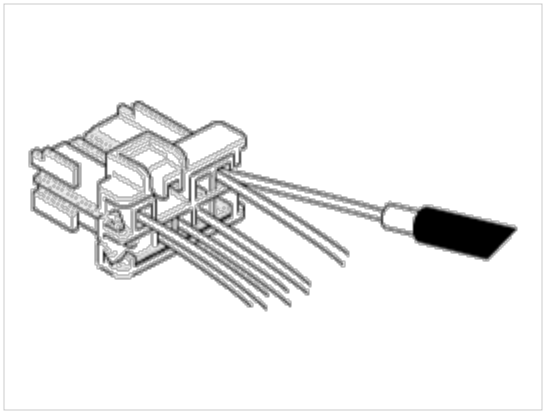


4. After installing harness clips, make sure the harness doesn't interfere with any moving parts.
5. Keep wire harnesses away from exhaust pipes and other hot parts, from sharp edges of brackets and holes, and from exposed screws and bolts.
6. Seat grommets in their grooves properly (A). Do not leave grommets distorted (B).

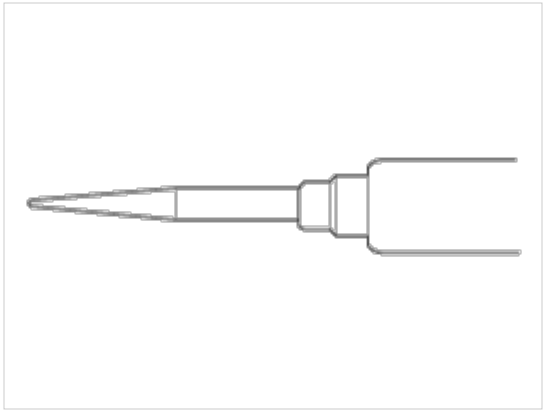


Testing And Repairs

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 remover tool from the wire side (except waterproof connector).



5. Use a remover tool with a tapered tip.



Refer to the user's guide in the wiring repair kit II (Pub. No. : 0K000 003 A05)

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.

Battery Reset

Description

When reconnecting the battery cable after disconnecting, recharging battery after discharged or installing the memory fuse located on the driver's side panel after removing, be sure to reset systems mentioned on the below table.

In addition, when replacing or reinstalling their fuses after removing, they should be reset according to the below table. Please refer to the below table when servicing.

SYSTEM	RESETTING
Auto up/down window	Whenever the battery is disconnected, discharged or the related fuse is replaced or reinstalled, reset the Auto up/down window system according to the procedure below. 1) Turn the ignition switch to the ON position. 2) Pull up the power window switch in order that the window can close completely, and then keep pulling up the power switch for about 1 second.
Sunroof	Whenever the vehicle battery is disconnected or discharged, or you use the emergency handle to operate the sunroof, you have to reset your sunroof system as follows : 1. Turn the ignition key to the ON position and then close the sunroof completely. 2. Release the sunroof control lever. 3. Press and hold the CLOSE button for more than 10 seconds until the sunroof closed and it has moved slightly. 4. Release the sunroof control lever. 5. Press and hold the CLOSE button once again within 5 seconds until the sunroof do as follows; A. Tilt → Slide Open → Slide Close Then release the lever. 6. Reset procedure of panorama system is finished.
Trip computer	When the battery is disconnected and reconnected, the set functions of the trip computer become initialized. So, you need to explain this information to the customer.
Clock	When the battery is disconnected and reconnected, the clock becomes initialized. So, the clock should be reset.
Audio	When the battery is disconnected and reconnected, the customer's radio stations become initialized. So, you need to record the customer's radio stations prior to service, and after service, set the customer's radio stations into the audio.

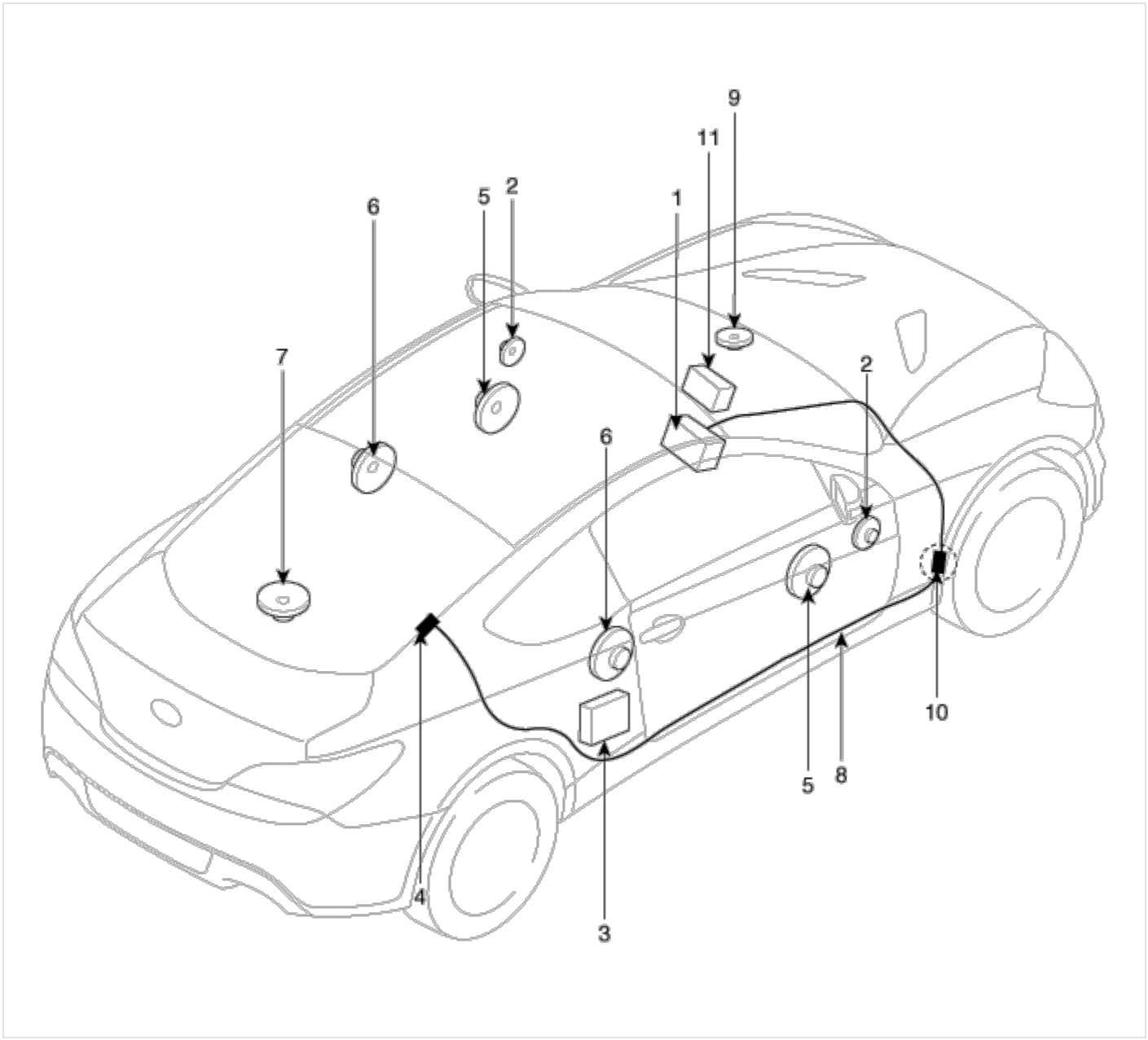
Specification

Audio

Item	Specification	

Model		RADIO/CD/MP3/XM	RADIO/CDC/MP3/XM
Power supply		DC 14.4 V	DC 14.4 V
Rated output		Max. 43 W x 4	Max. 3.2 Vrms
Antenna		80 PF 75 Ω	
Tuning type		PLL synthesized tuning	
Other		Internal Amplifier	External Amplifier
Frequency range / Channel space	FM	87.5 ~ 107.9 MHz/200 KHz	
	AM	NAS, CAN : 530 ~ 1710 KHz/9 KHz, GUAM : 531~1701 KHz/9 KHz	

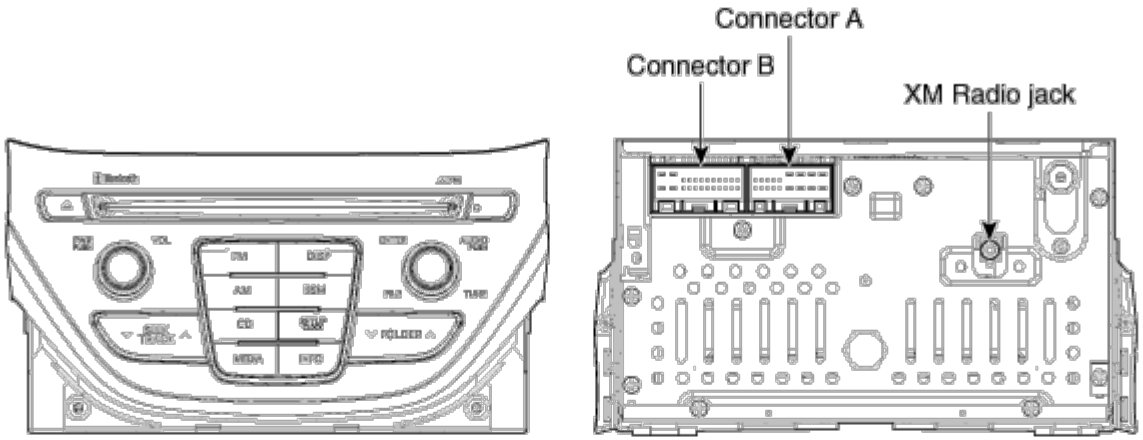
Component Location


9
11
6
5
2
1
7
2
6
10
5
8
4
3

1. Audio unit	7. Woofer speaker
2. Tweeter speaker	8. Antenna feeder cable
3. External amp	9. Crash pad center speaker
4. Glass antenna	10. Feeder cable joint connector
5. Front door speaker	11. Audio monitor
6. Rear speaker	12. Aux jack

Components

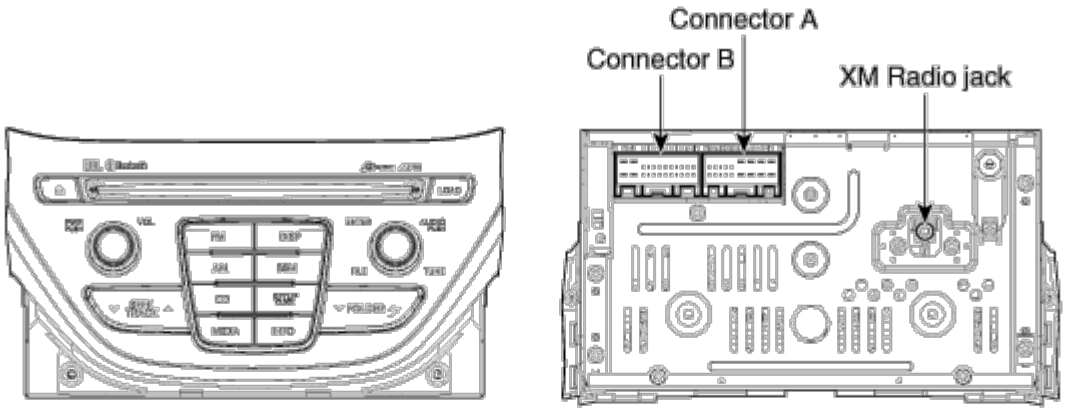
[RADIO/CD/MP3 - Internal AMP]

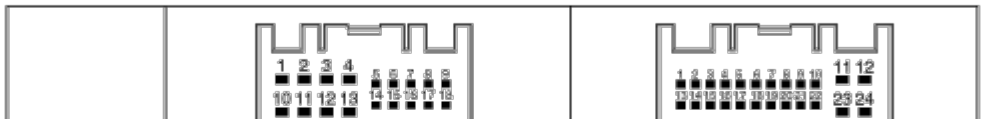


Pin No.	Connector A	Connector B
1	Speaker RL (+)	CAN High
2	Speaker FL (+)	-
3	Speaker FR (+)	Temp
4	Speaker RR (+)	Steering remote
5	-	-
6	-	USB D (+)

7	-	USB/iPod VDD
8	Illumination (+)	AUX R Input
9	-	AUX GND
10	Speaker RL (-)	MIC (+) (Bluetooth)
11	Speaker FL (-)	ACC
12	Speaker FR (-)	B (+)
13	Speaker RR (-)	CAN Low
14	-	-
15	-	-
16	External keyboard	Vehicle speed
17	Illumination (-)	Steering remote GND
18	Remote antenna	USB D (-)
19		USB / iPod GND
20		AUX detect
21		AUX L Input
22		MIC (-) (Bluetooth)
23		-
24		Power GND

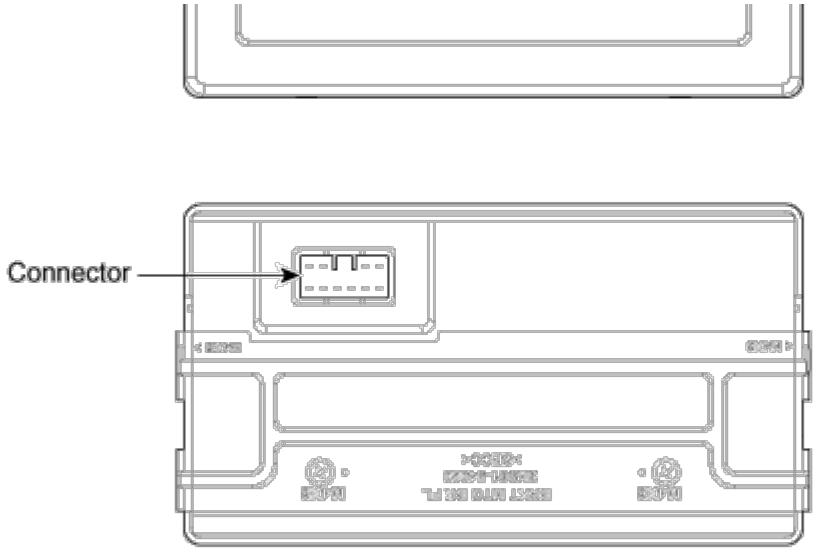
[RADIO/CD/MP3 - External AMP]

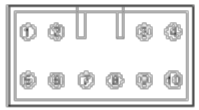




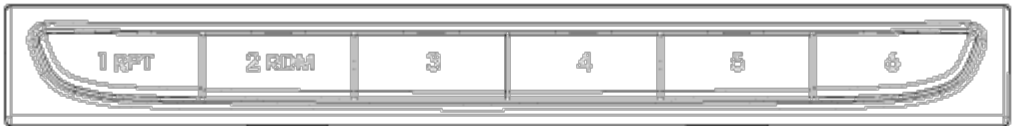
Pin No.	Connector A	Connector B
1	-	CAN High
2	-	-
3	-	Temp
4	-	Steering remote
5	SPDIF GND	-
6	SPDIF DN	USB D (+)
7	-	USB / iPod VDD
8	Illumination (+)	AUX R Input
9	-	AUX GND
10	-	MIC + (Bluetooth)
11	-	ACC
12	-	B+
13	-	CAN Low
14	-	-
15	SPDIF DP	-
16	External keyboard	Vehicle speed
17	Illumination (-)	Steering remote GND
18	Remote antenna	USB D (-)
19		USB / iPod GND
20		AUX DETECT
21		AUX L Input
22		MIC - (Bluetooth)
23		-
24		Power GND

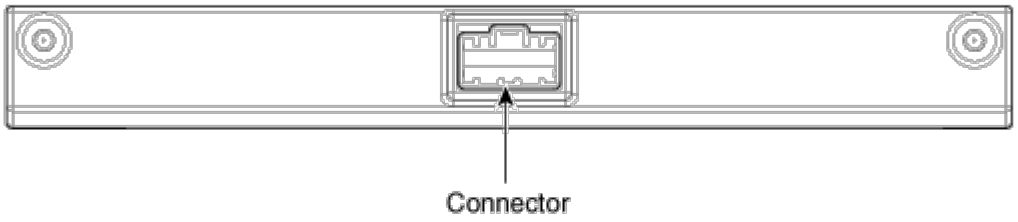
[Audio Monitor]

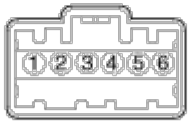


Connector	No.	Name	No.	Name
	1	ILL (-)	6	-
	2	-	7	CAN -
	3	-	8	CAN +
	4	Power ground	9	ACC
	5	ILL (+)	10	Battery

[External Keyboard]



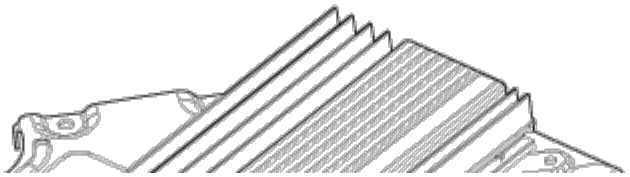


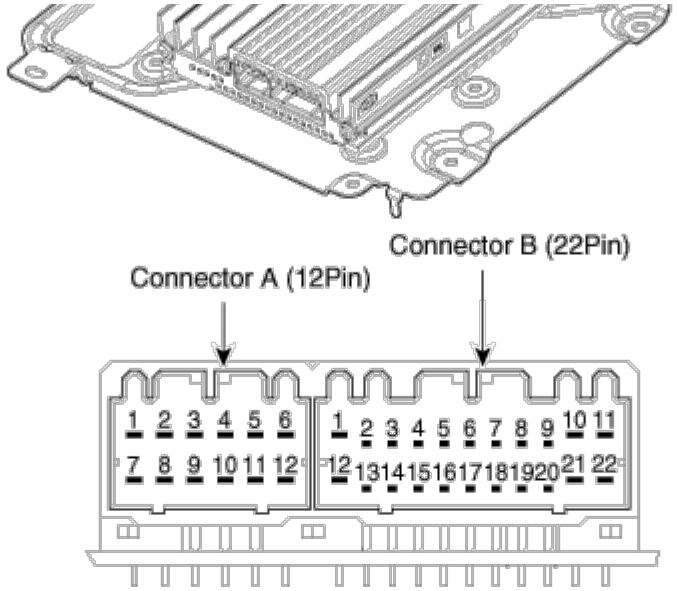


Connector

Pin No.	Description
1	Power GND
2	External keyboard
3	-
4	-
5	Illumination (+)
6	Illumination (-)

[External Amplifier]





No.	Connector A	Connector B
1	Front left door(+)	Front center(+)
2	Front Right door(+)	-
3	Rear left door(+)	-
4	Rear Right door(+)	-
5	Subwoofer 2(+)	NAVI(+)
6	Subwoofer 1(+)	ACC
7	Front left door(-)	CAN (-)
8	Front Right door(-)	CAN (+)
9	Rear left door(-)	-
10	Rear Right door(-)	Battery
11	Subwoofer 2(-)	Battery
12	Subwoofer 1(-)	Front center(-)
13		-
14		-
15		-
16		NAVI(-)
17		SPDIF Signal
18		SPDIF (-)
19		SPDIF (+)
20		-
21		GND

21	GND
22	GND

Body Electrical System

Installation

Audio Head Unit

1. Connect the audio unit connectors and cables.
2. Install the audio unit.
3. Install the center fascia lower panel.
4. Install the console upper cover.
5. Check the audio system.

NOTICE

Make sure the audio head unit connectors are plugged in properly and the antenna cable is connected properly.

Audio Monitor

1. Install the audio monitor.
2. Install the upper cover and connect the external keyboard connector.
3. Install the center fascia upper panel.

Body Electrical System

Installation

Front Speaker

1. Install the front speaker with rivets.
2. Install the front door trim.

Rear Speaker

1. Install the rear speaker.
2. Install the rear side trim.
3. Install the rear seat.

Crash pad center speaker

1. Install the center speaker.
2. Install the center speaker cover.

Tweeter Speaker

1. Install the tweeter speaker after connecting the tweeter speaker connector.
2. Install the front door trim.

Woofer Speaker

1. Install the woofer speaker after connecting the connector.
2. Install the rear package tray and rear seat assembly.

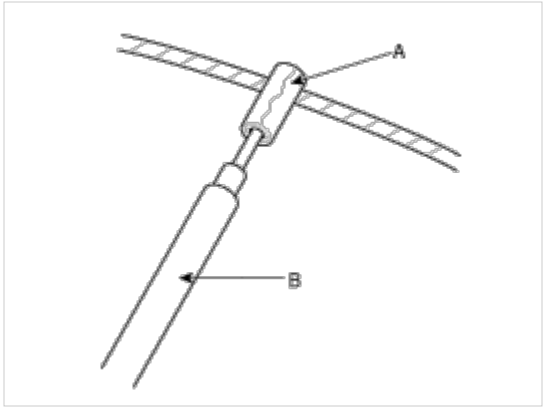
External Amp

1. Install the external amplifier after connecting the connector.
2. Install the rear right side trim.

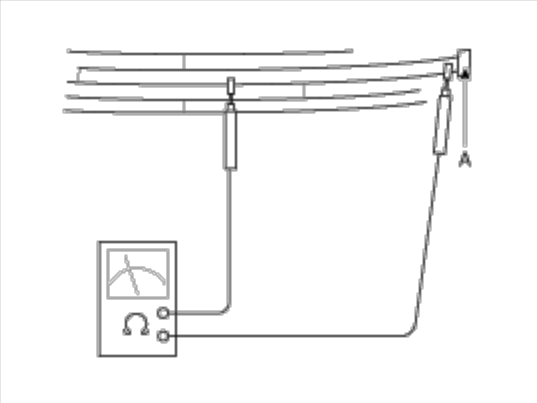
Inspection

Glass Antenna Test

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



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

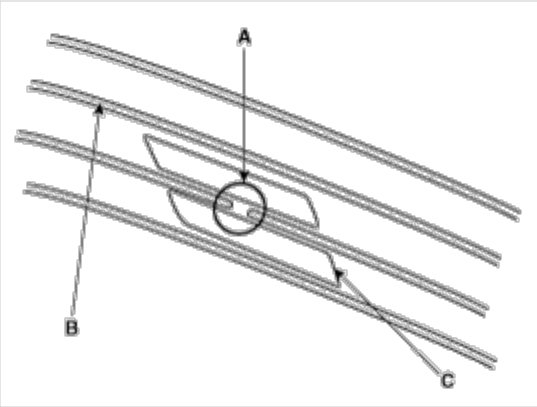


Glass Antenna Repair

NOTICE

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

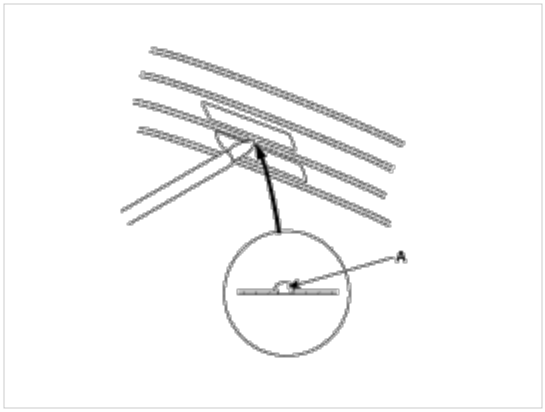
1. Lightly rub the area around the broken section (A) with fine steel wool, and then clean it with alcohol.



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.

NOTICE

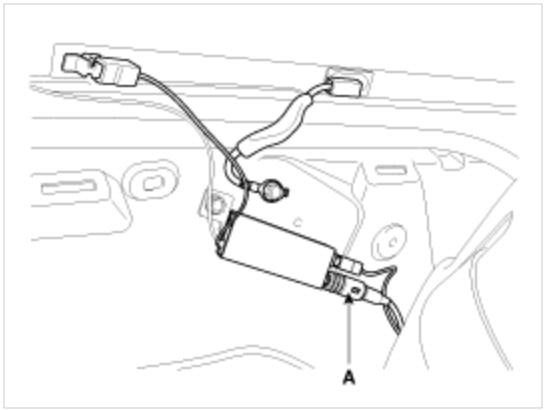
Thoroughly mix the paint before use.



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.

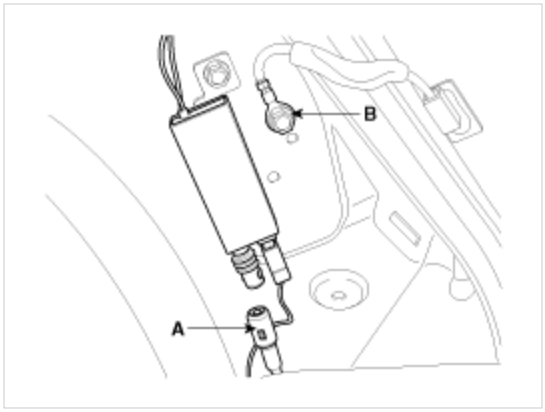
Glass Antenna Circuit Inspection

1. Remove the right side rear quarter trim.
   Then disconnect the antenna feeder cable(A) from the glass antenna amp.

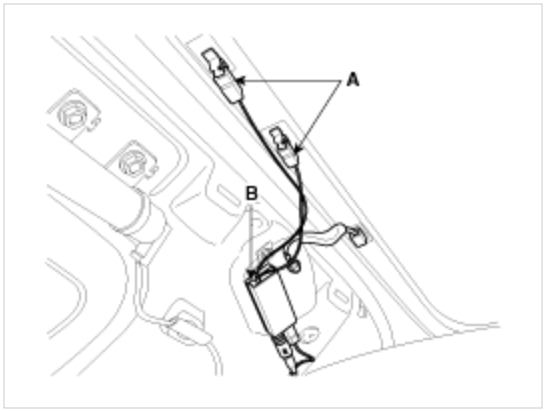


2. Turn the radio ON.
   Measure the voltage between terminal 2 of the harness side feeder cable(A) and body ground(B).

OK :approximately 12V (ACC+)



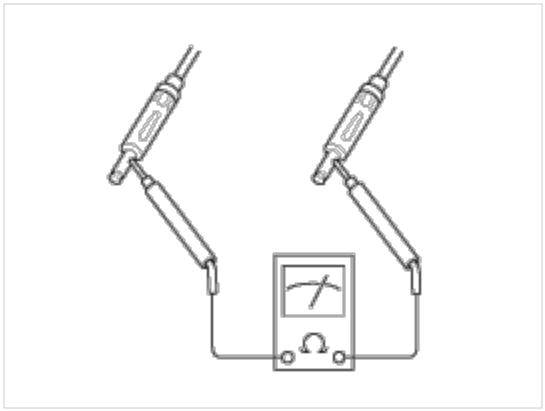
3. Disconnect the 2P connector of radio wiring from the glass antenna amp.
4. Check for continuity between terminals of harness side connector(B) and antenna grid terminals(A).



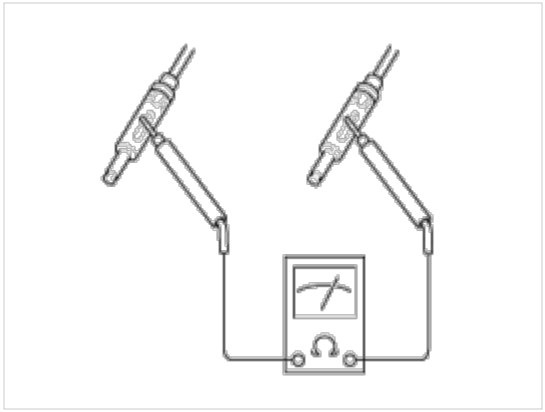
5. Check the grid lines for continuity.
6. When a poor radio reception is not repaired through the above inspection methods, replace the amp. If the radio reception is still poor, check the radio cable for short and radio head unit for failure.

Antenna Cable

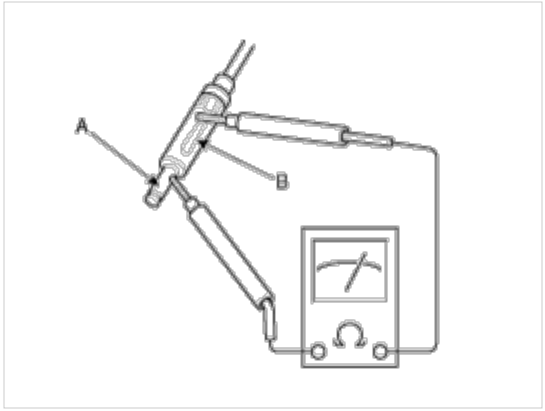
1. Remove the antenna jack from the audio unit and antenna.
2. Check for continuity between the center poles of antenna cable.



3. Check for continuity between the outer poles of antenna cable. There should be continuity.



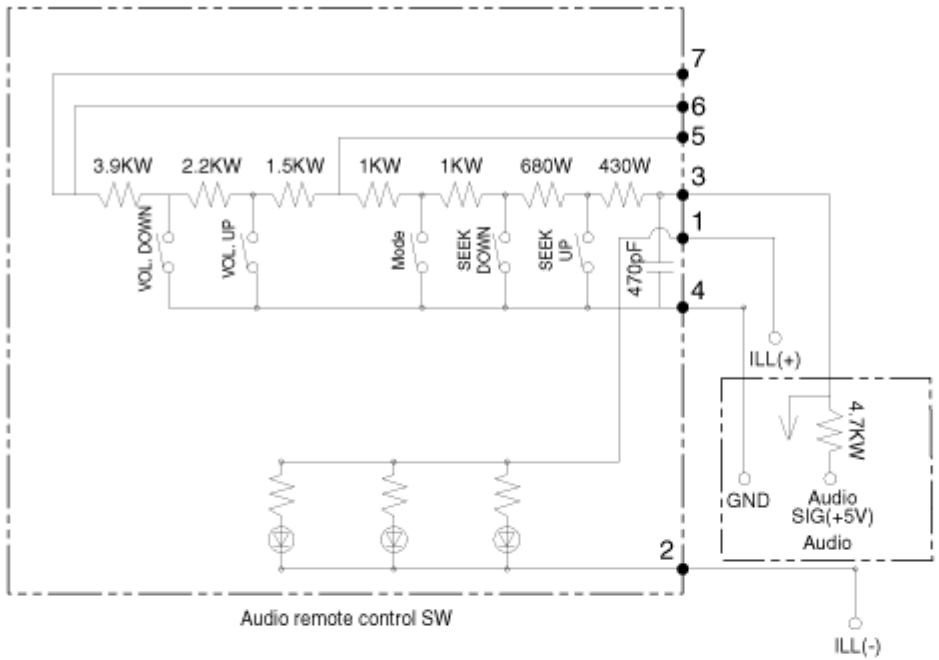
4. If there is no continuity, replace the antenna cable.
5. Check for continuity between the center pole (A) and outer pole (B) of antenna cable. There should be no continuity.

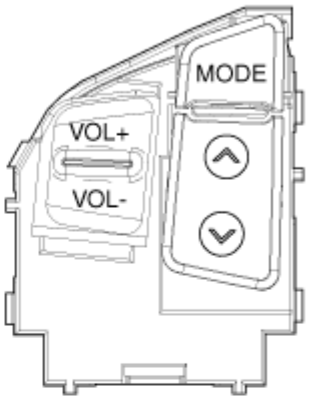


6. If there is continuity, replace the antenna cable.

Body Electrical System

Circuit Diagram





Pin No.	Name
1	ILL (+)
2	ILL (-)
3	Audio (+)
4	Audio (-)
5	Mute Out
6	

6	-
7	-
8	-

Body Electrical System

Installation

1. Reassemble the steering wheel remote control switch after connecting the connector.
2. Reassemble the steering wheel.
3. Reassemble the driver airbag module.

NOTICE

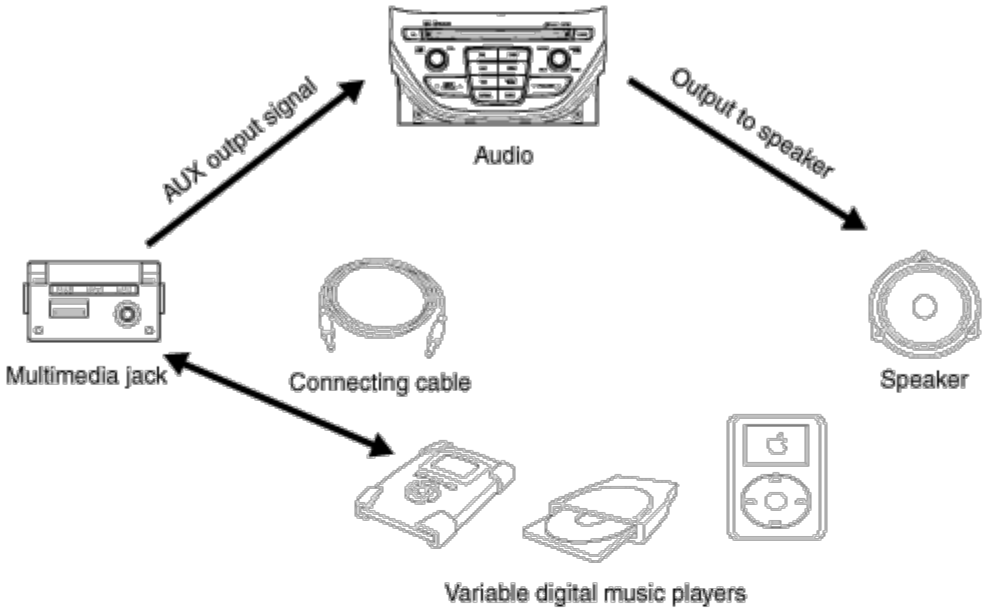
Make sure the audio remote control switch and the airbag module connectors are plugged in properly.

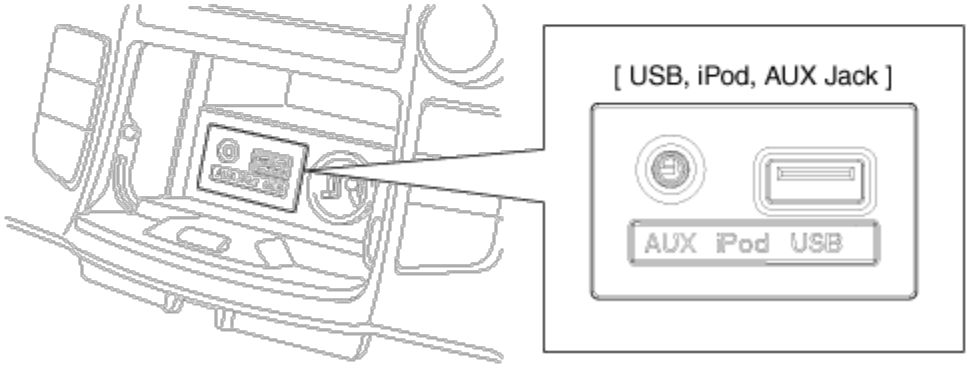
Body Electrical System

Description

The multimedia jack on the console upper cover is for customers who like to listen to external portable music players like the MP3, iPod and etc., through the vehicle's sound system when it is linked to this jack. The customer has this added option.

In case of distortions from media connected to the AUX source, the audio unit may not be defect but the output level of the used media does not match the specification of the AUX input.


AUX output signal
Audio
Output to speaker
Multimedia jack
Connecting cable
Speaker
Variable digital music players


[USB, iPod, AUX Jack]
AUX iPod USB

Installation

1. Install the multimedia jack.
2. Connect the AUX jack connector.
3. Install the center fascia lower pannel.

NOTICE

Make sure the Aux connector and the console connectors are plugged in properly.

Troubleshooting

Customer Complaint Analysis Check Sheet

TROUBLE IN	☐ ALL ☐ AM ☐ FM ☐ CD ☐ MP3 ☐ CD changer ☐ AMP ☐ Others
TROUBLE OCCURS	☐ Always ☐ Engine start ☐ Engine Running ☐ Cold ☐ Warm ☐ Sometimes ☐ Most of the time ☐ Engine off
TYPE OF TROUBLE	☐ Will not play ☐ Weak ☐ Squealing noise ☐ Display/illumination poor ☐ CD skips & jumps ☐ CD will not eject or insert ☐ Others (Describe) :
OTHERS	▶ Customer complaint contents : ▶ Have you checked customer's defects :
✶ Using the customer complaint analysis check sheet for reference, ask the customer for as much detail as possible about the problem.	

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

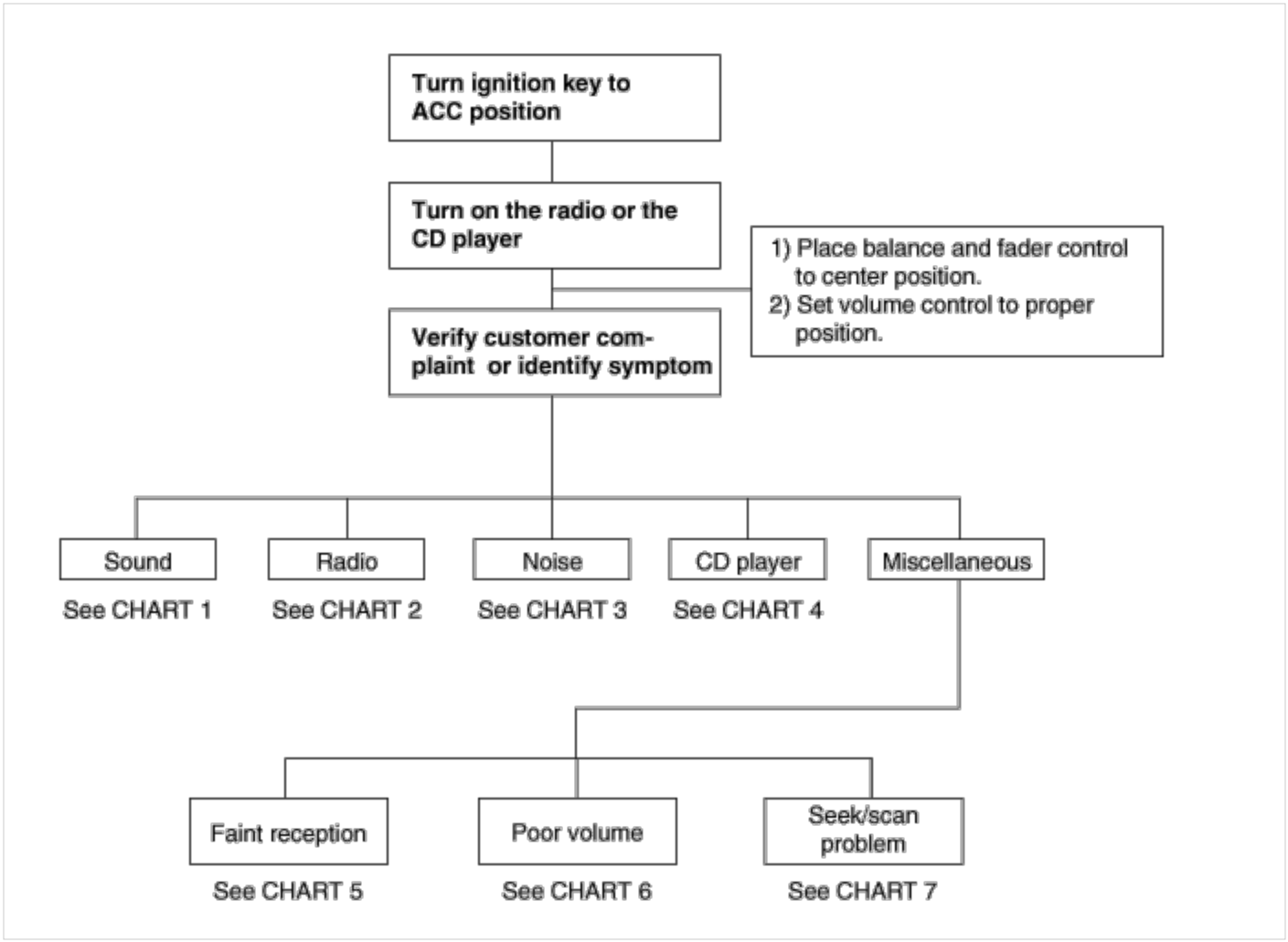
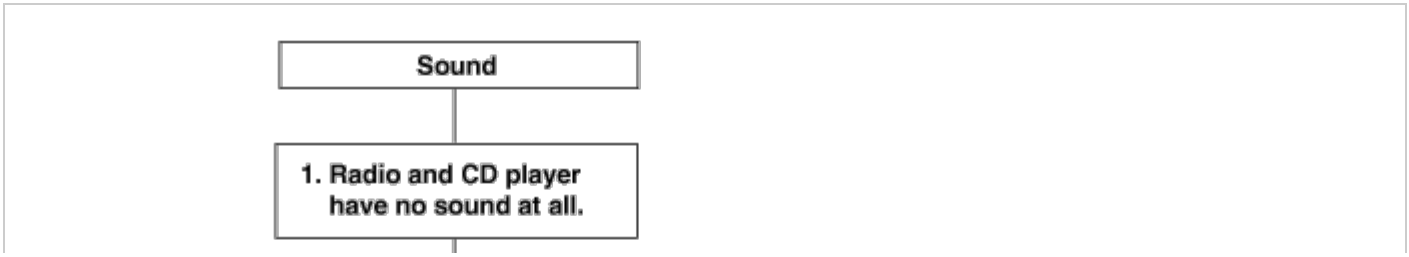
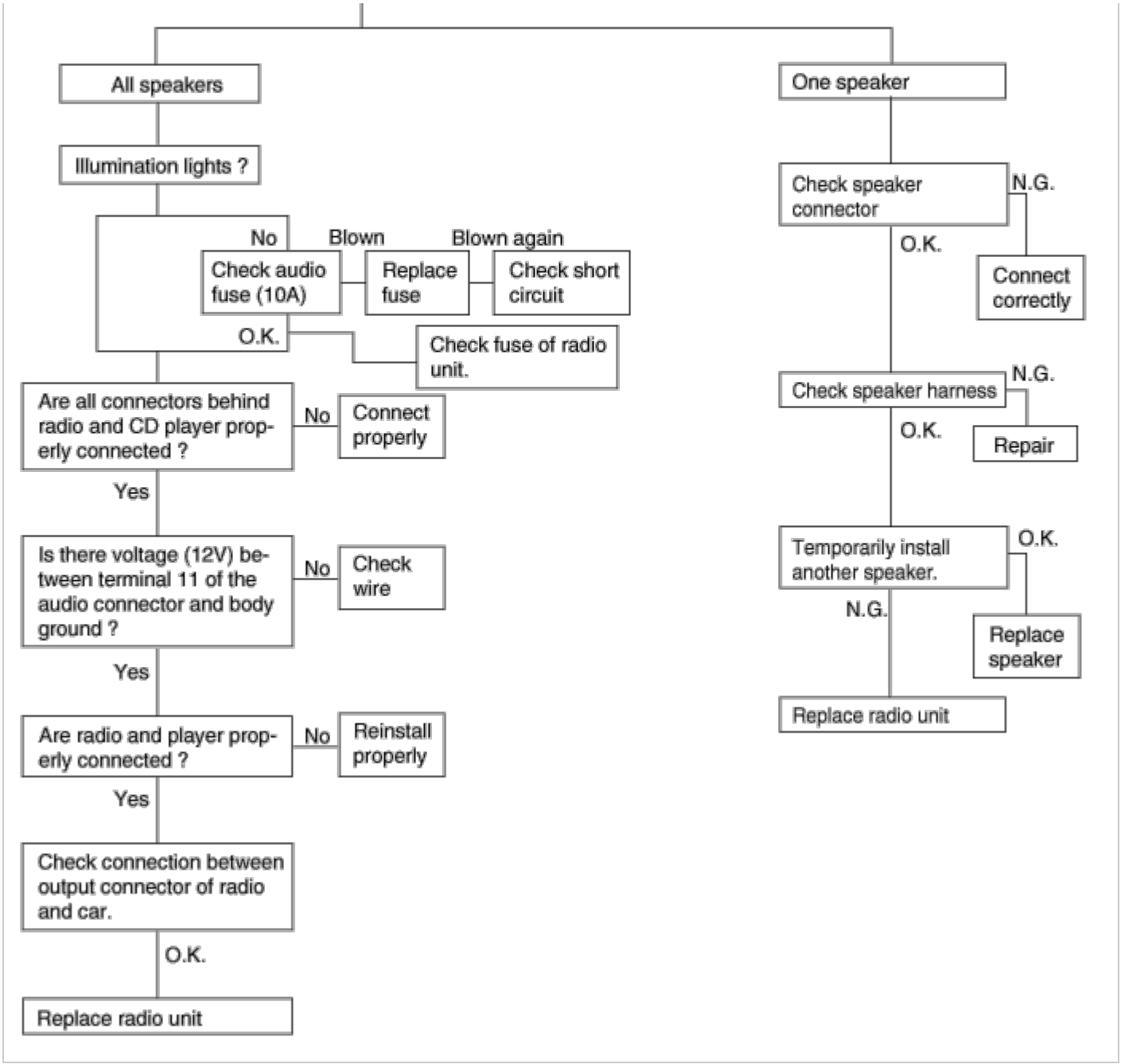

Turn ignition key to ACC position
Turn on the radio or the CD player
1) Place balance and fader control to center position.
2) Set volume control to proper position.
Verify customer complaint or identify symptom
Sound
See CHART 1
Radio
See CHART 2
Noise
See CHART 3
CD player
See CHART 4
Miscellaneous
Faint reception
See CHART 5
Poor volume
See CHART 6
Seek/scan problem
See CHART 7

Chart 1


Sound
1. Radio and CD player have no sound at all.


All speakers
Illumination lights ?
No
Blown
Blown again
Check audio fuse (10A)
Replace fuse
Check short circuit
O.K.
Check fuse of radio unit.
Are all connectors behind radio and CD player properly connected ?
No
Connect properly
Yes
Is there voltage (12V) between terminal 11 of the audio connector and body ground ?
No
Check wire
Yes
Are radio and player properly connected ?
No
Reinstall properly
Yes
Check connection between output connector of radio and car.
O.K.
Replace radio unit
One speaker
Check speaker connector
N.G.
O.K.
Connect correctly
Check speaker harness
N.G.
O.K.
Repair
Temporarily install another speaker.
O.K.
N.G.
Replace speaker
Replace radio unit

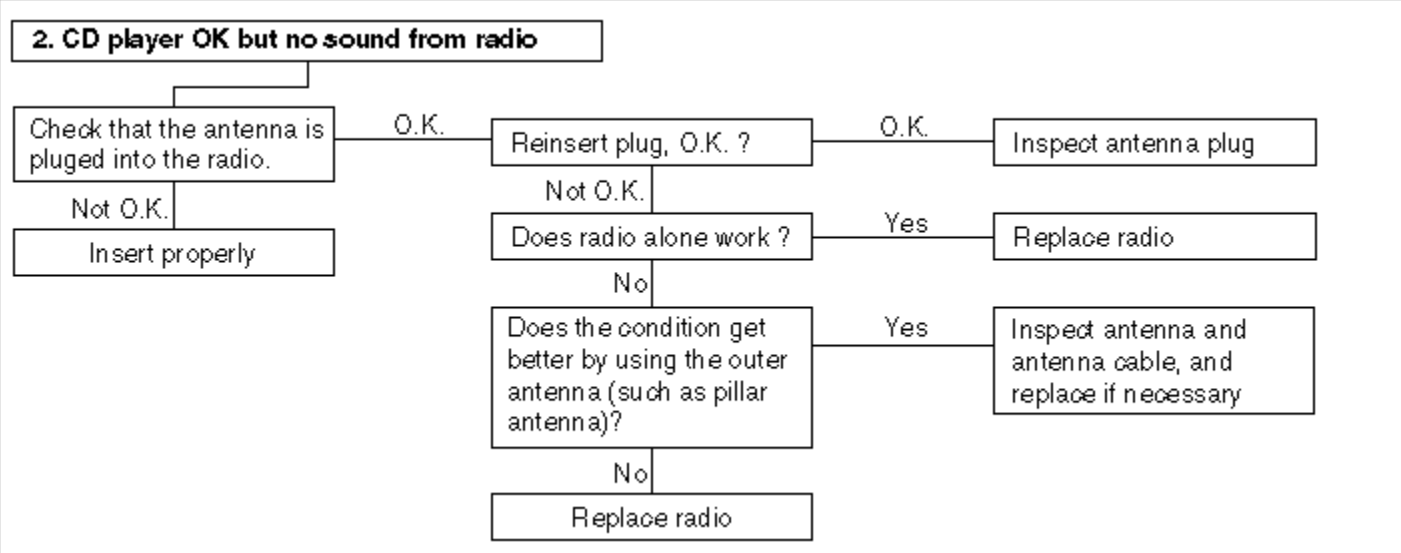

2. CD player OK but no sound from radio
Check that the antenna is pluged into the radio.
O.K.
Reinsert plug, O.K. ?
O.K.
Inspect antenna plug
Not O.K.
Insert properly
Not O.K.
Does radio alone work ?
Yes
Replace radio
No
Does the condition get better by using the outer antenna (such as pillar antenna)?
Yes
Inspect antenna and antenna cable, and replace if necessary
No
Replace radio

Chart 2

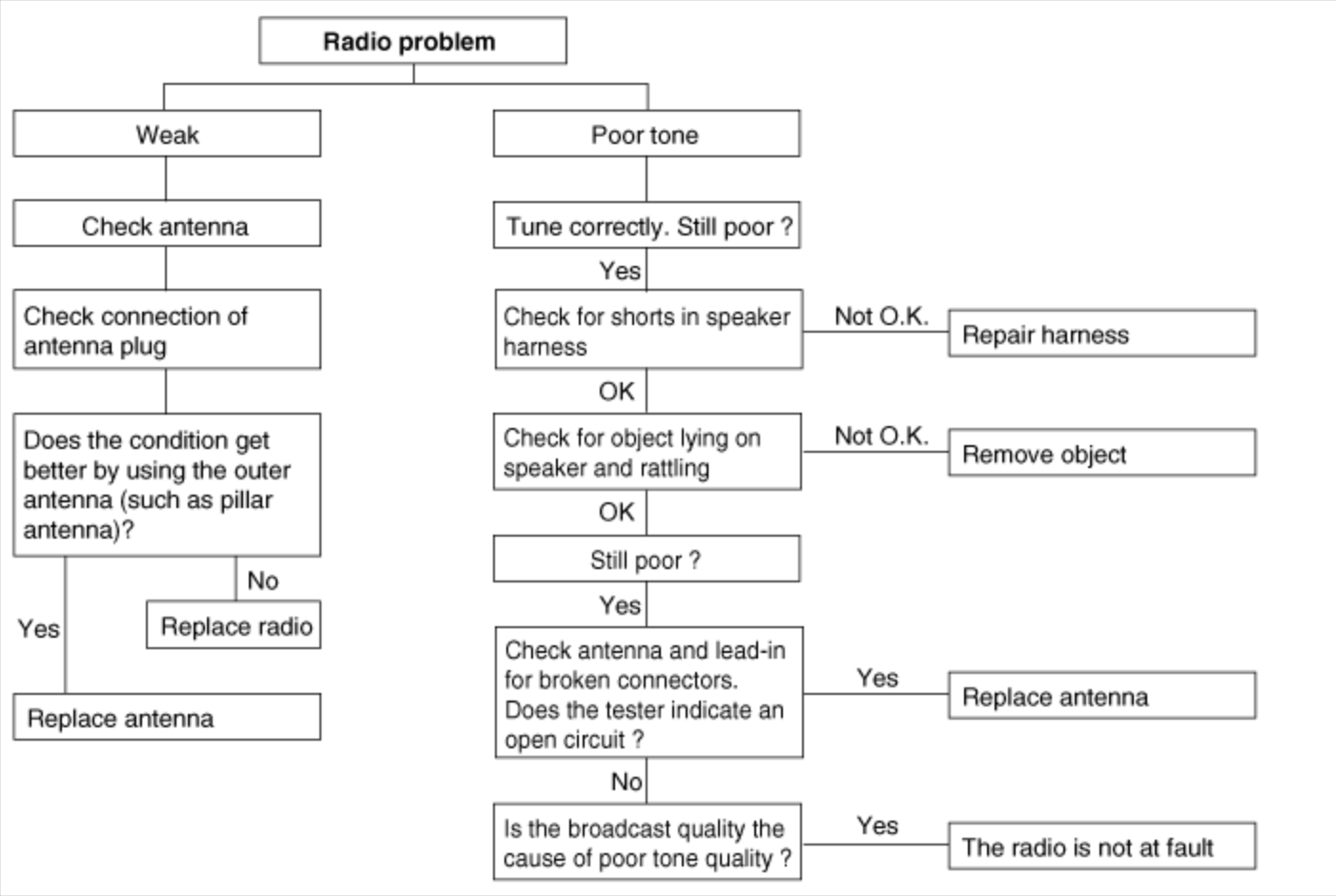

Radio problem
Weak
Check antenna
Check connection of antenna plug
Does the condition get better by using the outer antenna (such as pillar antenna)?
No
Yes
Replace radio
Replace antenna
Poor tone
Tune correctly. Still poor ?
Yes
Check for shorts in speaker harness
Not O.K.
Repair harness
OK
Check for object lying on speaker and rattling
Not O.K.
Remove object
OK
Still poor ?
Yes
Check antenna and lead-in for broken connectors. Does the tester indicate an open circuit ?
Yes
Replace antenna
No
Is the broadcast quality the cause of poor tone quality ?
Yes
The radio is not at fault

Chart 3

1. RADIO

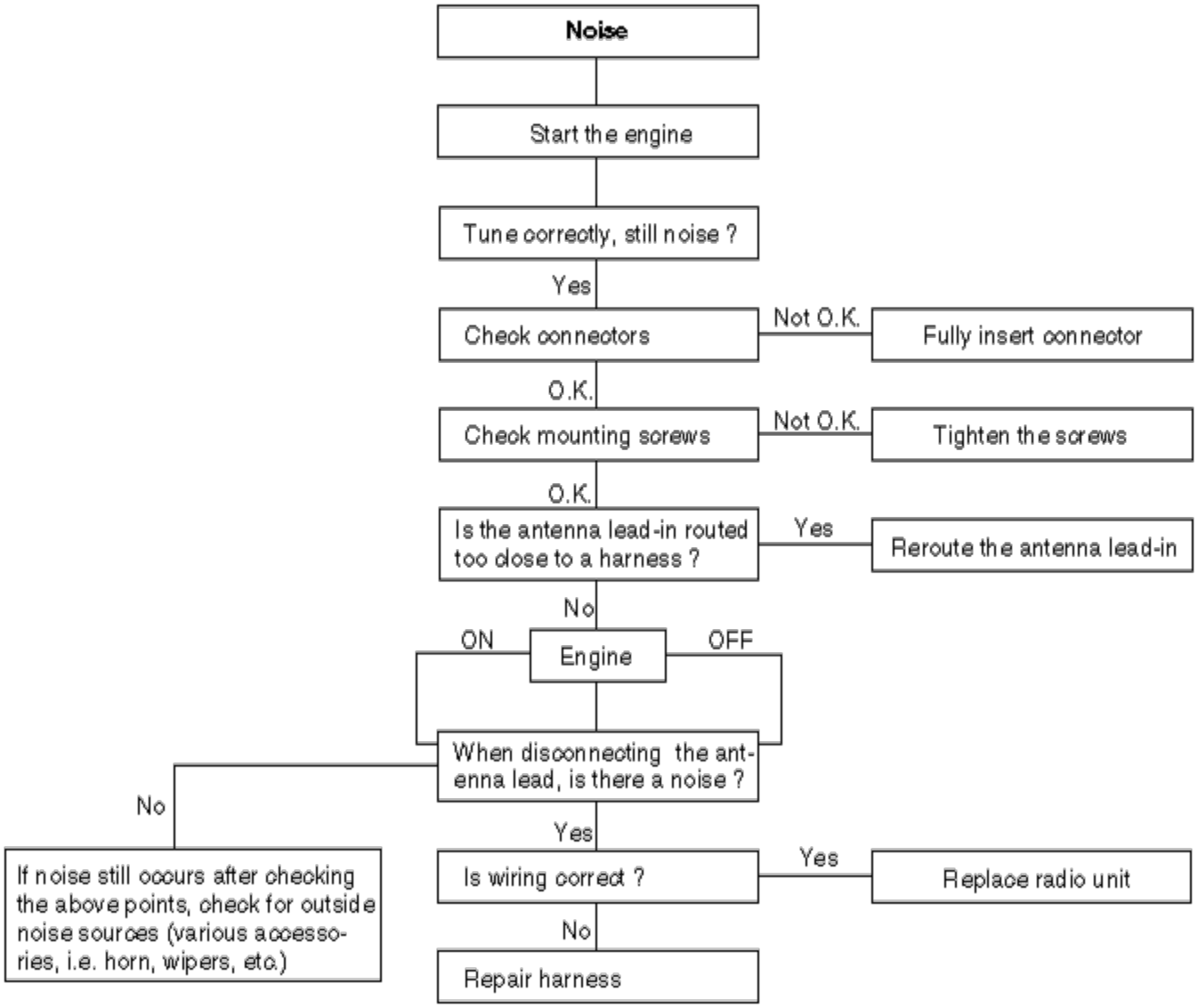
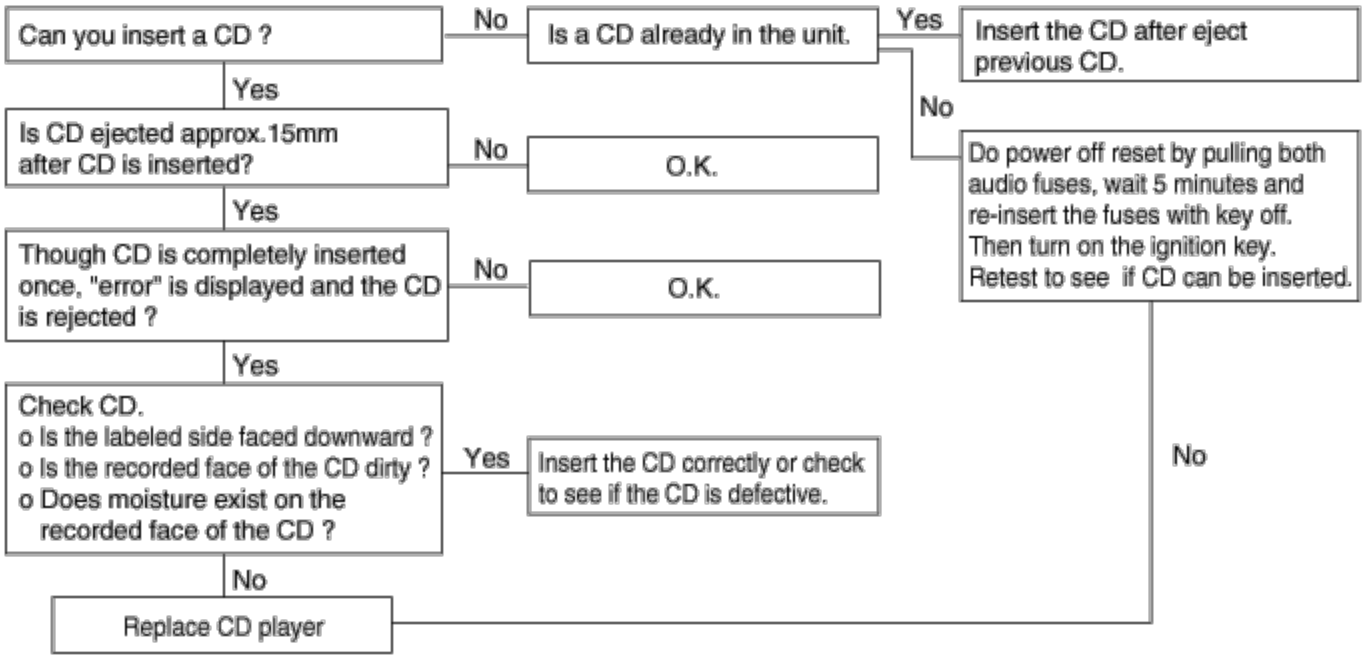
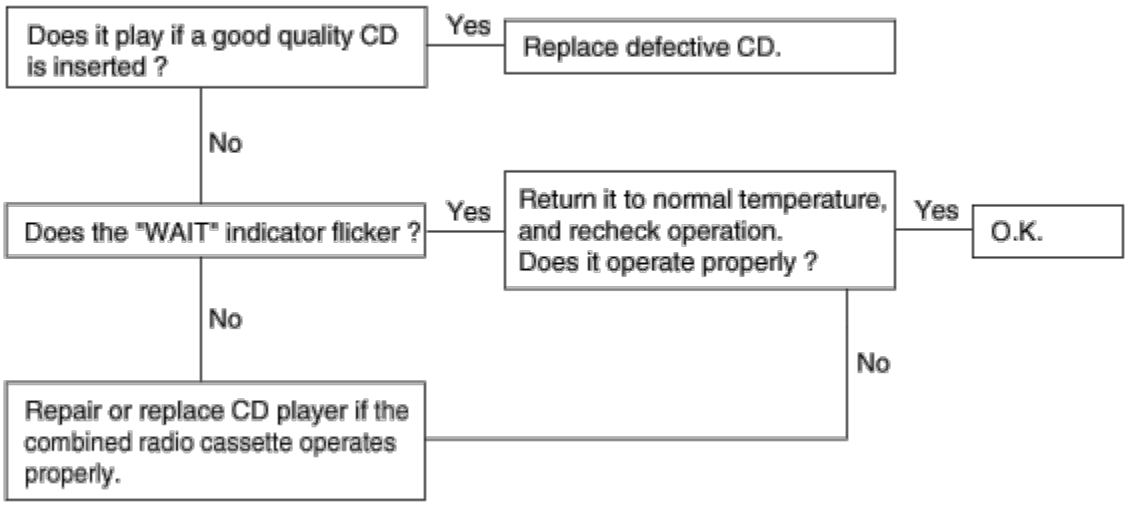

Noise
Start the engine
Tune correctly, still noise ?
Yes
Check connectors
Not O.K.
Fully insert connector
O.K.
Check mounting screws
Not O.K.
Tighten the screws
O.K.
Is the antenna lead-in routed too close to a harness ?
Yes
Reroute the antenna lead-in
No
ON
Engine
OFF
When disconnecting the antenna lead, is there a noise ?
No
Yes
If noise still occurs after checking the above points, check for outside noise sources (various accessories, i.e. horn, wipers, etc.)
Is wiring correct ?
Yes
Replace radio unit
No
Repair harness

Chart 4

1. CD WILL NOT BE ACCEPTED

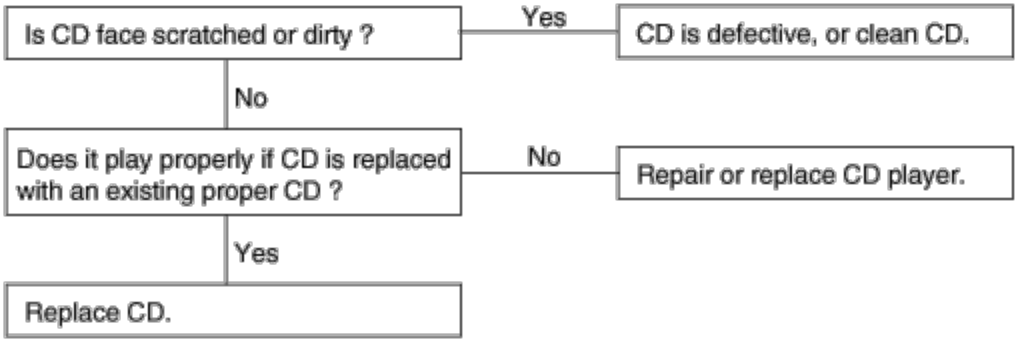


2. NO SOUND

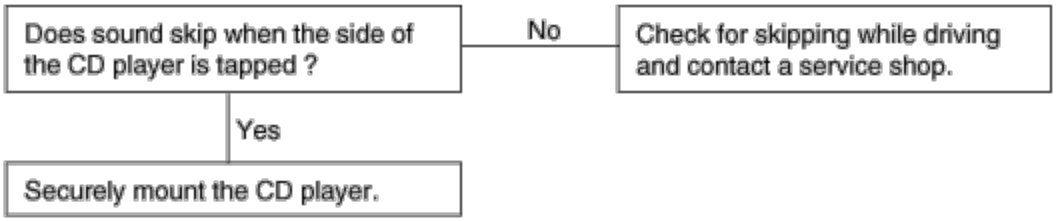

Does it play if a good quality CD is inserted ?
Yes
Replace defective CD.
No
Does the "WAIT" indicator flicker ?
Yes
Return it to normal temperature, and recheck operation. Does it operate properly ?
Yes
O.K.
No
No
Repair or replace CD player if the combined radio cassette operates properly.

3. CD SOUND SKIPS

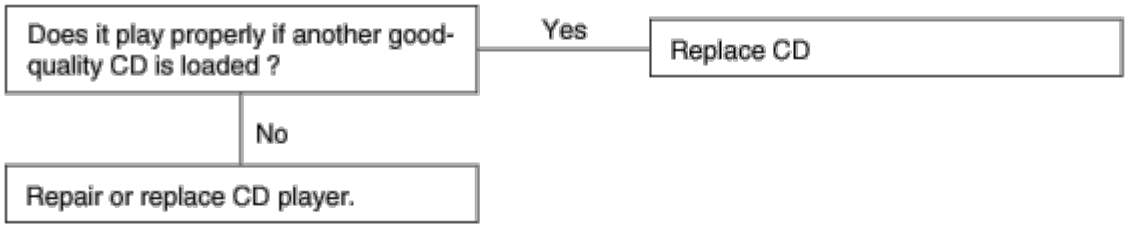
1) Sound sometimes skips when parking.



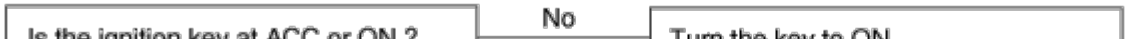
2) Sound sometimes skips when driving.
(Stop vehicle, and check it.)
(Check by using a CD which is free of scratches, dirt or other damage.)

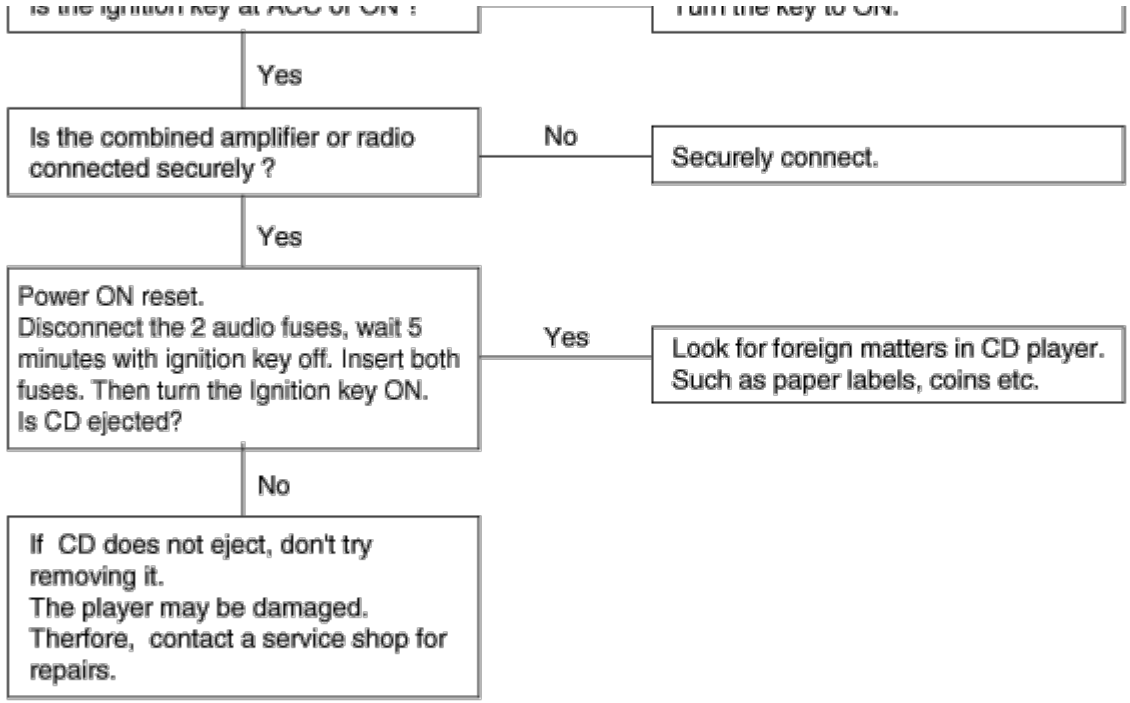


4. SOUND QUALITY IS POOR



5. CD WILL NOT EJECT





6. NO SOUND FROM ONE SPEAKER

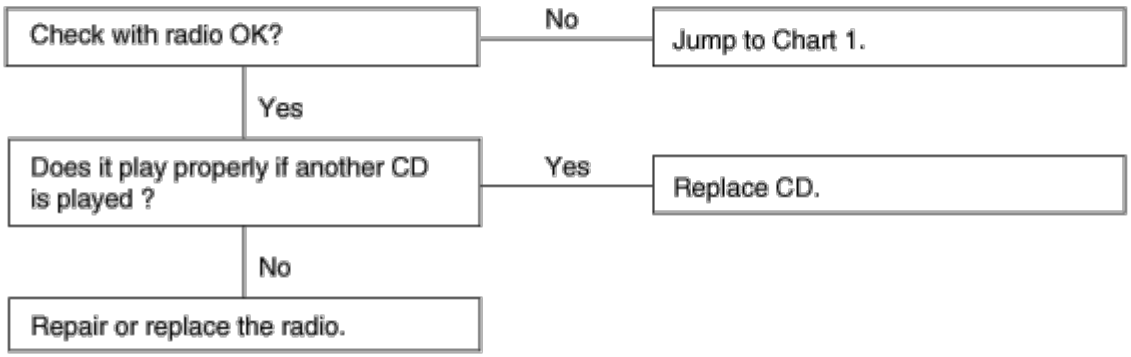


Chart 5

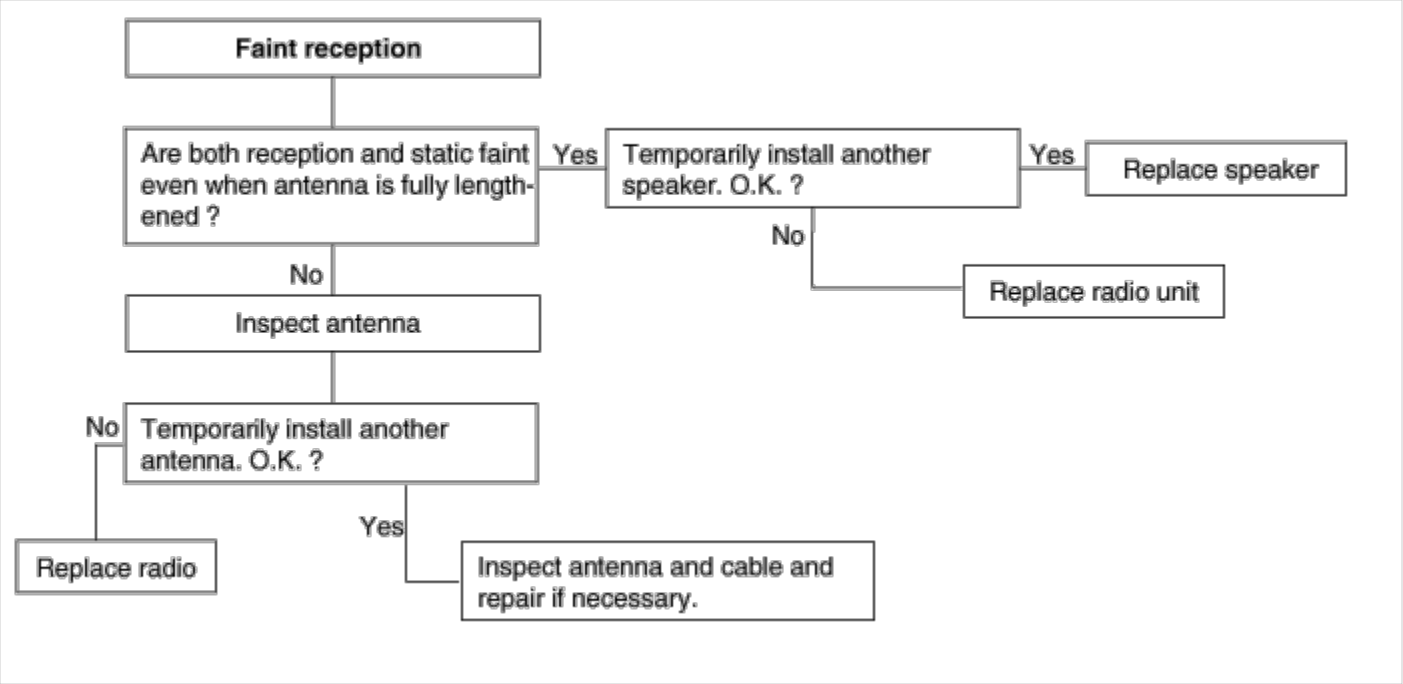


Chart 6

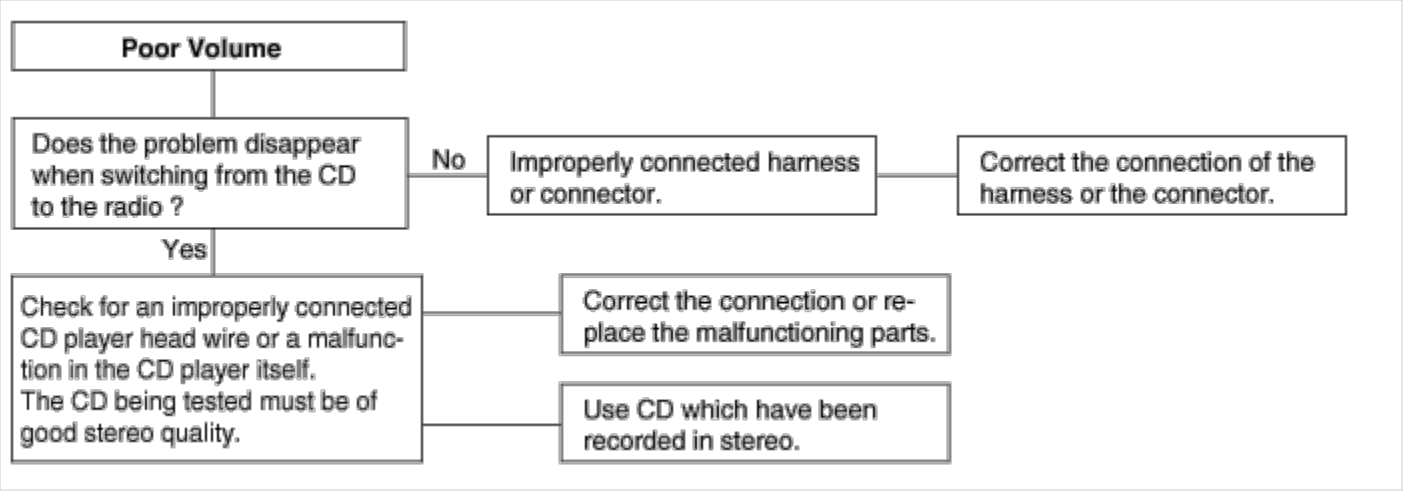
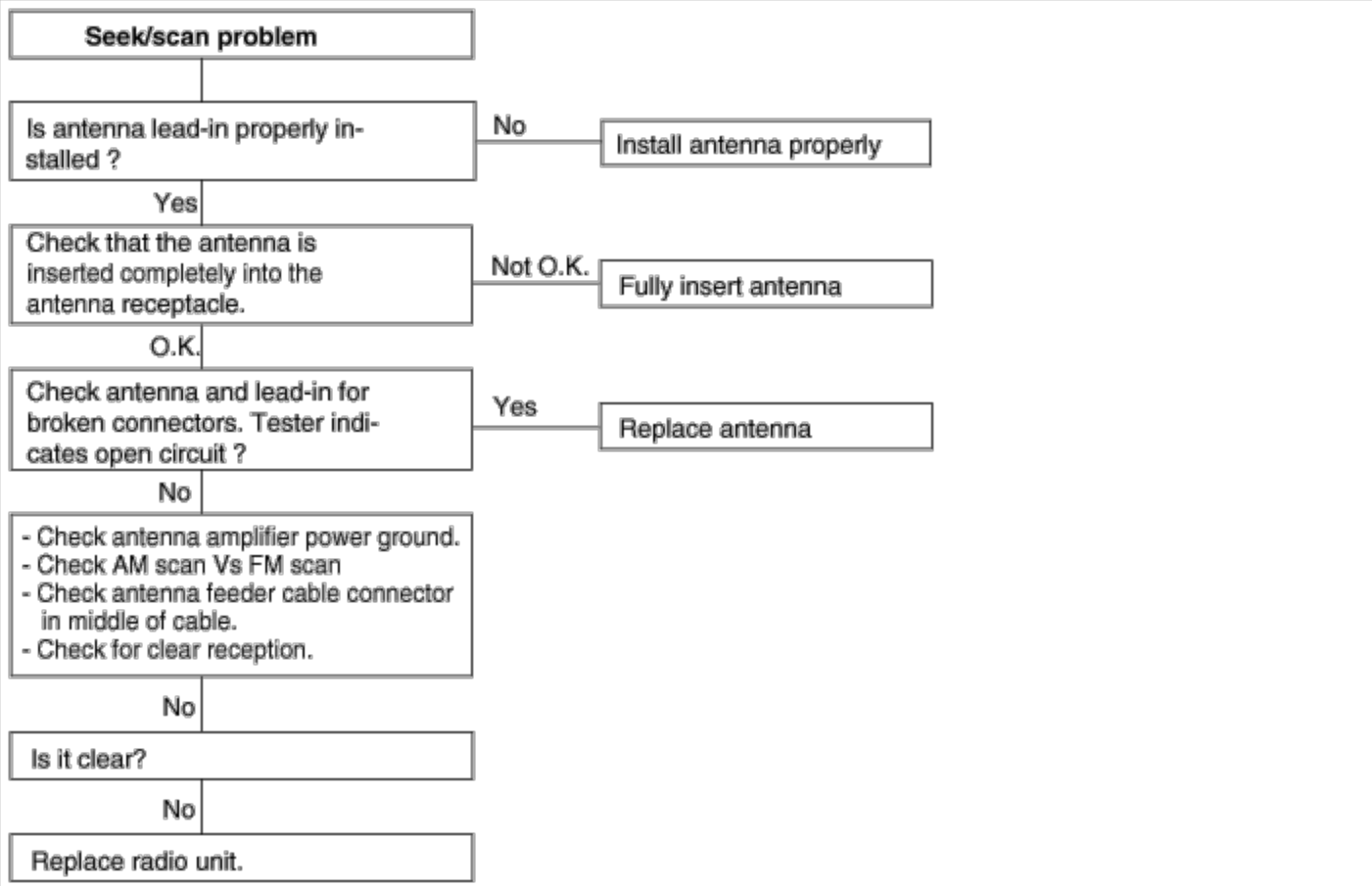


Chart 7



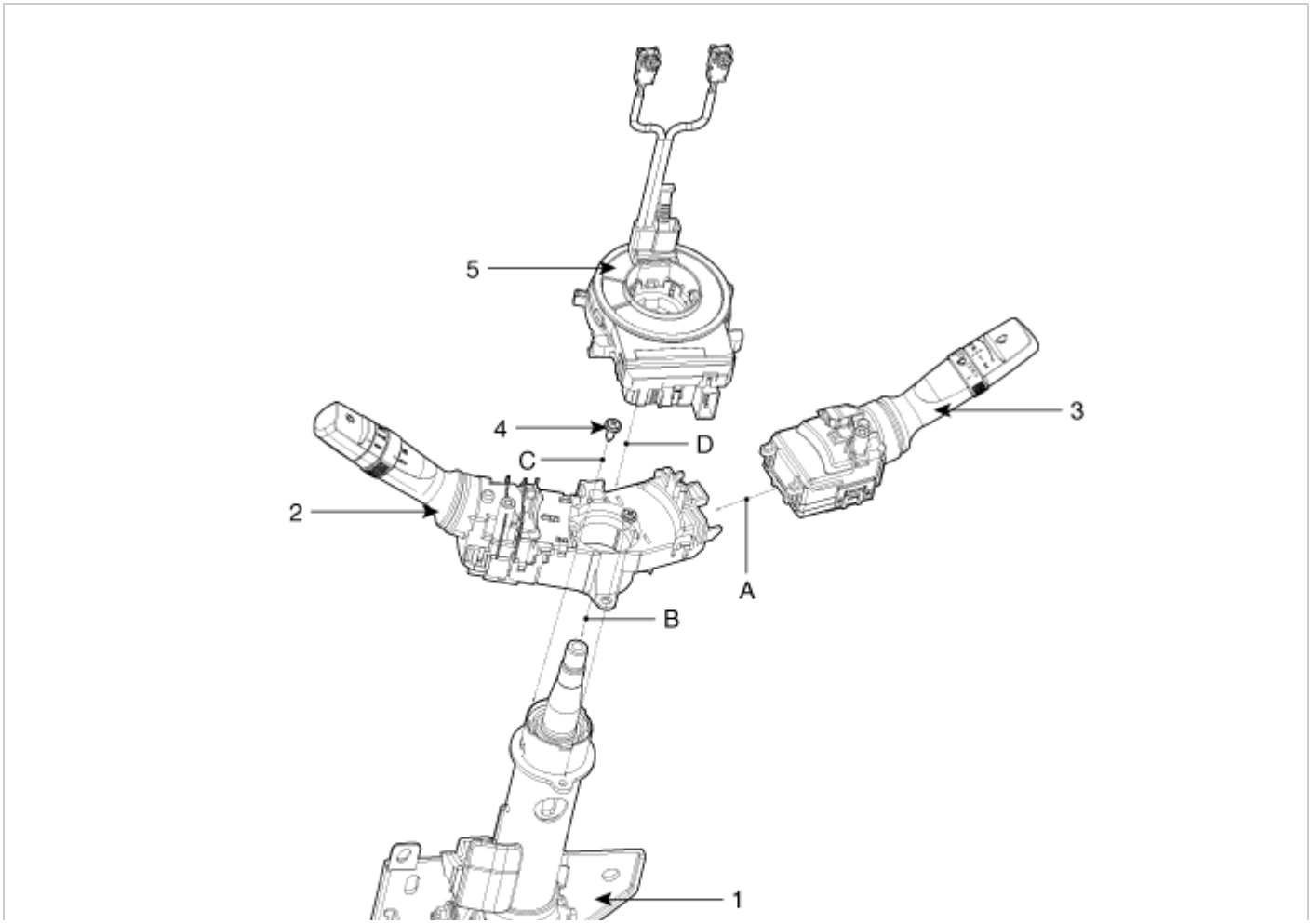
Specifications

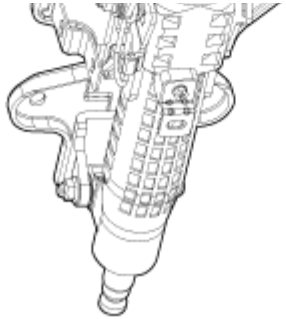
Items		Specifications
Rated voltage		DC 12V
Operating temperature range		-30°C ~ +80°C (-22 ~ +176°F)
Rated load	Dimmer & passing switch	High : 0.2A (Relay load) Low : 0.2A (Relay load) Passing : 0.2A (Relay load)
	Lighting switch	Lighting : 0.2A (Relay load)
	Turn signal & lane change switch	6.6 ± 0.5A (Lamp load)

	Front & rear fog lamp switch	0.2A (Relay load)
	Wiper & mist switch	Low, High : 4.5A (Motor load) Intermittent : 0.22 ± 0.5A (Relay load) Lock : Max. 28A (Motor load)
	Washer switch	4A (Motor load)
	Variable intermittent volume switch	Max. 25mA

Body Electrical System

Component (1)

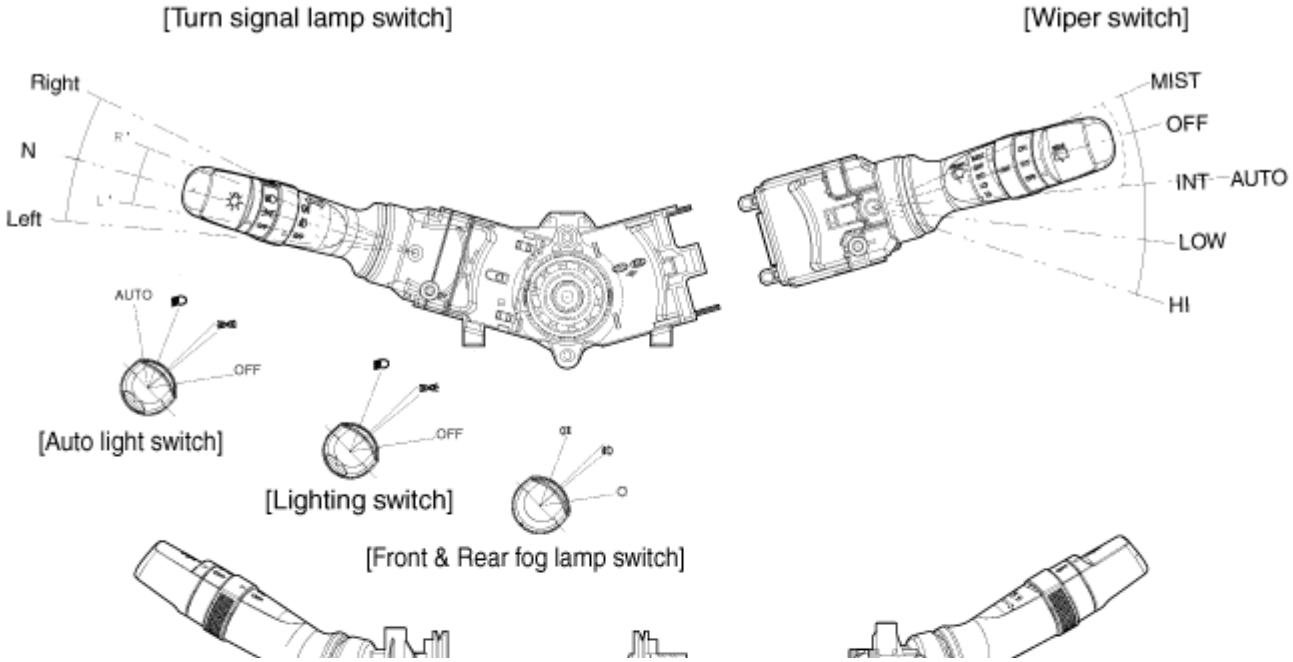


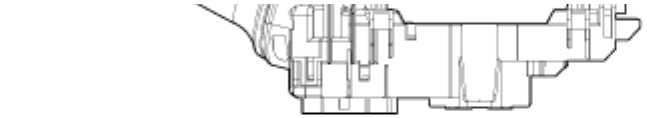


* Installation order : A→B→C→D

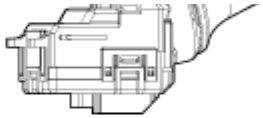
1. Steering column shaft 2. Lighting switch 3. Wiper and washer switch	4. Screw 5. Clock spring

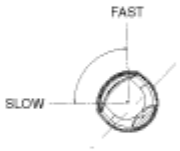
Component (2)





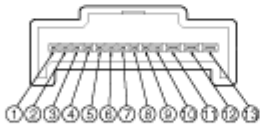
[Dimmer & passing switch]



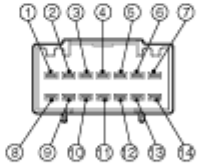


[Intermittent volume switch]

[Lighting switch]



[Wiper switch]



Connector	Pin NO.	Name	Connector	Pin NO.	Name
Lighting SW (13pin)	1	Tail lamp sw	Wiper & washer SW (14pin)	1	Mist sw
	2	Lighting sw ground		2	Wiper parking
	3	Auto light sw		3	Wiper low speed
	4	H/lamp sw		4	Intermittent volume base
	5	Fog sw base		5	Intermittent time base
	6	Front fog sw		6	-
	7	Rear fog sw		7	-
	8	Head lamp low beam		8	Intermittent wiper sw
	9	Head lamp high beam		9	Wiper high speed
	10	Dimmer sw base		10	IGN(2)- Front washer & wiper
	11	Turn signal lamp - left		11	Front washer
	12	Turn signal base		12	-
	13	Turn signal lamp - right		13	-
				14	-

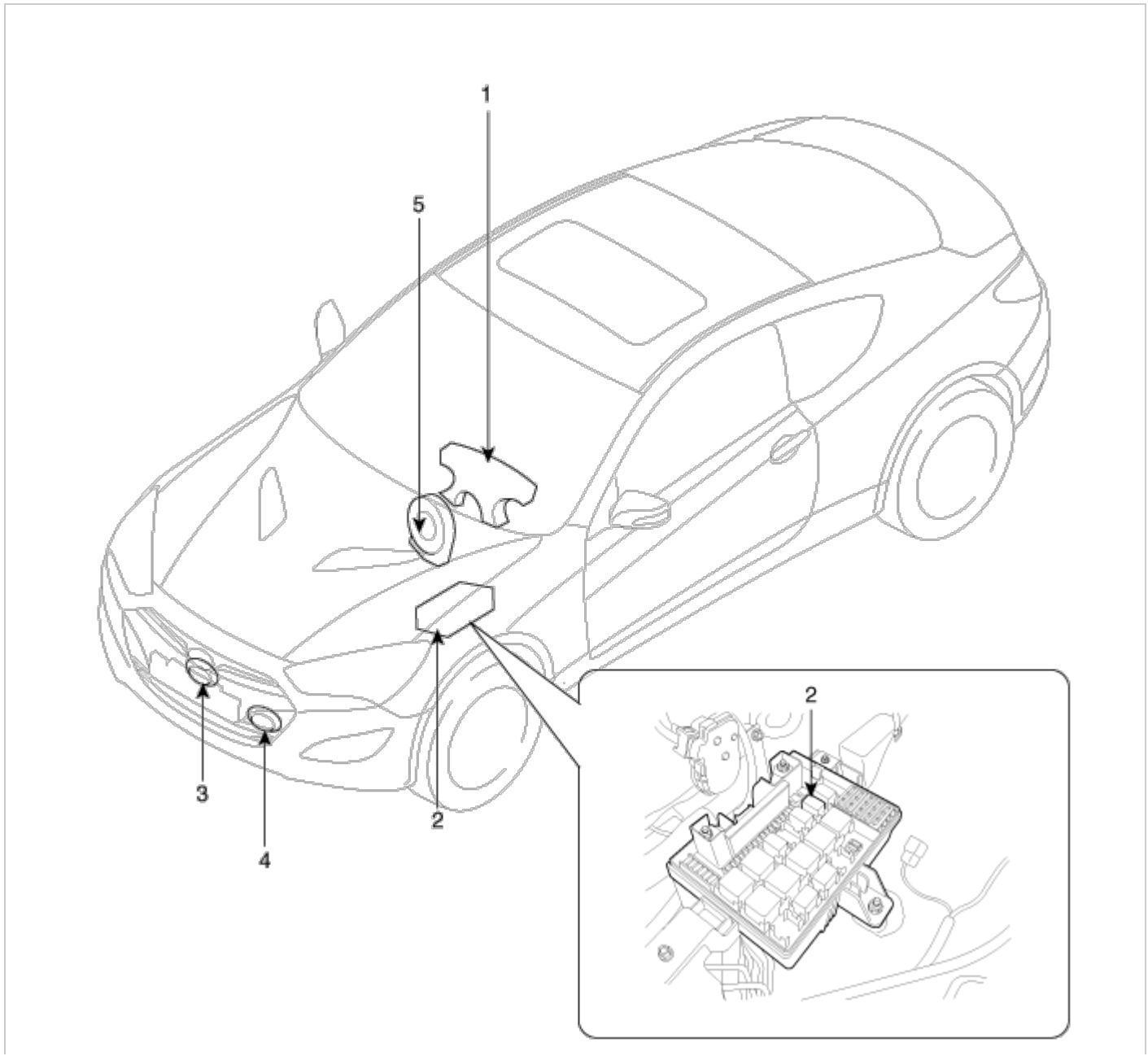
Installation

1. Install the multifunction switch.
2. Install the clock spring.
3. Install the steering column upper and lower shrouds.
4. Install the steering wheel.

NOTICE

Make sure the multifunction switch connectors are plugged in properly.

Component Location



1. Horn switch 2. Horn relay (Engine room compartment) 3. Horn (Low pitch)	4. Horn (High pitch) 5. Clock spring

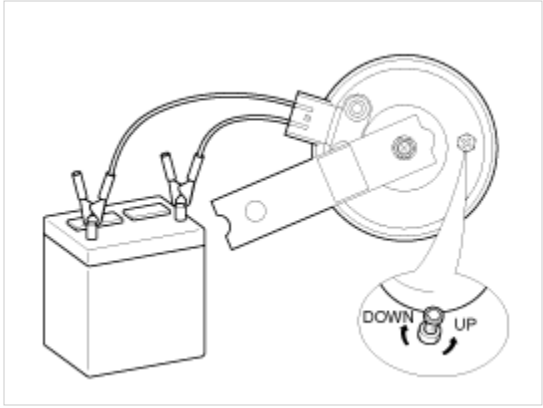
Body Electrical System

Adjustment

Operate the horn, and adjust the tone to a suitable level by turning the adjusting screw.

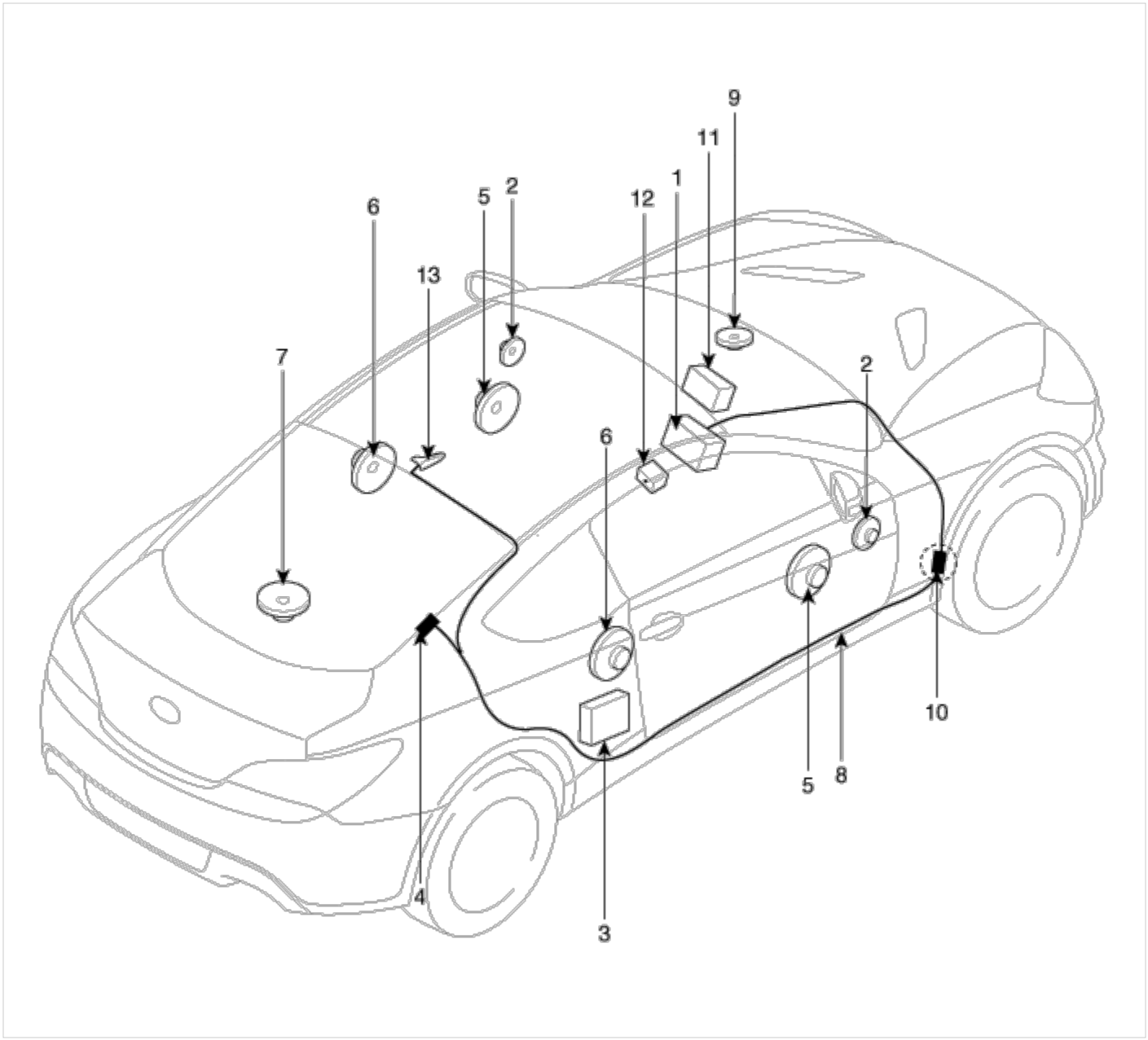
NOTICE

After adjustment, apply a small amount of paint around the screw head to keep it from loosening.



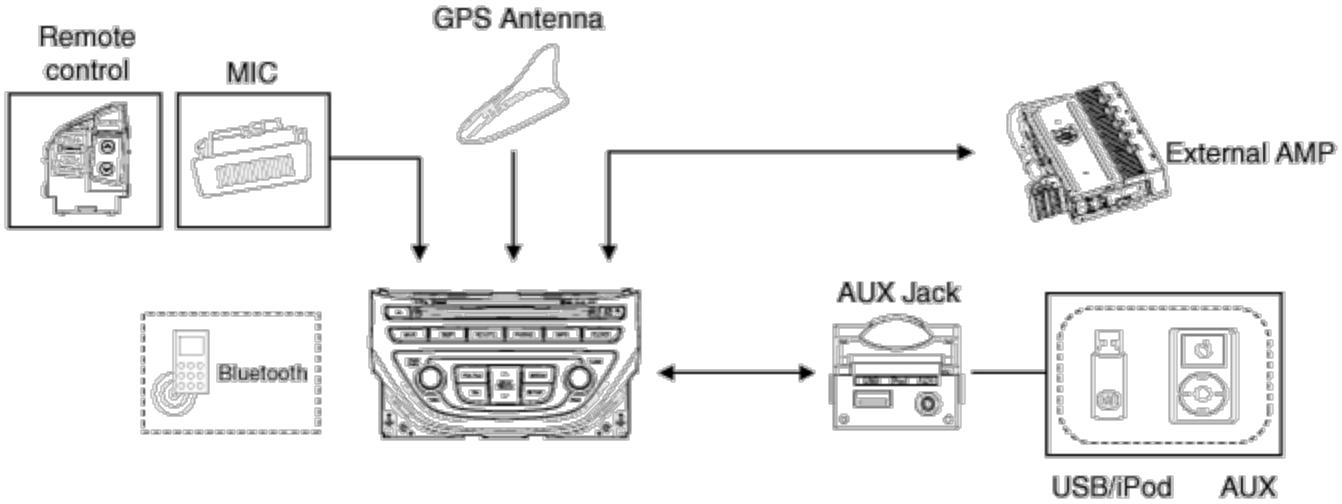
Body Electrical System

Component Location


9
11
1
12
5
2
6
13
7
2
6
10
5
8
4
3

1. AVN (A/V & Navigation) head unit	8. Antenna feeder cable
2. Tweeter speaker	9. Crash pad center speaker
3. External Amplifier	10. Feeder cable joint connector
4. Glass antenna (Radio)	11. Multi display
5. Front door speaker	12. Aux jack
6. Rear door speaker	13. Roof antenna (GPS)
7. Woofer speaker	

System Block Diagram



Limitations Of The Navigation system

GPS Signal Reception State

As the GPS satellite frequency is received/transmitted in straight lines, reception may not work if hiding devices are placed on or near the GPS antenna or when traveling through the following locations.

- Tunnels

• Basement parking structures

• Underneath an overpass

• Roads within forested areas

- Areas near high rise buildings

- Roads within canyons

Vehicle Position Display

1. If multipass errors occur due to reflections from buildings or related causes, the current position mark on the navigation may differ from the actual position of the vehicle.
2. The position of the vehicle on the navigation may be different from the actual position if the vehicle is under the occur, driving for a short period of time will vehicle through map matching or GPS information (several minutes may be necessary in certain cases).
   A. When driving on a Y-shaped road with a narrow angle, the current position may be displayed in the opposite direction.
   B. If the vehicle is loaded onto a car transport vehicle, the current position mark may be stalled on the last position prior to loading.
   C. When driving on a spiral-shaped road.
   D. When driving in mountain regions with sharp turns or sudden brakes.

E. When entering a road after having been in an underground parking structure, building parking structure, or turnable with many rotations.
F. When the tires have recently been replaced (Especially upon use of spare or studless tires)
G. If the battery terminal is removed.
H. When driving in city streets, the current position may be displayed on the opposite side or on an off-road position.
I. When changing the zoom level from the maximum zoom in level to a different zoom level, the current position mark may be displayed on a different road.
J. When driving in heavy traffic with frequent go and stops in traffic or intersections.
K. When driving under slippery conditions, such as heavy sand, snow, etc.
L. When driving with the tire chain in place.
M. When using a tire with an incorrect size specification.
N. When the tire pressure for the 4 tires are different.
O. When the replacement tire is a worn or used tire (Especially studless tires having passed a 2nd seasons, etc.)
P. When driving near high-rise buildings
Q. If a roof carrier has been installed
R. When driving under high speeds or having calculated a long-distance route.

Route Guidance

Unsuitable route guidance situation may caused by the following search conditions or the driving position.

- Guidance to go straight may be given while driving on a straight road.
- Guidance may not be given even when having turned at an intersection.
- There are certain intersections in which guidance may not occur.
- A route guidance signaling entrance into a no enter zone may occur (No enter zone, road under construction, etc.)
- Guidance may be given to a position removed from the actual destination if roads to reach the actual destination do not exist or are too narrow.
- Faulty voice guidance may be given if the vehicle breaks from the designated route (ex : if a turn is made at an intersection while the navigation provided guidance to go straight).
- Map Data may be missing or incorrect causing route guidance to not be given.

Route Re-calculation

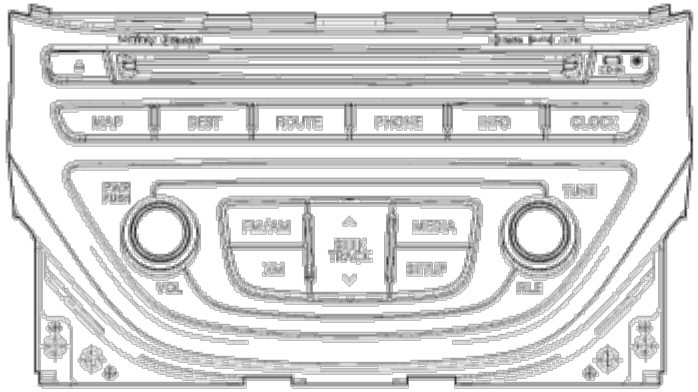
The following phenomena may occur after conducting route recalculation.

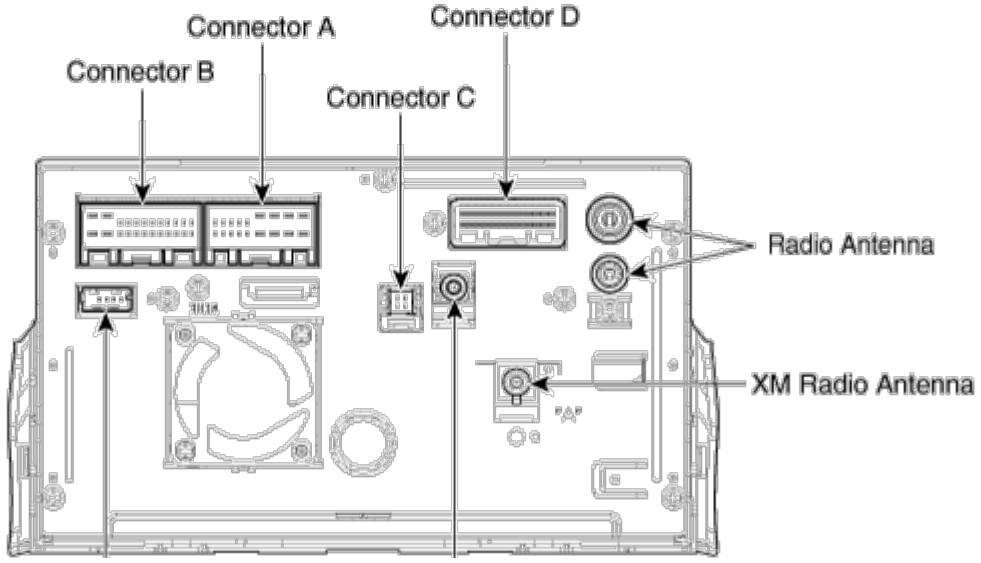
- Guidance may be given to a position differing from the current position when turning at an intersection.
- Route recalculation may take a longer period of time when driving under high speeds.
- A route guidance signaling for a U-Turn in a No U-Turn location may occur.
- A route guidance signaling entrance into a no enter zone may occur (No enter zone, road under construction, etc).
- Guidance may be given to a position removed from the actual destination do not exist or are too narrow.
- Faulty voice guidance may be given if the vehicle breaks from the designated route (ex : if a turn is made at an intersection while the navigation provided guidance to go straight)

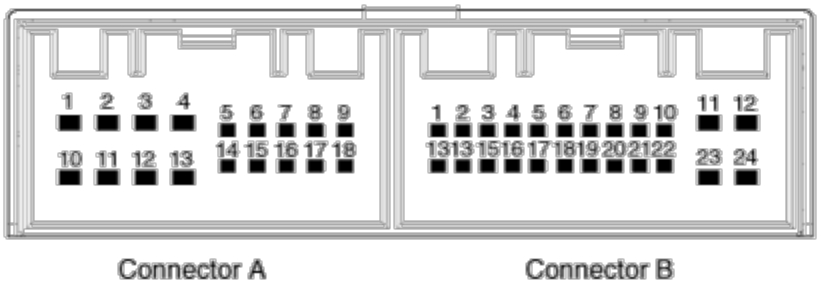
Components

AVN (A/V & Navigation) Head Unit

[AVN Head Unit]

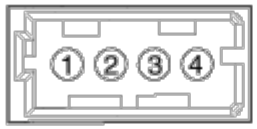


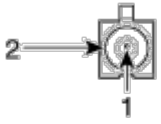


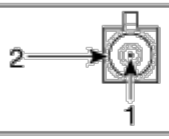


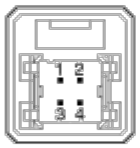
Pin No.	Connector A	Connector B
1	-	MM CAN High
2	-	-
3	-	-
4	-	Steering remote
5	SPDIF GND	-
6	SPDIF (+)	-
7	ALT L	AUX Video
8	Illumination (+)	AUX R IN
9	R Position	AUX GND
10	-	MIC+ (Bluetooth)
11	-	ACC+
12	NAVI Voice (-)	B+
13	NAVI Voice (+)	MM CAN Low
14	-	Auto Light
15	SPDIF (-)	P Position
16	Door key unlock	Vehicle speed
17	Illumination (-)	Remote GND
18	Remote antenna ON	-
19		AUX Video GND

20		AUX DETECT
21		AUX L IN
22		MIC- (Bluetooth)
23		Power GND
24		Power GND

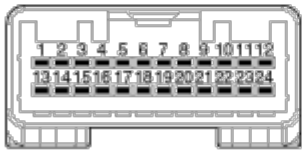
USB Connector	NO	Description	NO	Description
	1	USB GND	3	USB D (-)
	2	USB D (+)	4	USB VCC

XM Antenna	NO	Description	NO	Description
	1	XM Signal	2	GND

GPS Antenna	NO	Description	NO	Description
	1	GPS Signal	2	GND

Connector C	NO	Description	NO	Description
	1	LVDS (-)	3	GND
	2	GND	4	LVDS (+)

Connector D	NO	Description	NO	Description
	1	-	13	LVDS LOCK
	2	-	14	BL ON
	3	-	15	RS485 RX(+)



4	-	16	RS485 RX(-)
5	-	17	GND
6	-	18	RS485 TX(+)
7	-	19	RS485 TX(-)
8	-	20	-
9	LVDS _ PDN	21	-
10	-	22	-
11	-	23	-
12	-	24	-

[AVN Monitor]