LCD AUDIO SYSTEM

8610-22/8610-25/8610-26/8610-30/8610-37/8630-10/ 8910-02/8910-10/8930-26/

LCD AUDIO SYSTEM

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FUSE

LCD audio

8910-02

8910-02

GENERAL INFORMATION

1. SPECIFICATIONS

1) LCD Audio System

	Item	Description
Operating sys	stem	QNX
CPU		Jacinto eco 5600 MHz
Memory		ROM - NAND Flash 256 Mbytes
		DOR2 : 256 Mbytes
Booting time	Radio	Within 19 sec.
	Rearview camera	Within 3 sec.
Touch panel		IR Touch
Display		7" TFT WVGA (800*480)/16:9 aspect ratio
USB		USB 2.0 (High Speed)
Hands-free		Bluetooth
Audio		Radio (FM/AM)
Rearview car	nera	Shifting to R - POWER ON/OFF is unavailable when the rearview camera is operating Mode change is unavailable when the rearview camera is operating.
Multimedia	Audio	Audio codec: MP3, OGG, WMA,WAV Supported file format: mp3, aac, ogg, ape, flac, wma, wav
HDMI		Version: HDMI 1.4a

Modification basis	
Application basis	
Affected VIN	

2) LCD Audio Head Unit

Category	Item		Specifications
General	Frequency range	FM	87.5 to 108.0 kHz
		AM	531 to 1,602 kHz
	Operation tem	perature	−30°C to +75°C
	Operating v	oltage	9.0 to 16.0 V
	Power supply	voltage	DC 13.5 V (-) Ground
	Dark curi	ent	3 mA or lower
	Load imped	dance	4 Ω X 6
	Antenn	а	80 PF 75 Ω
	Storage ca	pacity	NAND 256 MB
	Weigh	t	1.9 Kg
LCD	Viewing a	ngle	Up: 65°, Down: 70°, Left: 70°, Right: 70°
display	Power supply		5 V (1.2 A)
	Input sig	nal	DIGITAL RGB
	Display s	size	168.38 mm (W) x 101 mm (H) x 8.76 mm (D)
	Display t	уре	7" TFT WVGA (800X480)
	Display aspect ratio		16:9
	Screen size		154.8 X 93.84 mm (bezel open)
	Color		Full color
USB	Compatik	oility	USB 2.0 (High Speed)
Bluetooth	MAX output power		2.5 mW
Tail lamp color	Daylight o	color	Panel front: Black metal, Letters: White Button: Black metal, Letters: White
	Illumination	color	Button: Orange/Red Display: Full color

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Modification	basis	
Application	basis	
Affected V	IN	

2) USB and HDMI Jack Assembly

ltem	Specifications
Operating temperature	−30°C to +80°C

4) Micro Pole Antenna

Item	Specifications	
Storage temperature	-40°C to +85°C	
Operating temperature	−30°C to +75°C	
Operating voltage	AM/FM	10.5 to 16.0 V
Current consumption	AM/FM	Max. 100 mA
I/O impedance	AM/FM	75 Ω

5) Speaker

Item	Specifications		
Front/rear door	Speaker size	5.25 inch	
speaker	Max. input	40 W	
	Impedance	400Hz of 4 Ω \pm 15%	
Front tweeter speaker	Speaker size	1 inch	
	Max. input	40 W	
	Impedance	5 KHz of 4 Ω \pm 15%	

6) Rearview Camera

Item	Specifications
Storage temperature	−40°C to +80°C
Operating temperature	−30°C to +75°C
Operating voltage	6.0 to 9.0 V
Current consumption	60 mA
Signal type	Video: NTSC Composite
Power supply	8 V
Viewing angle	Horizontal 129°, Vertical 89°
Weight	30 g

7) Handsfree Microphone

Item	Specifications
Storage temperature	−30°C to 80°C
Operating temperature	−30°C to +75°C
Sensitivity	-36 ± 2 dB
Impedance	Up to 2.2 kΩ
S/N ratio*	65 dB or more

S/N ratio (signal to noise ratio): Describes noise level in relation to the signal level in dB

Modification basis	
Application basis	
Affected VIN	

8) Steering Wheel Audio Remote Control Switch

Item Specifications		cations
Rated voltage	5 V -	0.1 A
Rated load	5 V -	0.1 A
Operating temperature	−30°C t	o +85°C
Item	Resistance	Operating voltage
Volume down	196 Ω ± 1%	0 to 0.4 V
Volume up	1.02 KΩ ± 1%	0.7 to 1.1 V
Mode	2.21 KΩ ± 1%	1.4 to 1.8 V
Power/Mute	34.8 KΩ ± 1%	4.2 to 4.6 V
SEEK up	4.02 KΩ ± 1%	2.1 to 2.5 V
SEEK down	6.98 kΩ ± 1%	2.8 to 3.2 V
Bluetooth (hands-free) - ON	13.3 KΩ ± 1%	3.5 to 3.9 V
Bluetooth (hands-free) - OFF	34.8 KΩ \pm 1%	4.2 to 4.6 V

8910-02

2. CAUTIONS AND WARNINGS FOR SAFETY

WARNING

- This mark indicates situation which, if not observed, may result in an accident or system malfunction.
- Do not disassemble or modify this system.
 - Doing so may cause an accident, fire or electric shock.
- Do not use the system if it is malfunctioning (sound or video output problem).
 - Doing so may lead to an accident or electric shock.
 - Please contact a Ssangyong service dealer immediately.
- The system should be used only when the engine is started. Using the system for an extended period of time with the engine off may discharge the battery.
- Do not leave beverages or foreign materials around the system. If they enter the system, they may cause a fire.
- The system may break down if a disc not supported by this system is inserted.
- Do not apply impact to or drop this system. It may cause malfunction.
- Never leave the system in a hot or cold place for an extended period of time. Therefore, do not park the vehicle in a hot or cold place. The ambient temperature should be −30°C to +80°C for proper operation.
- When cleaning the touch screen, turn off the system and clean the surface with a dry and soft cloth. Never use any coarse cloth, hard cloth, chemical agent, volatile cleaning solvent (alcohol, benzene, thinner) for cleaning the touch screen.



A CAUTION

- This mark indicates potentially hazardous situation which, if not observed, may result in serious injury and material damage.
- Ssangyong is not liable for any personal injury and material damage, caused by violation of traffic regulations or neglect of observing actual traffic and driving situations.
- Colors on display figures in this manual may differ from actual display due to publication concerns.

LCD A	AUDIO	SYSTE	ΞΜ
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♣ NOTE

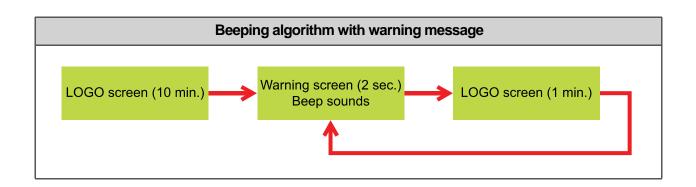
- The screen of HDMI is blocked while the vehicle is driven (at a speed of higher than 0 km/h).



- When the ignition off signal is detected with the audio system ON, the battery discharged warning message is displayed on the screen.



- A beep sounds when the battery discharged warning message is displayed on the screen.



Modification basis	
Application basis	
Affected VIN	

OVERVIEW AND OPERATING PROCESS

1. OVERVIEW

The LCD audio system with 7-inch LCD can play the radio (FM1, FM2, AM), contents in a USB device (video, music, photo files), and contents in a device using HDMI. The LCD audio system also has hands-free (Bluetooth) feature, rearview camera, external device connection features including USB and HDMI. It has a micro pole antenna and its own integrated amplifier to improve the radio frequency reception rate and to provide the high-quality sound.

2. COMPONENTS

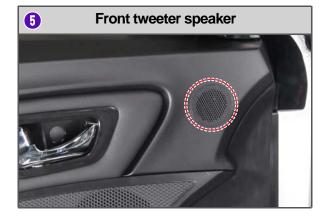


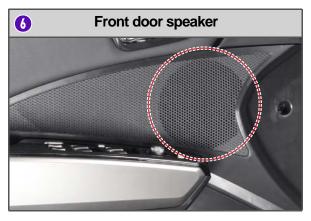


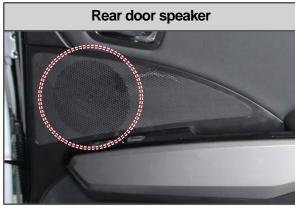






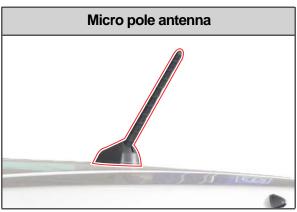












Modification basis	
Application basis	
Affected VIN	

Audio remote control switch



Outputs the signal when power, mode, volume up/down, handsfree, seek up/down, or mute switch is operated.

Bluetooth (hands-free) microphone



It sends the transmission tone signal to the head unit and outputs the receiving tone and navigation guidance sound to the driver's door speaker during hands-free calling.

USB and HDMI jack



Sends USB signals and HDMI signals.

LCD audio head unit



The LCD audio system plays radio, audio in various formats. The system also has USB and HDMI connections as well as Bluetooth function. The system is equipped with the touchscreen for the best user experience.

Door unlock signal

Vehicle speed signal

Rearview camera



When the head unit receives a reverse driving signal from the transmission lever unit, it supplies the operating power to the rearview camera which then transmits the video signals to display the rear area view on the LCD screen.

Micro pole antenna



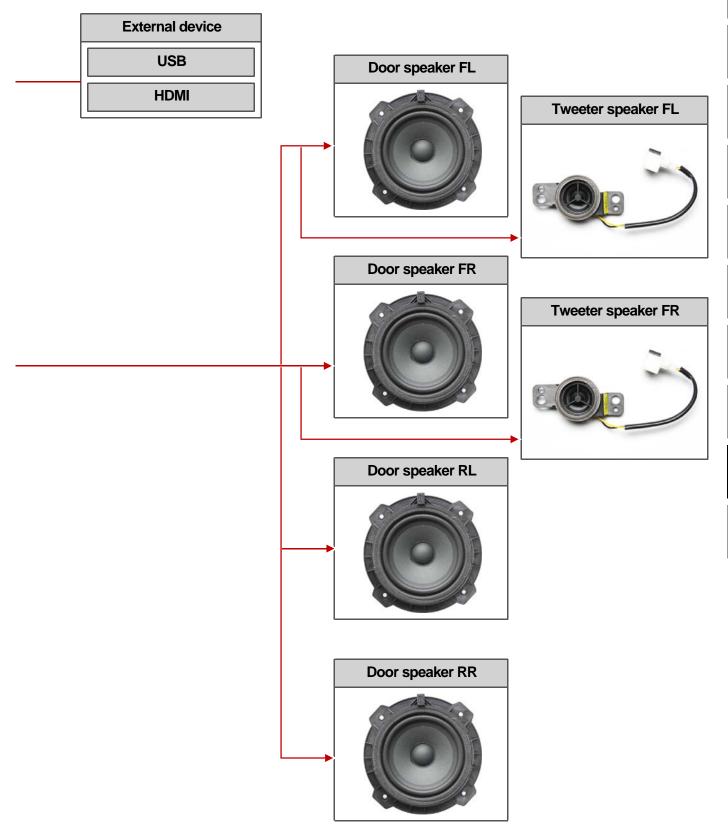
Micro pole radio antenna is fitted to ensure the high sensitivity.

Bluetooth (hands-free)



Once the pairing is completed after searching for the Bluetooth phone, you can use a various functions and contents in the phone via Bluetooth.

LCD AUDIO SYSTEM



Modification basis	
Application basis	
Affected VIN	

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3. FEATURES

1) LCD Display Mode

In the LCD audio main menu screen, RADIO, HDMI, MEDIA, BLUETOOTH MUSIC, BLUETOOTH HANDSFREE menus are displayed. For detailed information about these menus, see the manual for the LCD audio system.



(1) Radio mode



No.	Name	Description
1	Selected mode	- Selected mode is displayed (one of FM1, FM2 or AM).
2	Preset	- Stored station frequency is displayed.
3	Indicator	- One of STEREO, SCAN, AST, or P.SCAN is displayed depending on the currently selected mode.
4	Frequency	- Currently selected station frequency is displayed.
5	SEEK DOWN	- Searches automatically for the strongest station by going down the radio frequency.
6	TUNE DOWN	- Goes down the radio frequency by 1 step.
7	TUNE UP	- Goes up the radio frequency by 1 step.
8	SEEK UP	- Searches automatically for the strongest station by going up the radio frequency.
9	AM/FM	- Changes the mode in order of FM1→FM2→AM→FM1.
10	AST	- Stores the searched for radio stations in preset buttons automatically in ascending order.
11	SCAN	- Scans for radio stations with strong signals and stays for 5 seconds each time a station is chosen.
12	P.SCAN	- Plays the stations stored in preset no. 1 to 6 buttons for 5 seconds for each station.



TUNE UP/DOWN 1 step

General: (FM: 0.1MHz, AM: 9KHz), EU: (FM: 0.1MHz, AM: 9KHz),

Latin America: (FM: 0.1MHz, AM: 10KHz)

Modification basis	
Application basis	
Affected VIN	

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(2) USB music mode



No.	Name	Description
1	Selected mode	- USB music mode is displayed.
2	Folder Up	- Move and play previous folder.
3	Folder Down	- Move and play next folder.
4	Current folder	- Displays current playing folder name.
5	Info	- Displays the detailed information of music file currently played.
6	Indicator	- Shows the playing mode. (such, RDM, RPT, INT and etc.)
7	Previous Track	- Plays the previous music file while playing a song.
8	PLAY/PAUSE	- Plays or pause a music.
9	Next Track	- Plays the next music file while playing a song.
10	List	- Displays the list of music files stored in the USB memory.
11	RDM	- Plays the music files stored in the USB memory randomly.
12	RPT	- Repeats one file or all files stored in the USB memory.
13	INT	- Plays the music files stored in the USB memory in sequence for the first 10 seconds.
14	MY LIST	- You can select and store music files you want in this list and plays songs within this list.

FUSE

(3) Bluetooth (hands-free) mode



No.	Name	Description
1	Selected mode	- Selected mode is displayed (one of Bluetooth music or Phone mode).
2	Connected Device information	- Device name and device media type displayed.(Phone, Music or Phone/Music)
3	BT peripherals info	- BT icon, Signal Strength and Battery status.(Items may not supported by mobile device.)
4	Display window	- Call information and time information will be displayed.
5	Keypad	- Number pad, dial and hang-up key
6	Address Book	- Downloads the phonebook from the cell phone. Shows the recent call list.
7	Settings	- Used to change the settings of Bluetooth device of this system.
8	Secret Mode	- Switches between handsfree and private call.
9	Mic. Off	- Turns the Mic. Function off.(Mic. mute)
10	MUSIC	- Switches to Bluetooth MUSIC screen.

Modification basis	
Application basis	
Affected VIN	

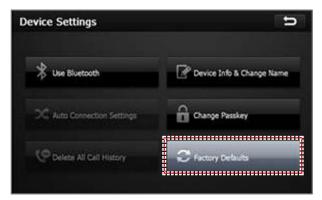
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▶ Initialization of Bluetooth

Initialize and delete all settings related to Bluetooth function (pairing history, paired phonebook, call list, various settings)



Select [Device setting] button on the Bluetooth screen.



Select [Initialize Bluetooth] button on the Device setting screen.



Select [OK] when confirm message for initialization pops up.



Initialization complete

(4) Bluetooth music mode



No.	Name	Description
1	Selected mode	- Bluetooth music mode is displayed.
2	PLAY/PAUSE	- Plays or pause a song.
3	Previous Track	- Plays the previous music file while playing a song.
4	Next Track	- Plays the next music file while playing a song.
5	PHONE	- Switches to Phone mode. Pressing this switch during a song play switches the system to Phone scree but keeps playing the song.
6	Song information	- Displays the detailed information of music file currently played.

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2) External Device Connection

► HDMI



1. Connect the HDMI device with HDMI cable to the HDMI jack.



2. Wait for the system to complete the transition.



3. If the system is successfully connected to the device, video and audio are output from the system.



3. During driving, only the sound of the video file is played. The image of the video file does not appear on the screen. (The image will appear on the screen as soon as the vehicle stops.)





When the ignition off signal is detected with the audio system ON, the battery discharged warning message is displayed on the screen.

Modification basis	
Application basis	
Affected VIN	

3) How To Set LCD Audio System

▶ How to set LCD audio system



1. Press the [SETUP] button the front.

2. Setup Menu will be displayed.(Non RDS and RDS setting is shown together.)



(1) Sound setting



 Select [Sound] button on the Configuration screen.



- 2. The Sound setting screen is displayed.
 - Sound Center can be adjusted using four directional arrows or select sound center in the top view of seating area.
 - EQ style can be select from the EQ screen.
 Left, Right arrow will allow user to adjust the User EQ

(2) Display setting



1. Select [Display] button on the Configuration screen.



- 2. The Display setting screen is displayed.
 - Left, Right arrow will allow user to adjust the Brightness / Contrast / Saturation / Hue.
 - Non-Video(Radio / USB / BT) will only have Brightness control. (Default Brightness is 6.)
 - Video mode(HDMI) will have Brightness / Contrast / Saturation / Hue control.(Each Default value is 0.)

(3) Clock setting



1. Select [Clock] button on the Configuration screen.



2. The Clock setting screen is displayed.

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No.	Name	Description
1	Clock display	This will display the clock on the screen while the system is turned off.
2	Clock Type	User can select different type of clock.
3	12h/24h	User can select the clock to be 12h/24h for digital clock.
4	Time adjust	-
5	Reset	Time will be set to 10:10AM/12h.
6	Close	Return to previous Setting Menu.

(4) System setting



1. Select [System] button on the Configuration screen.



- 2. The System setting screen is displayed.
 - Region
 - Language
 - Version
 - Reset

► Checking system version



- 1. You can check the version of the system.
 - Systems SW information about OS, Application, V850, IR touch will appear on the screen.

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▶ System Initialization



1. Press RESET button on the top tab.



Confirmation Pop will appear and pressing YES will reset the user configuration setting for the system.

- The settings and configurations programmed at the factory are as follows:

Item	Mode	Description		
Radio	FM1	89.1 MHz		
USB	Audio	File	Automatic selection	
		Play time	00:00	
		Play/Stop	Play	
		Repeat mode	All (All/Folder/1)	
		Random	OFF (All/Folder)	
		Intro	OFF (All/Folder)	
Bluetooth	Pairing	Not p	aired	
	Settings	Bluetooth use	Yes	
		Automatic connection	Automatic	
		Automatic connection phone list	Empty	
		Device name	SYMC	
		Verification number	1234	
	Phone number	Outgoing call Empty		
		Incoming call Empty		
		Missed call	Empty	
	Phone book list	Empty		
	Microphone volume	3		
	Hands-free volume	15 15		
	A2DP volume			

Modification basis	
Application basis	
Affected VIN	

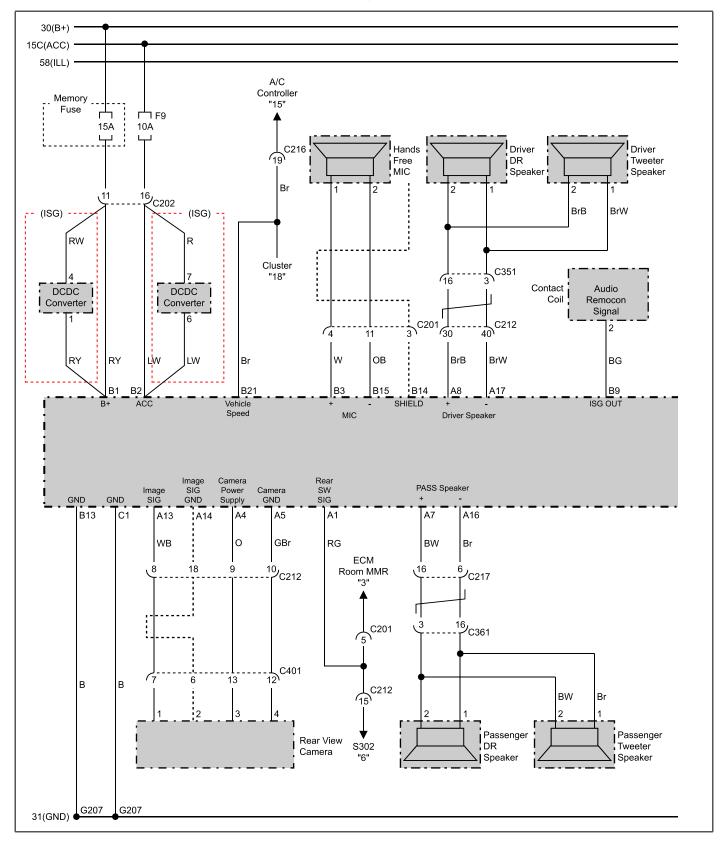
Item	Mode	Description		
Menu	Sound setting	FAD/BAL	0,0	
		Surround sound	ON	
		EQ	Center	
		BEEP	ON	
		AVC	ON	
	Display setting	Brightness, Contrast, Saturation, Color	0	
		Dimming	Auto	
		Aspect ratio	Full screen	
		Screen off	Disabled	
	Clock setting	ON	Analogue, 12-hour clock, 12:00, AM	
Volume	Audio volume	15		
	HDMI volume	1	5	

Memo		
- WCIIIO		

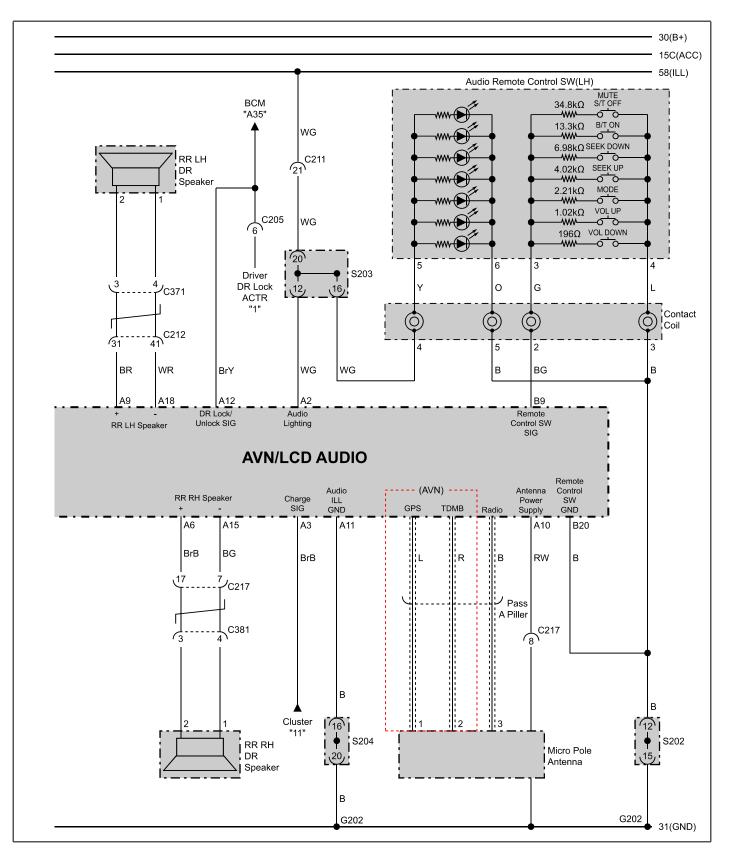
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4. CIRCUIT DIAGRAM

▶ Audio, remote control, antenna, rearview camera, speaker



LCD AUDIO SYSTEM

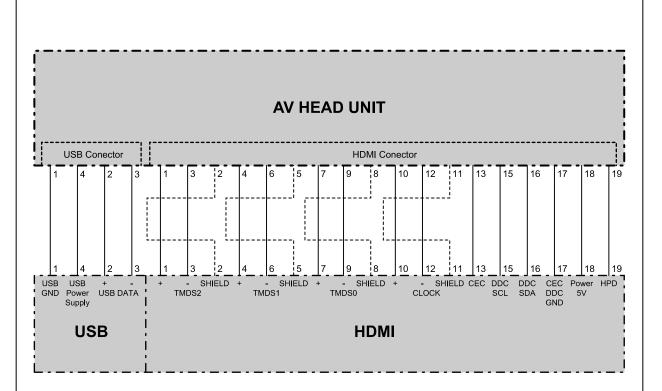


Modification basis	
Application basis	
Affected VIN	

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▶ USB/HDMI jack



HDMI: High Definition Multimedia Interface
TMDS: Transition Minimized Differential Signaling
CEC: Consumer Electronics Control
DDC: Display Data Channel
SCL: Serial Clock Line
SDA: Serial Data Line SDA : Serial Data Line HPD : Hot Plug Detect

Modification basis	
Application basis	
Affected VIN	

CONFIGURATION AND FUNCTIONS

8910-02 LCD AUDIO HEAD UNIT

1) Overview

The LCD audio head unit is fitted to the center of the instrument panel. It plays radio, audio and video files in various formats. The system also has USB and HDMI connections as well as Bluetooth function. The system is equipped with the touchscreen for the best user experience.

2) Mounting Location



No.	Name	Description
1	LCD display	- 7" TFT WVGA (800X480)
2	Mode	- Transit to Mode screen In Off status, last media will be resumed.
3	SETUP	- Transit to Setting screen
4	POWER/VOL	 Used when turning LCD audio system on or off, or adjusting sound volume. Volume range: 0 to 45
5	Mute	- Mute/Pause the audio/media
6	Radio	- Turn the radio on Change the Band/Preset.

Modification basis	
Application basis	
Affected VIN	

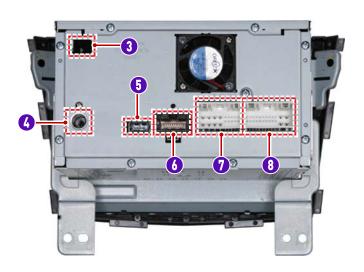
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LCD audio head unit

Front view



Rear view

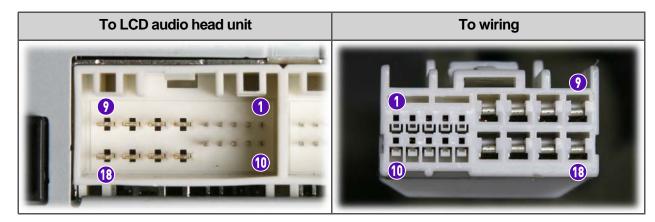


- 1. Touch screen switch
- 2. Audio head unit hard key
- 3. Ground
- 4. Radio antenna

- 5. USB connector
- 6. HDMI connector
- 7. Audio A connector
- 8. Audio B connector

3) Connector

▶ LCD audio A connector

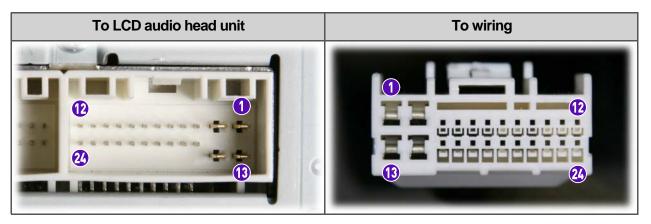


Pin No.	Function	Pin No.	Function
1	Rear switch signal	10	Antenna power supply
2	Audio lighting	11	Audio lighting ground
3	Charge signal	12	Door lock/unlock signal
4	Camera power supply	13	Image signal
5	Camera ground	14	Image signal ground
6	Rear right speaker +	15	Rear right speaker -
7	Passenger side speaker +	16	Passenger side speaker -
8	Driver side speaker +	17	Driver side speaker -
9	Rear left speaker +	18	Rear left speaker -

Modification basis	
Application basis	
Affected VIN	

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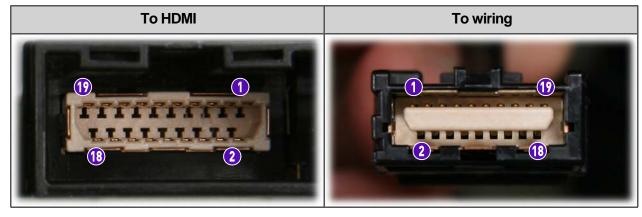
▶ LCD audio B connector



Pin No.	Function	Pin No.	Function
1	B+	13	Ground
2	ACC	14	SHIELD
3	Microphone +	15	Microphone -
4	-	16	-
5	-	17	-
6	-	18	SHIELD
7	-	19	-
8	-	20	Remote control switch ground
9	Remote control switch signal	21	Vehicle speed
10	-	22	-
11	-	23	-
12	-	24	-

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▶ HDMI connector



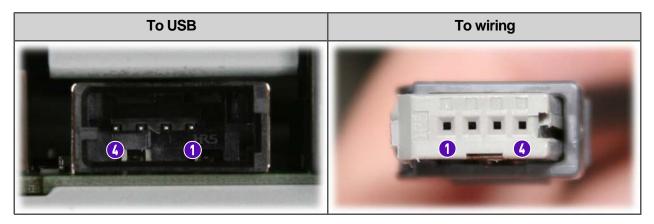
Pin No.	Function	Pin No.	Function
1	TMDS2 +	11	CLOCK-SHIELD
2	TMDS2 SHIELD	12	CLOCK -
3	TMDS2 -	13	CEC
4	TMDS1 +	14	-
5	TMDS1 SHIELD	15	DDC-SCL
6	TMDS1 -	16	DDC-SDA
7	TMDS0+	17	CEC/DDC ground
8	TMDS0 SHIELD	18	Power supply (5 V)
9	TMDS0 -	19	HDP
10	CLOCK+		

- HDMI: High Definition Multimedia Interface
- TMDS: Transition Minimized Differential Signaling
- CEC: Consumer Electronics Control
- DDC: Display Data Channel
- SCL: Serial Clock Line
- SDA: Serial Data Line
- HPD: Hot Plug Detect

Modification basis	
Application basis	
Affected VIN	

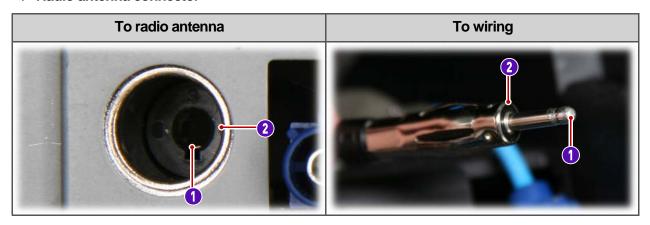
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▶ USB connector



Pin No.	Function	Pin No.	Function
1	USB ground	3	USB data (-)
2	USB data (+)	4	USB power supply

▶ Radio antenna connector



Pin No.	Function	Pin No.	Function
1	FM/AM	2	Ground

Modification basis	
Application basis	
Affected VIN	

▶ Operation specifications for AVN head unit

	Used for	Operating range		Current consumption
Battery	Head unit main power source	9V < V < 16V (13.5V)		MAX. 15A
ACC	ACC power supply		. 18.0V _ Min 12V)	MAX. 1A
Generator	Detects the engine operation and use the signal as a reference signal to prevent the battery from being discharged.	VL ≤ 0.5V		MAX. 15mA
Reverse signal	Feeds this signal during reverse		V < 18V 3.5V)	MAX. 1A
Speed sensor	The vehicle speed signal input is used for regulating the driving.	VL ≤ 0.5V		MAX. 15mA
Door UNLOCK	Door unlock signal input	VL ≤ 0.5V		MAX. 15mA
Steering wheel switch signal	Steering wheel signal input	0V < V < 5V		MAX. 100mA
USB	USB power supply	5V ± 10%		MAX. 1A
Sound output (built in AMP)	Outputs audio signal as a differential AMP output (FL, FR, RL, RR)	MAX. 22W, 4 ± 6Ω		-
Rearview camera input	Rearview camera signal input	0.7V RMS NTSC		-
Rearview camera power supply	Rearview camera power supply	6 ~ 9V Power supply (6.5V)		60mA
Integrated pole antenna	Integrated pole antenna power supply	Radio	9V ~ 16V	150mA
HDMI	HDMI signal input	Core power supply	1.17V~1.89V	188.1mA at 1.8V
		I/O power supply	3.14V~3.46V	178.5mA at 3.3V

Modification basis	
Application basis	
Affected VIN	

8910-10 USB AND HDMI JACK ASSEMBLY

1) Overview

The USB and HDMI jack assembly is an external input port assembly which enables users to enjoy media files stored in an external device played on the LCD audio head unit. The assembly consists of the USB port and HDMI port.

2) Mounting Location



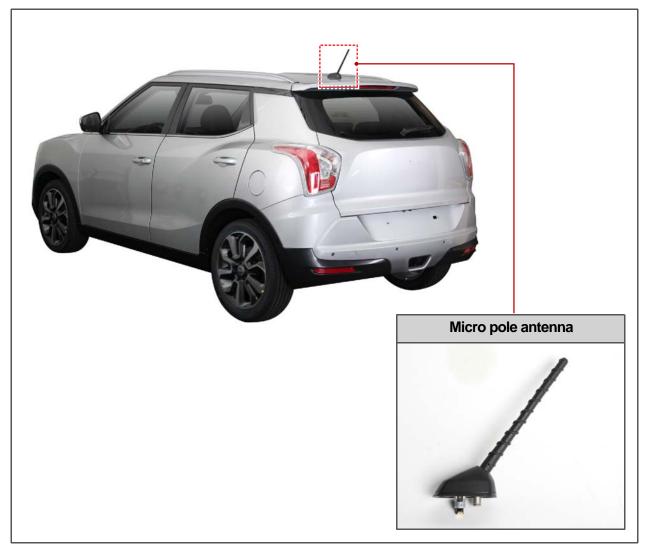
Modification basis	
Application basis	
Affected VIN	

8930-26 MICRO POLE ANTENNA ASSEMBLY

1) Overview

Micro pole antenna is fitted on the roof panel to ensure the high sensitivity.

2) Mounting Location



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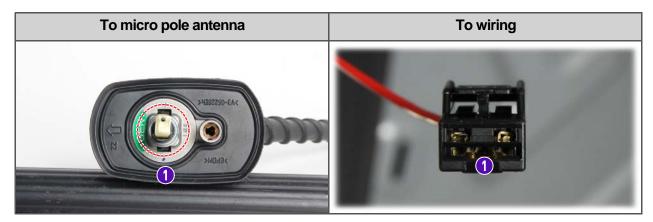
3) Connector

► Antenna connector



Pin No.	Function
1	Radio

▶ Power connector



Pin No.	Function
1	Power supply

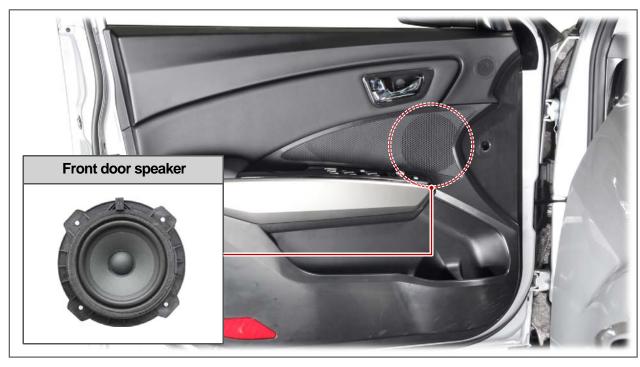
8610-22 FRONT DOOR SPEAKER ASSEMBLY

1) Overview

I V O L I

The front door speakers are built-in AMP type and mounted on the inside surface of the driver's and passenger's door trims.

2) Mounting Location



To front door speaker	To wiring	
2 1	1 2	

Pin No.	Function	Pin No.	Function
1	Ground	2	Power supply

Modification basis	
Application basis	
Affected VIN	

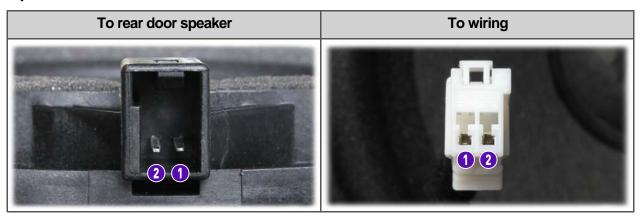
8610-22 REAR DOOR SPEAKER ASSEMBLY

1) Overview

The rear door speakers are built-in AMP type and mounted on the inside surface of the rear left and right door trims.

2) Mounting Location





Pin No.	Function	Pin No.	Function
1	Ground	2	Power supply

Modification basis	
Application basis	
Affected VIN	

8610-26 FRONT TWEETER SPEAKER ASSEMBLY

1) Overview

The front tweeter speakers are mounted on the inside surface of the driver's and passenger's door trims.

2) Mounting Location



To front tweeter speaker	To wiring
	1 2

Pin No.	Function	Pin No.	Function
1	Ground	2	Power supply

Modification basis	
Application basis	
Affected VIN	

09-46 8610-30 T I V O L I

8610-30 REARVIEW CAMERA ASSEMBLY

1) Overview

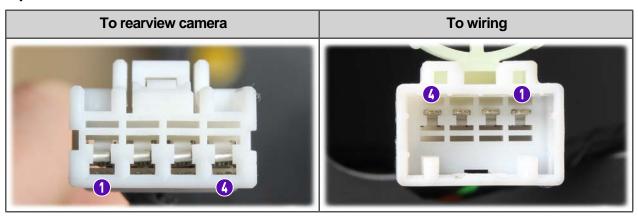
The rearview camera assembly displays the rear area of the vehicle on the LCD screen of the AVN system. When the TGS lever is shifted to R position, the rear area of the vehicle is displayed on the LCD screen automatically.

When the audio head unit receives a reverse driving signal from the TGS lever unit during reverse driving, it supplies the operating power to the rearview camera which then transmits video signals to display the rear area on the monitor.

2) Mounting Location



3) Connector



Pin No.	Function	Pin No.	Function
1	Image signal	3	Camera power supply
2	Image signal ground	4	Camera ground

LCD AUDIO SYSTEM

Modification basis	
Application basis	
Affected VIN	

4) Operating Process

For a vehicle equipped with rearview camera, the rear view is displayed on the monitor when shifting the gear selector lever to "R" position, for safe parking.

The operating conditions are as follows:

▶ Characteristics of rearview camera

The image of the rearview camera overrides the image of LCD audio system.

Even if the monitor is off, the power will be supplied to the monitor to display the rear view when shifting the gear selector lever to "R" position. Under this condition, shifting the gear selector lever to any position except "R", cuts off the power to the monitor.

▶ Operating conditions of rearview camera

Even if the image of the rearview camera overrides the image of LCD audio system, the rearview camera cannot operate alone. If the gear selector lever stays in "R" position for more than 3 seconds with the ignition switch ON or engine running, the rear view is displayed on the monitor automatically, no matter what is currently displayed.

► Rearview camera operation mode

- Automatic operation mode

When selecting R position while audio system is not in use (Ignition switch "ON" or engine running): The LCD screen of audio system is automatically turned on to display rear area of the vehicle. The screen is automatically turned off when shifting out from "R" position.

- Switching mode

When selecting R position while audio system is in use (Ignition switch "ON" or engine running): The LCD screen of audio system is automatically changed to rearview monitoring mode. The screen returns to the previous mode when shifting out from "R" position.

However, the audio stays on even in the rearview monitoring mode.



🕹 NOTE

The actual distance may differ from what you see from the monitor because the rearview camera uses a wide-angle lens to have a large clear view. Therefore, you should check the rearview mirrors and the area behind the vehicle before and while moving backward. The rearview camera does not show the entire area behind the vehicle.

Keep the camera lens clean using a camera lens cleaner so that the lens is free of foreign matter.

Modification basis	
Application basis	
Affected VIN	

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8610-37 BLUETOOTH (HANDS-FREE) MICROPHONE ASSEMBLY

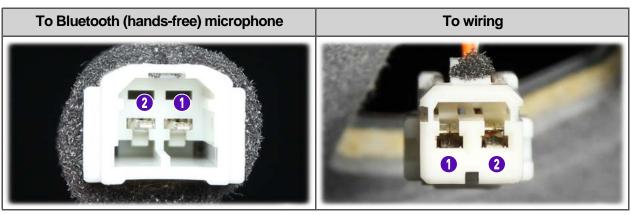
1) Overview

This enables the driver to talk on the phone comfortably and safely by putting the cellular phone at the designated place or on holder without having to hold it during driving.

2) Mounting Location



3) Connector



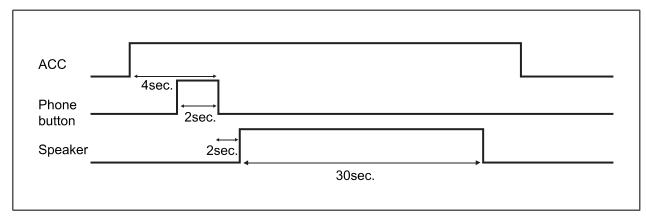
Pin No.	Function	Pin No.	Function
1	Power supply	2	Ground

LCD AUDIO SYSTEM TIVOLI 2015.03

Modification basis	
Application basis	
Affected VIN	

4) Self Diagnosis for Bluetooth

- 1. When the phone button of the audio remote control switch assembly is pressed for 2 seconds or more with 4 seconds after the ACC is turned ON from OFF, a beep sounds and then a howling sound is heard through the front tweeter speaker for 30 seconds.
- Pressing the phone button again or turning ACC to OFF stops the self diagnosis immediately.Do not operate other buttons or keys other than the ones needed for the self diagnosis. There is a risk of malfunctioning.



NOTE

Procedures when no howling sound is heard or the howling time does not meet the specification

- 1. Initialize the Bluetooth.(Refer to Initialization of the Bluetooth)
- 2. Reconnect the device by Bluetooth pairing.
- 3. If the same symptom appears again, connect other device.
- 4. If other device is connected normally, the Bluetooth function of the first device may be malfunctioning.
- If other device shows the same problem, the head unit may have internal problems. Check the Bluetooth microphone or hands-free phone switch installed on the steering wheel for electrical circuit.

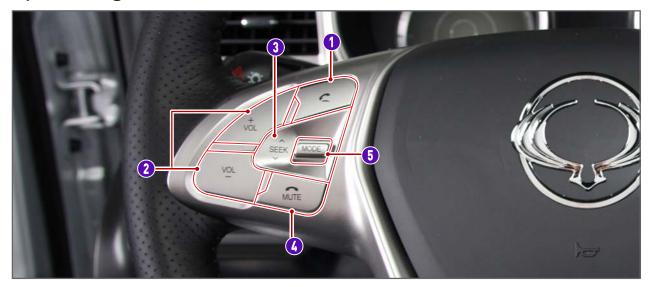
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8630-10 AUDIO REMOTE CONTROL SWITCH ASSEMBLY

1) Overview

The audio control switch assembly installed on the left side of the steering wheel controls the audio system. The audio remote control switch assembly consists of the bluetooth handsfree switch, SEEK UP/DOWN switch, volume UP/DOWN switch, audio power switch, and audio operation mode switch.

2) Mounting Location



No.	Name	Description
1	Bluetooth (handsfree) switch	Phone switch which is used for Bluetooth handsfree call with a mobile phone.
2	Volume up/down switch	- Increases/decreases volume
3	SEEK up/down switch	In file play mode - Pressing SEEK up/down switch: Moves to previous/next file while a MP3 file is playing. In radio mode - Pressing SEEK up/down switch: Searches for radio stations manually, moves to channel stored Pressing and holding SEEK up/down switch: Searches for radio stations automatically.
4	Power/mute switch	With audio power ON - Press and hold to switch it off - Press the switch briefly to mute and press it again to unmute
5	Mode switch	Press and hold the switch to change the audio mode (AM, FM1, FM2).

LCD AUDIO SYSTEM
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Modification basis	
Application basis	
Affected VIN	

To power window main switch	To wiring

Pin No.	Function	Pin No.	Function
1	-	4	Audio remote control switch signal ground
2	-	5	Illumination power supply
3	Audio remote control switch signal	6	Illumination ground

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REMOVAL AND INSTALLATION

8910-02 LCD AUDIO HEAD UNIT

Preceding work

- Disconnect the negative battery cable.







1. Remove the center fascia LH panel by prying off the bottom (A) using a hand remover. (The same method applies to the RH panel.)

A CAUTION

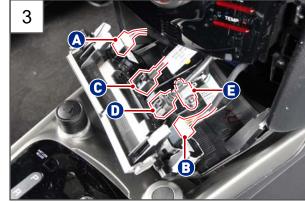
Take care not to damage the fixing clips (5 off) when removing the center fascia LH panel.

Front view	Rear view

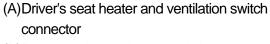
LCD AUDIO SYSTEM	Modification basis	
TIVOLI 2015.03	Application basis	
A	Affected VIN	



2. Prise apart the center fascia front seat heater switch assembly panel with a hand remover.

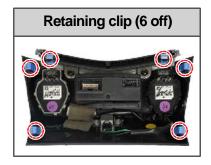


3. Disconnect the connectors at the rear side of the front seat heater switch assembly panel.



- (B) Passenger's seat heater switch connector
- (C)USB connector
- (D)HDMI connector
- (E)IP center lower mood lamp connector
- 4. Remove the front seat heater switch assembly panel completely.







5. Unscrew the 4 mounting screws for the heater and A/C control assembly.



Disconnect the heater and A/C control assembly connector (A) at the rear side of the heat and A/C control assembly by prising the assembly off.



Remove the heater and A/C control assembly.



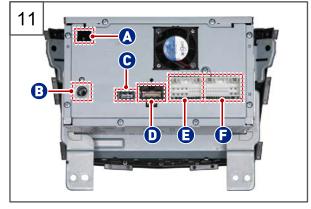
8. Unscrew the 2 mounting screws (A) for the center fascia switch assembly.



9. Disengage the center fascia switch assembly and pull it down.



10.Unscrew the 4 mounting screws for the LCD audio head unit and pull it down.



- 11. Disconnect the connector at the rear side of the LCD audio head unit.
 - A. Ground
 - B. Radio antenna
 - C. USB connector
 - D. HDMI connector
 - E. Audio A connector
 - F. Audio B connector



12. Remove the LCD audio head unit.



13.Install in the reverse order of removal.

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8910-10 USB AND HDMI JACK ASSEMBLY

Preceding work

- Disconnect the negative battery cable.







 Remove the front seat heater switch assembly.

!

NOTE

Refer to "FRONT SEAT HEATER AND VENTILATION SWITCH ASSEMBLY" under "REMOVAL AND INSTALLATION" subsection of "SWITCH" section in "ELECTRIC" chapter.

Disengage the USB and HDMI jack assembly mountings at the rear side of the center fascia front seat heater switch assembly panel.





3. Remove the USB and HDMI jack assembly.



4. Install in the reverse order of removal.

8930-26 MICRO POLE ANTENNA

Preceding work

- Disconnect the negative battery cable.

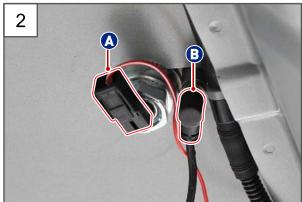




1. Remove the headlining.

♣ NOTE

Refer to "HEADLINING ASSEMBLY" under "REMOVAL AND INSTALLATION" subsection of "BODY INTERIOR" section in "BODY" chapter.

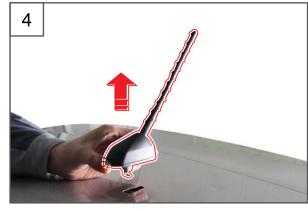


2. Disconnect the power connector (A), radio (AM, FM) connector (B).

Modification basis	
Application basis	
Affected VIN	



3. Unscrew the mounting nut (19 mm) for the micro pole antenna.



4. Remove the micro pole antenna assembly.



5. Install in the reverse order of removal.

Modification basis	
Application basis	
Affected VIN	

8610-22 FRONT DOOR SPEAKER

Preceding work

- Disconnect the negative battery cable.



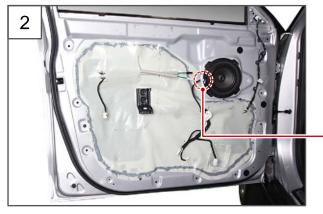


1. Remove the front door trim.

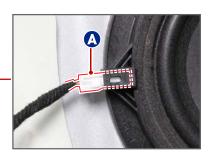


♣ NOTE

Refer to "FRONT DOOR TRIM ASSEMBLY" under "REMOVAL AND INSTALLATION" subsection of "BODY INTERIOR" section in "BODY" chapter.



2. Disconnect the front door speaker connector (A).



LCD AUDIO SYSTEM TIVOLI 2015.03

Modification basis	
Application basis	
Affected VIN	



3. Unscrew the 4 mounting screws on the front door speaker.



4. Remove the front door speaker.



5. Install in the reverse order of removal.

8610-22 REAR DOOR SPEAKER

Preceding work

- Disconnect the negative battery cable.

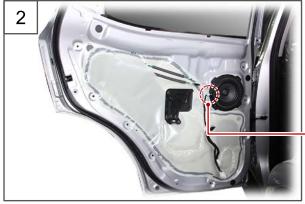




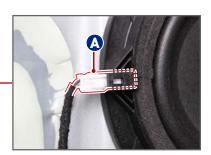
1. Remove the rear door trim.



Refer to "REAR DOOR TRIM ASSEMBLY" under "REMOVAL AND INSTALLATION" subsection of "BODY INTERIOR" section in "BODY" chapter.



2. Disconnect the rear door speaker connector (A).



Modification basis	
Application basis	
Affected VIN	



3. Unscrew the 4 mounting screws on the rear door speaker.



4. Remove the rear door speaker.



5. Install in the reverse order of removal.

Modification basis	
Application basis	
Affected VIN	

8610-25 FRONT TWEETER SPEAKER

Preceding work

- Disconnect the negative battery cable.



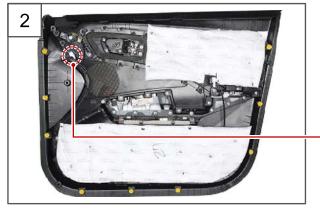


1. Remove the front door trim.



♣ NOTE

Refer to "FRONT DOOR TRIM ASSEMBLY" under "REMOVAL AND INSTALLATION" subsection of "BODY INTERIOR" section in "BODY" chapter.

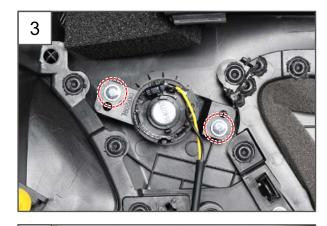


2. Disengage the mounting for the front tweeter speaker.



LCD AUDIO SYSTEM TIVOLI 2015.03

Modification basis	
Application basis	
Affected VIN	



3. Unscrew the 2 mounting screws on the front tweeter speaker.



4. Remove the front tweeter speaker.



5. Install in the reverse order of removal.

Modification basis	
Application basis	
Affected VIN	

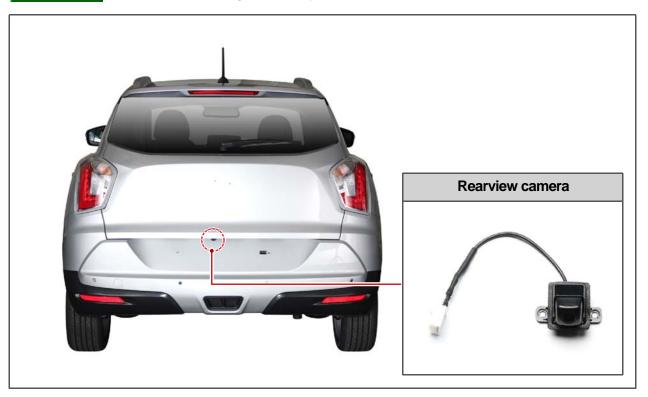
09-66 8610-30

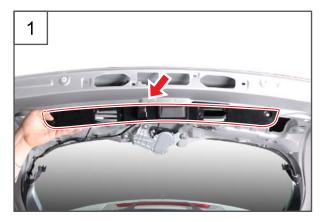
T I V O L I

8610-30 REARVIEW CAMERA

Preceding work

- Disconnect the negative battery cable.

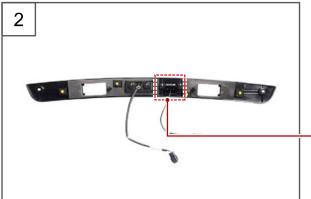




1. Remove the tailgate switch panel.

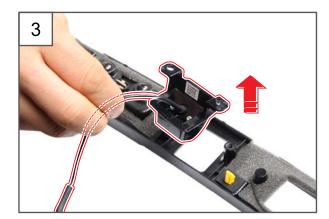


Refer to "TAILGATE SWITCH ASSEMBLY" under "REMOVAL AND INSTALLATION" subsection of "SWITCH" section in "ELECTRIC" chapter.



2. Unscrew the 2 mounting screws for the rearview camera.





4. Install in the reverse order of removal.

3. Remove the rearview camera.



8610-37 BLUETOOTHE (HANDS-FREE) MICROPHONE

Preceding work

- Disconnect the negative battery cable.







1. Prise apart the mounting for the Bluetooth (hands-free) microphone with a hand remover.



2. Disconnect the Bluetooth (hands-free) microphone connector (A).

Modification basis	
Application basis	
Affected VIN	



3. Remove the Bluetooth (hands-free) microphone.



4. Install in the reverse order of removal.

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8630-10 AUDIO REMOTE CONTROL SWITCH

Preceding work - Disconnect the negative battery cable.





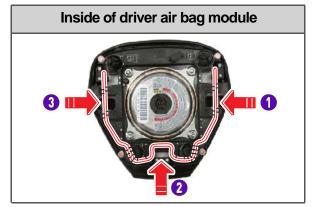
1. Remove the driver air bag module from the steering wheel by following the procedures below:

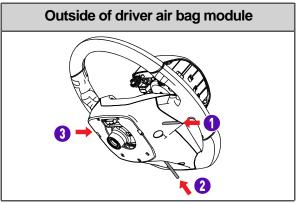


a. Insert a flat bladed screw driver to the 3 holes on the rear side of the steering wheel to press out the snap rings securing the air bag module.

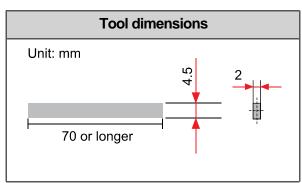
A CAUTION

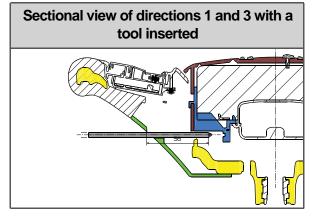
Insert a screwdriver by paying close attention to the short circuit due to wirings in the driver air bag module.

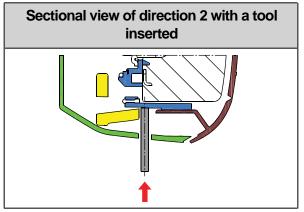












Modification basis	
Application basis	
Affected VIN	



- b. Lift out the driver's air bag module and disconnect the connectors (A) and (B).
 - (A) Horn connector
 - (B) Driver's air bag module connector



c. Remove the driver's air bag module.



2. Remove the 4 mounting screws for steering wheel upper cover at the back side of the steering wheel.





3. Remove the steering wheel upper cover and disconnect the connectors (A) and (B).

- (A) Audio remote control switch connector
- (B) Cruise control switch connector



5

4. Remove the steering wheel upper cover.



5. Remove the 3 mounting screws for the audio remote control switch at the back side of the steering wheel upper cover.



6. Remove the audio remote control switch.



ł	Modification basis	
	Application basis	
	Affected VIN	

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7. Install in the reverse order of removal.

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Modification basis	
Application basis	
Affected VIN	