



TECHNICAL SERVICE BULLETIN

	Group
	90 - ELECTRICAL
	Number
	02-90-005
Subject	Date
AUDIO SYSTEM DIAGNOSTIC TIPS	06-2002
	Model
	All Models 0

DESCRIPTION:

This bulletin provides a basic guide to assist in diagnosing Hyundai audio systems. Detailed operational information regarding each specific model of radio is described in the vehicle's owner's manual. Additional information is available in Hyundai Shop Manuals in the "Audio" portion of the Body Electrical section, as well as the "Sound" or "Audio" System portion of the Electrical Troubleshooting Manual.

NOTE

Before diagnosing a customer's audio system, be sure you are familiar with the operation and features of the various Hyundai audio systems. At times, the operation of Hyundai audio systems may be different from what the customer has assumed.

RADIO DIAGNOSTIC HINTS:

- Verify the customer's comments and make sure the customer understands the operation of the radio.
- Compare operation of the radio in the customer's vehicle with an identical radio in a vehicle where the radio is known to operate properly.
- Test the radio outdoors with the hood of the vehicle closed (not under fluorescent lights).
- Check the radio and antenna grounding.
- Ensure that the antenna cable is fully inserted into the radio and antenna connectors. Check the antenna to ensure it is securely attached to the vehicle and completely screwed into the base.
- Check that the radio connector at the back of the radio case is fully inserted. Visually inspect all connector pins and receptacles.
- Make sure the speaker connectors are properly connected to the speakers.
- Replacing the radio should only be done following thorough diagnosis.

RADIO DIAGNOSTIC PROCEDURES:

CONDITION	POSSIBLE CAUSE	CORRECTION
Inoperative	Insert/replace fuse	Isolate/repair
Fades or cuts out	<ol style="list-style-type: none"> 1. Loose connection 2. Intermittent wiring short to vehicle chassis 	<ol style="list-style-type: none"> 1. Secure connection 2. Isolate/repair
Speaker(s) inoperable	<ol style="list-style-type: none"> 1. Pinched speaker wire (short to chassis) (one shorted speaker can affect all speakers) 2. Incorrect Balance/Fader setting 	<ol style="list-style-type: none"> 1. Isolate and repair 2. Adjust setting
Speaker distortion (rattles and buzzes)	<ol style="list-style-type: none"> 1. Loose speaker screw or speaker mounts 2. Foreign object vibrating near speaker 3. Damaged speaker 	<ol style="list-style-type: none"> 1. Secure screw or mo 2. Remove object 3. Replace speaker
Radio illumination	<ol style="list-style-type: none"> 1. Instrument panel rheostat setting 2. Loose connector 	<ol style="list-style-type: none"> 1. Adjust rheostat 2. Secure connection
Poor reception	<ol style="list-style-type: none"> 1. Antenna securely mounted and fully extended? 2. Antenna feeder (coax) pinched or kinked 3. Poor antenna base ground 4. Glass amplifier connections pore 5. Aftermarket window tint over an in-glass antenna 	<ol style="list-style-type: none"> 1. Bad reception area? 2. Replace feeder 3. Secure antenna bas ground
Memory (loses station memory)	<ol style="list-style-type: none"> 1. Missing or blown fuse 2. Loose connection 	<ol style="list-style-type: none"> 1. Replace fuse 2. Secure connection
Balance/Fader	Improper control setting	Correct control setting
Ignition noise (constant popping)	Loose/worn spark plugs or plug wires	Replace plugs or wires

CONDITION	POSSIBLE CAUSE	CORRECTION
Alternator noise (varying whine)	<ol style="list-style-type: none"> 1. Ineffective condensers or noise filter 2. Loose alternator/battery connections 	<ol style="list-style-type: none"> 1. Replace condenser noise filter 2. Check alternator and connections

AUDIO SYSTEM RECEPTION:

A customer may comment about a characteristic of FM reception that is really not a problem, but the normal operation of FM radios.

- Before testing a customer's radio for reception, find three strong local stations for comparison to the customer's selected station.
- The range of FM is less than that of AM. If the car is moving away from the station's transmitter, the signal will tend to fade out.
- Most aftermarket window tint films will interfere with the reception on vehicles with in-glass antennas. The factory tint does not affect reception.

CASSETTE PLAYER DIAGNOSTIC HINTS:

- Verify the customer's comments and make sure the customer understands the operation of the cassette player.
- Check inside the tape slot for foreign objects (old cassette labels, keys, coins, etc.).
- Test the unit using a known good, pre-recorded tape.
- Verify that any customer recorded tapes are made with good quality blank tapes. The use of 90 minutes or longer blank tapes is not recommended.
- Inform customers that they must keep the cassette units clean. Commercial head cleaners are available at reasonable prices for head and capstan cleaning.
- Replacing the radio unit should only be done following thorough diagnosis.

CASSETTE PLAYER DIAGNOSTIC PROCEDURES:

CONDITION	POSSIBLE CAUSE	CORRECTION
Will not play	Foreign object in tape slot	Remove foreign object
Tangles (eats) tapes	<ol style="list-style-type: none"> 1. Check tape condition 2. Tape reel loose 3. Dirty tape head 4. Poor quality or excessively long blank tapes 	<ol style="list-style-type: none"> 1. Discard damaged ta 2. Tighten tape reel 3. Use head cleaner 4. Advise consumer to better quality or 90 minute maximum ta
Won't eject tapes or won't accept tapes	<ol style="list-style-type: none"> 1. Warped tape or peeling label 2. Missing or blown fuse 3. Foreign object in tape slot 	<ol style="list-style-type: none"> 1. Use known good tap 2. Replace fuse 3. Remove foreign obje
Low or poor sound	<ol style="list-style-type: none"> 1. Dirty tape head 2. Poor home recording 	<ol style="list-style-type: none"> 1. Use head cleaner 2. Use known good tap
Tape changes speed	Tape reel loose	Tighten tape reel
Auto reverses constantly	<ol style="list-style-type: none"> 1. Tightly wound tape 2. Curled/tangled tape 3. Misaligned felt pressure pad 	<ol style="list-style-type: none"> 1. Use a pen to adjust reel tension. Don't use tapes longer than 90 minutes 2. Check tape condition 3. Discard tape
Music search inoperative	3 seconds of blank space is needed for this function to work	N/A

COMPACT DISC PLAYER DIAGNOSTIC HINTS:

- Verify the customer's comments and make sure the customer understands the operation of the CD player.
- Test the unit using a known good compact disc.
- Replacing the unit should only be done following thorough diagnosis.

COMPACT DISC PLAYER DIAGNOSTIC PROCEDURES:

CONDITION	POSSIBLE CAUSE	CORRECTION
CD Ejects	<ol style="list-style-type: none"> 1. CD upside down 2. Dirty or scratched CD 3. Disc is warped 	<ol style="list-style-type: none"> 1. Insert label side up 2. Clean CD gently with cloths 3. Discard disc
CD Skips	Rough road conditions	N/A
Won't play disc	<ol style="list-style-type: none"> 1. Self made (CDR or CDRW) CDs 2. High temperature 3. Dirty optical pickup 	<ol style="list-style-type: none"> 1. N/A 2. Use A/C to lower int temperature 3. Use optical cleaner
CD Changer disc skips	Horizontal/Vertical (setting incorrect)	Change setting

If a CD player malfunction occurs, an error code will appear on the LED display. The following list describes each error code and a diagnostic step to assist in correcting the malfunction.

AUDIO FAULT CODES:

ERROR CODE	ERROR TYPE	MALFUNCTION	CORRECTION
Er1	Memory error	Data error occurred due to discharge of battery in auto-change mode	Cycle power CD player
Er2	Mechanical error	Ejection does not occur after 3 attempts.	Replace CD player
Er3	Functional error	The focus does not adjust, even after several retries. If the code returns within a known good CD, reset the CD player or changer.	Try known good disc
Er5	Data disc	Data is not read after disc is inserted. "Error" displays for 5 seconds and then disc is ejected.	Try known good disc
Er6	Disc error	Data is not read after disc is inserted. "Error" displays for 5 seconds and then disc is ejected.	Try known good disc
Er8	Eject error	Eject does not function, usually due to a foreign substance (screw, coin, etc.).	Check for foreign substance. Reset the CD player or changer to eject it to try to eject.
Er0	DSP error	Communication error between DSP unit and controller	Replace CD player
HHH	Temperature error	CD player gets too warm.	Cycle power CD player

NOTE

Some customer recorded CDs (CDR, CDRW) may not play properly on some Hyundai radios. Paper labels should never be used in Hyundai radios. The heat in the radios can cause the labels to separate from the CD, causing the CD mechanism to lock up. Radio replacements where there is CD label residue in the CD player are not warrantable.

WARRANTY INFORMATION:

Normal warranty procedures apply (see the Labor Time Standard LTS).

The warranty covers defects in workmanship or materials. Foreign objects or labels trapped inside the tape or CD players are not covered under warranty.