SWITCH

7610-54/7632-16/7770-20/8510-01/8510-05/8510-13/ 8510-21/8510-31/8510-52/8610-06/8610-08/

GENERAL

CONFIGURATION AND FUNCTIONS

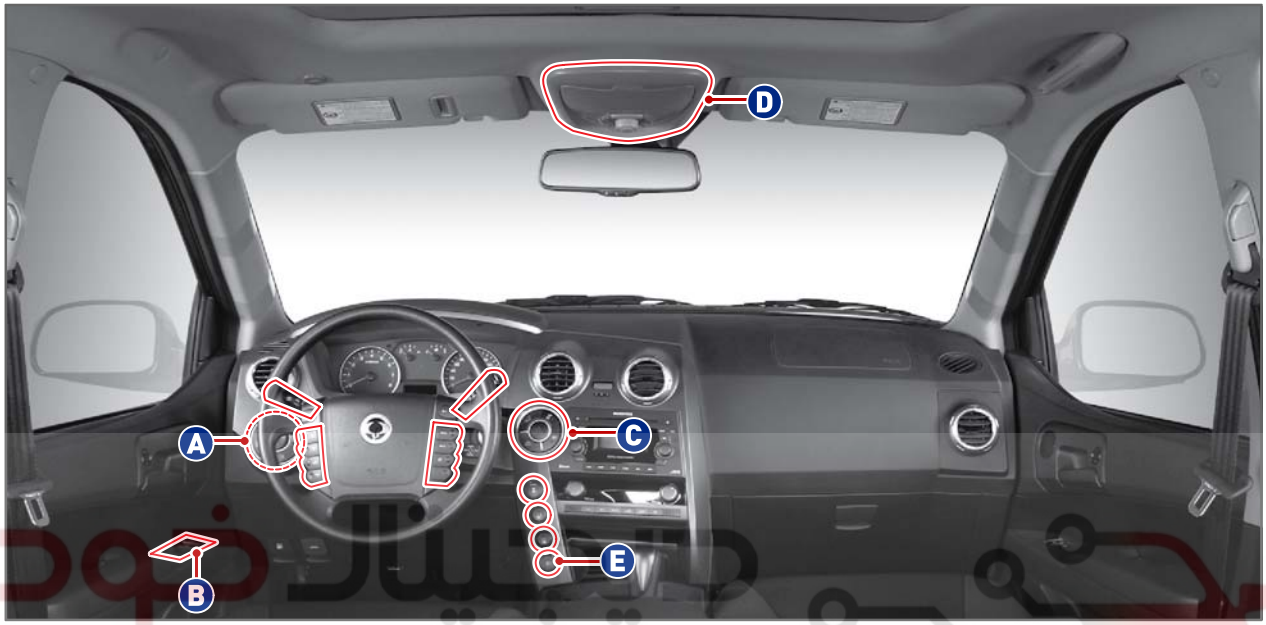
REMOVAL AND INSTALLATION

SWITCH

8510-31

GENERAL

1. SWITCH ARRANGEMENT



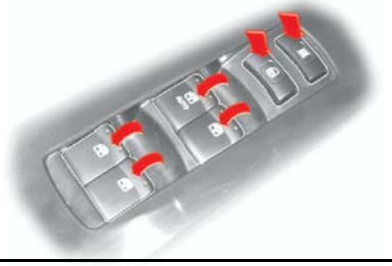
A

CAUTION

Do not install the supplemental steering device. It may cause to damage the heated wire inside the steering wheel.

1. **Outside Rearview Mirror Folding Switch**
   To fold the outside rearview mirrors, press the switch. To unfold the mirrors, press it again.
2. **Steering Wheel Heating Switch**
   To heat the steering wheel, press this switch. To stop the heating, press it again. The heating function stops when stopping the engine.
3. **Rear Fog Lamp Switch**
   The rear fog lamp comes on when the rear fog lamp is turned on only while the front fog lamp is ON.
4. **ESP OFF Switch**
   If you press the ESP OFF switch, the ESP function stops and the indicator lamp in instrument panel comes on. Press this switch again to resume the ESP function. At this time, the indicator lamp goes out.

B



Driver's Power Window Switch

Driver can controls all door windows (Open/Close/Lock/Unlock) and doors (Lock/Unlock) with this switch unit.

Modification basis	
Application basis	
Affected VIN	

C

1 **HDC Switch**
When this button is pressed once, HDC is ready for use. The green HDC indicator comes on the instrument panel. When the button is pressed again, HDC is deactivated and the indicator goes off. (Refer to ABS/ESP section.)

2 **Heated Tailgate Glass and Outside Rearview Mirror Glass Switch**
Press this switch to turn on the tailgate and outside rearview mirror defogger. It will operate for about 12 minutes.

3 **Heated Windshield Glass Switch**
Press this switch to turn on the heated windshield glass. It will operate for about 12 minutes.

4 **TRIP Switch**
To choose a desired driving distance display mode, press the switch: Changing sequence: ODO - TRIP A - TRIP B - ODO

Additional Functions of Multifunction Switch

Auto light position

1 **Front wiper operation range**
(move the wiper lever up/down)

2 **Rear wiper operation**

3 **Washer fluid will be sprayed**
onto the rear window glass once during rear wiper operation.

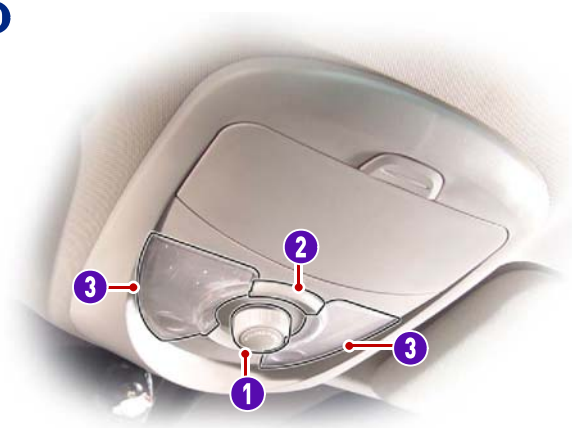
4 **Auto Washer Switch**
When the front wiper switch is off and this switch is pressed, washer fluid will be sprayed and the wiper will automatically operate 4 times. Then, the fluid will be sprayed again and the wiper will automatically operate 3 times.

5 **Front Wiper and Washer Coupled Operation**
Pull the lever briefly (below 0.6 seconds): One wiping cycle Pull and hold the lever for more than 0.6 seconds: Three wiping cycles with washer spray

6 **Washer fluid will be sprayed onto**
the rear window glass and the wiper will also operate once.

Modification basis	
Application basis	
Affected VIN	

D



1. Sun roof switch
2. Main room lamp switch
3. Front room lamp spot switch

E

4WD Control Switch

Driver's Heated Seat Switch

Passenger's Heated Seat Switch

Head Lamp Leveling Switch

Audio Remote Control Switch

POWE	MUTE
MODE	▲ VOL
▲ SEEK	VOL ▼
SEEK ▼	Bluetooth Switch

Modification basis	
Application basis	
Affected VIN	

CONFIGURATION AND FUNCTIONS

S.G.N. 8510-31 CENTER FASCIA & BEZEL SWITCH ASSEMBLY

1) Location

The center fascia switch consists of hazard switch bezel assembly, T/C control switch and seat warmer switch.

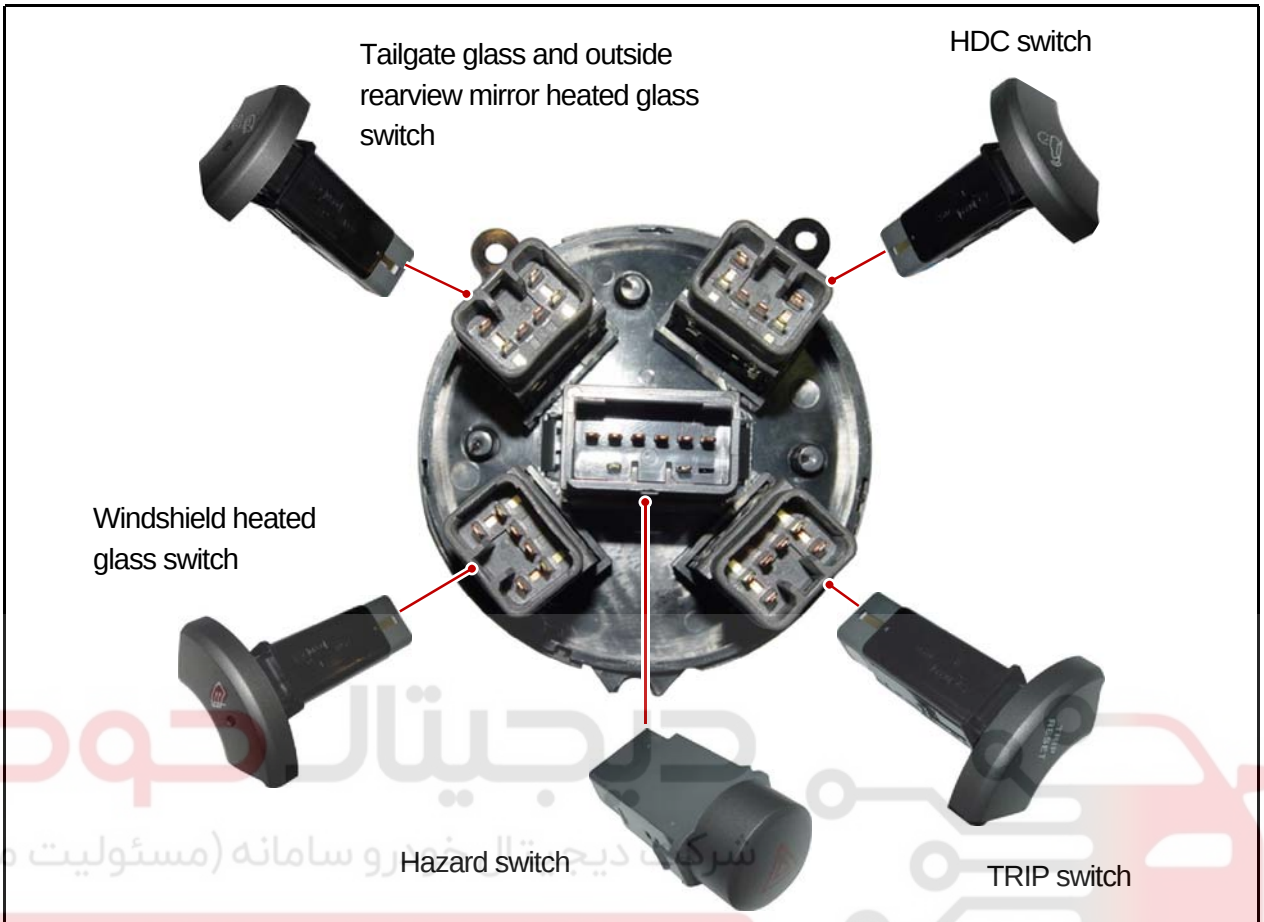
Center Fascia Assembly

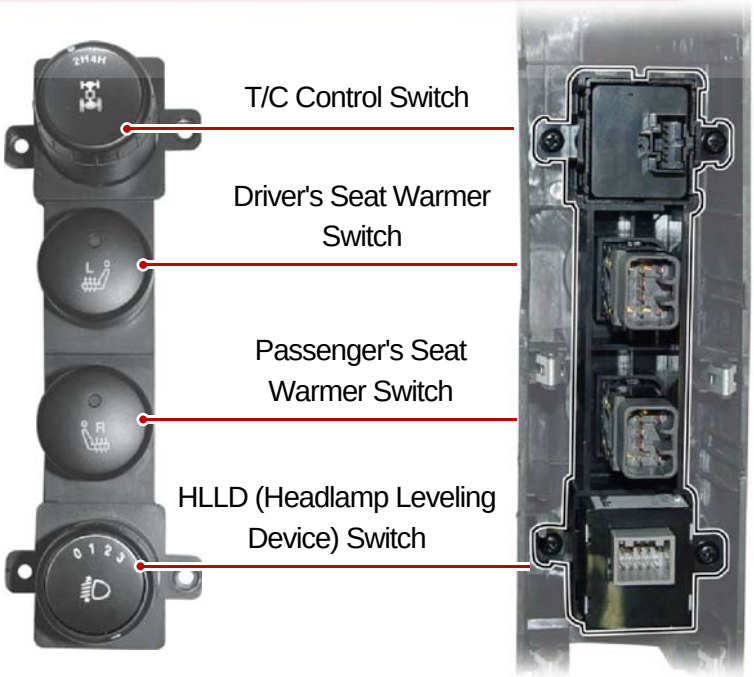
SWITCH

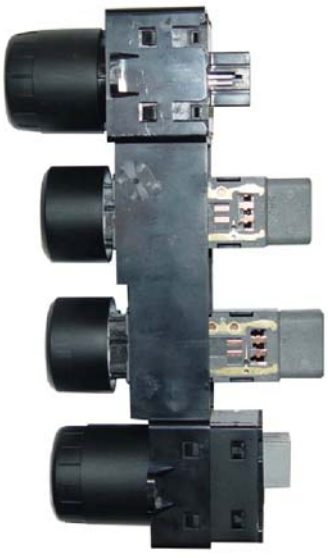
undefined

Modification basis	
Application basis	
Affected VIN	

2) Switch Arrangement







Modification basis	
Application basis	
Affected VIN	

3) Functions

CAUTION

- The G sensor in sensor cluster measures the actual road steepness. However, it may recognize a sharp turn or rough road as a downhill road with a slope level exceeding 10%, and the HDC may operate.

A HDC Switch

When you press the HDC switch, the green HDC indicator comes on, and when the HDC operates, the green HDC indictor blinks with 0.5 second of interval.

The HDC system is an automatic descent control device that allows the vehicle to automatically decelerate to about 7 km/h by 0.1G, on steep roads (slope level exceeding 10%) through a separately installed switch operation. When the vehicle speed reaches below 7 km/h (refer to the information below), the HDC automatically terminates the operation.

B Heated Tailgate Glass & Outside Rearview Mirror Glass Switch

- Press this switch to turn on the tailgate and outside rearview mirror heated glass. It will operate for about 12 minutes.
- Press the switch again to stop the operation.
- This switch is designed to defrost and defog on tailgate glass and outside rearview mirrors.
- The heated glass will operate for about 6 minutes when the switch is pressed again within 10 minutes after completion of its first operation cycle.
- The indicators in the switch come on when in use.

C Heated Windshield Glass Switch

This switch is designed to defrost and defog on windshield.

- Press this switch to turn on the windshield heated glass. It will operate for about 12 minutes. Press the switch again to stop the operation.
- The indicators in the switch come on when in use.
-

D TRIP RESET Switch

The mode is changed each time this button is pressed as follows: TRIP A -> TRIP B -> DTE -> Driving time -> Average fuel economy -> Instant fuel consumption -> Tail lamp illumination level.

Modification basis	
Application basis	
Affected VIN	

4WD Control Switch

Driver's Heated Seat Switch

Passenger's Heated Seat Switch

HLLD (Headlamp Leveling Device) Switch

4WD Control Switch

Choose a proper mode according to the road conditions.

4WD HIGH	4WD LOW	4WD CHECK
This light comes on when switched to HIGH 4WD	This light comes on when switched to LOW 4WD	This warning light comes on when the 4WD system is defective.

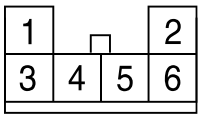
Modification basis	
Application basis	
Affected VIN	

4) Switches in Hazard & Bezel Switch Assembly

(1) HDC Switch

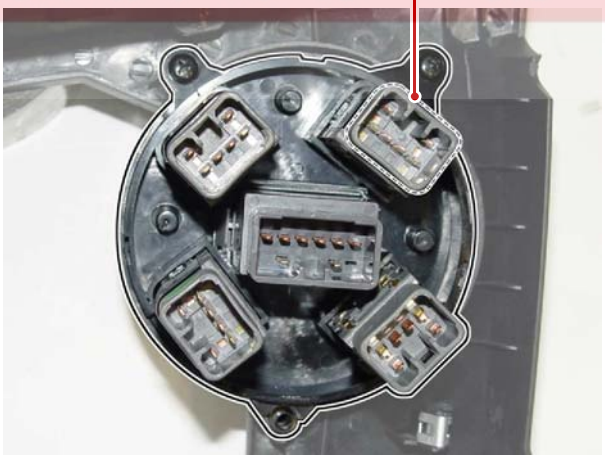
▶ Overview

HDC switch is a Push & Self Return type switch and connected to ABS/ESP HECU terminal. This switch has an illumination lamp connected to the tail lamp circuit.



HDC SW

Pin No.	Function
1	Tail lamp (-)
2	SIGNAL (5V)
3	Tail lamp (+)
4	-
5	Ground
6	-



Modification basis	
Application basis	
Affected VIN	

▶ Operation of HDC Indicator Controller

This table describes the coming-on and blinking mode of HDC indicator according to the HDC switch operation (ON/OFF).

The HDC indicator on the instrument panel has two modes; green (function lamp) and red (warning lamp).

The HDC switch is a push & self return type switch - when you press it once, it starts to operate and when you press it again, it stops the operation.

<table>
<tr><th colspan="4" rowspan="3">HDC Operation Mode</th><th>HDC Indicator</th><th>HDC Warning Lamp</th></tr>
<tr><th>Green</th><th>Red</th></tr>
<tr><th> 
</th><th> 
</th></tr>
<tr><td colspan="4">Initial ignition ON (From hence, this signifies operation mode after the engine starts. Even when HDC switch is ON, if the ignition is OFF, HDC operation stops automatically.)</td><td>OFF</td><td>ON
(goes off after 1.8 seconds)</td></tr>
<tr><td rowspan="4">Not available
Stand-by</td><td colspan="3">HDC switch OFF</td><td>OFF</td><td>OFF</td></tr>
<tr><td colspan="3">HDC system error</td><td>OFF</td><td>ON</td></tr>
<tr><td colspan="3">HDC switch ON</td><td>ON</td><td>OFF</td></tr>
<tr><td colspan="5">The HDC switch is turned ON, but HDC system is in stand-by mode because the operating requirements are not met.</td></tr>
<tr><td rowspan="2">In operation</td><td colspan="3">HDC system is operating.</td><td>Blinking (0.5 second of interval)</td><td>OFF</td></tr>
<tr><td colspan="5">The HDC switch is turned ON, and the operating requirements are met. HDC is operating with operating sound.</td></tr>
<tr><td rowspan="4">System overheat</td><td rowspan="2">High brake system temperature (over 350°C)</td><td>HDC stand-by mode</td><td colspan="2">OFF</td><td>Blinking</td></tr>
<tr><td>HDC is operating</td><td colspan="3">Alternate blinking of green and red lamp (0.5 second of interval)</td></tr>
<tr><td colspan="3">Too high brake system temperature (over 450°C)</td><td>OFF</td><td>ON</td></tr>
<tr><td colspan="5">There is no specific temperature sensor in the system, but a programmed logic inside the HECU predicts the temperature based on the operating numbers and conditions of HDC (HDC cannot be operated).</td></tr>
</table>

CAUTION

- Basically, the brake system's basic functions can work even when there are problems with the HDC system.
  As given in the table above, the HDC warning lamp comes on when
  - · Initial ignition ON
  - · HDC system error occurs
  - · Brake system overheat

▶ **HDC (Hill Descent Control) System Operating Conditions**

1. When HDC switch is turned ON
2. Gearshift lever position (Forward/Reverse)
   Manual transmission: operates in the 1st gear or reverse gear position (does not operate in neutral position).
   Automatic transmission: operates in any position except P (parking) or N (neutral) positions.

and

and

CAUTION

- The **vehicles with manual transmission** do not have a separate device or switch that detects the 1st gear. It only detects the forward/reverse driving direction of the vehicle through backup lamp switch and neutral switch, and cannot solely detect the 1st gear position. The reason for noting the 1st gear above, though the HDC also operates in 2nd gear position, is because the engine may turn off during the HDC operation process. You may face a very dangerous situation if the engine turns off at a steep hill.
- The HDC is the device to improve the engine brake effect during downhill driving on a steep hill. For manual transmission equipped vehicle, HDC system should operated only in 1st gear.

3. When not depressing the accelerator pedal or brake pedal.
4. The vehicle speed is above 7 km/h (in Automatic transmission/4H mode).

and

and

CAUTION

- The vehicle speed given in step (3) varies according to the vehicle driving mode, and the speed ranges by the vehicle driving mode and condition are as follows.

1) Speed available in HDC mode (slope)

Forward driving 2H/4H mode: vehicle speed below 50 km/h
(operation slope level: 10%, termination slope level: when it reaches 8%)

Reverse driving 2H/4H mode: vehicle speed below 50 km/h
(operation slope level: 8%, termination slope level: when it reaches 5%)

2) HDC target speed in 2H/4H mode

(The HDC target speed is the speed that the HDC is not terminated even after the vehicle speed reaches 7 km/h, but is converted to the stand-by mode. When the vehicle speed increases again as a result of the increase of the road steepness, etc., the HDC goes into operation.)

Forward driving: 7 km/h
Reverse driving: 7 km/h (automatic transmission), 8.5 km/h (manual transmission)

Modification basis	
Application basis	
Affected VIN	

5. Vehicle position control function in ESP and HBA function are not in operation: **and**
   The HDC is the device to improve the engine brake effect during downhill driving on a steep hill. If the ESP function is in operation, HDC operation is overridden.
6. Slope level exceeds 10%.
   When the slope level exceeds 10%, the HDC operates until the vehicle reaches the speed value given in step (4).

▶ **When the slope level is between 10% and 20% during the HDC operation**

- When depressing the accelerator pedal or brake pedal, HDC system is changed to stand-by mode.
  When depressing the accelerator pedal again, HDC starts its operation again. Therefore, drivers can control the vehicle speed to a desired level by operating the accelerator pedal.

▶ **When the slope level exceeds 20% during the HDC operation**

- When depressing the accelerator pedal, HDC system is changed to stand-by mode. When depressing the brake pedal, HDC continues its operation and the braking power is increased.
  In this case, HECU sounds an abnormal noise and brake pedal may be very rigid, but this is a normal condition due to HDC operation.

Modification basis	
Application basis	
Affected VIN	

▶ **HDC (Hill Descent Control) System Non-Operation Conditions**

1. When HDC switch is turned OFF **or**
2. Gearshift lever has passed neutral (N) position. **or**

CAUTION

- Vehicle with the manual transmission: Sensing at the neutral switch
- Vehicle with the automatic transmission: Sensing at the selector lever unit

3. When the vehicle speed is out of the specified values. **or**
4. When the ESP related functions, e.g. vehicle position control, HBA, ARP is activated during HDC operation. **or**
   The HDC is the device to improve the engine brake effect during downhill driving on a steep hill. If the ESP function is in operation, HDC operation is overridden.
5. When the internal temperature of HDC system goes over 350°C due to long downhill driving on a steep hill with HDC operated. **or**
   There is no specific temperature sensor in the system, but a programmed logic inside the HECU predicts the temperature based on the operating numbers and conditions of HDC.

CAUTION

- The red HDC warning lamp blinks when the internal temperature goes over 350°C. When it reaches 450°C, the HDC warning lamp comes on. The HDC can be operated in the range even where the HDC warning lamp blinks.

6. When the slope level is below 10%
   When the slope level exceeds 10%, the HDC operates until the vehicle reaches the speed condition given in step (4).

▶ **When the slope level is between 10% and 20% during the HDC operation**

- When depressing the accelerator pedal or brake pedal, HDC system is changed to stand-by mode.
  When depressing the accelerator pedal again, HDC starts its operation again. Therefore, drivers can control the vehicle speed to a desired level by operating the accelerator pedal.

▶ **When the slope level exceeds 20% during the HDC operation**

- When depressing the accelerator pedal, HDC system is changed to stand-by mode. When depressing the brake pedal, HDC continues its operation and the braking power is increased.
  In this case, HECU makes an abnormal noise and brake pedal may be very rigid, but this is a normal condition due to HDC operation.

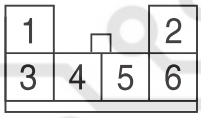
Modification basis	
Application basis	
Affected VIN	

(2) Heated Tailgate Glass/Outside Rearview Mirror (Defogger) Switch

▶ Overview

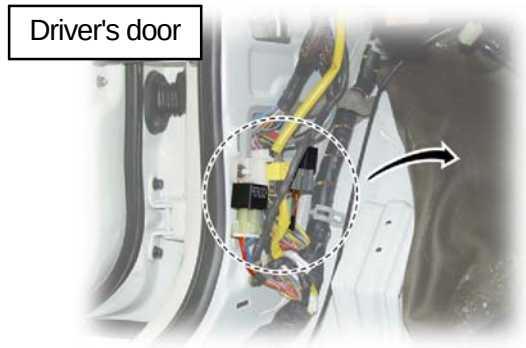
Heated tailgate glass/Outside rearview mirror switch is a Push & Self Return type switch.

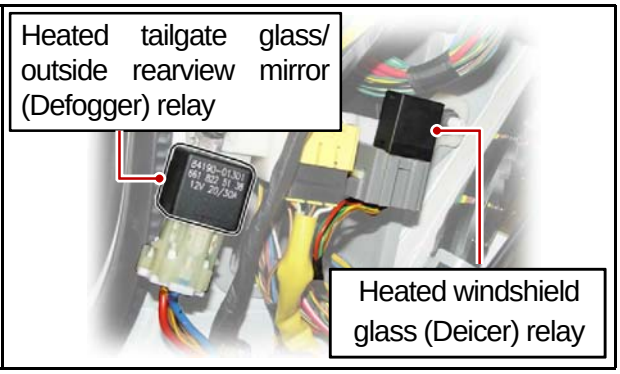
1. The outside rearview mirror & tailgate glass defogger operates for approx. 12 minutes when pressing this switch while the ignition switch is turned on.
2. It stops when pressing the switch again during its operation.
3. If pressing this switch again within 10 minutes after completion of first operation, it will operate for about 6 minutes.
4. It stops when the ignition switch is turned to "OFF".



RR DEF SW

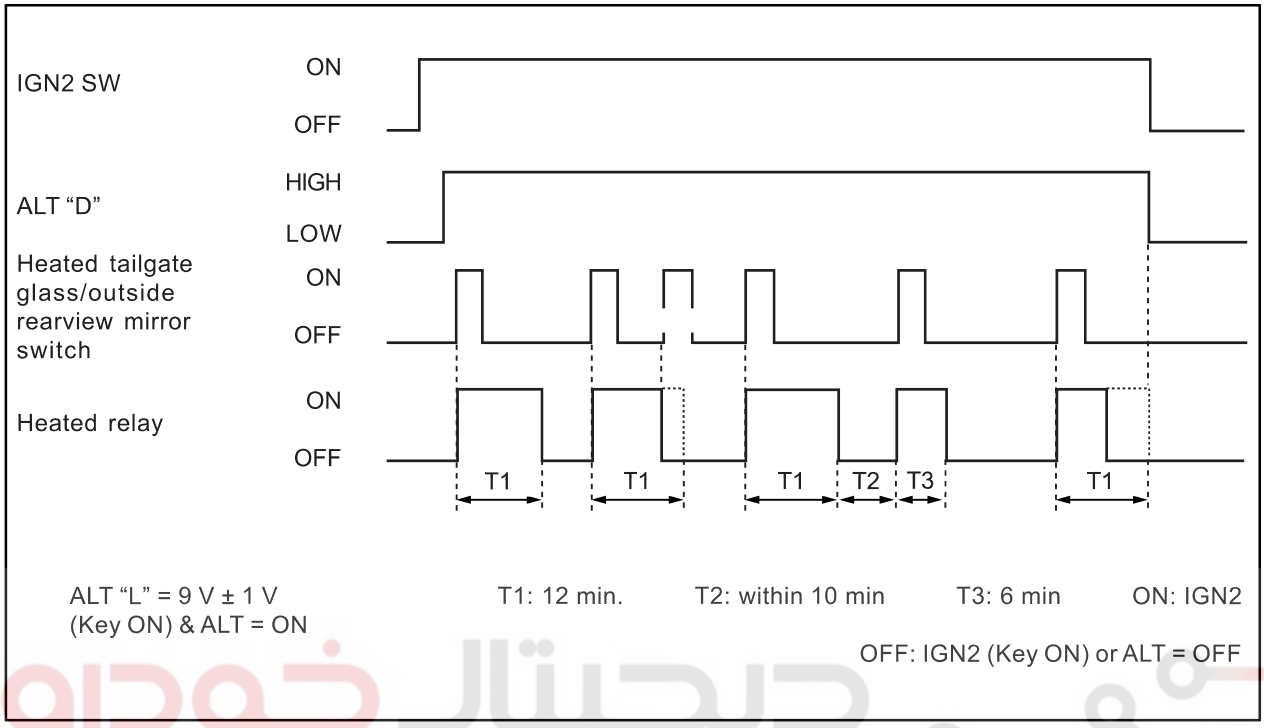
Pin No.	Function
1	ILL (-)
2	STICS SIG
3	ILL (+)
4	-
5	GND
6	DEFORGGER RELAY IND





Modification basis	
Application basis	
Affected VIN	

▶ **Timing Chart**



Modification basis	
Application basis	
Affected VIN	

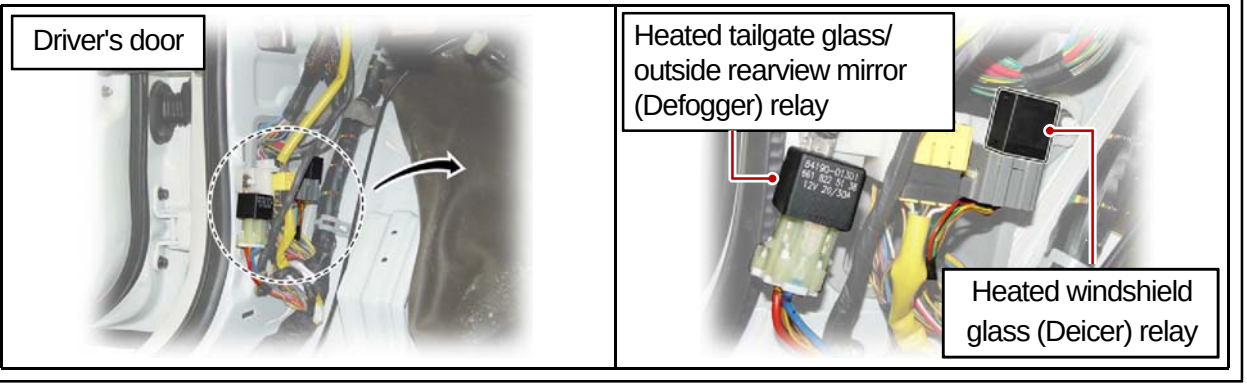
(3) Heated Windshield Glass (Deicer) Switch

▶ Overview

Heated windshield glass switch is a Push & Self Return type switch.

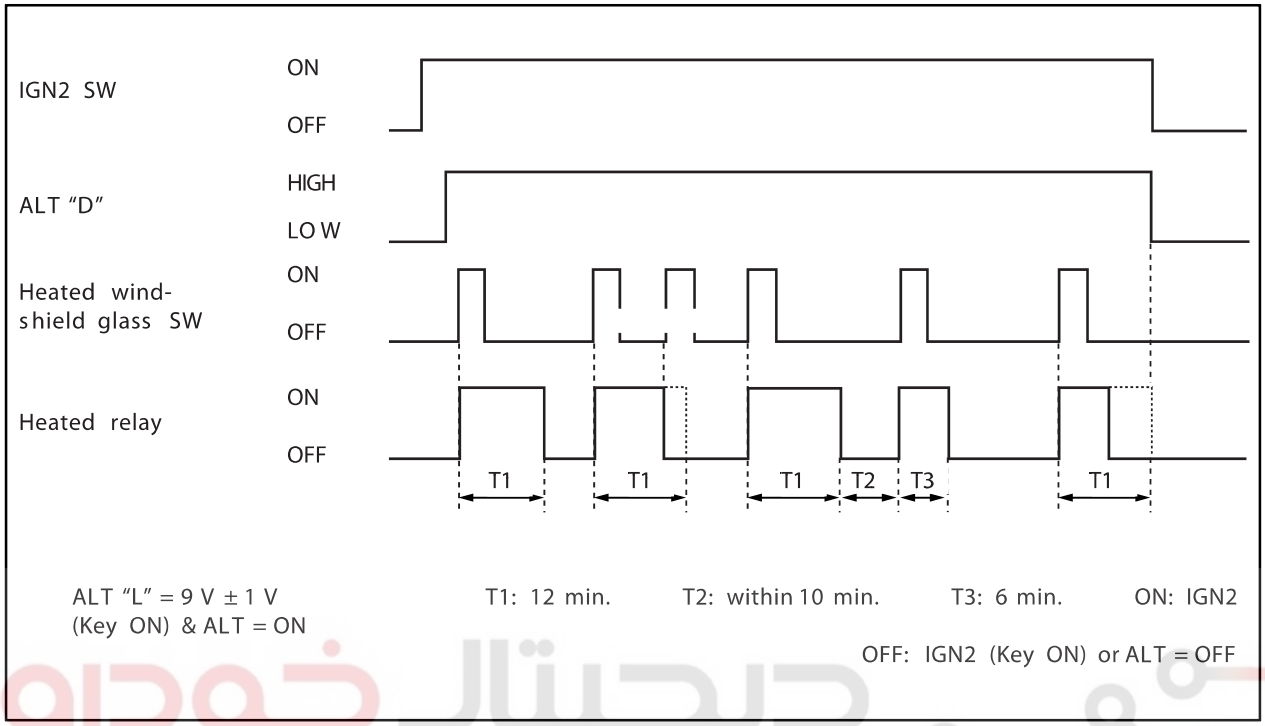
- The windshield deicer operates for approx. 12 minutes when pressing this switch while the ignition switch is turned on.
- It stops when pressing the switch again during its operation.
- If pressing this switch again within 10 minutes after completion of first operation, it will operate for about 6 minutes.
- It stops when the ignition switch is turned to "OFF".

Pin No.	Function
1	ILL (-)
2	STICS SIG
3	ILL (+)
4	-
5	GND
6	DEICER RELAY IND



Modification basis	
Application basis	
Affected VIN	

▶ Timing Chart



ALT "L" = 9 V ± 1 V (Key ON) & ALT = ON

T1: 12 min. T2: within 10 min. T3: 6 min. ON: IGN2

OFF: IGN2 (Key ON) or ALT = OFF

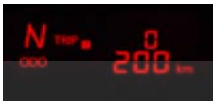
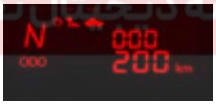
Modification basis	
Application basis	
Affected VIN	

4) TRIP/ Reset Switch

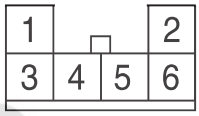
▶ Overview

The TRIP switch is a push & self-return switch which is operated each time it is pressed. Pressing this switch changes the mode displayed on the LCD display in the order as follows:

▶ Mode Description

Order	Mode	LCD display	Description
1	TRIP A		The maximum distance value that can be displayed is 999.9 km with increments of 0.1 km. The trip meter is reset to 0.0 km when the value reaches above 999.9 km. When measuring a trip distance, reset the distance value in the mode you want to use by pressing the TRIP switch for 1 sec. or more.
2	TRIP B		The maximum distance value that can be displayed is 9999 km with increments of 1 km. The trip meter is reset to 0.0 km when the value reaches above 999.9 km. When measuring a trip distance, reset the distance value in the mode you want to use by pressing the TRIP switch for 1 sec. or more.
3	Distance to empty		The estimated distance that can be traveled is calculated based on the current fuel level. If the DTE is less than 50 km, "---" flashes on the display.
4	Driving time		The driving time from resetting the value (0:00) until now is displayed. The value displayed is accumulated while the engine is running even if the vehicle is not driven. The display range is 00:00 to 99:59. When measuring the driving time, press the TRIP switch for 1 sec. or more to reset the value.
5	Average fuel economy		The average fuel economy from resetting the value (--.-) until now is displayed. The value displayed is accumulated while the engine is running even if the vehicle is not driven. The display range is 0.0 to 99.9 km/h. When measuring the average fuel economy, press the TRIP switch for 1 sec. or more to reset the value. "--.-" is displayed on the screen when resetting.
6	Instant fuel consumption		The fuel range is calculated based on the distance driven and fuel consumed every 2 seconds. If the vehicle speed is below 10 km/h or the engine rpm is 200 rpm or less, the instant fuel economy is not displayed. The display range is 0.0 to 99.9 km/h.

Order	Mode	LCD display	Description
7	Brightness adjustment		The brightness of the illumination can be adjusted in 6 steps by pressing the TRIP switch briefly (less than 1 sec.). The display is changed from ILL1 to ILL6 every time the switch is pressed. If you select one level within the range and press and hold the TRIP switch, the brightness level is memorized. If there is no TRIP switch input for 5 seconds or more, the mode is switched to TRIP A mode automatically. When the battery is reinstalled, the brightness level is reset to level 4.



Trip Reset SW

Pin No.	Function
1	ILL (-)
2	RESET MODE SIG
3	ILL (+)
4	-
5	GND
6	-

SWITCH

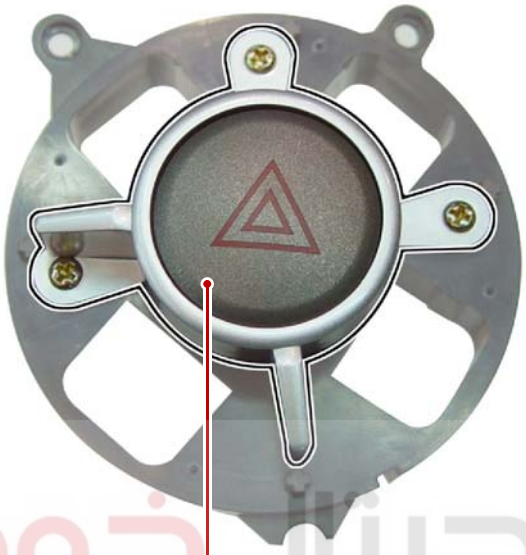
undefined

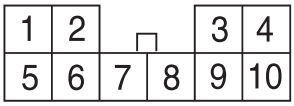
Modification basis	
Application basis	
Affected VIN	

(5) Hazard Switch

▶ Overview

Hazard switch is connected to the turn signal lamp circuit.





Hazard SW

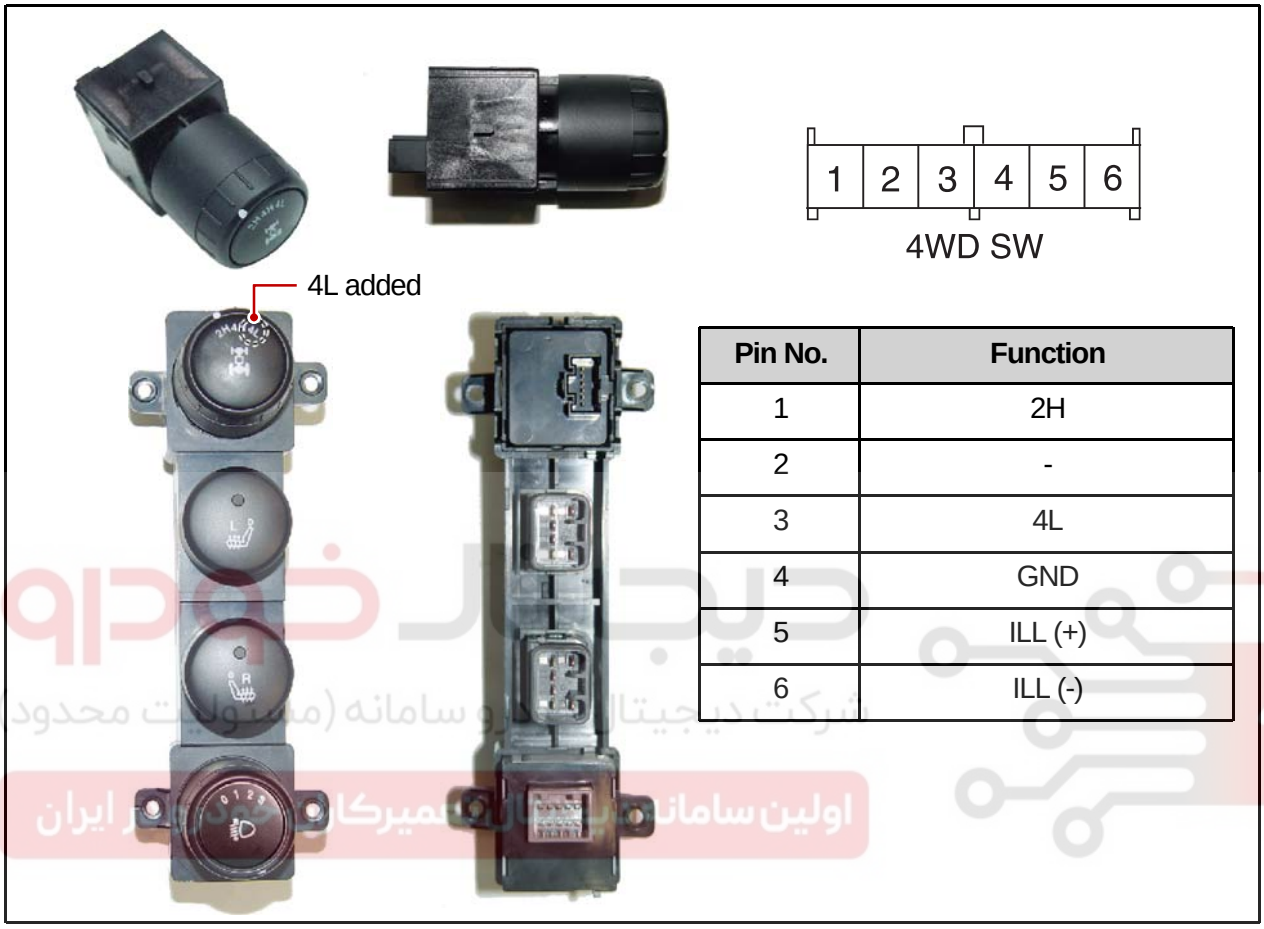
Pin No.	Function
1	-
2	ILL (-)
3	ILL (+)
4	CLUSTER HAZARD IND
5	FRONT / REAR (LH)
6	FRONT / REAR (RH)
7	FLASHER UNIT
8	BAT (+)
9	Multi Function SW
10	IGN 1

Modification basis	
Application basis	
Affected VIN	

5) 4WD Control Switch

▶ Overview

4L function is newly applied. 4WD system is operated by the rotary switch and its position is recognized in TCCU. The switch has the illumination connected to the tail lamp circuit.



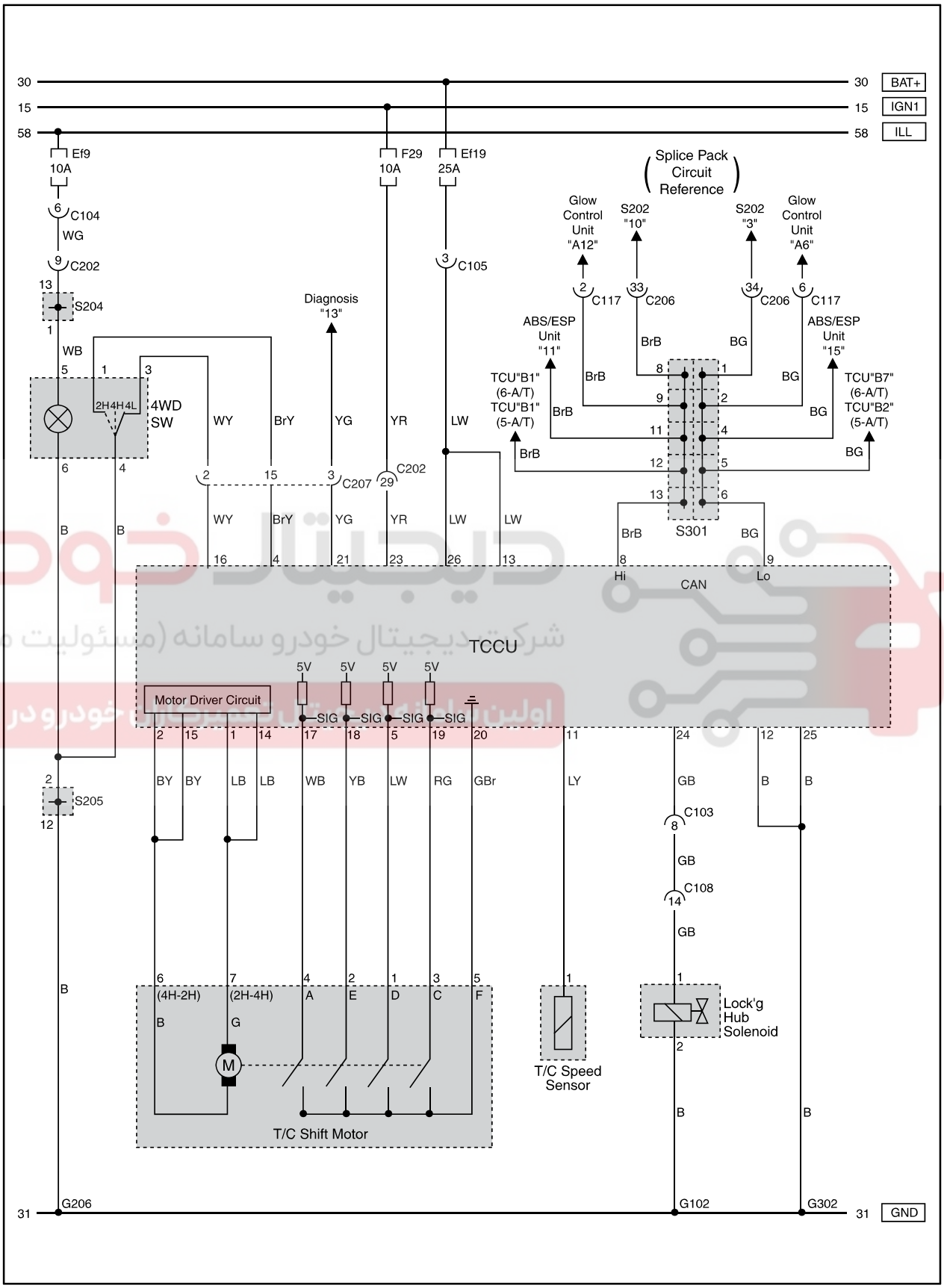
Pin No.	Function
1	2H
2	-
3	4L
4	GND
5	ILL (+)
6	ILL (-)

CAUTION

- There could be mechanical noises and shocks during mode shifts. However, these are normal conditions due to the mode shifting operations.
- Use only the 2H mode on a normal paved surface. Do not drive your vehicle in the "4H" position on a normal paved surface. Doing so will result in damages to the drive train.
- Driving in a 4 wheel mode on a normal paved surface will cause unwanted noises, premature wear of tires, or increased fuel consumption.
- For safety reasons, depress the brake and decrease the vehicle speed when shifting to 4L or shifting from 4L to other wheel drive system.
- When "4WD CHECK" warning light comes on, or "4WD LOW" and "4WD HIGH" lights simultaneously come on or blink, or one of them blinks, have 4WD system checked because it may indicate that shifting in 4WD system is defective.
- When cornering a curved road in a 4-wheel drive mode, there could be some mechanical shocks and resistances in vehicle's drive train. These are normal conditions due to internal resistance in the drive train when the 4-wheel drive mode is properly working. To avoid damages to the drive train, do not drive your vehicle with an excessively high speed on a sharply curved road.

Modification basis	
Application basis	
Affected VIN	

▶ Electrical Wiring Diagrams



Modification basis	
Application basis	
Affected VIN	

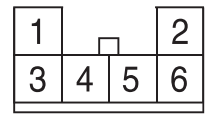
SWITCH

undefined

(1) Heated Seat Switch

▶ Overview

Heated seat switch is Push lock type switch. When the heated eat switch is operated, the seat cushion and seatback gets warm. If the temperature of seat surface gets 40 ± 5°C, the thermistor cuts or connects the power to heated wire to maintain the temperature to the specified level. The is no control switch and unit to control the temperature of the seat surface temperature.



S/Warmer SW

Pin No.	Function
1	ILL(-)
2	IGN2
3	ILL(+)
4	-
5	GND
6	FRT SEAT WARMER

CAUTION

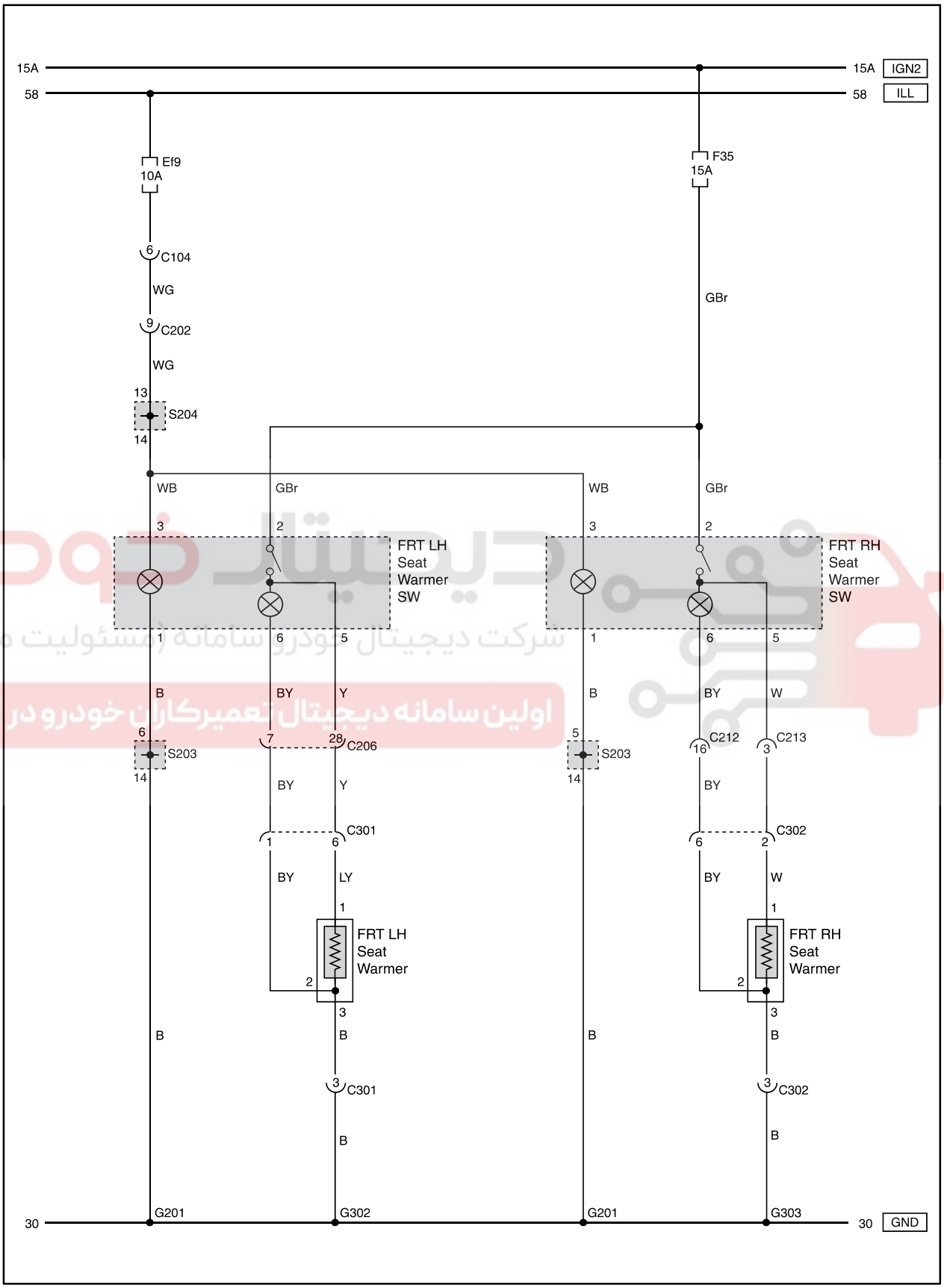
- The temperature of seat surface should be increased over 20°C within 3 minutes after turning on the switch while a person (height: 175 ± 5 cm, weight: 75 ± 5 kg) occupies the seat.

CAUTION

- Do not place anything sharp on the seat.
- When cleaning the seats, do not use organic solvents such as benzene or thinner.
- Do not use this function when the engine is not running. The battery could be discharged.

Modification basis	
Application basis	
Affected VIN	

▶ Electrical Wiring Diagrams



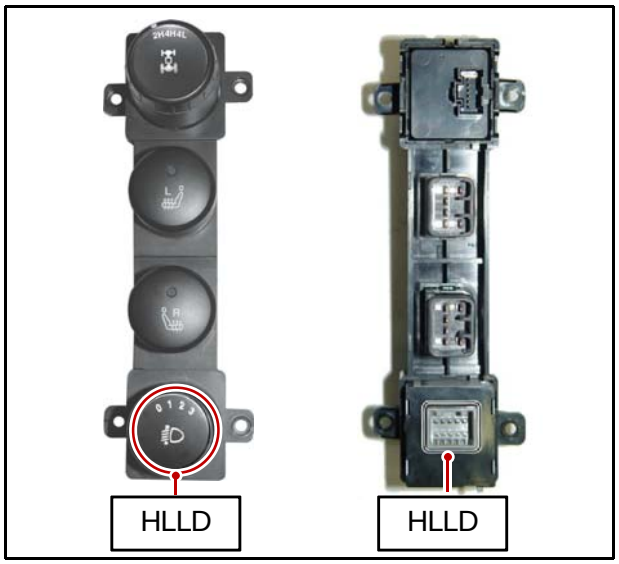
Modification basis	
Application basis	
Affected VIN	

SWITCH

undefined

(2) HLLD (Headlamp Leveling Device)

▶ Overview



Headlamps are designed to get a front visibility when driving a vehicle at night.
The beam of the light can be aligned by using a screw installed on the unit.
If the beam of the light is too high, it makes an approaching driver be dazzled (same as when using high beam).
On the contrary, if it is too low, a driver cannot get a good visibility.
Therefore, the headlamps should be aligned properly.
There is an electric control device, so called "Headlamp Leveling Device", to align the beam of the light as needed while driving.

▶ Principle

▷ Operating Principle

- A rod in actuator is linked to the headlamp to move the headlamp up or down when operating the leveling switch. The sensor integrated in actuator senses the rod positions.

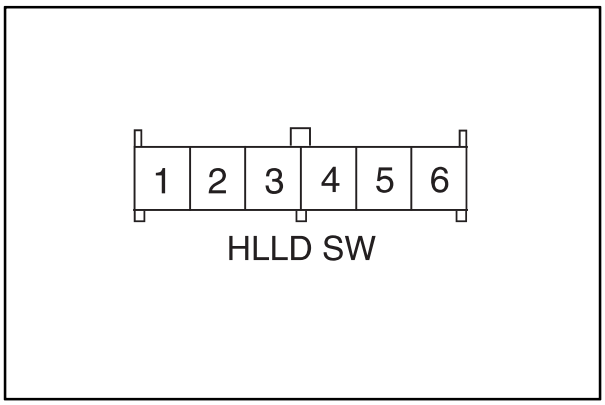
▷ Using when

- This system compensates for a heavy load in the trunk or fully occupied vehicle which pushes the front of the vehicle up and causes the headlamps to project upward. The leveling system levels out the projection of the light.

▶ Control

▷ Leveling Control Switch

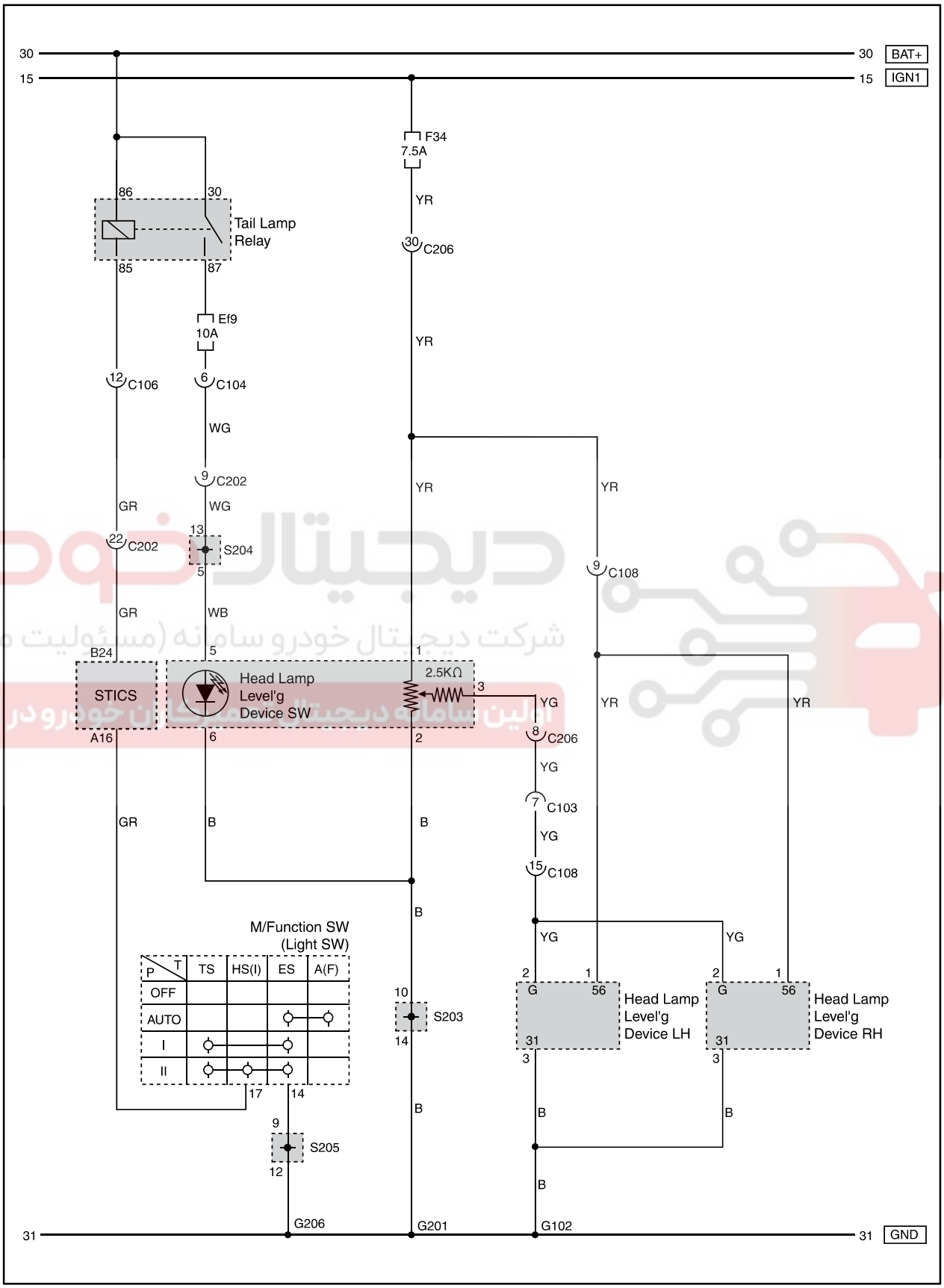
- The leveling control switch is located on the instrument panel. It can adjust the level of beam aiming by 4 stages (0 to 3).
  Ex) Level 0: "Driver" or "Driver + Front passenger"
  Level 3: "Fully occupied + Heavy luggage in trunk"



Pin No.	Function
1	IGN 1
2	GND
3	HEAD LAMP LEVEL'G DEVICE
4	-
5	ILL (+)
6	ILL (-)

Modification basis	
Application basis	
Affected VIN	

▶ Electrical Wiring Diagrams



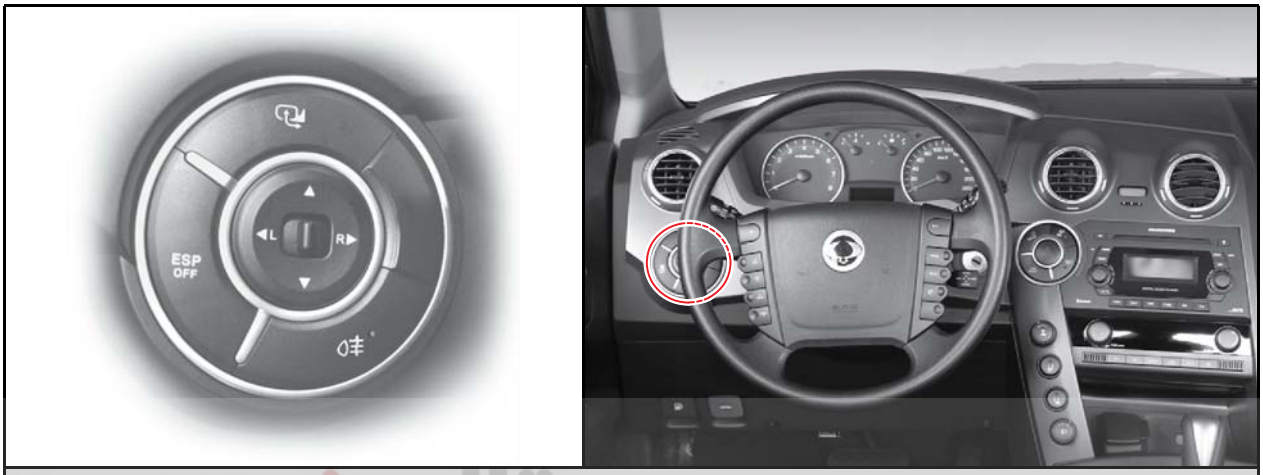
Modification basis	
Application basis	
Affected VIN	

S.G.N. 8510-52

OUTSIDE REARVIEW MIRROR SWITCH BEZEL ASSEMBLY

1) Location

Outside rearview mirror switch bezel assembly consists of outside rearview mirror folding switch, ESP OFF switch and rear fog lamp switch (regional option).

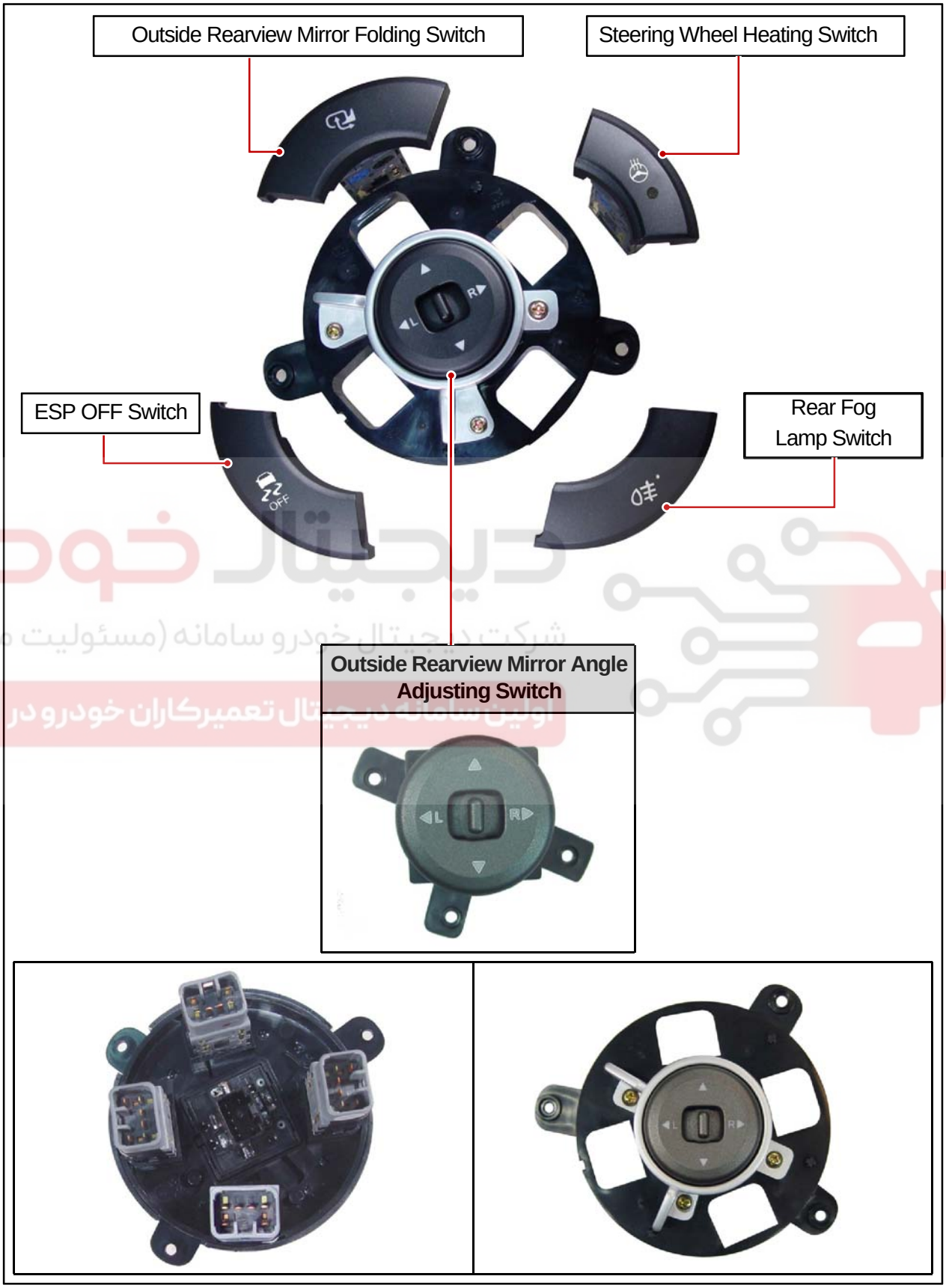


Front View of Outside Rearview Mirror Bezel Panel

Rear View of Outside Rearview Mirror Bezel Panel

Modification basis	
Application basis	
Affected VIN	

2) Switch Arrangement



Modification basis	
Application basis	
Affected VIN	

3) Switches in Outside Rearview Mirror Switch Bezel Assembly

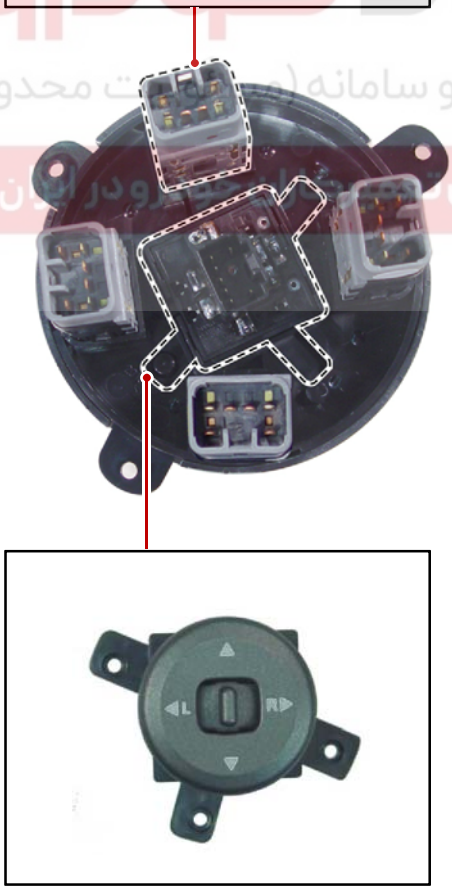
(1) Outside Rearview Mirror Folding and Adjusting Switch

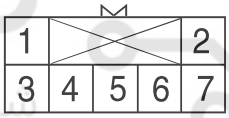
▶ Overview

The outside rearview mirror folding switch is a self-return type switch and equipped with the separate folding unit as a see-saw and self-return type switch.
The power supply relay is connected to STICS and can fold and unfold outside rearview mirrors for 30 seconds after the engine is off. The folding unit for controlling the folding/unfolding operations is installed on the left side of instrument panel center frame.
Do not fold or unfold outside rearview mirrors manually. It may cause a malfunction of the mirror folding system.

Outside Rearview Mirror Folding Switch

To fold the outside rearview mirrors, press the switch. To unfold the mirrors, press it again.





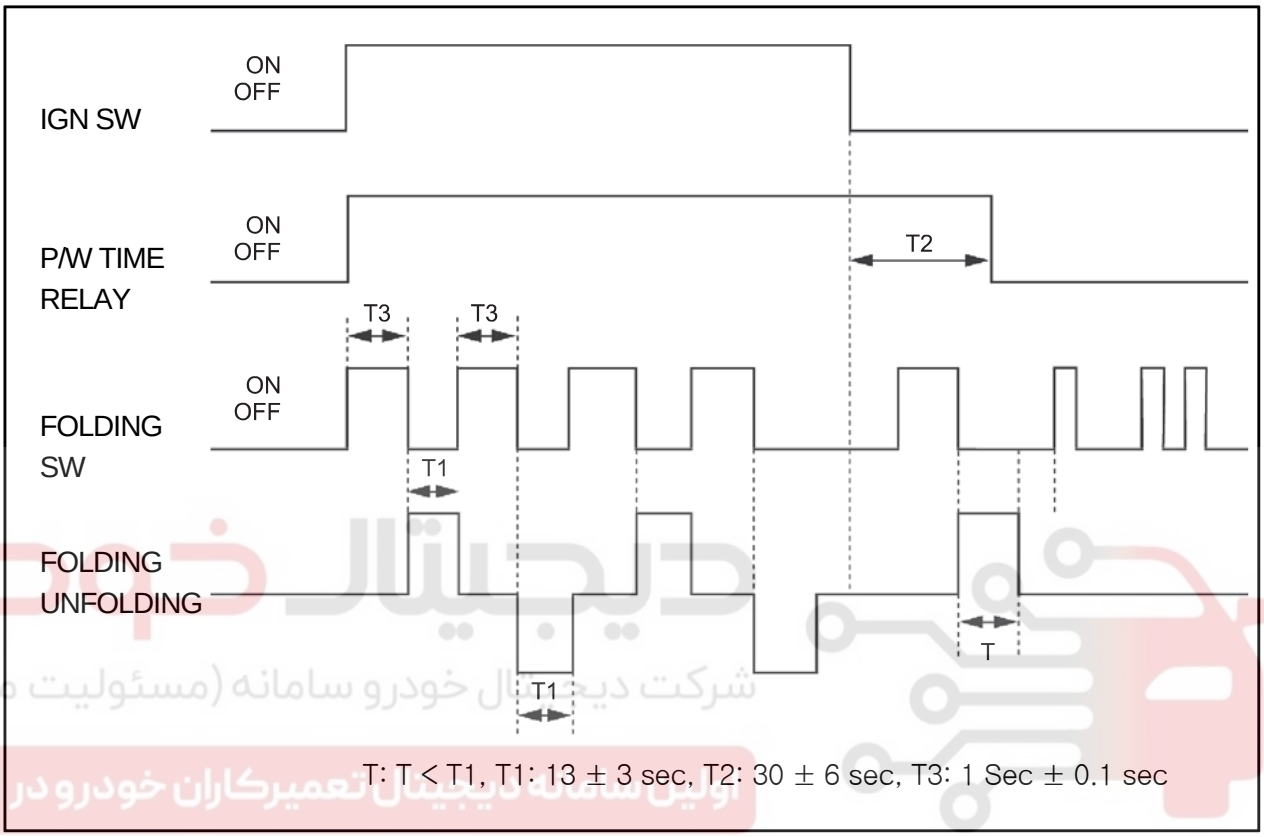
O/S Mirror SW

Pin No.	Function
1	Ground
2	MIRROR DRIVER/PASSENGER (DN/UP)
3	ACC
4	MIRROR DRIVER LEFT/RIGHT
5	GND
6	MIRROR PASSENGER LEFT/RIGHT
7	GND

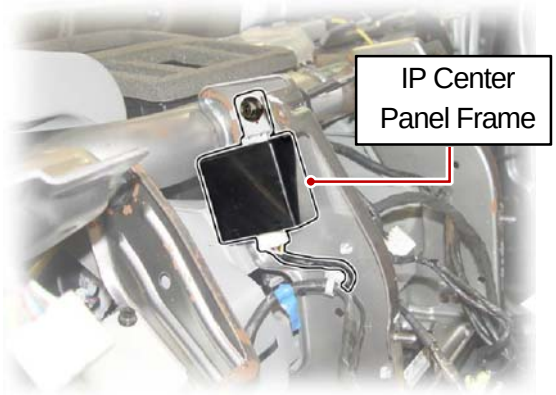
Modification basis	
Application basis	
Affected VIN	

▶ Operation Timing Chart

The outside rearview mirrors can be folded and unfolded within 30 ± 6 seconds even after turning off the ignition switch. To prevent the outside rearview mirrors from stopping during its operation, the mirror operating time is extended 13 seconds when pressing the switch again.
Refer to the following timing chart for operation procedures.

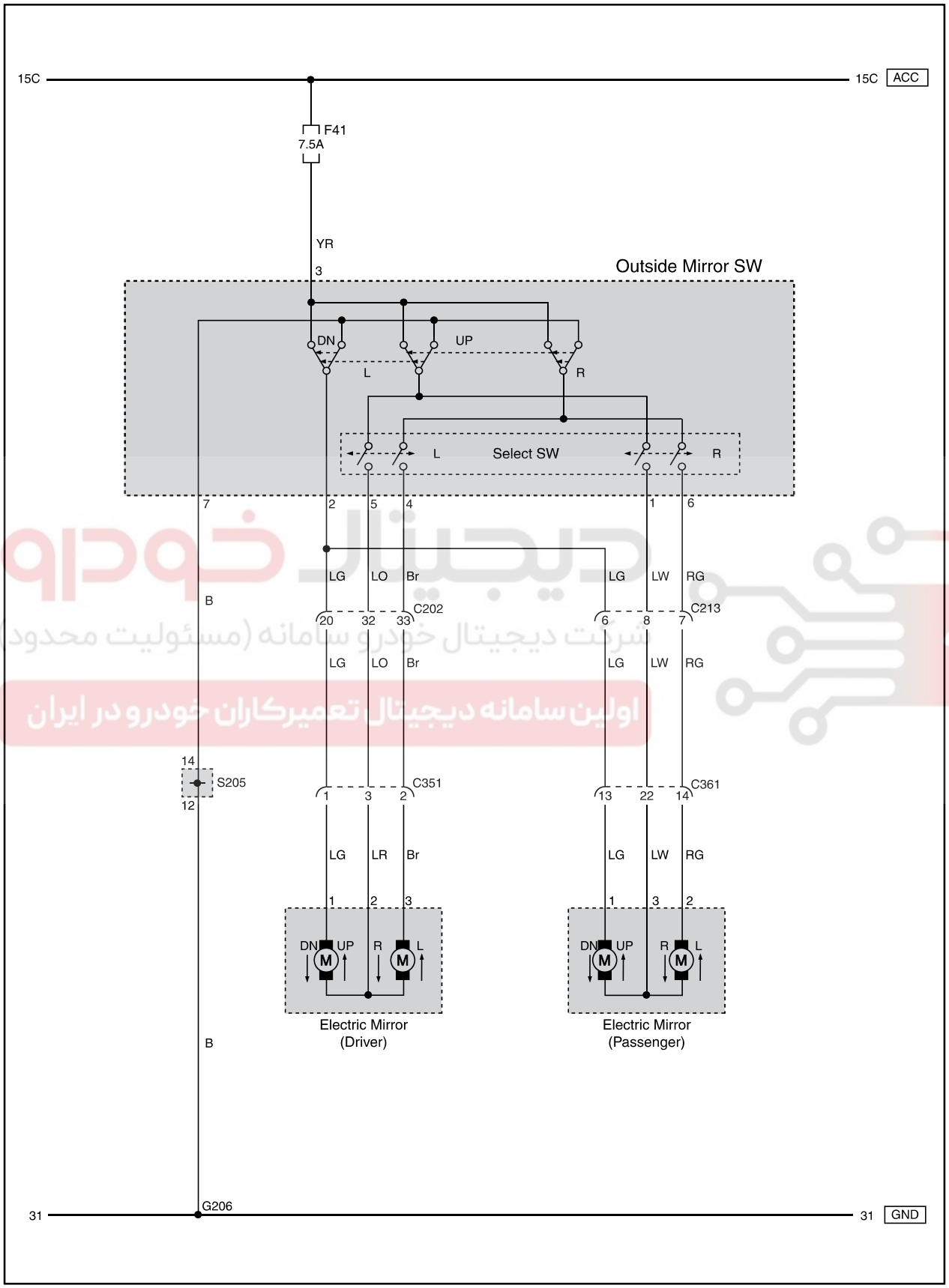


T: T < T1, T1: 13 ± 3 sec, T2: 30 ± 6 sec, T3: 1 Sec ± 0.1 sec

Outside Rearview Mirror Folding Unit	
	

Modification basis	
Application basis	
Affected VIN	

▶ Electrical Wiring Diagrams



SWITCH

undefined

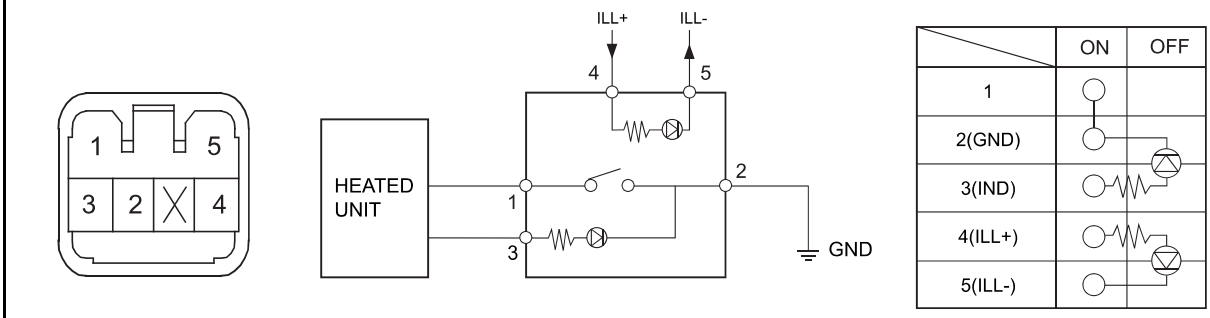
Modification basis	
Application basis	
Affected VIN	

(2) Heated steering wheel switch

▶ Overview

The heated steering wheel switch is installed to the left side of the cluster fascia panel. In that, signal voltage from the heated steering wheel controller, which is installed in the steering wheel, is grounded. This is used as an operation signal for the heated steering wheel system. The indicator in the switch comes on when it is operated.

Circuit Diagram



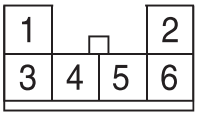
Modification basis	
Application basis	
Affected VIN	

(3) ESP OFF switch

▶ **Overview**

ESP OFF switch is a self return type switch used to enable or disable the ESP function.

ESP OFF Switch



ESP OFF SW

Pin No.	Function
1	ILL(-)
2	ESP UNIT
3	ILL(+)
4	-
5	GND
6	-

▶ **DIESEL**

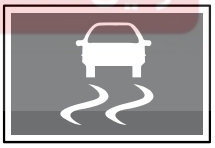
ESP Indicator/Warning Lamp

Blinking: When ESP is operating
On: When ESP system is defective.
When ESP is activated, this indicator blicks and the alram beeps.
If this indicator stays on (ESP warning lamp), immediately have the system checked by Ssangyong Dealer or Ssangyong Authorized Service Center.

ESP OFF Indicator

On: When ESP is deactivated by pressing ESP OFF switch

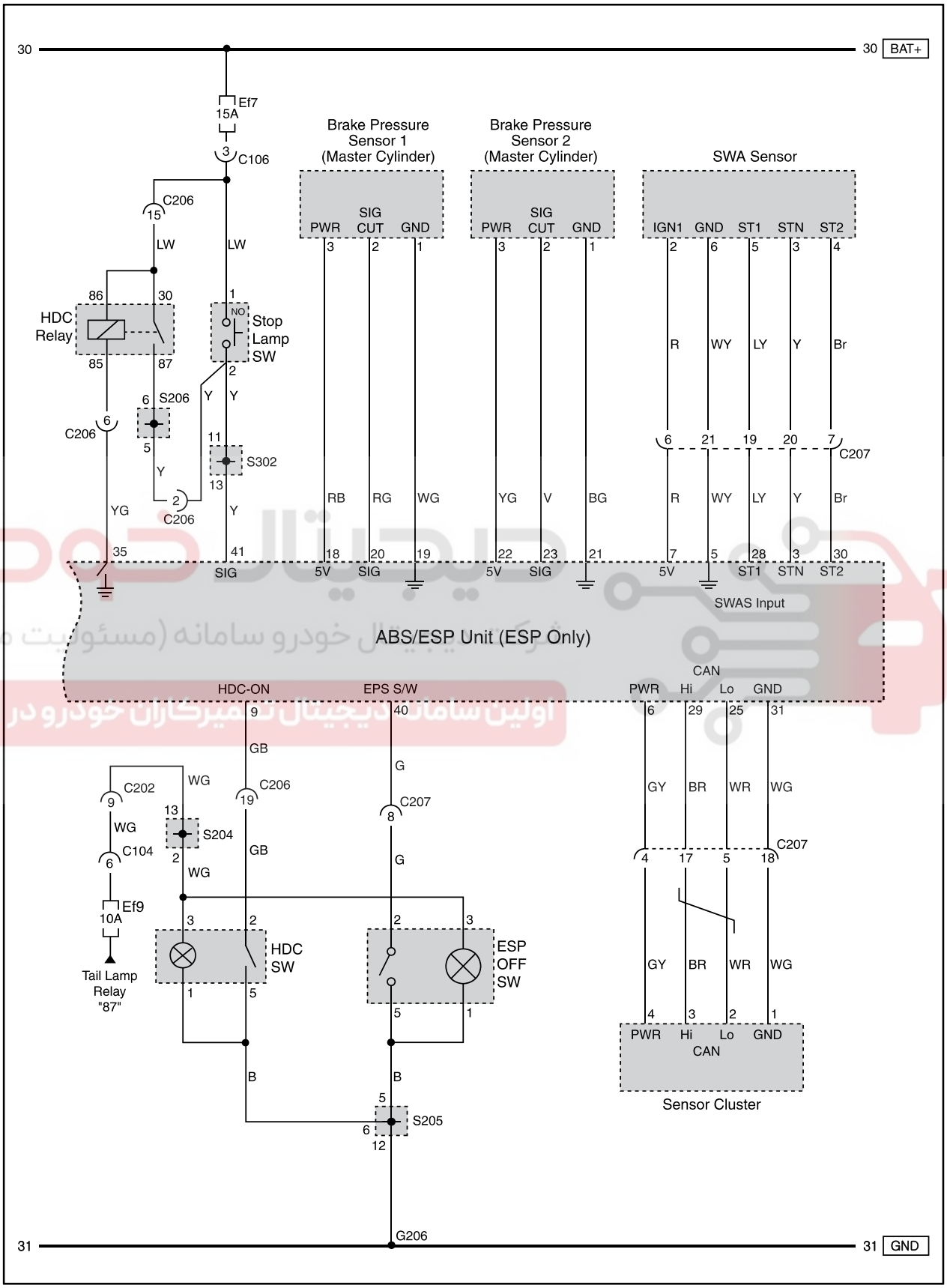
▶ **GASOLINE**



Blinking: When ESP is operating
On: When ESP system is deactivated by pressing ESP OFF switch or when ESP system is defective.
This indicator blinks and chime sounds when ESP system is activating. If this indicator stays on even when ESP system has not been deactivated by ESP OFF switch, immediately have the system checked by Ssangyong Dealer or Ssangyong Au thorized Service Center.

Modification basis	
Application basis	
Affected VIN	

▶ Electrical Wiring Diagrams



Modification basis	
Application basis	
Affected VIN	

SWITCH

undefined

▶ ESP System Cancellation Using the ESP OFF Switch

When the ESP switch at the center switch panel is pushed (for over approximately 150 ms), the ESP system will be cancelled and the vehicle will be driven regardless of the output values from the corresponding sensors. Then, the ESP warning lamp on the instrument panel comes on.

The detailed operation procedures are as follows

- The ESP warning lamp comes on when the ESP OFF switch is pushed for over 150 ms.
- The switch returns to normal position when the OFF switch is released.
- The ESP system will be cancelled after approximately 150 ms.

Based on the above procedures, we can see that the ESP system will be cancelled after a certain period (approx. 150 ms) from releasing the switch to the original position.

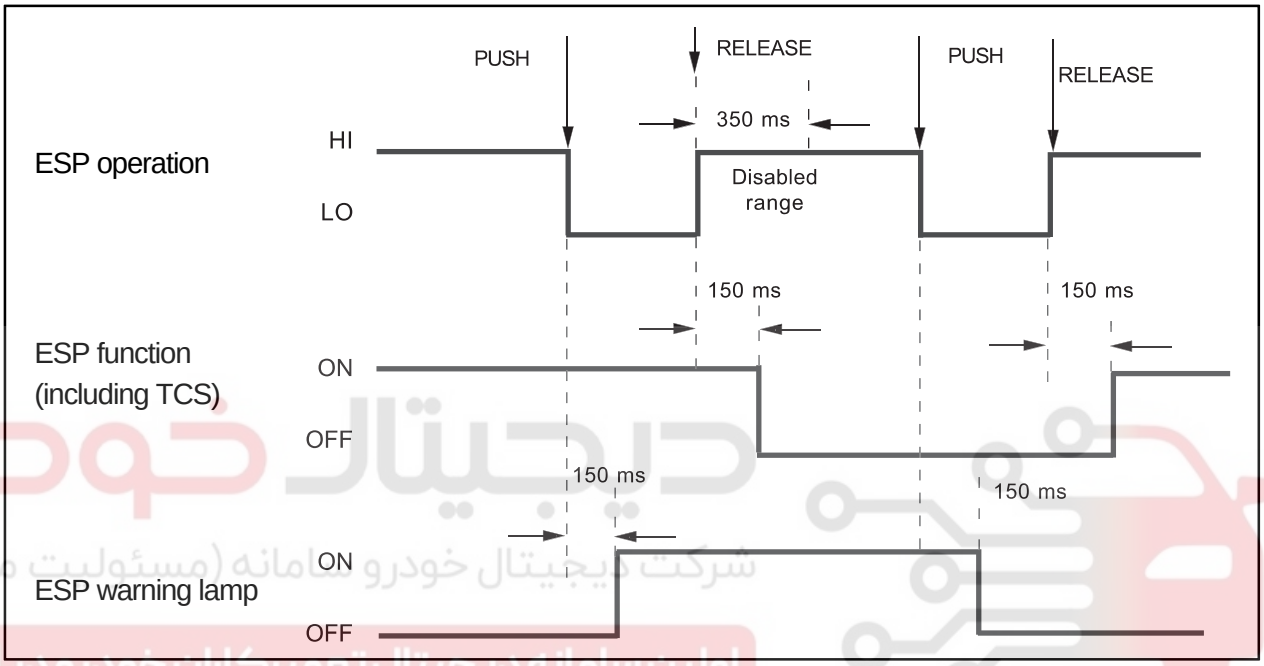
The ESP system does not get canceled immediately when the ESP warning lamp is turned on by pressing the ESP OFF switch. When you turn the ESP system off by pressing the ESP switch for over 150 ms, the TCS system (including ABD function) is turned off. And the ABS system is still operated.

Modification basis	
Application basis	
Affected VIN	

▶ Resuming the ESP System by Using the ESP OFF Switch

The ESP system will be resumed and the ESP warning lamp at the instrument panel goes off when the ESP switch is pushed (for over approximately 150 ms) while the ESP system is not operating.
The detailed operation procedures are as follows.

- The ESP warning lamp goes off when the ESP OFF switch is pushed for over 150 ms.
- The switch returns to normal position when the OFF switch is released.
- The ESP system will be resumed after approx. 150 ms.

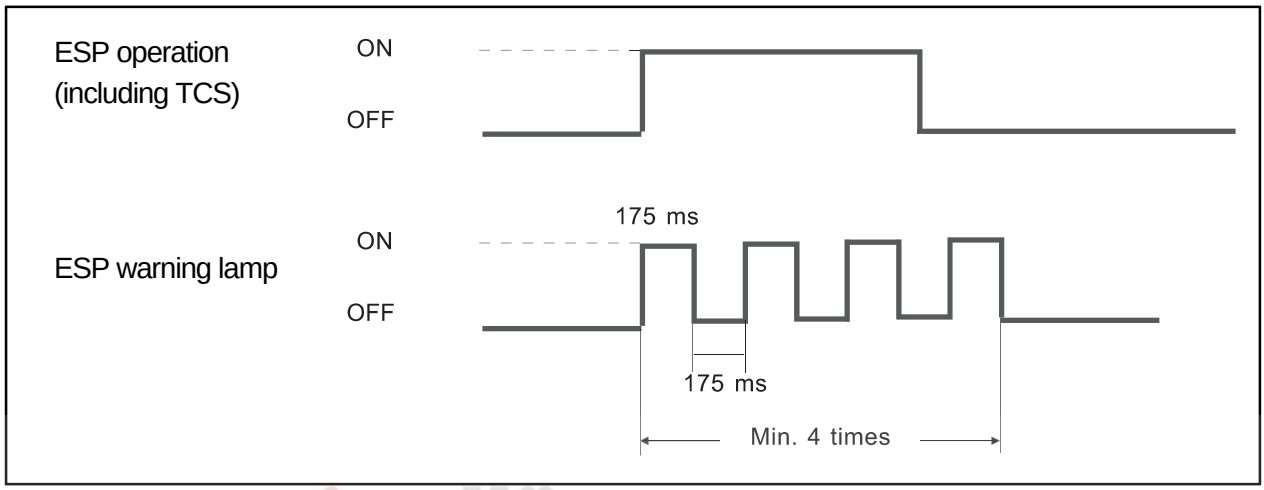


CAUTION

- When turning the ignition switch off while the ESP system is activated, the ESP system will be resumed when ignition switch is turned on again.
- When the vehicle is controlled by ESP system during driving, the ESP OFF switch does not operate.
- The ESP OFF switch operates when it is pushed for over 150 ms. When it is pushed for less than 150 ms, the ESP OFF mode and the ESP warning lamp will not be changed.
- When the ESP OFF switch is pushed within 350 ms of being turned off, the ESP warning lamp and ESP system will not be turned on.

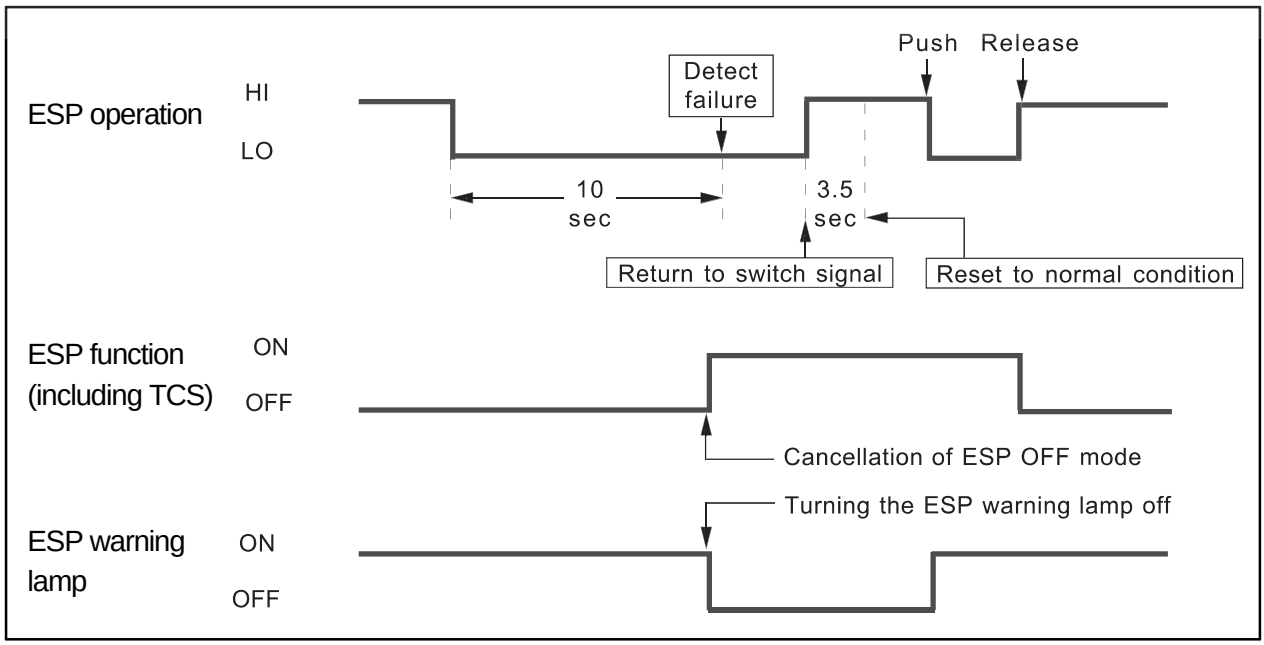
▶ ESP Warning Lamp Blinking in Control

ESP warning lamp blinks when ESP control is activated. If the activation reaches a certain limitation, a beep sounds to warn the driver. The ESP warning lamp goes off when ESP function is deactivated. Even when the ESP is operated for a very short period of time, the ESP warning lamp blinks minimum of 4 times every 175 milliseconds.



▶ ESP OFF Switch Monitoring

When the ESP unit recognizes that the ESP OFF switch is pushed for over 10 seconds, the ESP unit determines it as a ESP OFF switch malfunction. When the ESP OFF switch is pushed, the ESP system is resumed after 10 seconds. However, the ESP warning lamp comes on when the ESP OFF switch is pushed (for over 150 ms) and then goes out when the ESP system is resumed. When the ESP OFF switch returns to normal position, the ESP unit resets the ESP OFF switch for approx. 3.5 seconds.



Modification basis	
Application basis	
Affected VIN	

▶ ESP Warning Lamp Operation Depending on System Conditions

The table shows ESP warning lamp operations when the ESP system is defective or ESP (including TCS function) is working.

	Warning Lamp		Controls			
	ABS W/L	ESP W/L	ABS	ASR	ABD	Vehicle yaw control
Initial start (for 1.8 sec)	ON	ON	NO	NO	NO	NO
Normal mode	OFF	BLINKS WHEN ESP OPERATION	OK	OK	OK	OK
ESP fault	OFF	ON	OK	NO	NO	NO
ABS fault	ON	ON	NO	NO	NO	NO
System fault	ON	ON	NO	NO	NO	NO
Low batt. voltage	ON	ON	NO	NO	NO	NO
High battery voltage	ON	ON	NO	NO	NO	NO
High brake pad temp.	OFF	ON	OK	NO	NO	NO
ESP-OFF mode	OFF	ON	OK	NO	NO	OK
Entering diag. mode	ON	ON	NO	NO	NO	NO

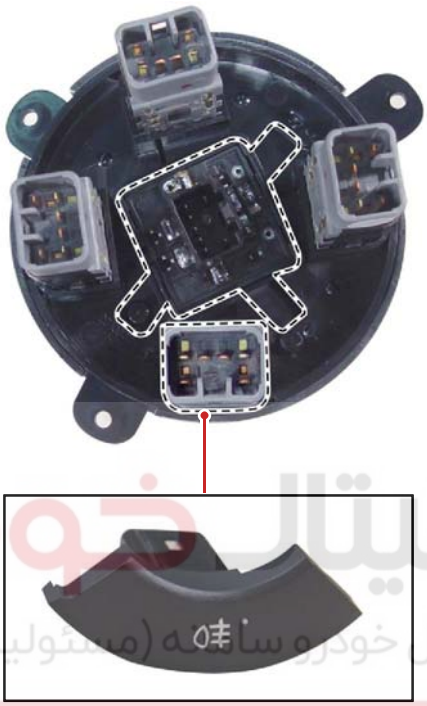
CAUTION

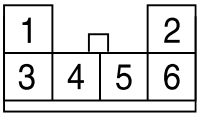
- When the driver presses the brake pedal during the ESP OFF mode, the yaw control is performed to compensate the vehicle stability (posture) during ESP operation.

Modification basis	
Application basis	
Affected VIN	

(4) Rear Fog Lamp Switch

The rear fog lamp switch is a self return type switch. When the front fog lamp switch on the multifunction switch is ON and the light switch is placed in the tail lamp or headlamp operation position, the rear fog lamp is operated if pressing the rear fog lamp switch. When the rear fog lamp comes on, the LED on the switch lights on.





RR Fog Lamp SW

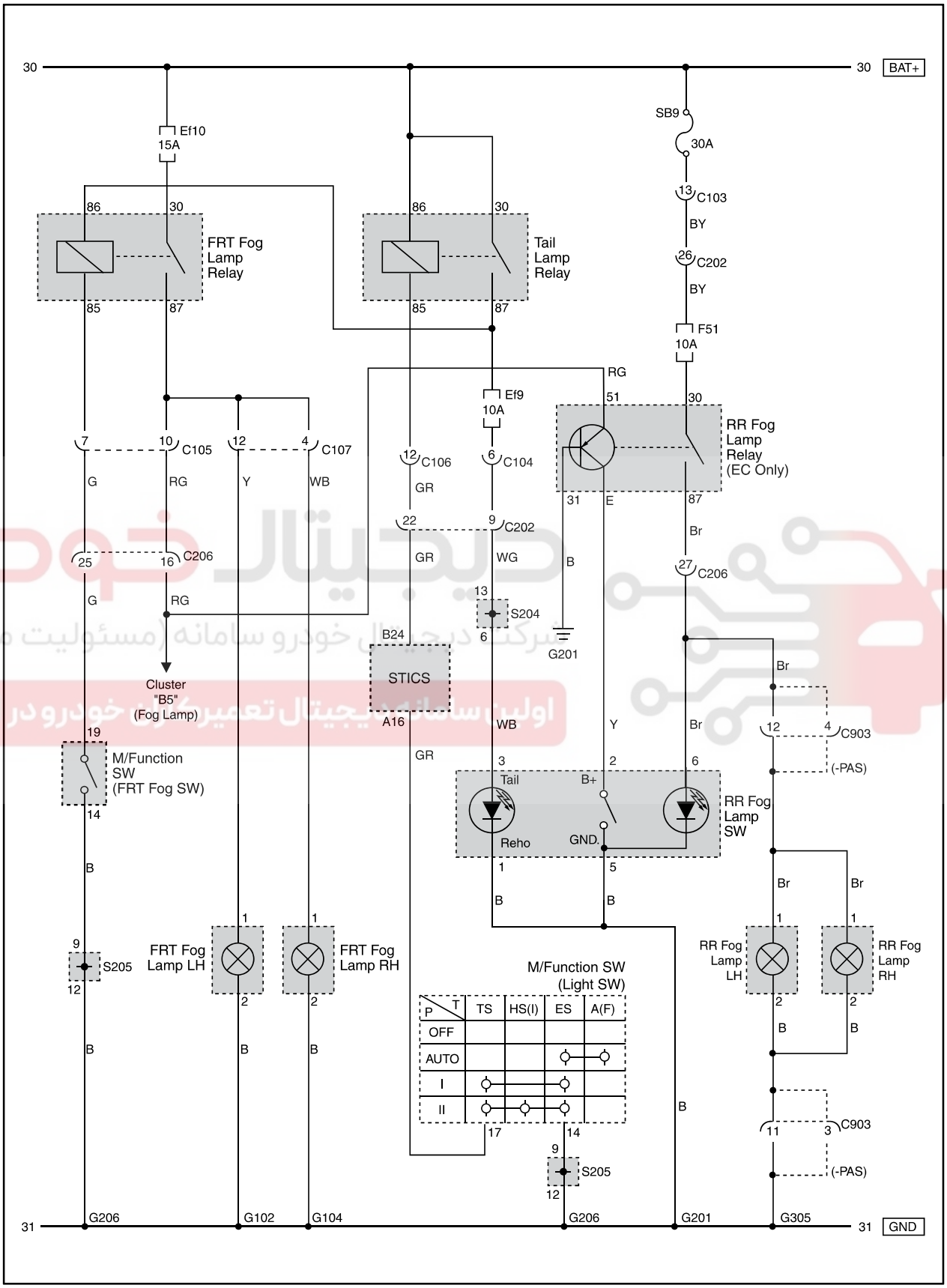
Pin No.	Function
1	GND
2	RR FOG LAMP RELAY
3	TAIL LAMP RELAY
4	-
5	GND
6	ILL (+)

▶ **Rear Fog Lamp Operation Procedures**

Multifunction switch in the front fog lamp position and headlamp or tail lamp ON	Pressing the rear fog lamp switch LED on the switch ON	Rear fog lamp ON (including front fog lamp)
		

Modification basis	
Application basis	
Affected VIN	

▶ Electrical Wiring Diagrams



Modification basis	
Application basis	
Affected VIN	

SWITCH

undefined

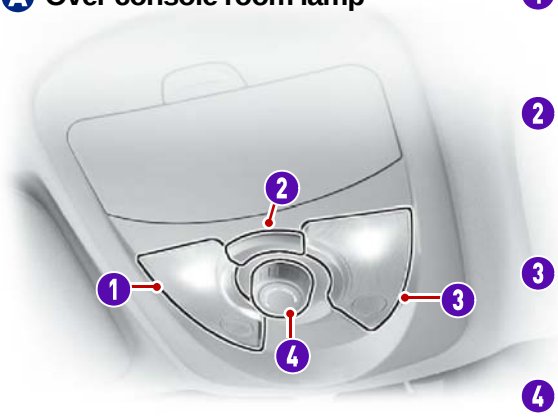
S.G.N.
7770-20

INTERIOR LAMP SWITCH

1) Location

It is composed of three switches and installed in the roof head lining.
The picture below shows the overhead console for vehicle equipped with sun roof.

A Over console room lamp

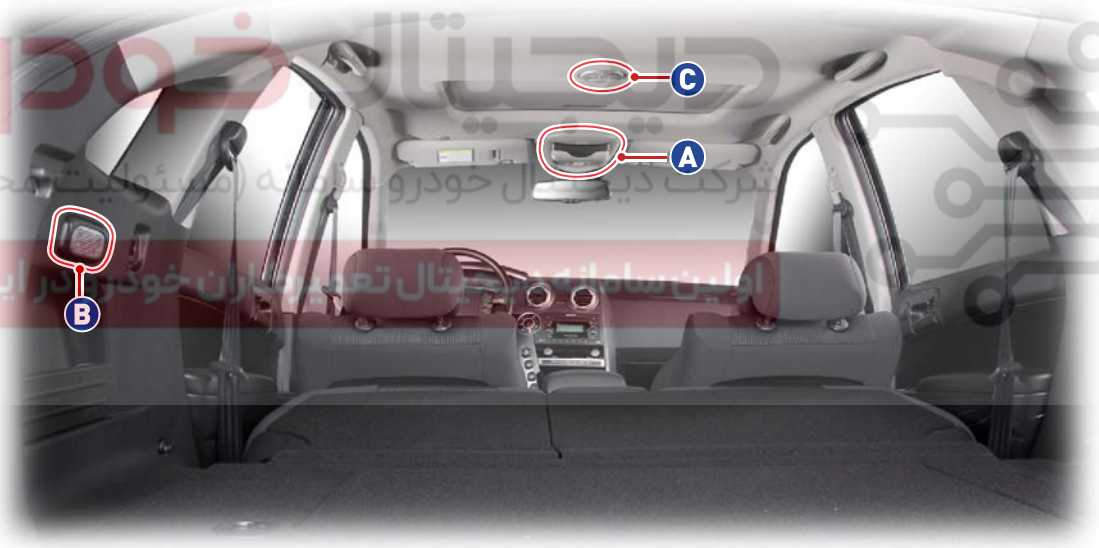


1 Driver's spot switch
The driver's room lamp comes on if you depress the spot switch (A).

2 Main room lamp switch
Front/center room lamps are turned on when pressing in this switch. They are turned off when pressing in this switch again.

3 Passenger's spot switch
The passenger's room lamp comes on if you depress the spot switch (B).

4 Sunroof switch



B Luggage Room Lamp	C Center Room Lamp
	

Modification basis	
Application basis	
Affected VIN	

2) Components

(1) Overhead Console

(2) Center Room Lamp and Luggage Room Lamp

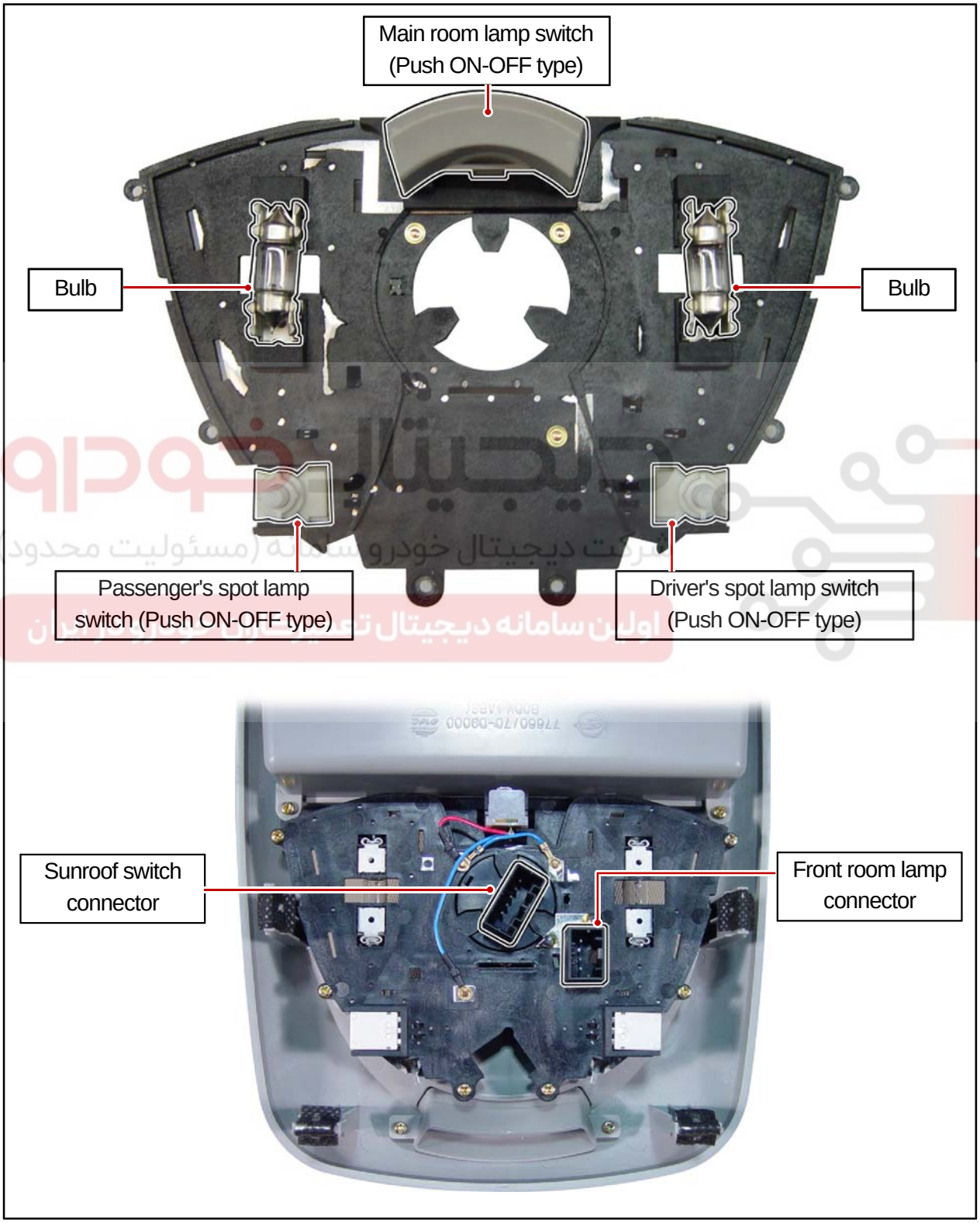
Center Room Lamp	Luggage Room Lamp
	

Modification basis	
Application basis	
Affected VIN	

3) Switches in Overhead Console Switch Assembly

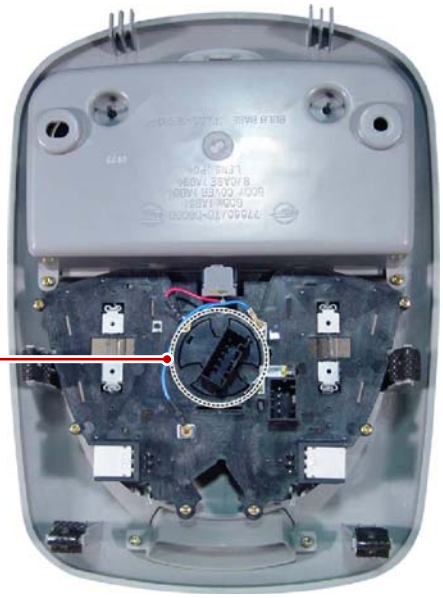
(1) Overview

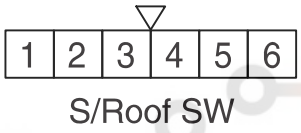
Front room lamp switches in overhead console: Push ON/OFF type
Sunroof switch: Rotary, self return type



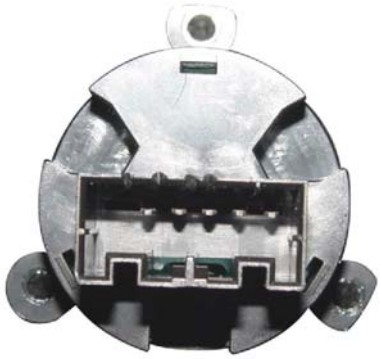
Modification basis	
Application basis	
Affected VIN	

Sunroof Switch



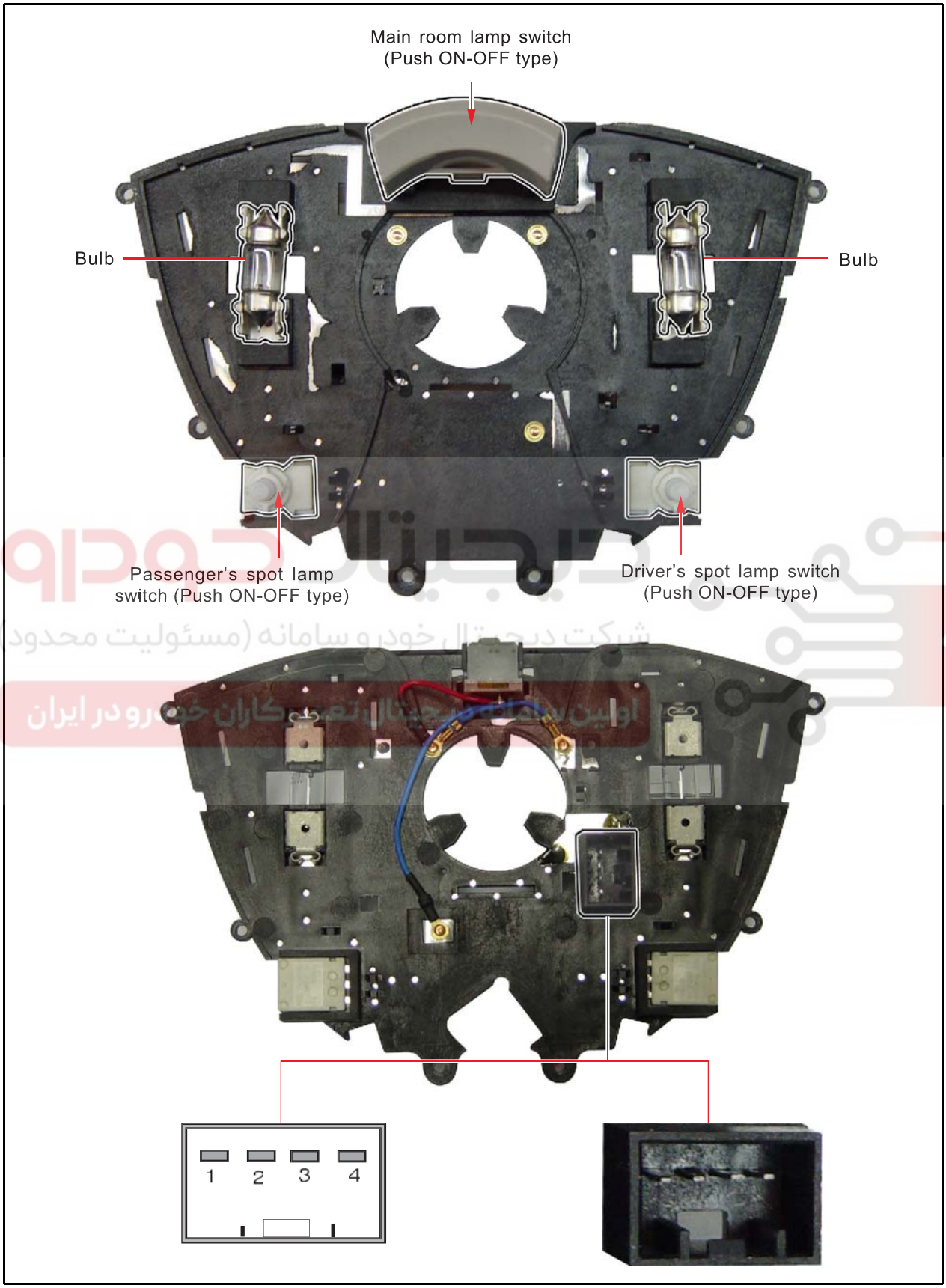


Pin No.	Function
1	-
2	UP
3	ACC
4	DOWN
5	ILL (-)
6	ILL (+)



Modification basis	
Application basis	
Affected VIN	

(2) Front Room Lamp



SWITCH

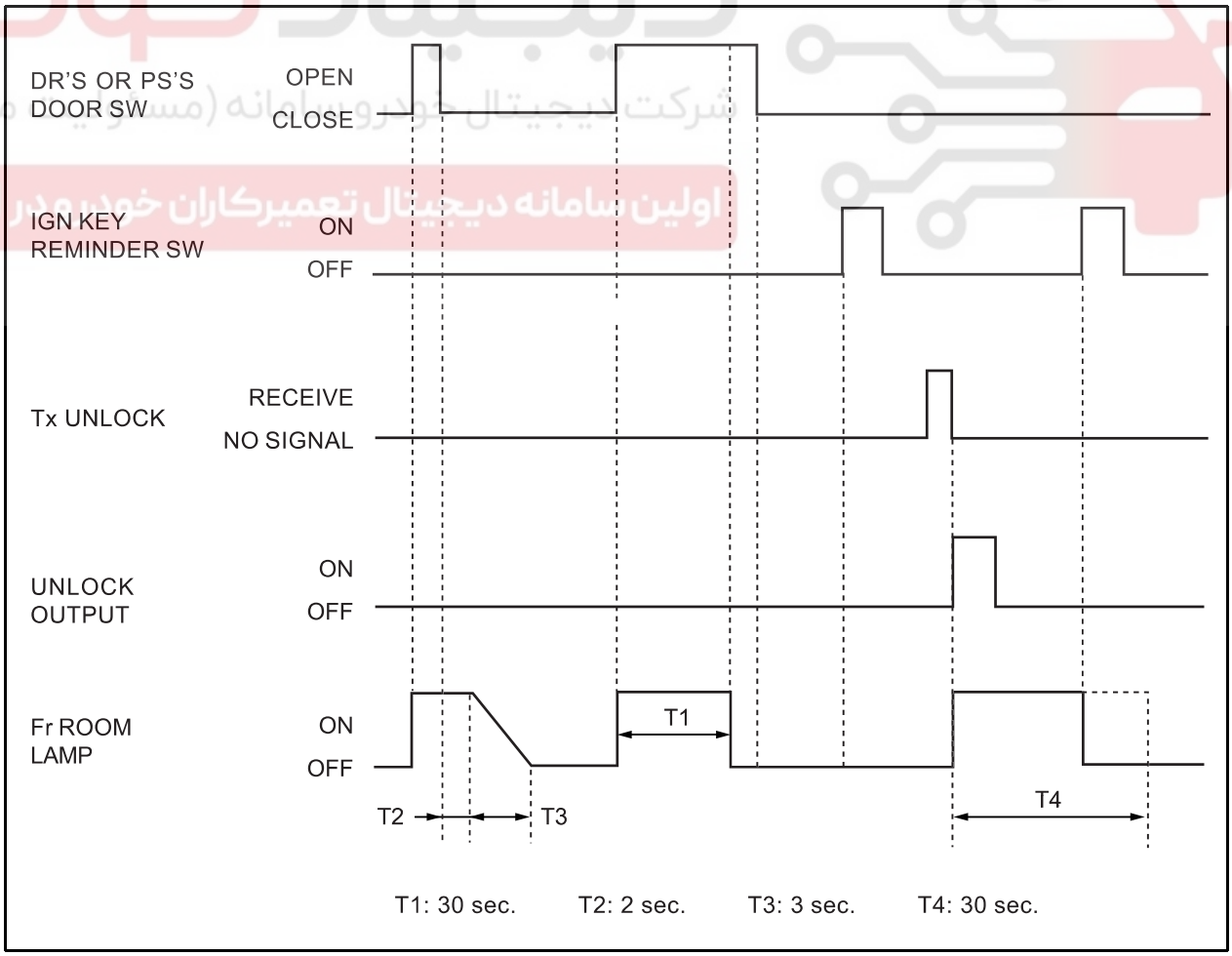
undefined

Modification basis	
Application basis	
Affected VIN	

(3) Room Lamp Control

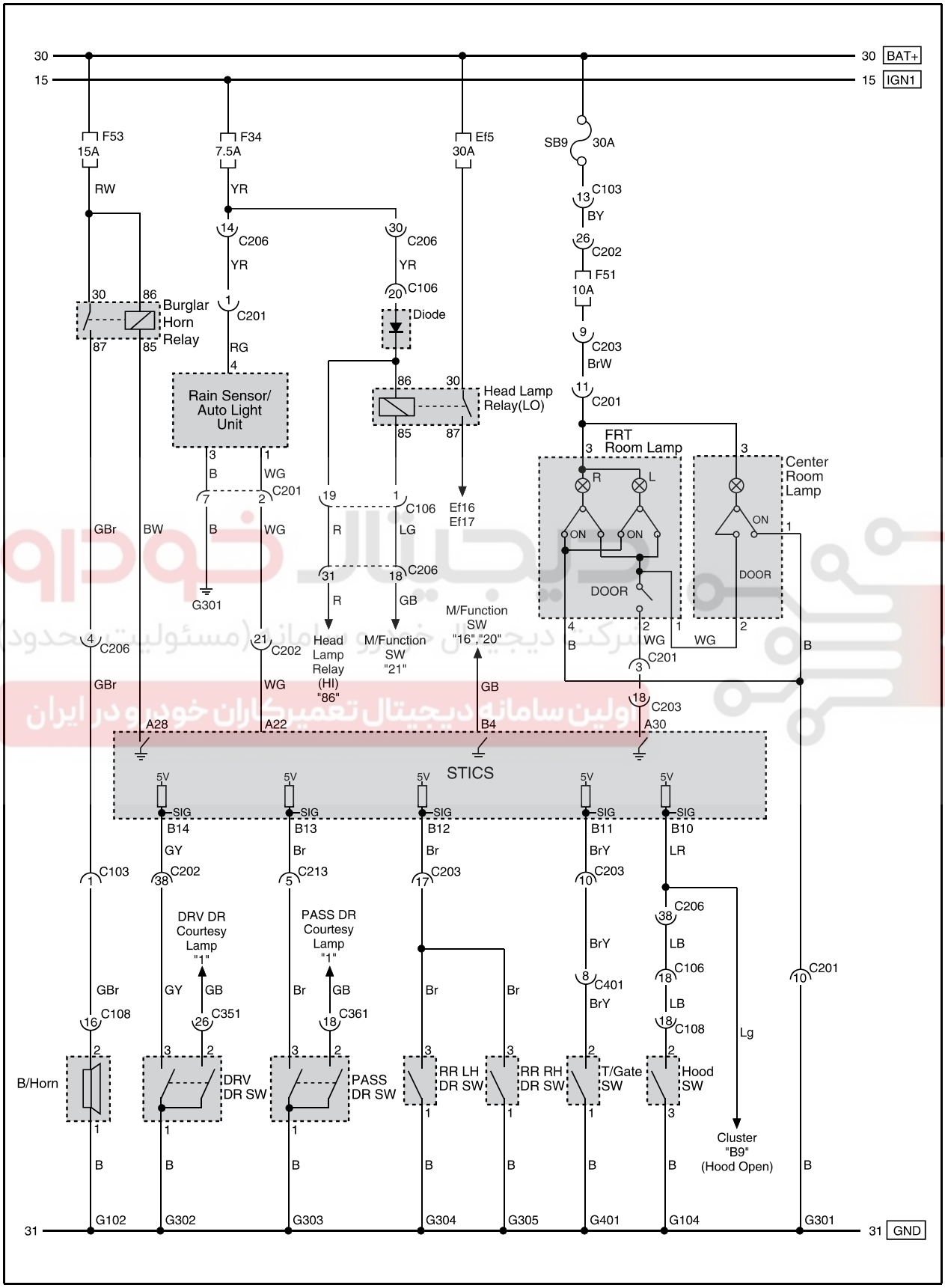
With the key reminder switch OFF, all the room lamps come on if a door (driver's/passenger's/rear) is open, which is controlled by STICS (except tailgate).

- The front and rear room lamps come on when a door (driver's/passenger's/rear) is open and goes off automatically in 30 seconds.
- The room lamp stays on for 2 seconds and then decays through 3 seconds when closing the door within 30 seconds.
- The decaying operation must have greater than 32 steps per one second.
- The room lamp output should stop immediately after turning on the ignition key during decaying operation.
- The front room lamp comes on for 30 seconds when receiving the unlock signal from the remote control key while the door is closed.
- The front/rear room lamp output period is extended by 30 seconds when receiving the unlock signal from the remote control key again during output.
- When a door is opened during its extended period, the lamp stays on. If closed, operates as in step 2.
- The room lamp output stops immediately after receiving the lock signal from driver's door, passenger's door and rear doors lock switch while the driver's door, passenger's door and rear doors are closed.



Modification basis	
Application basis	
Affected VIN	

(4) Electrical Wiring Diagram of Room Lamp



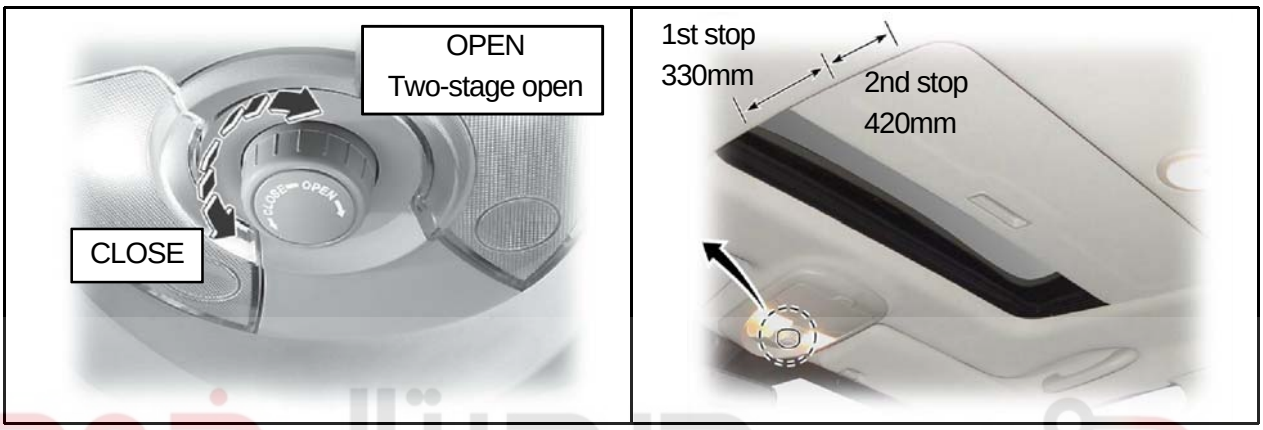
SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

(5) Sunroof Operation and Functions

When you drive this vehicle with the window or sunroof open at a certain position, you may feel some pressure upon your ears or hear some noises similar to those from a helicopter (Wind Buffeting Phenomenon). This phenomenon is caused by the air vibration produced by air entering through the windows and the sunroof. When this happens, adjust the position of windows or sunroof. Actyon has introduced the two stop positions to the sunroof system.
When the sunroof is at the 1st stop position it minimizes the wind buffeting effect. To fully open the sunroof, turn the



▶ Sunroof Sliding Operation

▷ Two-stage open

- If you turn the sunroof switch clockwise (OPEN direction) for less than 0.5 seconds, the sunroof stops at the 1st stop position (330 mm) and if you turn the switch again, it stops at the fully open 2nd stop position (420 mm).
  If you want to stop the operation while the sunroof is sliding, turn the sunroof switch again.

▷ Close

- To fully close the sunroof, briefly turn the sunroof switch counterclockwise (CLOSE direction) with the sunroof open.
  To partially close the sunroof, turn and hold the sunroof switch until it reaches at the desired position.

▶ Sunroof Tilting Operation

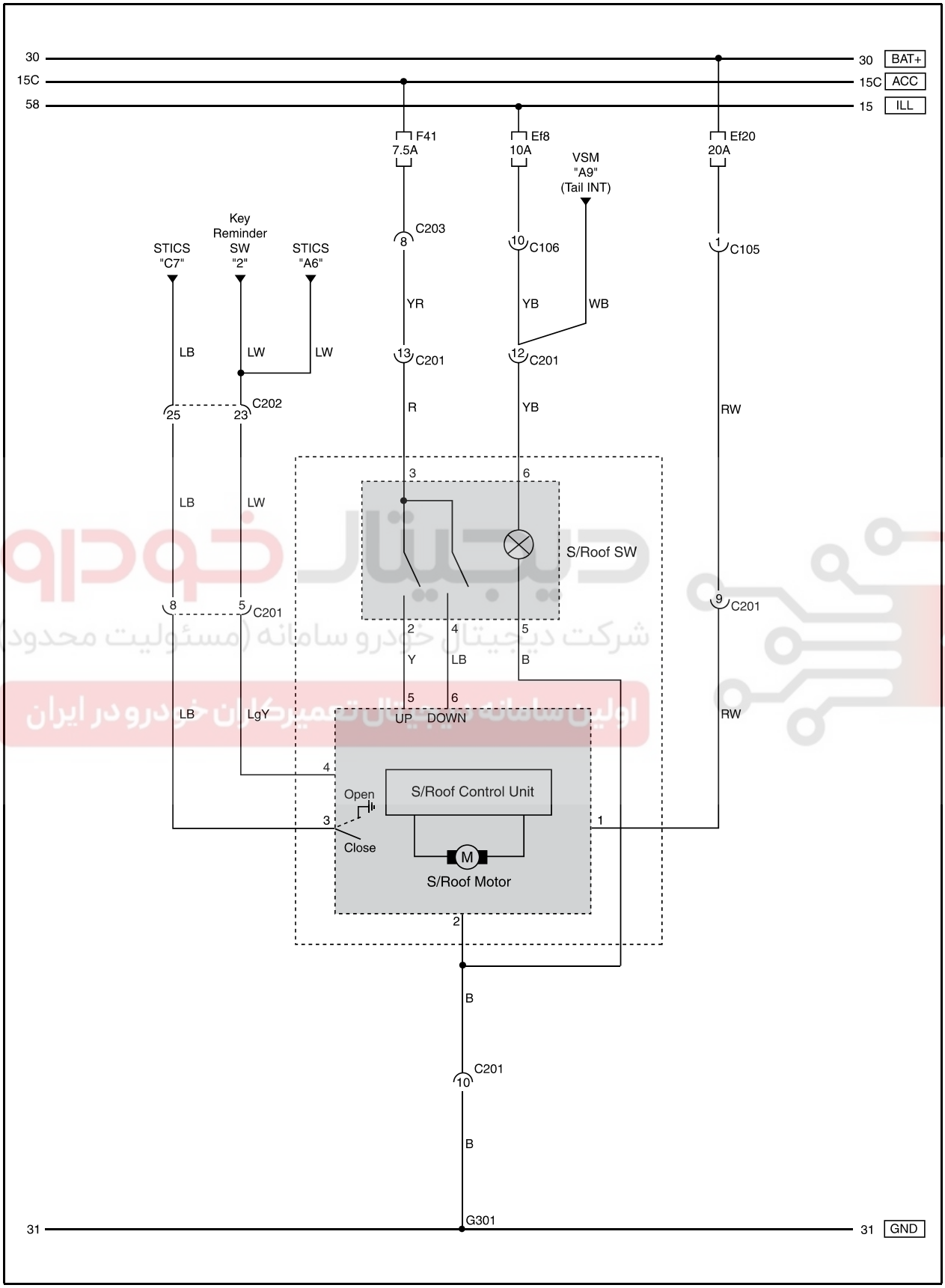
▷ Tilt-up

- To tilt-up the sunroof, turn the sunroof switch counterclockwise (CLOSE direction) with the sunroof fully closed.

▷ Tilt-down

- To tilt-down the sunroof, turn the sunroof switch clockwise (OPEN direction) with the sunroof tilted-up.

(6) Sunroof Circuit Diagram



SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

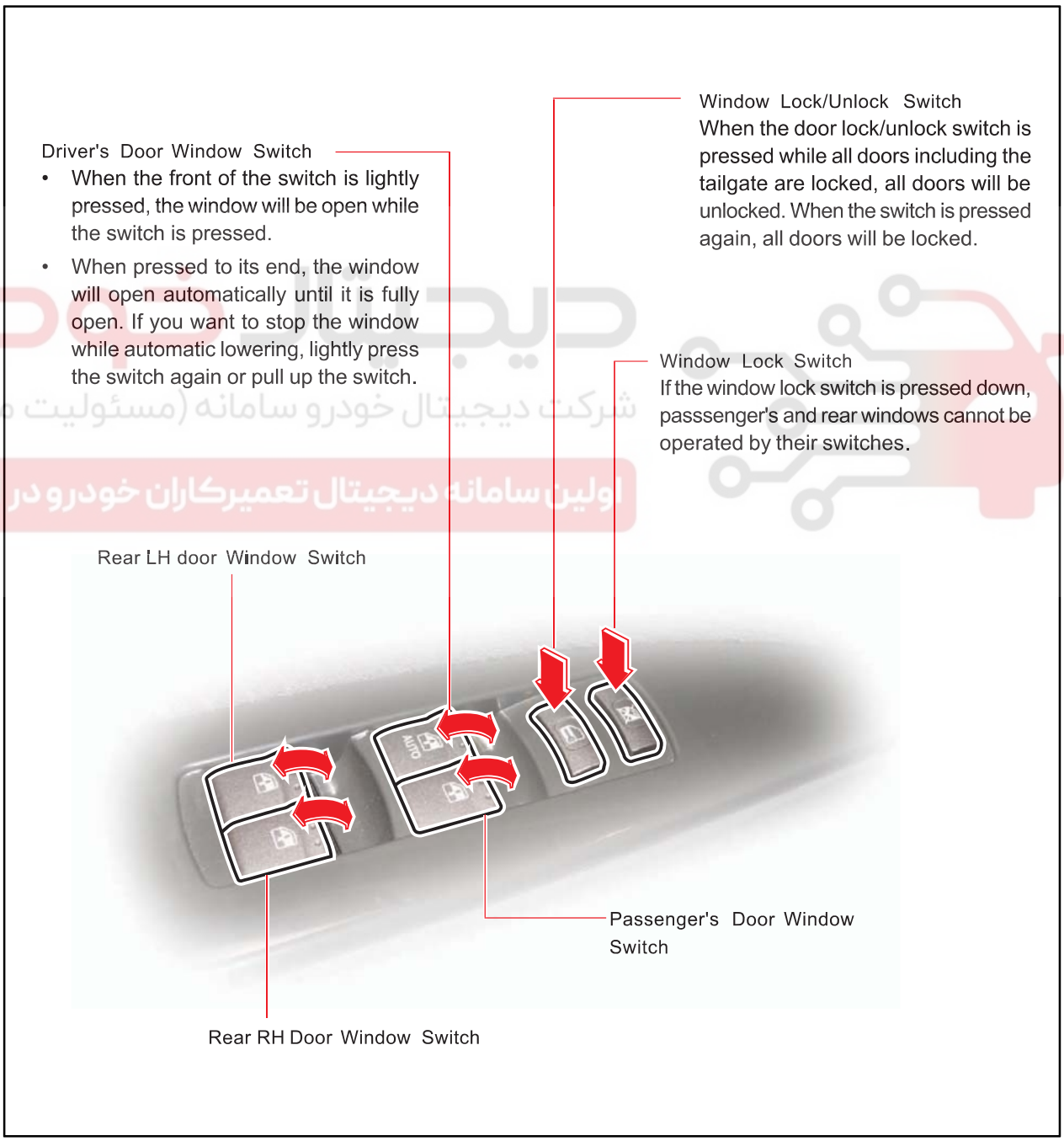
S.G.N. 8510-05

MAIN POWER WINDOW SWITCH

1) Locations and Functions

Driver can control all door windows (Open/Close/Lock/Unlock) and doors (Lock/Unlock) power this switch unit.

Driver's door window switch has Auto down/Auto up function. The window can be controlled within 30 seconds even after turning off the ignition switch. However, if any of front doors is opened or the Lock switch on the remote control key is pressed (theft deterrent mode is activated) during the delaying period, the delaying time is immediately canceled (power window relay is deactivated).



Modification basis	
Application basis	
Affected VIN	

2) Switch Arrangement and Appearance

(1) Power Window Connector

	Rated Curren t	Maximum Curren t
Power window switch (motor operation)	10 A (operating voltage)	20 A (restricted current)
Door lock switch (actuator operation)	0.4 A (operating voltage)	0.7 A (actuator voltage)
Window lock switch (motor operation)	10 A (operating voltage)	20 A (restricted current)

Switch Assembly	
	
Front View	**Rear View**
	
side view	**connector**
	

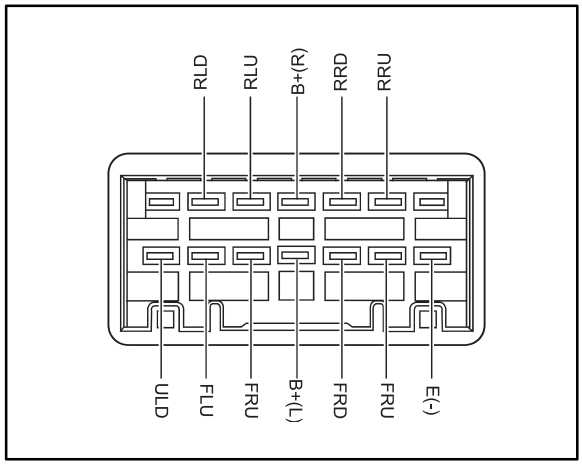
Modification basis	
Application basis	
Affected VIN	

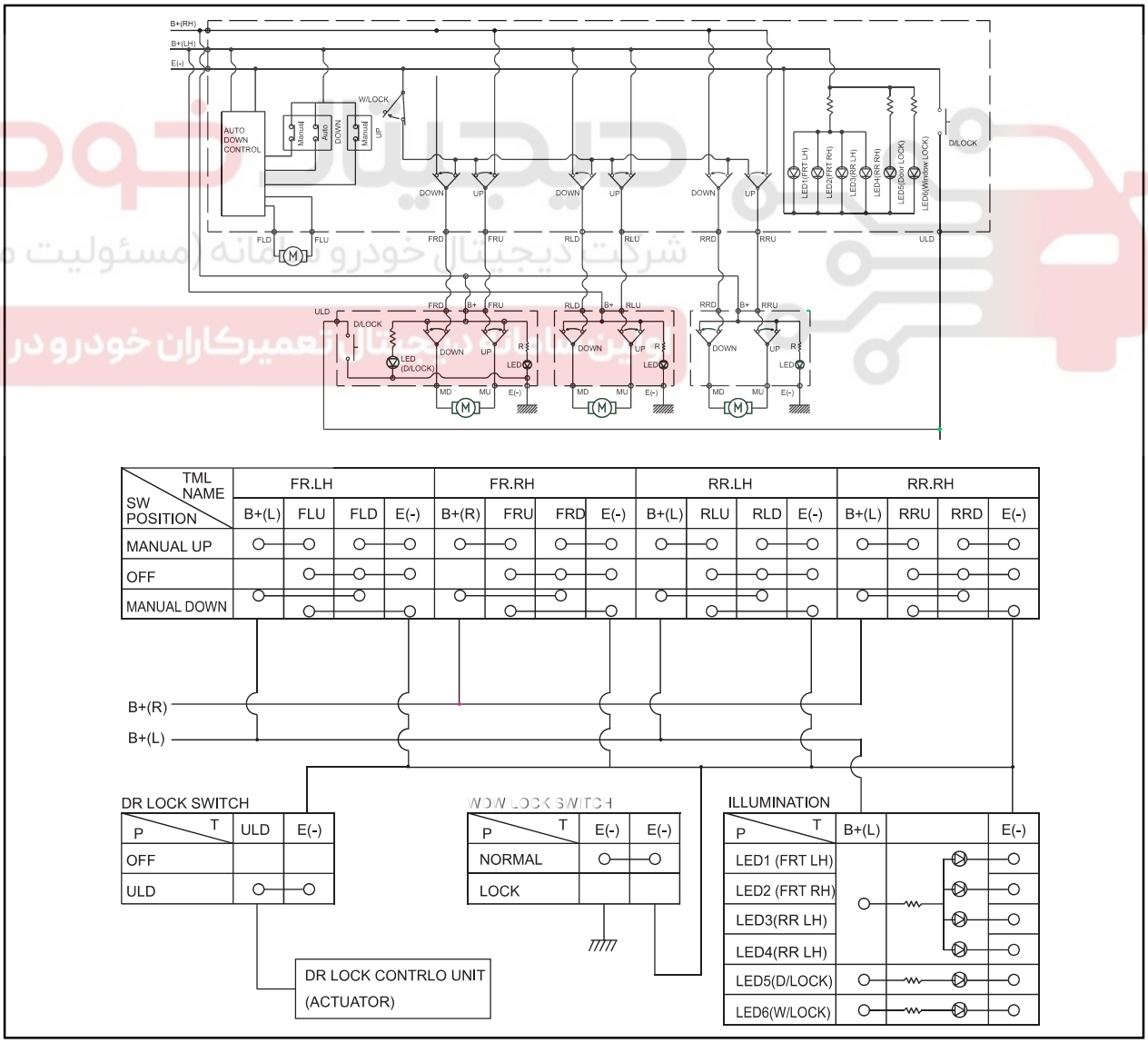
3) Power Window Operations

(1) Power Window Auto-down

When the front of the switch is lightly pressed, the window will be lowered while the switch is pressed. When pressed to its end, the window will open automatically until it is fully open.
If you want to stop the window while automatic lowering, lightly press the switch again or pull up the switch.

Power window versions in this vehicle: Auto Down, Auto Down/Up





SW POSITION \ TML NAME	FR.LH				FR.RH				RR.LH				RR.RH			
	B+(L)	FLU	FLD	E(-)	B+(R)	FRU	FRD	E(-)	B+(L)	RLU	RLD	E(-)	B+(L)	RRU	RRD	E(-)
MANUAL UP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OFF		○	○	○		○	○	○		○	○	○		○	○	○
MANUAL DOWN	○	○			○	○			○	○			○	○		

B+(R)
B+(L)

DR LOCK SWITCH

P \ T	ULD	E(-)
OFF		
ULD	○	○

DR LOCK CONTRLO UNIT (ACTUATOR)

WDW LOCK SWITCH

P \ T	E(-)	E(-)
NORMAL	○	○
LOCK		

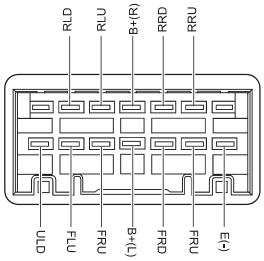
ILLUMINATION

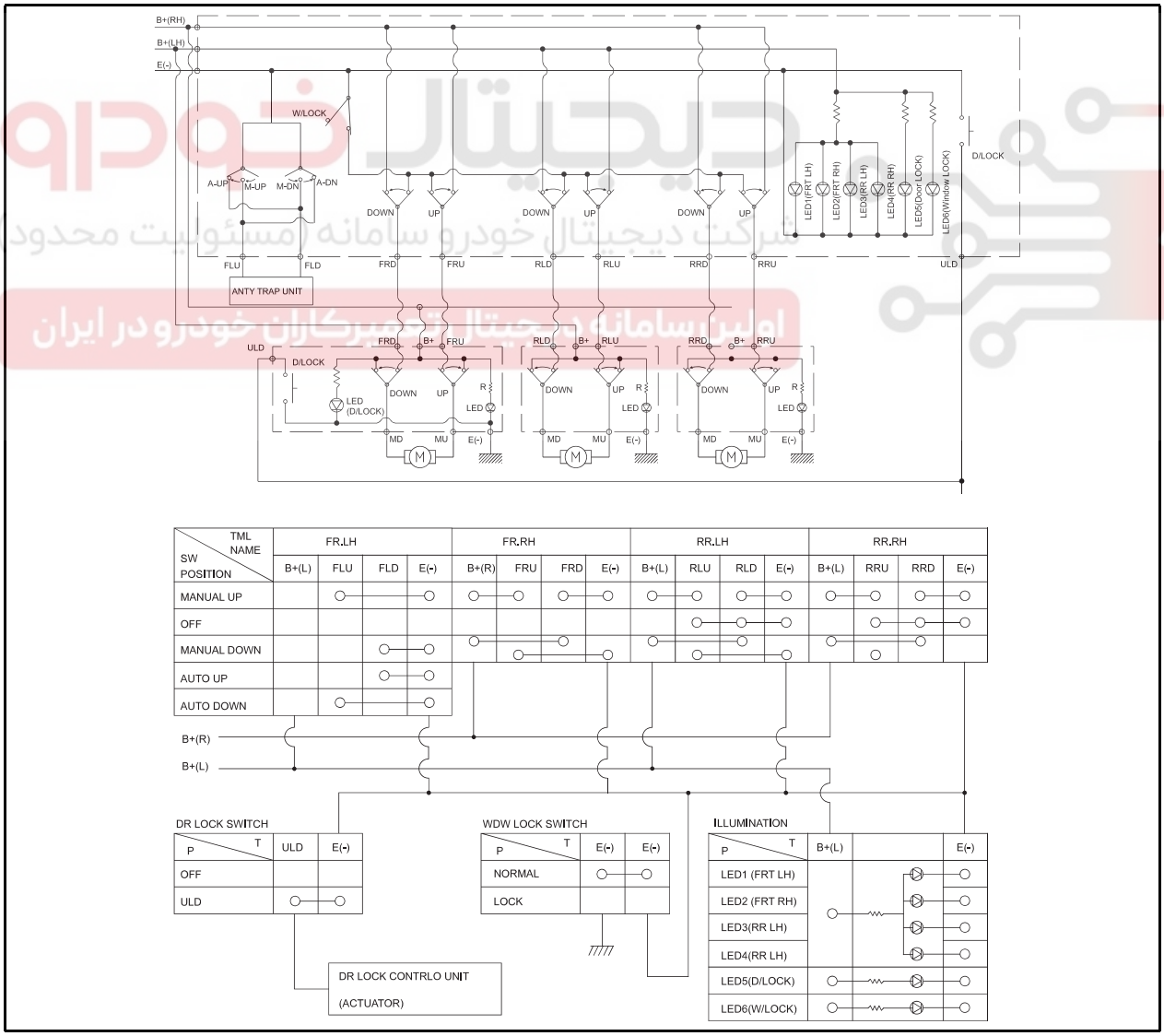
P \ T	B+(L)	E(-)
LED1 (FRT LH)		○
LED2 (FRT RH)		○
LED3(RR LH)		○
LED4(RR LH)		○
LED5(D/LOCK)	○	○
LED6(W/LOCK)	○	○

Modification basis	
Application basis	
Affected VIN	

(2) Power Window Auto Up

The Auto Up function only applies to the driver's window and is operated when pulling the switch up. The following circuit is for the vehicle equipped with the Auto Up function (optional).
The power window motor with the Auto Up function includes the anti-trap function, so the power motor and the anti-trap control ECU is integrated together.

Driver's Power Window ECU Motor	Power Window ECU Motor Connectors
	



Modification basis	
Application basis	
Affected VIN	

(3) Power Window with Anti-trap Function

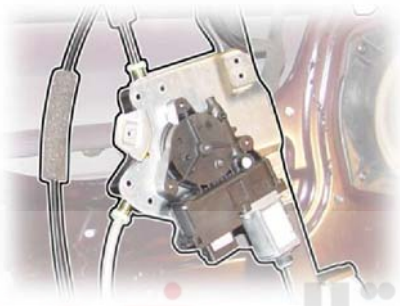
▶ **Anti-trap Function**

▷ Condition for Auto-Up: Initialization completed, Ignition ON

▷ Anti-trap operation

- If there is resistance of 100 N while the window is operating with the auto up function, the window is lowered approx. 150~180 mm to prevent personal injury.

▷ There is undetectable area where the space between the top of the glass and the window frame is below 4 mm.

Driver's Power Window	Power Window ECU Motor with Anti-trap function (only applies to Driver's window)
	
Passenger's Power Window (Without Anti-trap)	
	

▶ **Stop Condition of Anti-trap Power Window While in Operation**

▷ The motor stops if any of below conditions is met while auto up/down or manual up/down is operated.

- When the voltage is out of operation range → both the automatic and manual operations are not active
- When the motor is overheated → both the automatic and manual operations are not active
- When anti-trap is operated → this is only operated during auto up
- When initialization is canceled → if an error is detected or erased → the automatic operation is not active
- When power relay OFF (when STICS shuts off the power to the power window relay)
- When a signal from other switch is input while the motor is running

▶ System Overview

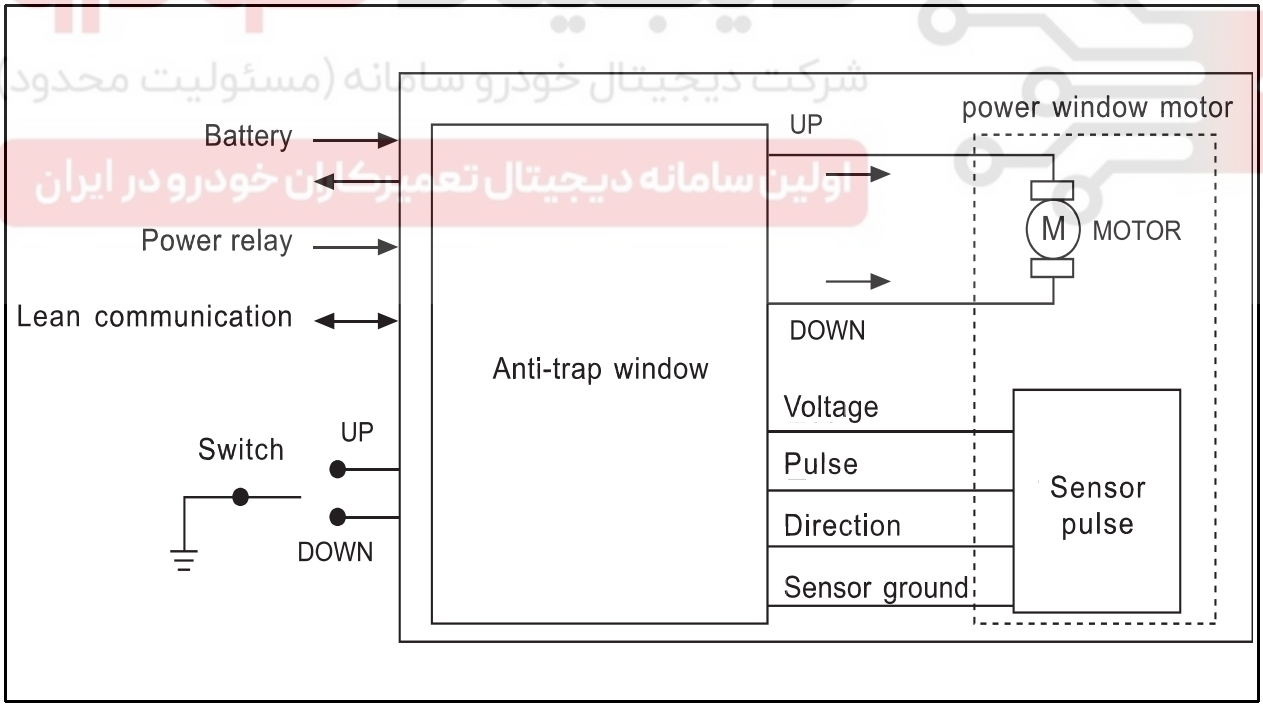
- The driver's door is equipped with the auto down, auto up (optional) and anti-trap (if auto up equiped) function. Also, it is equipped with dual rail regulator.

▶ Specifications

▷ Electrical Specifications

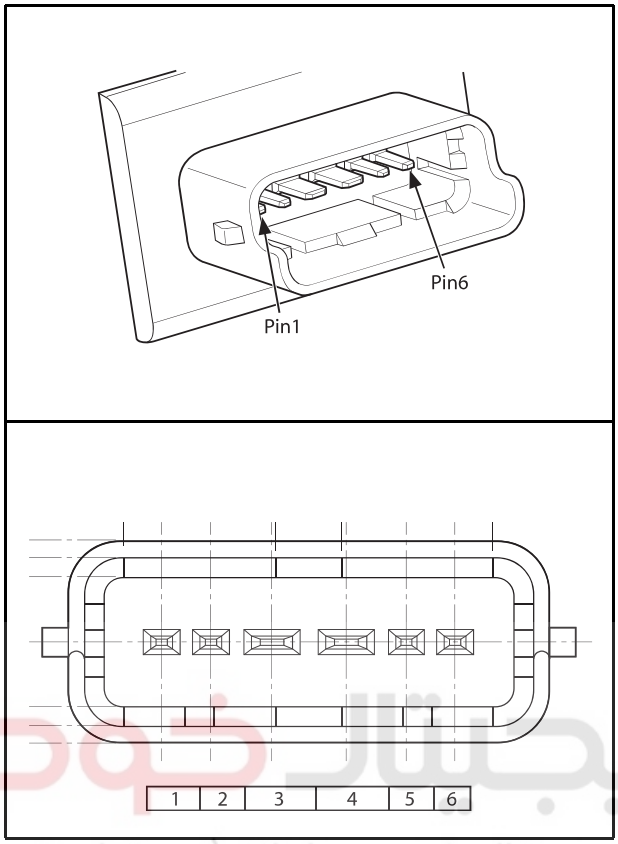
Item	Specified value	Remarks
Rated voltage	DC 12 V	Operated normally within this range
Operating voltage range	DC 9 V ~ DC 16 V	- Auto up function is inactive within 9 V ~ 10 V
Operating temperature range	-35°C ~ +75°C	- Data storage and manual operation is possible within 7 V ~ 9 V
Storage temperature range	-40°C ~ +85°C	- Stops motor if exceeding 16 V
Max. humidity	95% RH	
Power consumption	33 mA	No load included
Size and weight	-	Shown in the drawing
Current in slip mode	Max. 1 mA	

▷ System Diagram



Modification basis	
Application basis	
Affected VIN	

▷ Power Window ECU Motor Connectors



Pin	Functio n	Operatio n	$I_{max.}$	I_{normal}
1	Up (close)	low	15 mA	10 mA
2	Power relay	high	15 mA	10 mA
3	Battery	-	25 A	10.6 A
4	GND	-	25 A	10.6 A
5	Lean comm.	-	15 mA	10 mA
6	Down (open)	low	15 mA	10 mA

▶ System Function

▷ Power Signals of B+ and Power Relay

- The power window motor is integrated with ECU which is supplied with B+ power constantly to memorize the window position and operating speed. The motor runs only when the power is supplied to the switch by STICS. Also, it goes to slip mode to minimize the battery discharge.

▷ Operating Voltage

- Auto up inactive voltage: when the voltage is within 9 V ~ 10 V, auto up is inactive due to voltage drop
- Limited operation: when the voltage is within 7 V ~ 9 V, data can be stored and the window can be operated manually.
- Motor stop: when the voltage is over 16 V, the motor is stopped

Modification basis	
Application basis	
Affected VIN	

▷ Self-diagnosis

The ECU motor diagnoses of itself to stop the motor or reset the hardward if there is malfunction in the system or supply voltage.

- Service person may not know whether the ECU motor is in self-diagnosis or not.
- If there is an error in RAM checksum after wake-up
  → Hardware reset: auto Up deactivated (very unlikely in a real world) Re-initialization
- If the voltage is low (less than 5V)
  → Hardware reset: motor stops (both auto/manual deactivated) → Reactivated when the voltage is returned to normal
- If the motor rotates more than 10 times to the upper direction after initialization (idling for more than 10 times than the memorized position)
  → Motor stops, initialization erased → No auto up → Reactivated after initialization
- If the motor rotates more than 400 times to the lower direction after initialization
  → Motor stops, initialization erased → No auto up → Reactivated after initialization
- Abnormal program running (very unlikely in a real world)
  → Hardware reset by monitoring program → motor stops (both auto/manual deactivated) → Replace motor

▷ Motor Overheat Prevention Function

There is overheat prevention function to prevent motor from overheated (only if ECU operates normally).

- If the system is supplied with power ir resetted, the ECU motor initialize the temperature counter which counts the temperature increase as the motor runs.
  1st limited value
  · The temperature is not measured directly. If the motor runs 8~9 times consectively, it runs again in 60 seconds after completing the current operation.

CAUTION

- If the motor stops due to the 7~8 consecutive operation, it runs again in 3~4 minutes.

- 2nd limited value (not plausible on-board)0
  · If the value reaches the 2nd limited value due to the consecutive operation, the motor stops immediately and runs again in certain period of time.

▷ System Initialization

The top position of the wiper should be recognized again if the wiper motor or regulator is replaced or the initialization is erased due to the error detected.

- The auto up function is deactivated and the window position is not memorized unless the system is initialized.

Modification basis	
Application basis	
Affected VIN	

▷ System Re-initialization (For Recognizing the Window Operatiing Characteristics)

- Raise/Lower the window for approx. 5 times after the initialization to recognize the vehicle's window operatiing characteristics (position, speed etc.). By doing this, the correct resistance (less than 100 N) is applied when antitrap function is activated.

CAUTION

- The power window ECU motor with the anti-trap function observes the actual lowest position of the power window motor at every 20 cycles to reflect the slight changes in positions of door weather strip, regulator system, motor, etc.

▷ Sleep Mode

The ECU goes into the sleep mode to save the battery voltage when the conditions are established.

- Condition: It goes into the sleep mode if the motor overheat prevention heat counter decreased to the initial value and the power relay is OFF for 10 seconds.
- It can go into the sleep mode after 10 minutes from the time when the motor stops by the motor overheat prevention program.

▷ Wakeup Mode

It wakes up from the sleep mode when the hardward is reset (including connecting and disconnecting the connector or battery) or ignition switch is turned to ON position.

▷ Soft Stop Down Mode

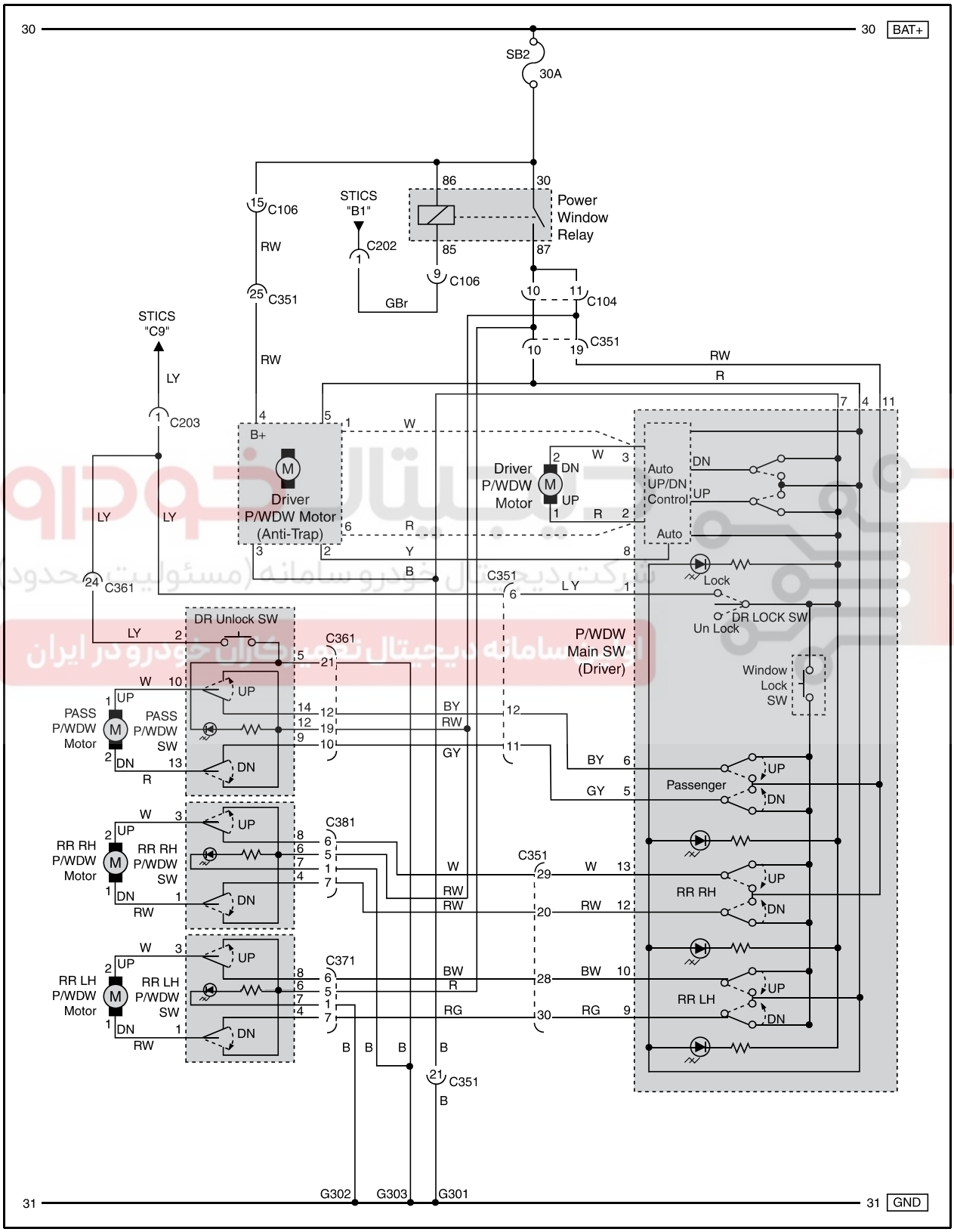
The ECU cuts off the power to the motor when the window is lowered to the 10 mm (approx. 7 revolutions) up from the lowest position to lower the window smoothly. From that position, the window is lowered by the inertia force.
To fully lower the window, operate the switch again after the soft stop down.

▷ Other Characteristics and Cautions

- The initial values are erased when the error is detected by self-diagnosis.
- The ECU motor stores the window position, intial value, window running direction, operation characteristics in the memory. Normally, the stored values are not erased by initializing the hardware or disconnecting the battery cable. However, the stored value may be erased occasionally in the case when the ECU is down.
- If the stored values are erased unexpectdely, the system should be initialized again.
- The window operation stops when turning the power OFF while it is in operation. However, if the anti-trap function is in operation, it completes its operation.
- Stuck prevention filter for power window switch
  The signal from the switch is overridden if it is continuous for more than 20 seconds with no level change of the window due to the malfunction of the power window switch, short circuit or misoperation by the operator.
- The anti-trap function of the power window may not work properly due to wrong installation of glass run or regulator.

4) Circuit Diagram of Power Window

It show the complete electric circuit of the power window. Refer to the electric circuit diagram manual for the color and the configuration of the connectors.



SWITCH

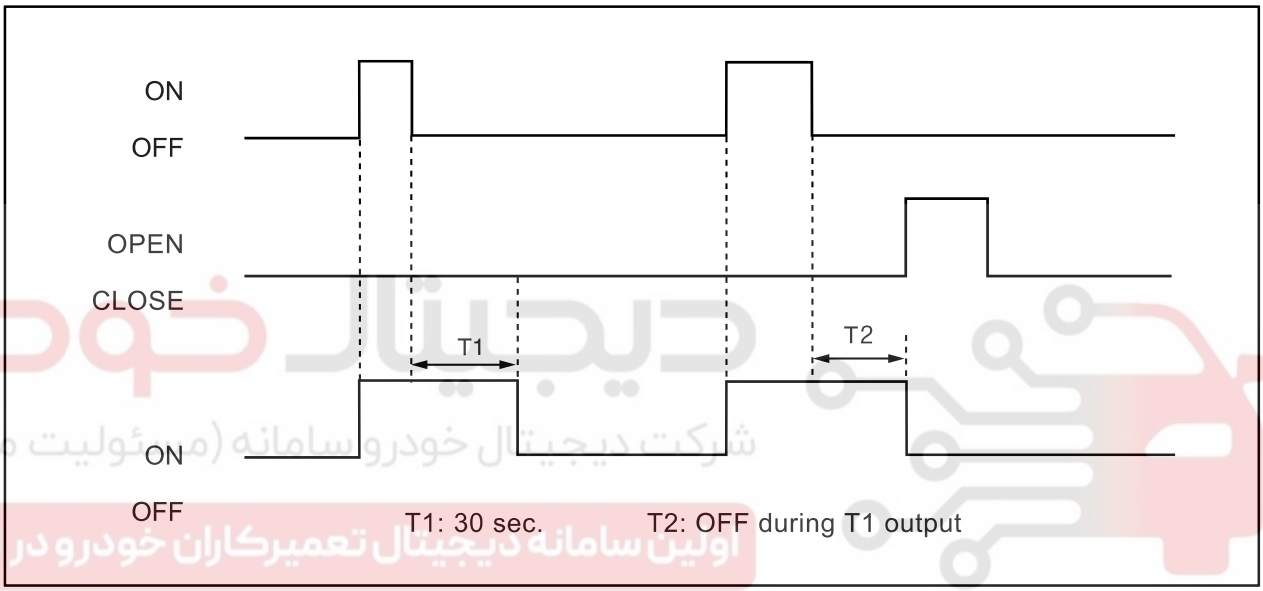
undefined

Modification basis	
Application basis	
Affected VIN	

The power window electric circuit is connected to the power window main switch and STICS for the "Time lag power window control" function. For details, refer to the following context.

▶ **Time Lag Power Window Control**

- The power window relay output is "ON" when turning on the IGN 1 switch.
- The power window relay output is "ON" for 30 seconds for T1 when turning off the IGN 1 switch.
  The power window relay output is "OFF" when opening the driver's door or the passenger's door.
  The power window relay is turned "OFF" when receiving the remote control key lock signal (armed mode) during its extended operation period of 30 seconds.



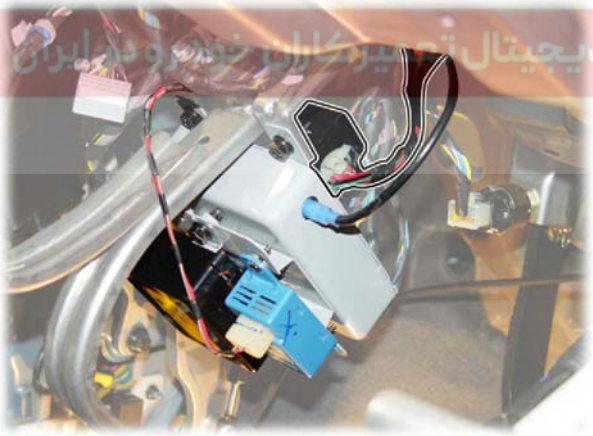
5) Central Door Lock/Unlock Switch

(1) Switch Arrangement and Functions

This vehicle has five door lock/unlock actuators including tailgate actuator. The doors can be opened separately.

However, the door lock switch on driver's door armrest locks/unlocks all doors with STICS control. This is a same control type with Auto door lock function that locks the doors when the vehicle speed exceeds 50 km/h.

(2) Door Lock/Unlock Relay



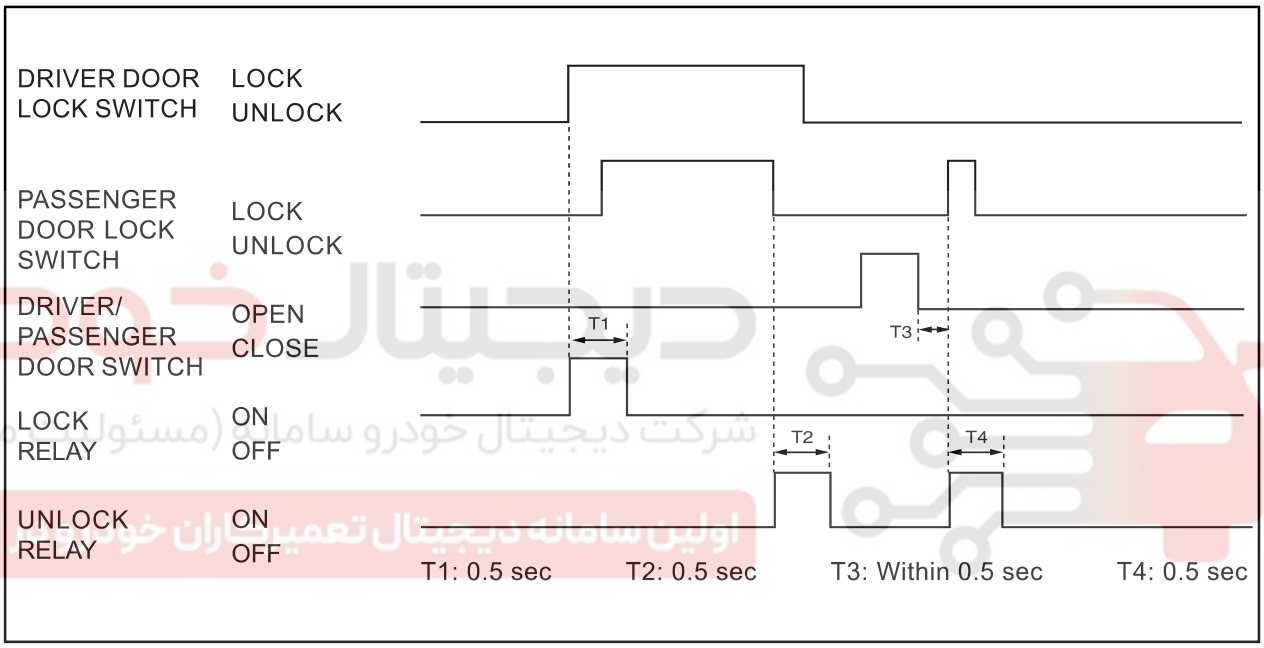
Door Lock/Unlock Relay

Modification basis	
Application basis	
Affected VIN	

(3) Door LOCK/UNLOCK Control

▶ Door Lock/Unlock by Door Lock Switch

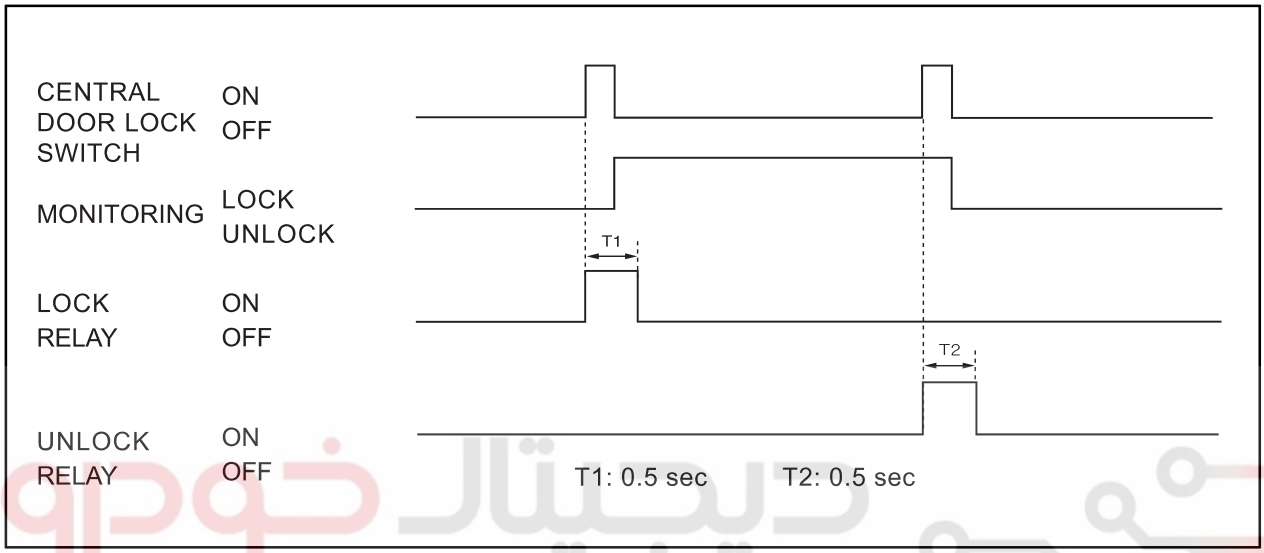
- The door lock system outputs "LOCK" for 0.5 second when positioning the driver's or passenger's door lock switch to lock position.
- The door lock system outputs "UNLOCK" for 0.5 second when positioning the driver's or passenger's door lock switch to unlock position.
- "LOCK" or "UNLOCK" signal by the door lock switch is ignored when outputting the "LOCK" or "UNLOCK" by other functions.
- All door lock signals are "UNLOCK" for 0.5 second just for once when receiving the "LOCK" signal within 0.5 second after closing the driver's or passenger's door. (with the ignition key removed)



Modification basis	
Application basis	
Affected VIN	

▶ Door Lock/Unlock by Central Door Lock Switch

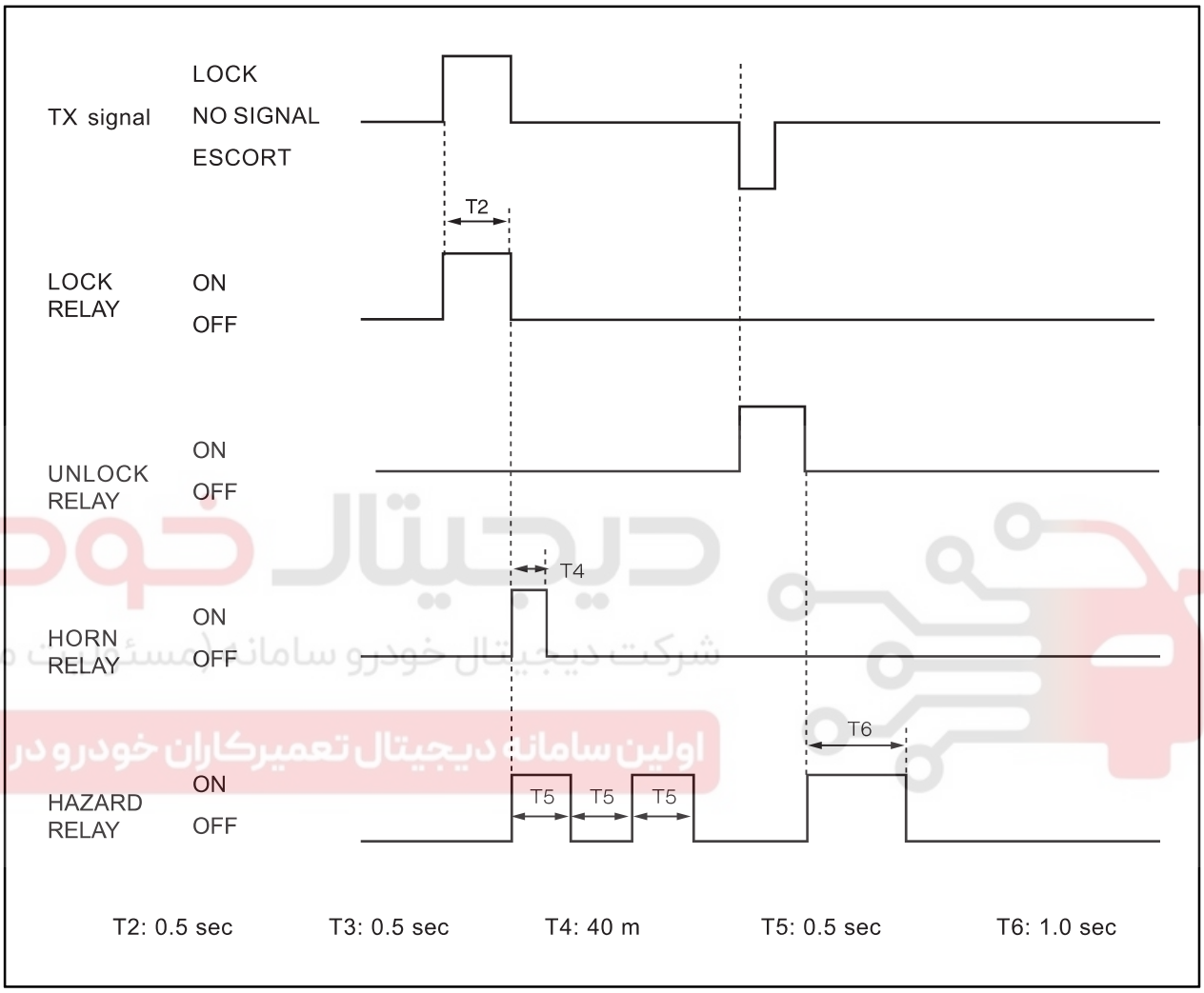
- The door lock system outputs "LOCK/UNLOCK" for 0.5 second when pressing "LOCK/UNLOCK" button on the central door lock switch.
  (However, the door lock system outputs UNLOCK signal when the front doors are locked, and vice versa.)
- The "LOCK" or "UNLOCK" inputs from the central door lock switch in armed mode are ignored.



Modification basis	
Application basis	
Affected VIN	

▶ Door LOCK/UNLOCK by Remote Control Key

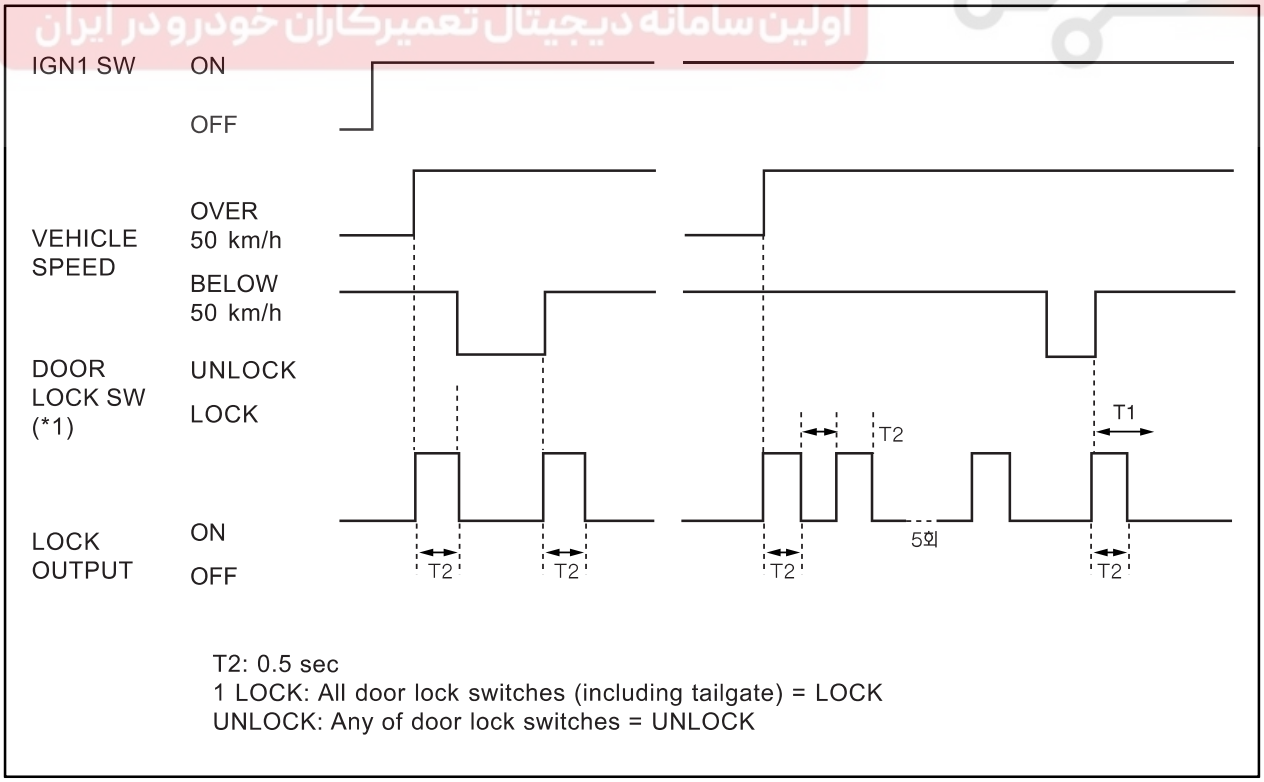
- The door lock system outputs "LOCK" for 0.5 second when receiving "LOCK" signal from the remote control key.
- The door lock system outputs "UNLOCK" signal for 0.5 second when receiving "UNLOCK" signal from the remote control key.



Modification basis	
Application basis	
Affected VIN	

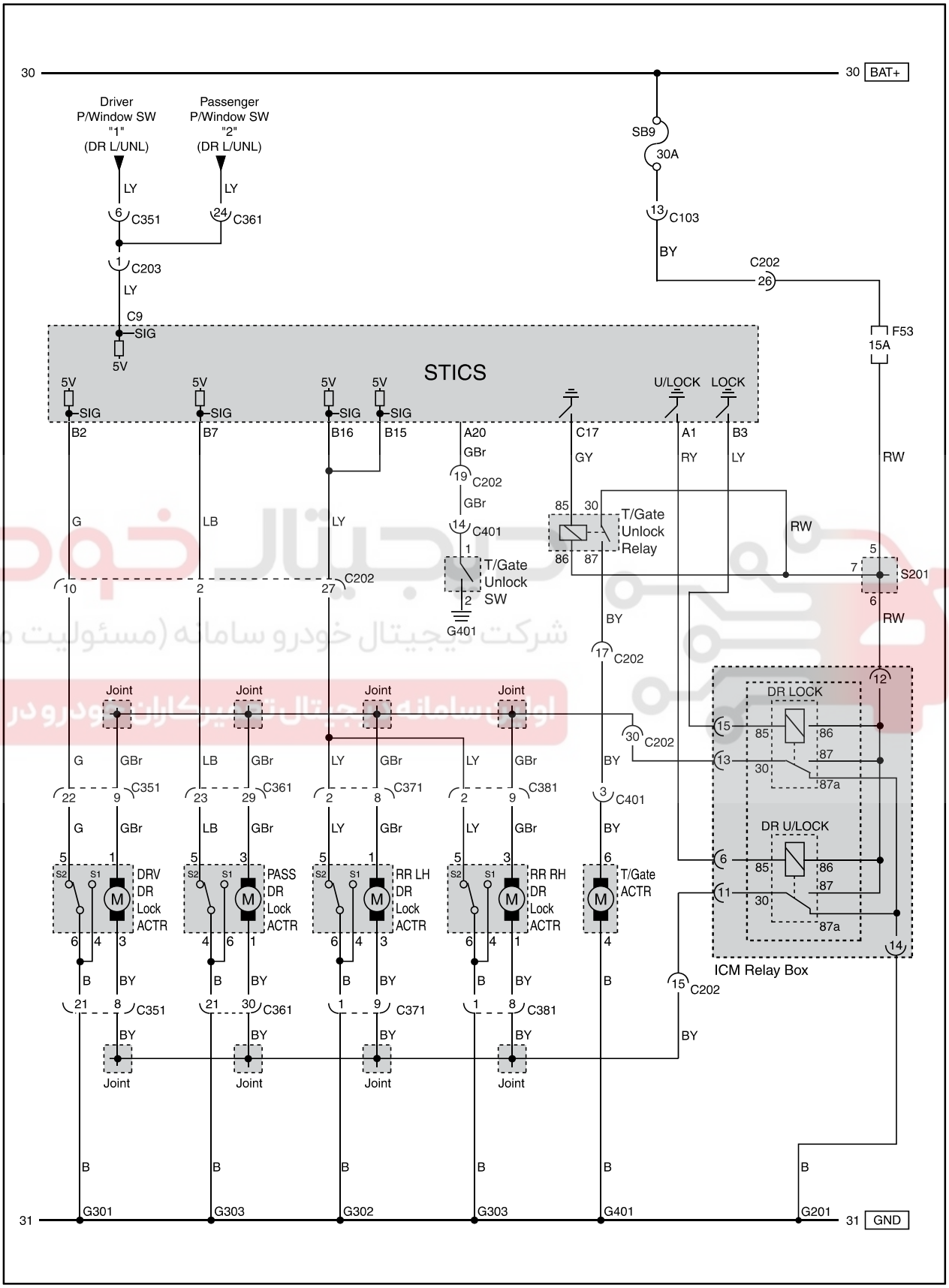
▶ Auto Door Lock

- The STICS outputs "LOCK" when the vehicle speed stays over 50 km/h.
  However, it doesn't output "LOCK" when all doors are locked or failed.
- If any of doors is unlocked after outputting "LOCK" in step 1, outputs "LOCK" up to 5 times (except step 1) with interval of one second.
- If any of doors is unlocked after 5 times of "LOCK" outputs, the door (driver/passenger/ rear/tailgate) is regarded as "FAIL".
- If the door that was regarded as fail changes (UNLOCK to LOCK) to unlock, only one "LOCK" output will be done.
- If any door is regarded as FAIL, the auto door lock function does not work (if it is occurred when the vehicle speed is over 50 km/h, the auto door lock output does not occur even if the vehicle speed falls below 50 km/h and accelerates again to over 50 km/h). Nonetheless, the central door lock function works properly.
- When the system receives "UNLOCK" signal from a door switch, it outputs five "LOCK" signals. If additional "LOCK" signal from another door switch is detected during the period, the system outputs five "LOCK" signals for the door.
- The door lock system outputs "UNLOCK" automatically if the "LOCK" output conditions are established by this function or the key is cycled (IGN1 = ON → OFF) (even when there is no "Lock" output while the vehicle speed stays over 50 km/h under lock condition).
  However, when the ignition key is turned to "OFF" position, the lock output conditions will be canceled.
  The "FAIL" condition of the door will be erased when the ignition key is turned to "OFF" position.
-



Modification basis	
Application basis	
Affected VIN	

6) Circuit Diagram



Modification basis	
Application basis	
Affected VIN	

SWITCH

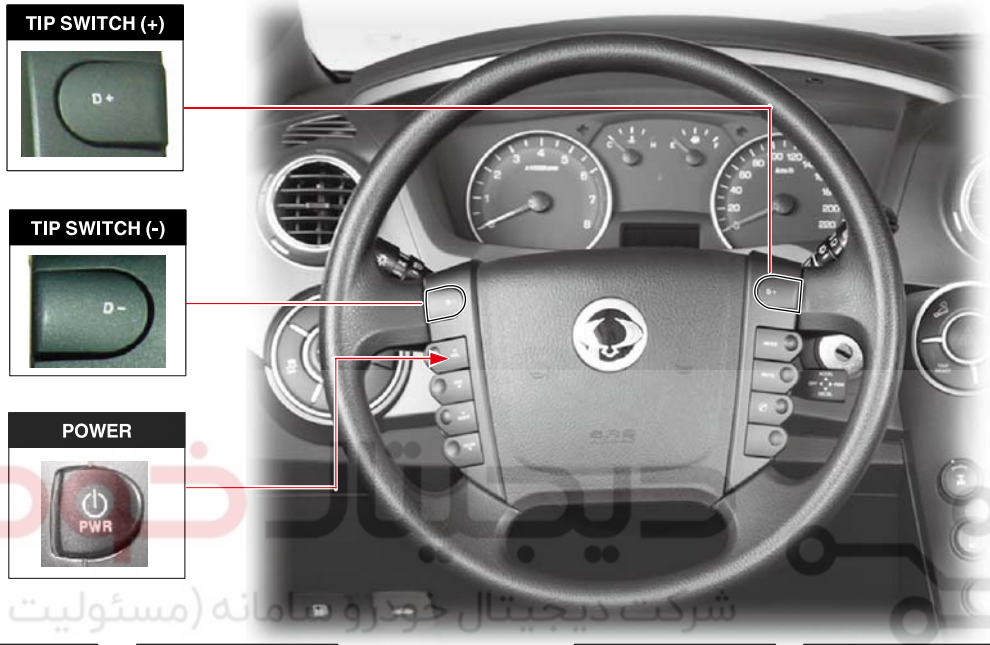
undefined

S.G.N. 8510-01

AUDIO REMOTE CONTROL SWITCH ON STEERING WHEEL

1) Locations and Functions

Action Sports uses MB 5 or DSI 6-speed automatic transmission. DSI 6-speed transmission has two Tip Tronic switches on the TGS lever and the steering wheel.



▲ SEEK

SEEK ▼

In radio mode

- Press briefly: Manul searching for a station.
- Press and hold: Automatic searching for a station.

In CD mode

- Press briefly: Play next/previous track.
- Press and hold: Move forward/backward in current track.

In CD-ROM/USB/DMB mode

- Press briefly: Play next/previous file or station automatically.
- Press and hold: Move forwards / backwards

▲ VOL

VOL ▼

Increase or reduce volume

POWER

Turns on and off the audio system.

MUTE

Stops audio output from audio system.
To resume the audio output, press the button again.

MODE

Changes the audio mode in order.

Bluetooth switch

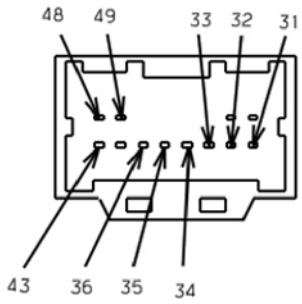
Allows the driver to make or receive a call via vehicle's audio system by connecting the cellular phone to the AV head unit through wireless communication.

Modification basis	
Application basis	
Affected VIN	

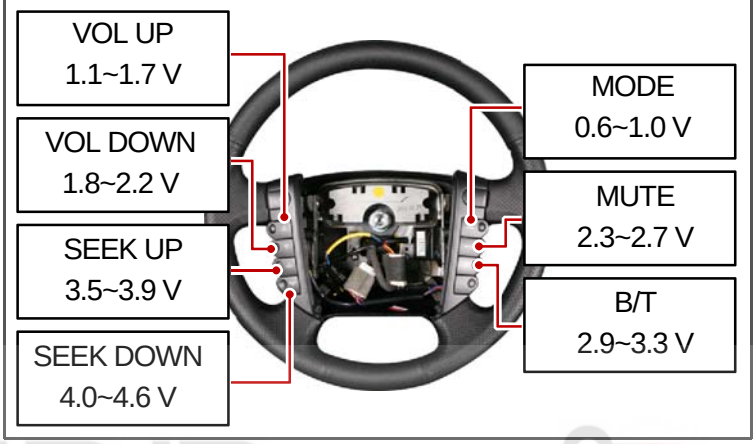
2) Components

The steering wheel audio control switches consist of audio remote control switch and hands-free switch. This switch receives rated voltage of approx. 5 V for operating and contains three connectors. For the function of each pin of the main connector, refer to the table below.

Main Connector



Operating Voltages



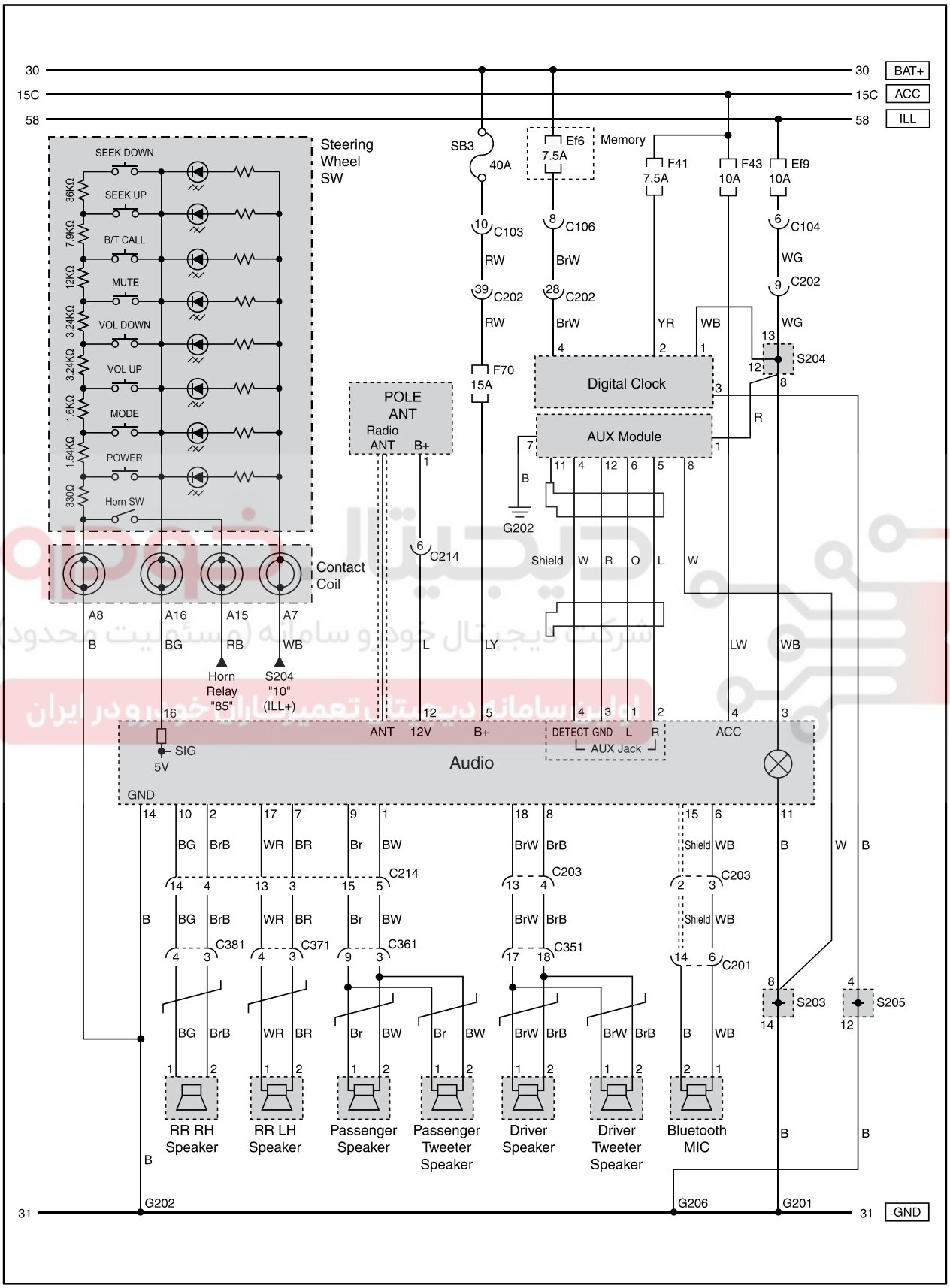
Switch and PCB

Switch and PCB

Functions of main connector by pin			
Pin No.	Name	Pin No.	Name
31	Audio signal	36	N.C / CRUISE SIG (GSL)
32	Illumination (-)	43	N.C
33	Illumination (+)	48	(TIP SHIFT) ECU GND
34	N.C / ECU GND (GSL)	49	(TIP SHIFT) ECU SIG
35	N.C / ECU 5V (GSL)		

Modification basis	
Application basis	
Affected VIN	

3) Cirsuit Diagram of Audio Switch on Steering Wheel



SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

4) Audio Switches on Steering Wheel

Modification basis	
Application basis	
Affected VIN	

S.G.N. 8510-21

MULTIFUNCTION SWITCH

1) Overview

The multifunction switch includes auto washer and wiper switch, fog light switch and auto hazard warning switch besides conventional functions. For the vehicle equipped with airbags, the airbag spring clock is installed on the multifunction switch, so be careful when removing and installing the switch or checking the wiring.

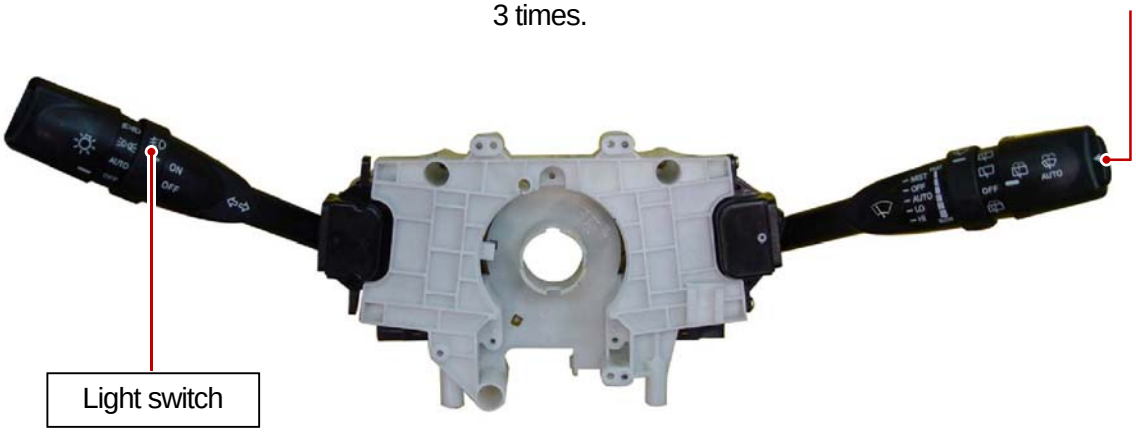
Mounted View

Auto Hazard Warning Switchs.

- ▶ Press briefly: Flashes 3 times
- ▶ Press and hold: Flashes 10 times

Front auto washer and wiper switch

When the front wiper switch is off and this switch is pressed, washer fluid will be sprayed and the wiper will automatically operate 4 times. Then, the fluid will be sprayed again and the wiper will automatically operate 3 times.

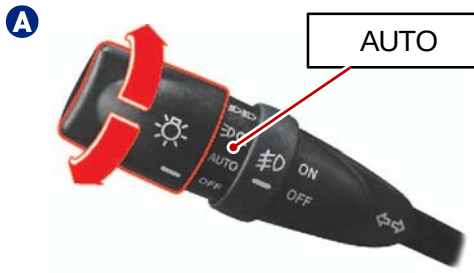


For detailed operation logics, refer to "STICS"

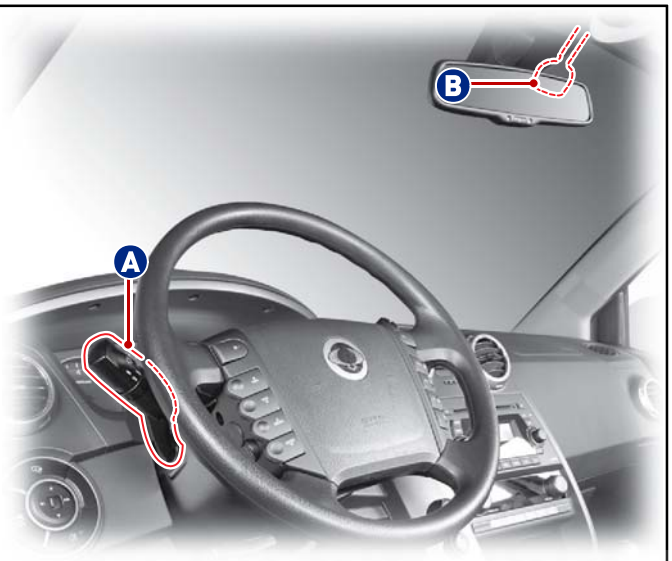
Modification basis	
Application basis	
Affected VIN	

2) Functions and Operations

(1) AUTO Light Function

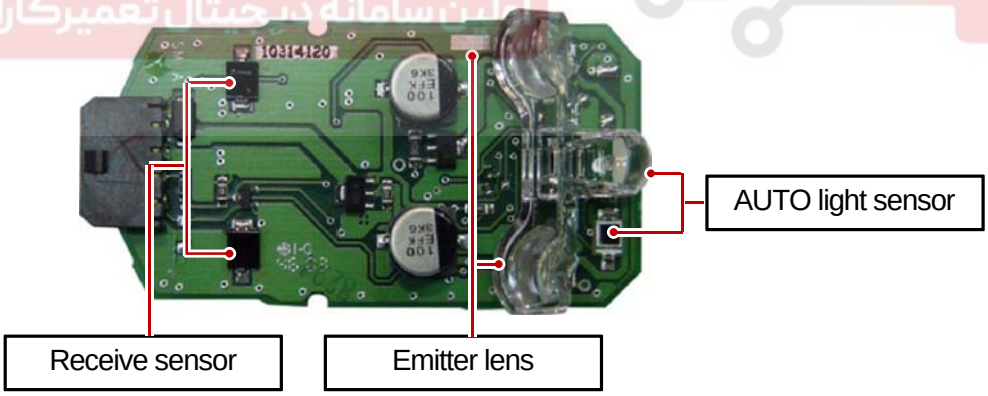


These senses the ambient illumination intensity to determine the timing for turning the headlamps and tail lamps on or off automatically when the light switch is set to "AUTO".



AUTO Light & Rain Sensor B

This senses the ambient illumination intensity to determine the timing for turning the headlamps and tail lamps on or off automatically when the light switch is set to "AUTO" (integrated with rhe rain sensor).



Modification basis	
Application basis	
Affected VIN	

(2) Light Switch(I)

Headlamp ON
Headlight, position, tail, license plate, fog and instrument panel lights are illuminated.

Tail lamp ON
Position, tail, license plate, fog and instrument panel lights are illuminated.

Automatic light ON
Headlamps and tail lamps automatically turn on or off based upon the intensity of the sunlight analyzed by the automatic light sensor.

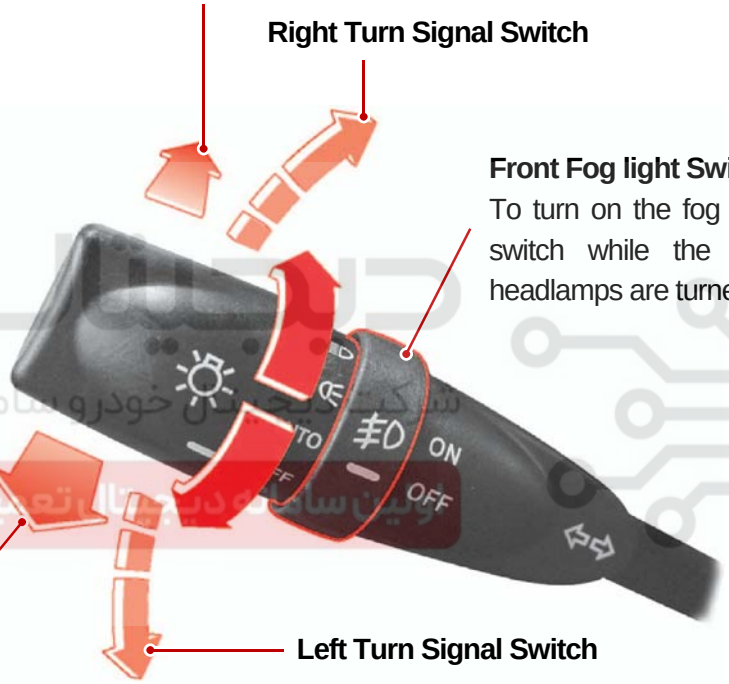
All lights are off.

Modification basis	
Application basis	
Affected VIN	

(3) Light Switch(II)

Headlamp High Beam

To turn on the headlamp high beam, push the lever towards the instrument panel with the headlamp low beam on. The headlamp high beam indicator in instrument panel comes on when the headlamp high beam is turned on.



Passing

To flash the high beam, pull the lever towards the steering wheel and release it. The lever will return to the normal position when released. The high beam headlights stay on as long as you hold the lever.

(4) Front Wiper Switch

MIST

When moving up the wiper lever, the wipers operate once. The lever will return to the "OFF" position when released.

OFF

Stop the operation.

AUTO

Operates automatically according to the vehicle speed or amount of rain.

LO

Continuous wipe, slow operation

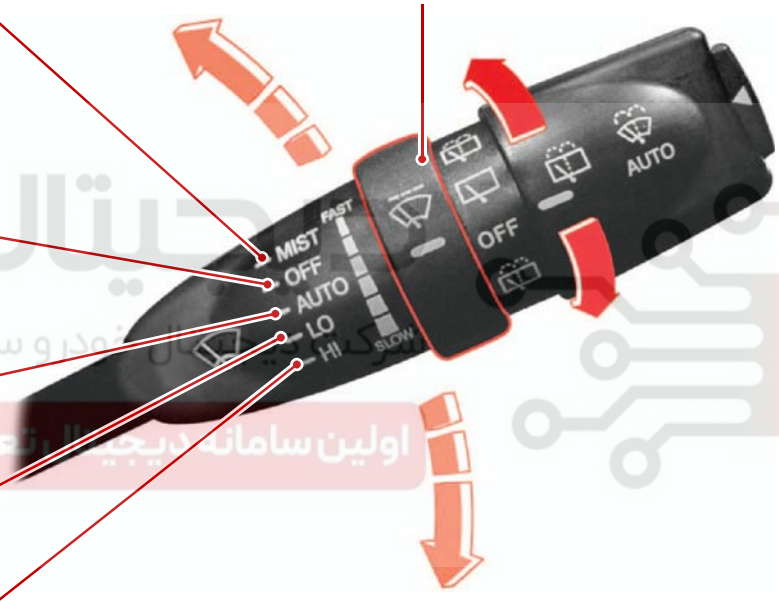
HI

Continuous wipe, fast operation

Front Automatic Wiping Speed Control Switch

Fast: Fast interval

Slow: Slow interval



SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

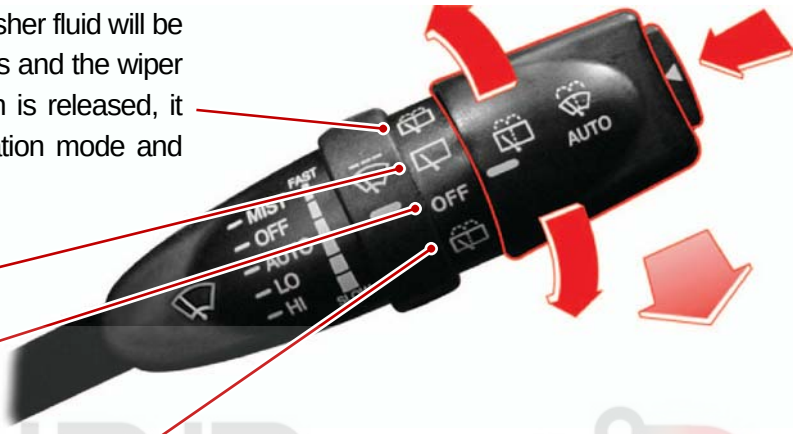
▶ Front wiper switch operation

Front Auto Washer Switch (AFW)

When the front wiper switch is off and this switch is pressed, washer fluid will be sprayed and the wiper will automatically operate 3 times. Then, the fluid will be sprayed again and the wiper will automatically operate 3 times.

Rear Washer and Wiper Switch

When the switch is fully turned, washer fluid will be sprayed onto the rear window glass and the wiper will also operate. When the switch is released, it will stop in the Rear Wiper Operation mode and only the wiper will keep operating.



Rear Wiper Operaes

Rear Wiper Stops

Wiper and Washer Coupled Operation

Pull the lever briefly (for less than 0.6 seconds): One wiping cycle with washer spray Pull and hold the lever for more than 0.6 seconds: Three wiping cycles with washer spray

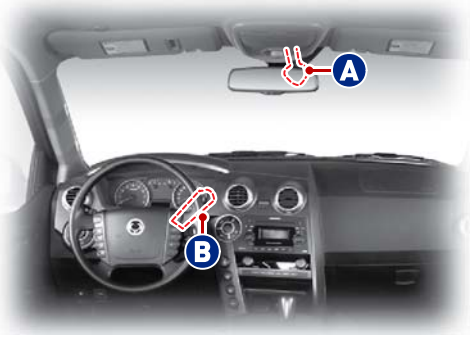
Rear Washer and Wiper Switch

When the switch is fully turned, washer fluid will be sprayed onto the rear window glass and the wiper will also operate. When the switch is released, it will return to the "OFF" position and turn off the wiper and washer.

When the wiper switch is in the "AUTO" position, this sensor detects the amount of rain, turns on the wiper, and controls the intermittent wiper intervals. For details, refer to "Rain Sensor" section.

A Rain & AUTO Light Sensor

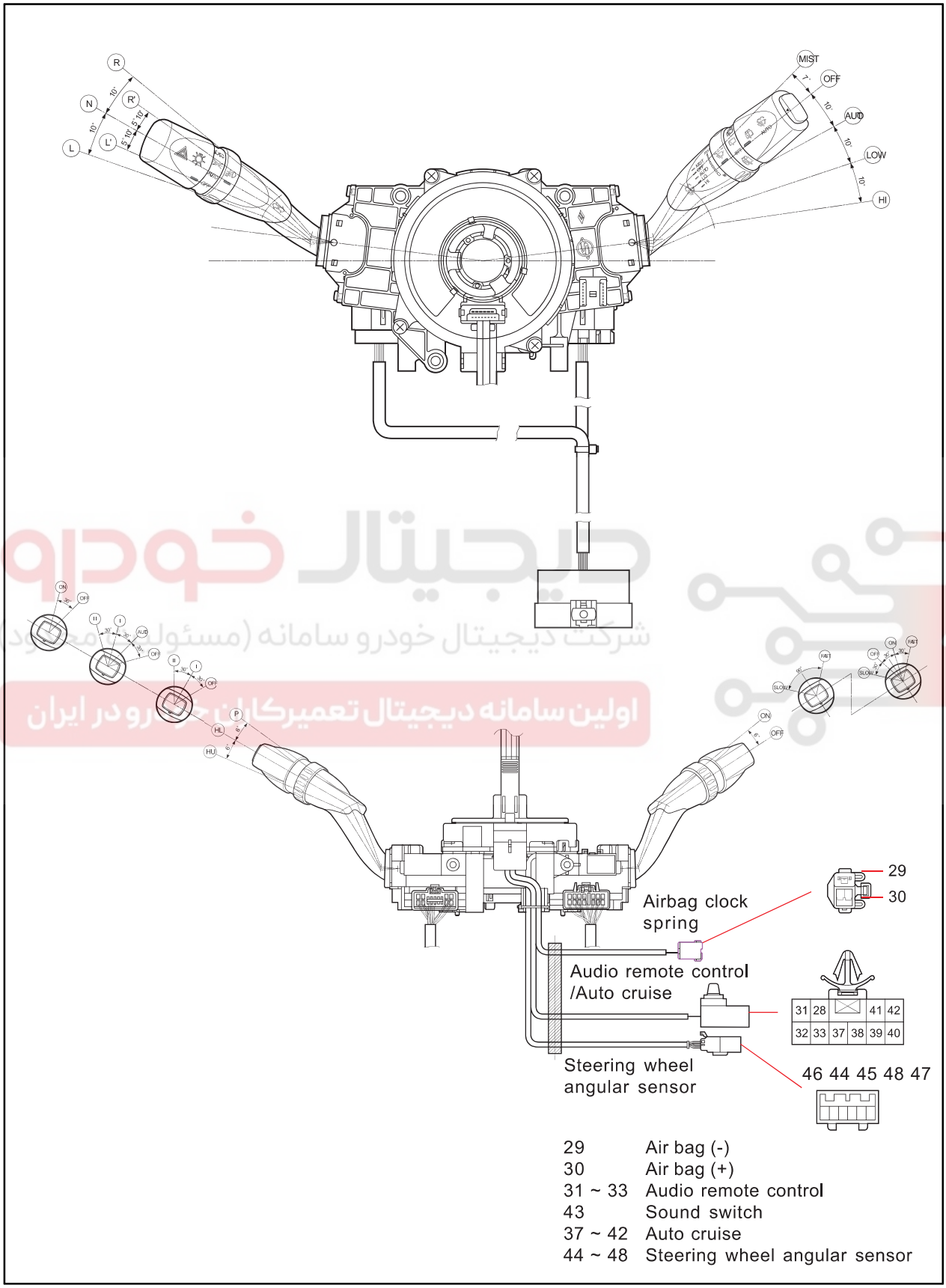
It controls the wiping speed by detecting the amount of rain drops.



B Wiper Switch AUTO Position

Modification basis	
Application basis	
Affected VIN	

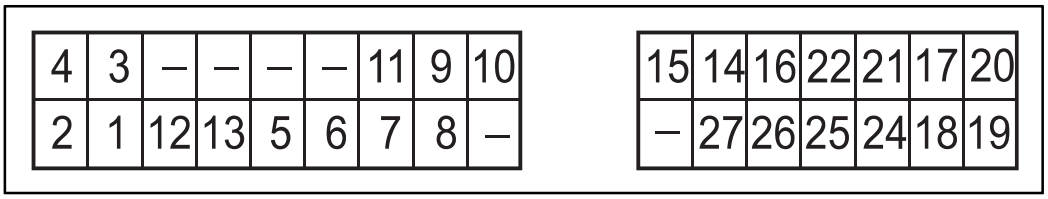
3) Operating Range



29	Air bag (-)
30	Air bag (+)
31 ~ 33	Audio remote control
43	Sound switch
37 ~ 42	Auto cruise
44 ~ 48	Steering wheel angular sensor

Modification basis	
Application basis	
Affected VIN	

4) Connector Pin Arrangement



LIGHT SW

P \ T	E	HS(1)	TS
OFF			
I	○		○
↕	○	○	○
II	○	○	○

AUTO LIGHT SW

P \ T	E	AUTO	TS	HS(1)
OFF				
AUTO	○	○		
↕	○	○	○	
I	○		○	
↕	○		○	○
II	○		○	○

FRONT FOG SW

P \ T	E	FOG
OFF		
ON	○	○

GROUND

WIPER & INT VOLUME SW

P \ T	LO	HI	S	AUTO(W)	IG	MS	INT(E)	INT(T)
MIST					○			
OFF	○		○					
AUTO	○		○	○			○	○
LOW	○				○			
HI		○			○			

WASHER SW

P \ T	W	IG
OFF		
ON	○	○

IG

DIMMER & PASSING SW

P \ T	EB	HL	HU	HS(2)
HU	○		○	
HL	○	○		
PASS	○		○	○

Rr WIPER & WASHER SW

P \ T	RW	RWA	IGR
WASHER	○	○	○
ON	○		○
OFF			
WASHER	○	○	○

AUTO WASHER SW

P \ T	AW	IGR
OFF		
ON	○	○

IGR

Modification basis	
Application basis	
Affected VIN	

1	EB	Dimmer and passing ground
2	HL	Headlamp low beam
3	HU	Headlamp high beam
4	HS(2)	Passing
5	TS	Tail lamp switch
6	HS(1)	Headlamp switch
7	AUTO	AUTO light
8	E	Light/fog/hazard warning switch ground
9	TB	Flasher unit power
10	TL	Turn signal (LH) lamp switch
11	TR	Turn signal (RH) lamp switch
12	FOG	Front fog light switch
13	HA	Hazard switch
14	LO	Low wiper speed
15	HI	High wiper speed
16	S	Wiper stop
17	AUTO (W)	Intermittent wiper
18	INT (T)	Intermittent wiper
19	INT (E)	Intermittent wiper ground
20	W	Front washer switch
21	IG	IG
22	MS	Low wiper speed
23	-	-
24	AW	AUTO washer switch
25	IGR	IGR
26	RW	Rear wiper
27	RWA	Rear wiper & washer

Modification basis	
Application basis	
Affected VIN	

S.G.N.
8510-13 TAIL GATE OPEN SWITCH

1) Components

Front View

Connector

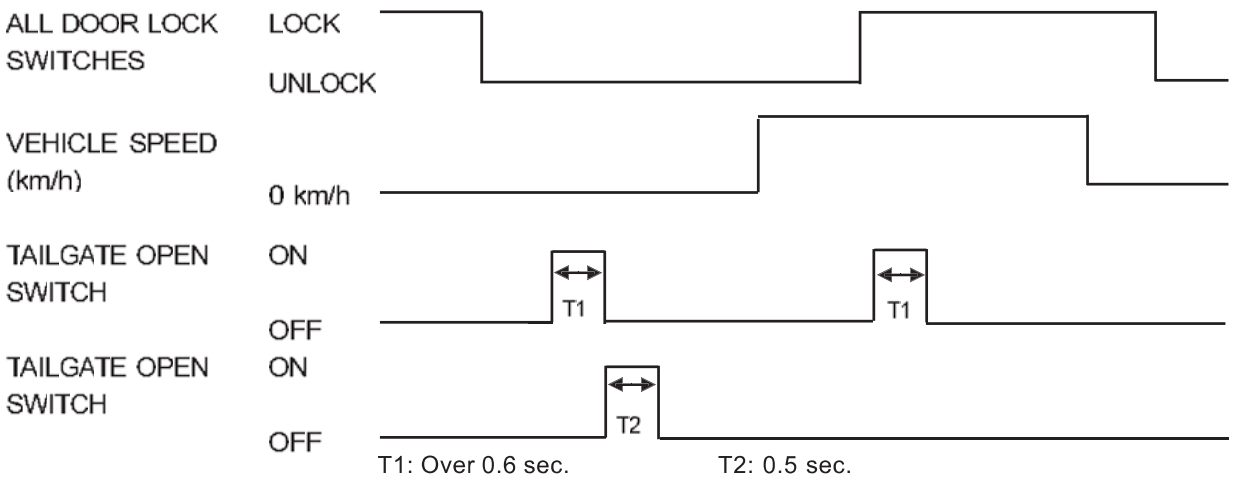
Rear View

2) Functions

(1) Tailgate Open Control

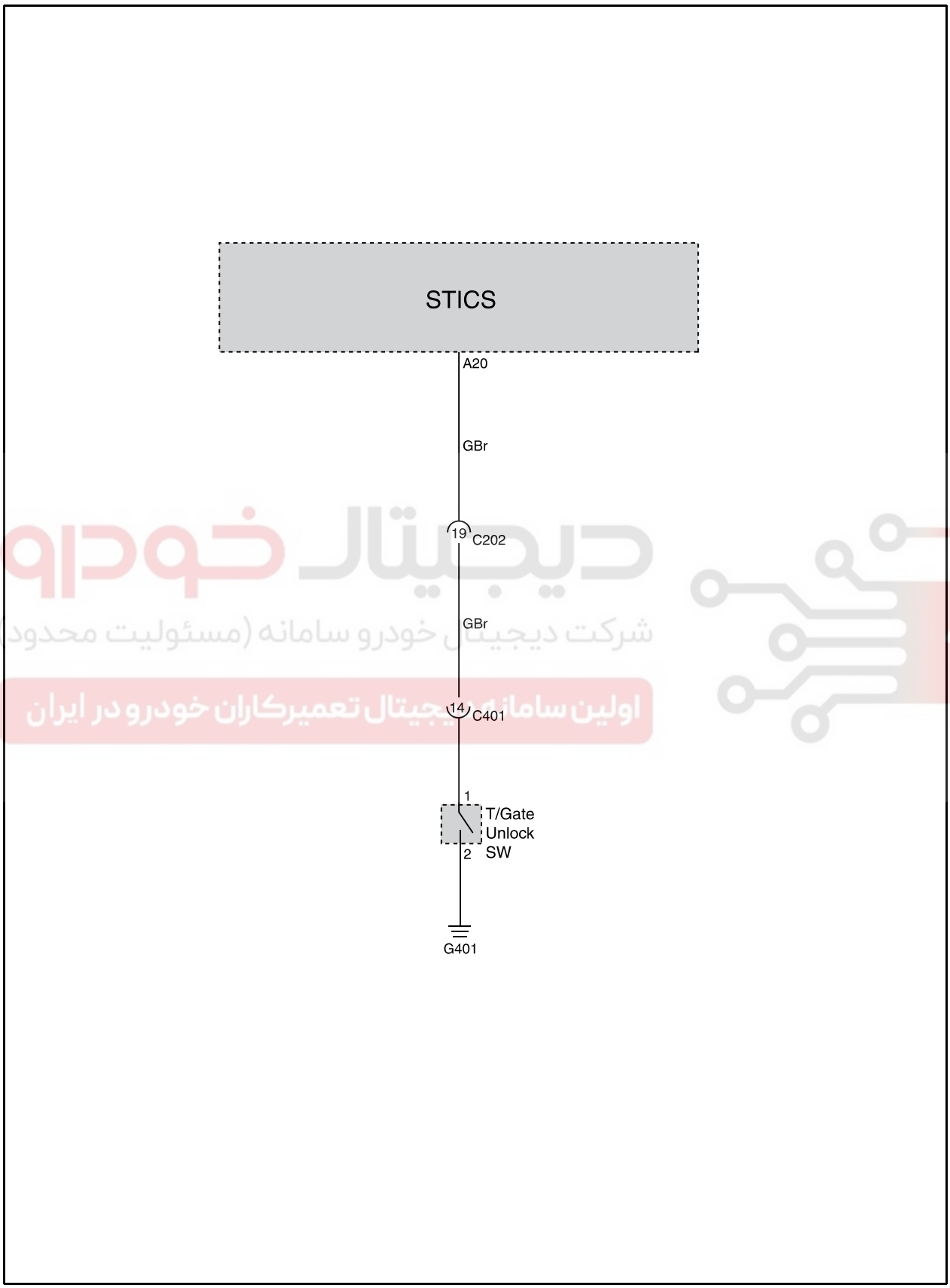
To unlock the tailgate, press the logo on the tailgate.
The operation procedures are as below

- When pressing the open switch on the tailgate for more than 0.6 seconds, the tailgate relay operates for 0.5 seconds to unlock the tailgate while all door lock switches are in UNLOCK position and the vehicle is stationary.
- The tailgate relay output is turned off immediately after any LOCK switch is switched to LOCK position or the vehicle moves.



Modification basis	
Application basis	
Affected VIN	

3) Circuit Diagram of Tailgate Switch



SWITCH

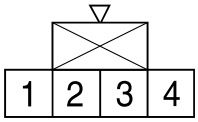
undefined

Modification basis	
Application basis	
Affected VIN	

S.G.N.
8610-08 DIGITAL CLOCK

1) Overview and Location

The digital clock receives the power constantly through the No. 23 fuse (7.5 A) from the battery and is connected to the tail lamp circuit and lighting devices for interior illumination. When the ignition switch is not in OFF position, it receives the power through the No. 43 fuse (10 A).



Clock

No.	Connection
1	ILL(+)
2	ACC
3	GND
4	BAT(+)

2) Specification

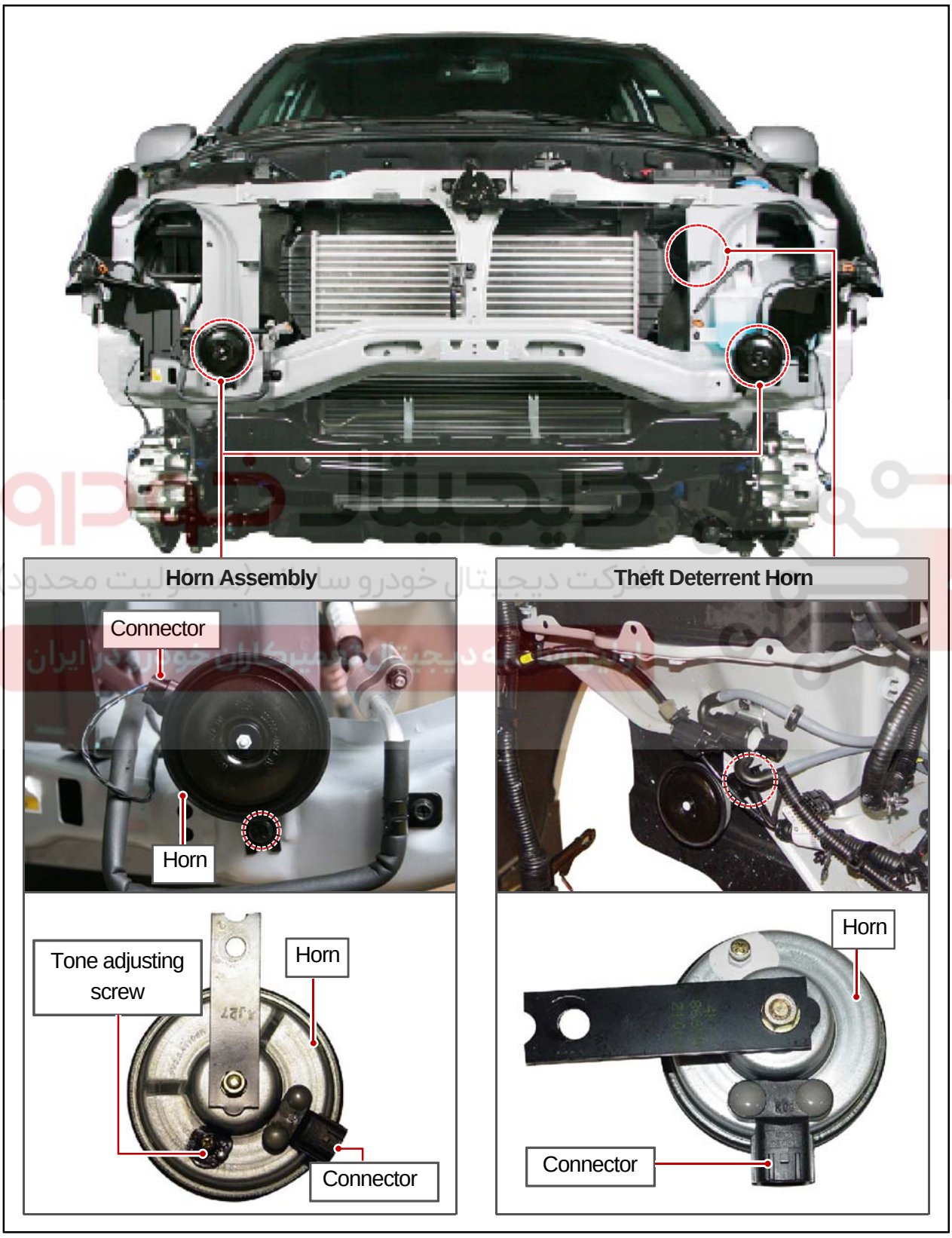
- Rated voltage: DC 12 V
- Operating voltage: DC 8 V ~ DC 16 V
- Time difference: ±2 sec/day (room temp.)
- Current consumption: Max. 150 mA with IGN ON
  Max. 2.5 mA with IGN OFF
- Display type: LCD
- Brightness: 100% with Tail lamp OFF
  40% with Tail lamp ON
- Blinking cycle of Colon: Once per second

Modification basis	
Application basis	
Affected VIN	

S.G.N. 8610-06

HORN (INCLUDING THEFT DETERRENT HORN)

1) Location



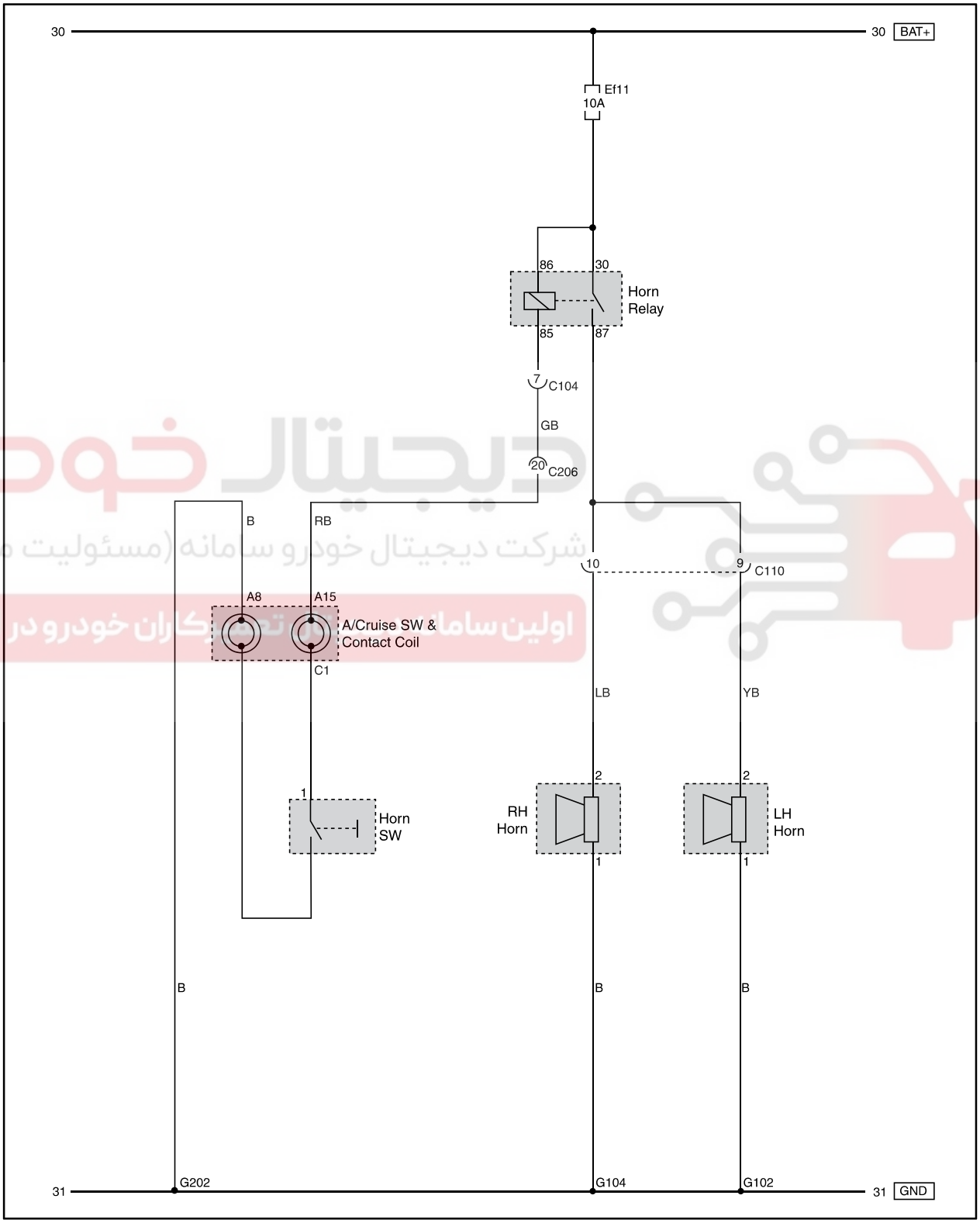
SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

2) Electrical Wiring Diagram of Horn

Location of horns: One at each side in engine compartment
Location of theft deterrent horn: Under the battery tray in engine compartment
The theft deterrent horn is controlled by STICS in armed mode regardless of horn relay operation.



Modification basis	
Application basis	
Affected VIN	

3) STICS Control for Theft Deterrent Mode

(1) Functions in Theft Deterrent Mode

A. Functions in Theft Deterrent Mode

▶ **Door OPEN/CLOSE**

- Door OPEN: Any of door switches (engine hood, front doors, rear doors, tailgate) outputs "OPEN" signal.
- Door CLOSE: All door switches (engine hood, front doors, rear doors, tailgate) output "CLOSE" signal.

▶ **Door LOCK/UNLOCK**

- Door LOCK: Any of door lock switches (front doors, rear doors, tailgate) outputs "LOCK" signal.
- Door UNLOCK: All door lock switches (front doors, rear doors, tailgate) output "UNLOCK" signal.

CAUTION

- The engine hood switch is not included in door lock/unlock switch.

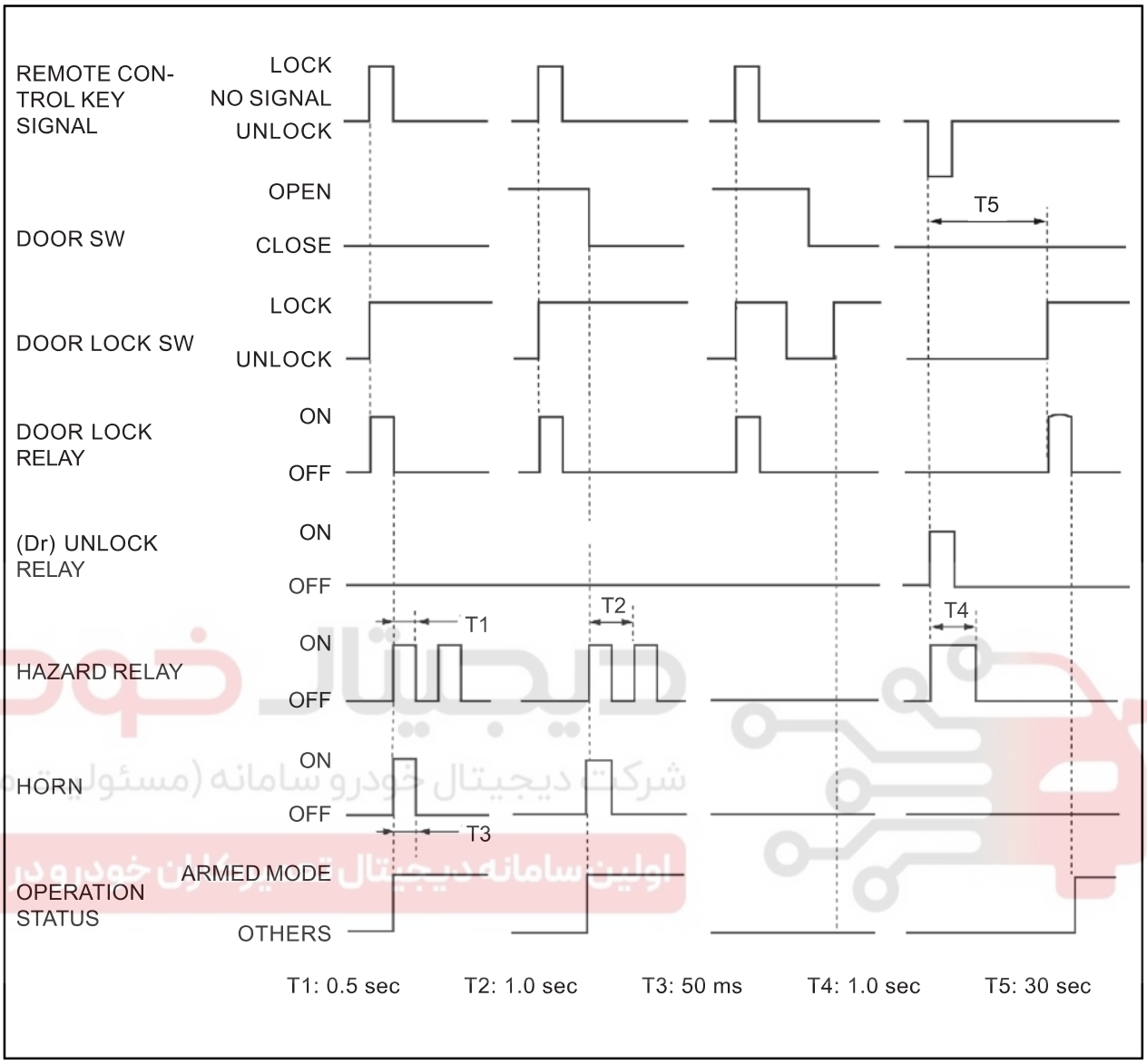
▶ **Description of Theft Deterrent Function**

▷ Armed mode activation requirements

- The "LOCK" output is "ON" when receiving the "LOCK" signal from transmitter while the ignition key is removed and all doors are closed. The armed mode is activated when the door lock switch is locked (theft deterrent horn output: once, hazard relay output: twice).
- The theft deterrent horn and hazard relay outputs are "ON" when receiving the "LOCK" signal from the remote control key again in armed mode (theft deterrent horn output: once, hazard relay output: twice).
- When receiving "LOCK" signal from the remote control key while any of doors is not closed, only the "LOCK" output can be done and then activates the armed ready mode (without theft deterrent horn and hazard warning flasher). At this moment, if the ignition key is in the ignition switch or the door lock switch is unlocked, cancels the armed mode and activates the normal mode.
  However, in these cases, if closing the door, the theft deterrent horn outputs once and the hazard warning flasher outputs twice and then activates armed mode.
- When the door is not opened or the ignition key is not inserted into ignition switch for 30 seconds after receiving "UNLOCK" signal, outputs "LOCK" and then activates armed mode (RELOCK operation). Also, at this moment, the system outputs the theft deterrent horn and hazard warning flasher.
  The armed mode will not be activated except above conditions.
- Ex) The armed mode will not be activated when the door is locked by the ignition key.

Modification basis	
Application basis	
Affected VIN	

▶ **Timing chart**



▷ Armed mode cancellation requirements

- Unlocking by remote control key or engine starting.

▷ Warning operation requirements

- When opening the door in armed mode
- When unlocking the door lock switch not by the remote control in armed mode
- When closing and then opening the door after completion of warning (27 seconds)

▷ Warning operation

- The theft deterrent horn and hazard warning flasher output is "ON" for 27 seconds with the interval of 1 second.

Modification basis	
Application basis	
Affected VIN	

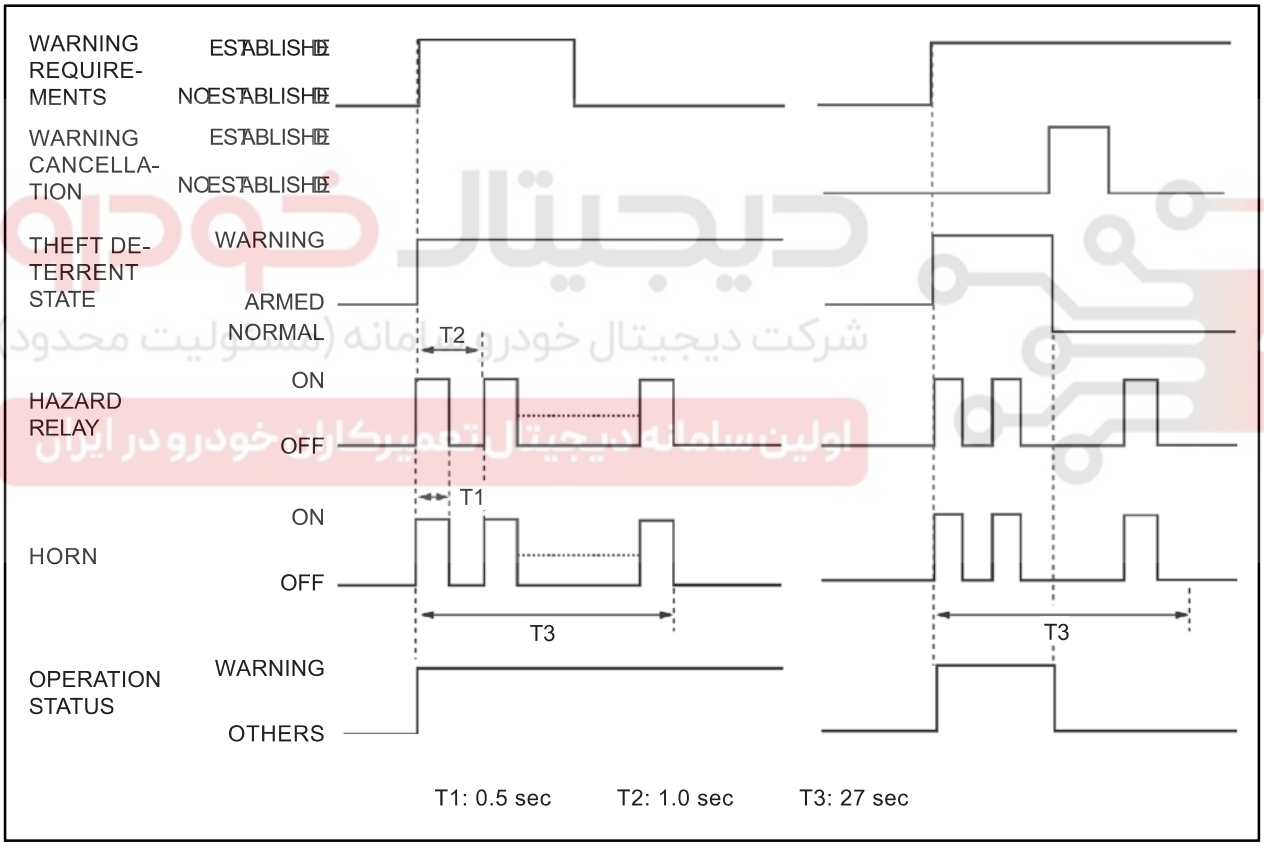
▷ Warning cancellation requirements

- Cancels warning by using any signal from the remote control key (LOCK, UNLOCK, PANIC) during warning operation.
- Cancels warning after 27 seconds (remaining period) while the ignition key is turned to "ON" position.
- If the ignition switch is turned to ON position when the warning is activated in armed mode, the warning is canceled immediately and the warning buzzer stops after 27 seconds (remaining time).

▷ Operation when warning is cancelled

- The theft deterrent horn and hazard warning flasher outputs are "OFF". REMOTE CONTROL KEY SIGNAL

▶ Timing chart



Modification basis	
Application basis	
Affected VIN	

▷ Operations when removing and installing the battery

Removed \ Installed	Normal	Armed	Warning	Remark
Normal	○			
Armed Ready	○			
Armed		○		
Warning			○	
Warning Completion	○	○	○	
RELOCK Ready	○			

If the system is in armed mode while installing a battery, the horn sounds and the emergency warning lamp blinks (Same operations with warning in armed mode).

▶ **RELOCK operation**

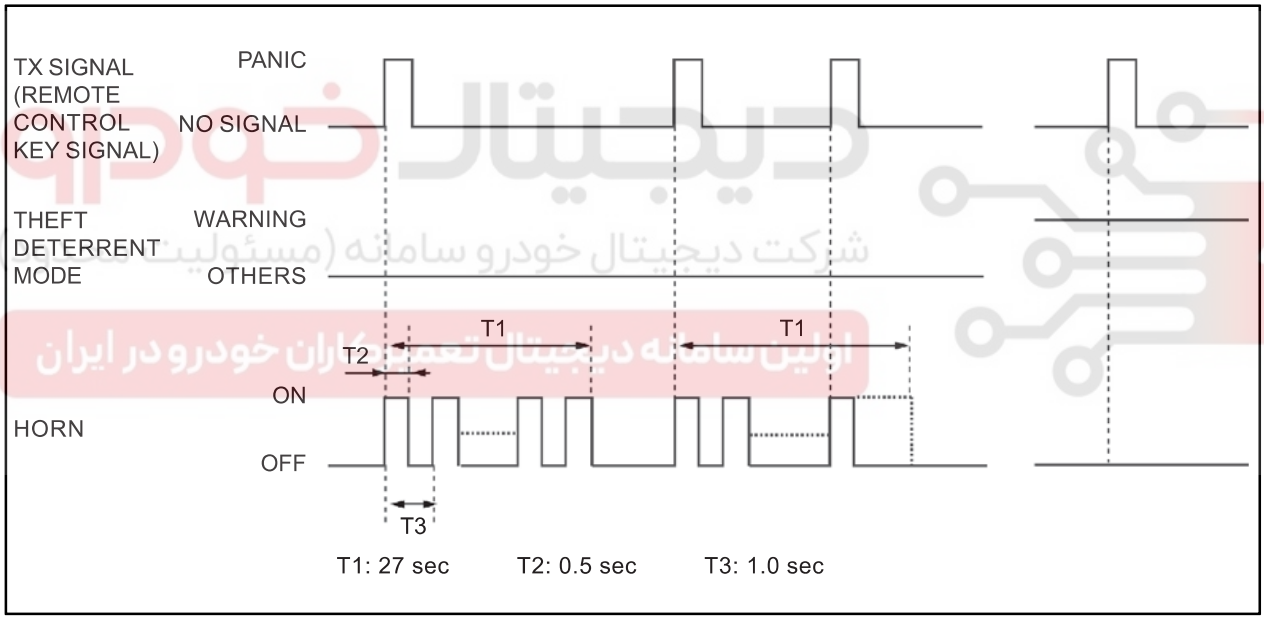
- It the door is not opened or the ignition key is not inserted into the key cylinder within 30 seconds after unlocking the door with remote control key, the system outputs "LOCK" signal and activates the armed mode.

Modification basis	
Application basis	
Affected VIN	

▶ PANIC Warning

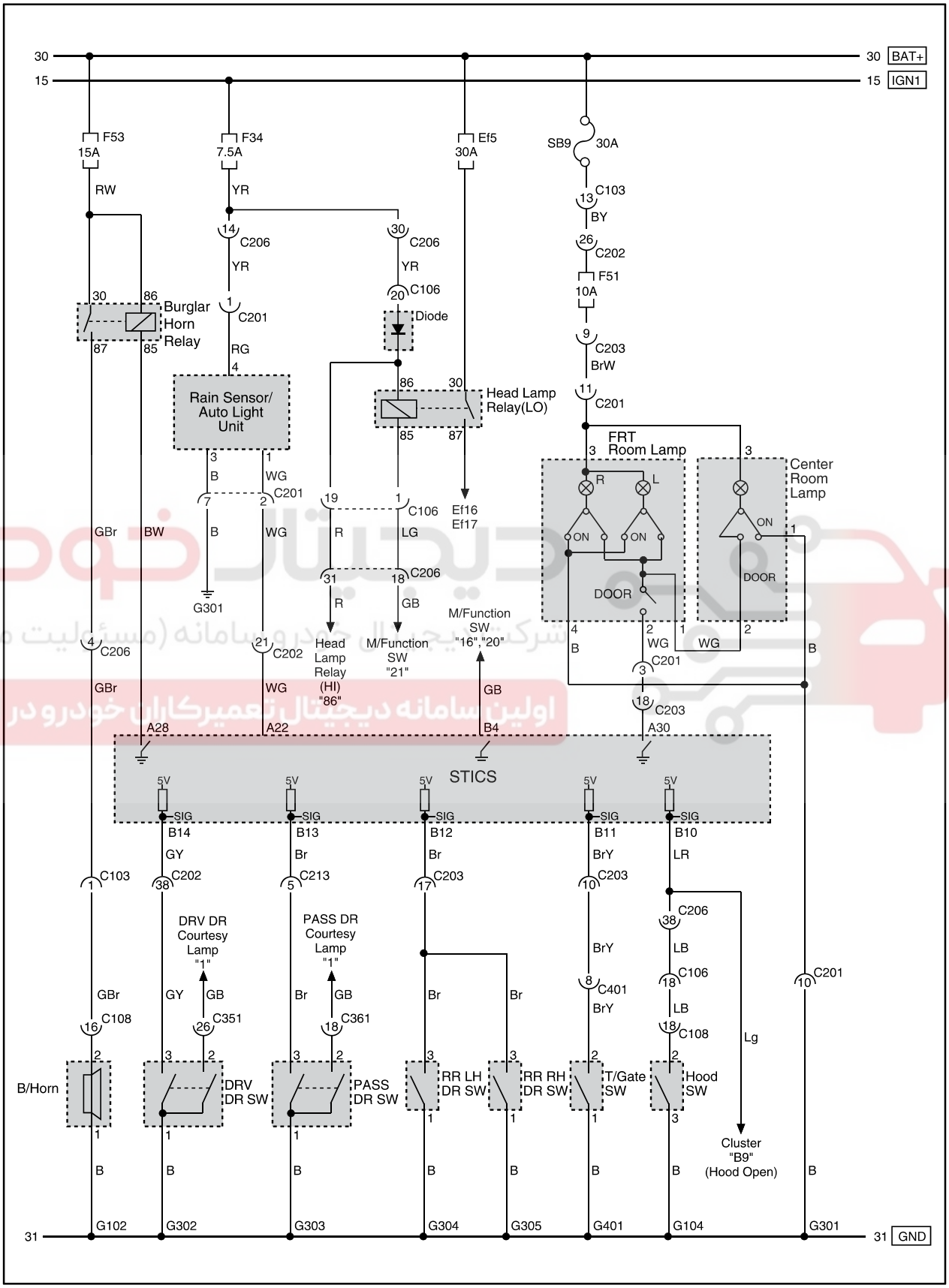
- The PANIC warning output is "ON" (theft deterrent horn) for 27 seconds when receiving the PANIC signal from the remote control key (pressing PANIC button.
- The PANIC warning output is "OFF" when receiving any signal from the remote control key during PANIC warning.
- Followings are theft deterrent warnings
  - The theft deterrent warning is canceled when receiving PANIC signal from the remote control key during theft deterrent.
  - The theft deterrent warning output is "ON" when the theft deterrent conditions are established during PANIC warning (PANIC output is "OFF").
  - The PANIC warning output is "ON" when receiving the PANIC signal from the remote control key in Armed Ready / Armed / Warning Completion / Relock Ready mode (maintaining the theft deterrent mode).
- This function operates only in armed mode.

▶ Timing chart



Modification basis	
Application basis	
Affected VIN	

(2) Circuit Diagram of Theft Deterrent Horn



Modification basis	
Application basis	
Affected VIN	

SWITCH

undefined

Memo

REMOVAL AND INSTALLATION

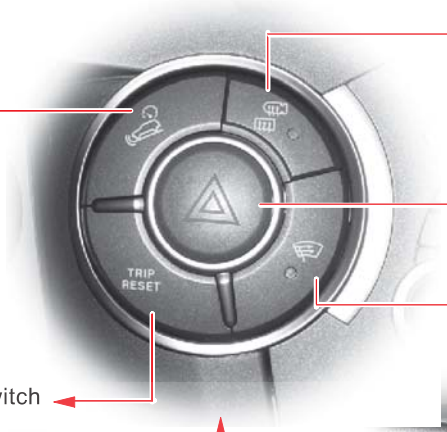
S.G.N. 8510-31

HAZARD & SWITCH ASSEMBLY

Preceding work

1. Disconnect the negative battery cable.

Hazard switch bezel assembly



Heated Tailgate glass & outside rearview mirror switch (Defogger switch)

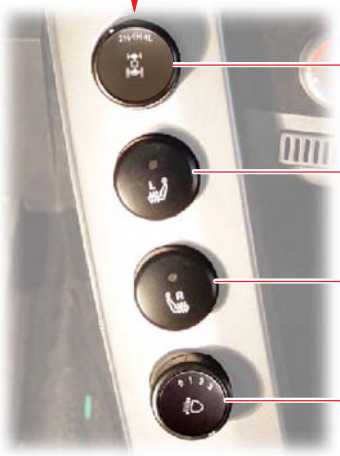
HDC switch

Hazard warning switch

Heated windshield glass switch (Deicer switch)

TRIP switch

Center fascia switch assembly



4WD control switch

Driver's heated seat switch

Passenger's heated seat switch

HLLD (Headlamp Leveling Device) Switch

Modification basis	
Application basis	
Affected VIN	

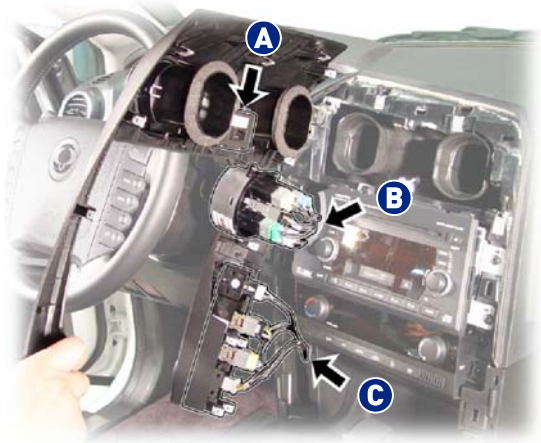
1. Remove the center fescia panel assembly.

CAUTION

- When removing, pull off its lower part first.

2. Disconnect the switch connectors and remove the center fascia panel assembly.

Connection



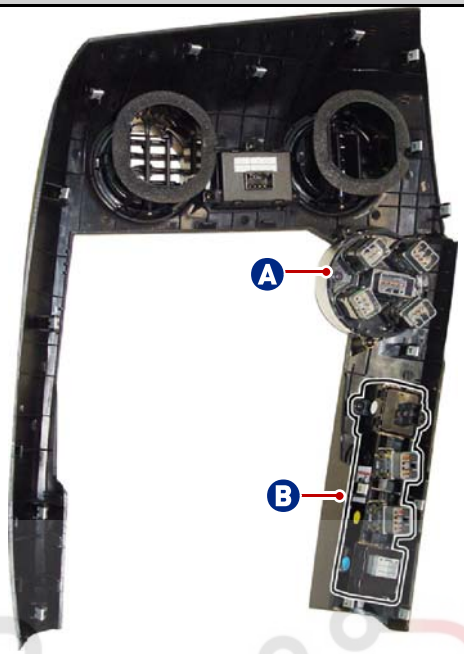
A Digital Clock

B Hazard Switch Bezel

C Center Fascia Switch

Modification basis	
Application basis	
Affected VIN	

3. Remove the hazard switch bezel assembly and center fascia switch assembly from the removed center fascia panel.

Front View	Rear View
	
A Remove Three Mounting Screws	B Remove Four Mounting Screws
	

Modification basis	
Application basis	
Affected VIN	

4. Remove each switch from the hazard switch bezel assembly.

Front View	Side View	Rear View
		

1) Remove the round cover and switches.

Front View	Side View	Rear View
		

2) Remove the hazard switch mounting bracket and remove the hazard switch.

Front View	Side View	Rear View
		

Modification basis	
Application basis	
Affected VIN	

5. Remove each switch from the miscellaneous switch assembly.

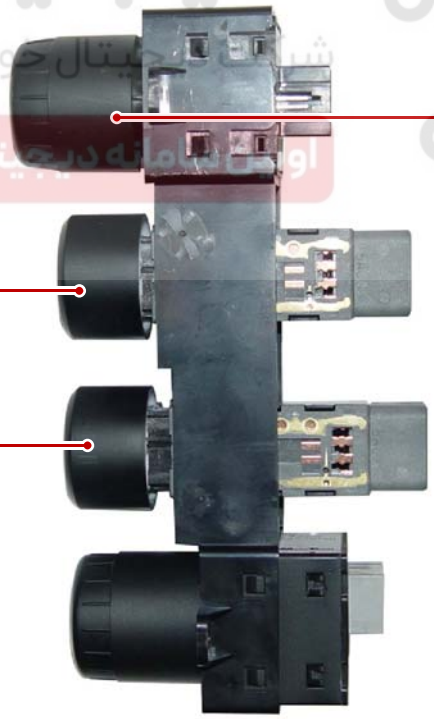
Front View

Rear View

Side View

Driver's Heated Seat Switch

4WD Control Switch



Passenger's Heated Seat Switch

Modification basis	
Application basis	
Affected VIN	

Center Fascia Panel

The digital clock receives the power constantly through the fuse No. 23 (7.5 A) from the battery and its lighting device is connected to the tail lamp circuit for illumination. When the ignition key is turned from OFF position, the power is supplied through the fuse No. 43 (10 A).

Digital clock

A. Heated tailgate glass & outside rearview mirror glass switch
B. Heated windshield glass switch
C. TRIP
D. HDC switch
E. Hazard warning switch

- 4WD control switch
- Driver's heated seat switch
- Passenger's heated seat switch
- HLLD (Headlamp Leveling Device) Switch

SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

S.G.N. 8510-52

OUTSIDE REARVIEW MIRROR SWITCH BEZEL ASSEMBLY

Preceding work

1. Disconnect the negative battery cable.

A. Outside rearview mirror folding switch
B. Steering wheel heating switch
C. Rear fog lamp switch
D. ESP OFF switch
E. Outside rearview mirror angle adjusting switch

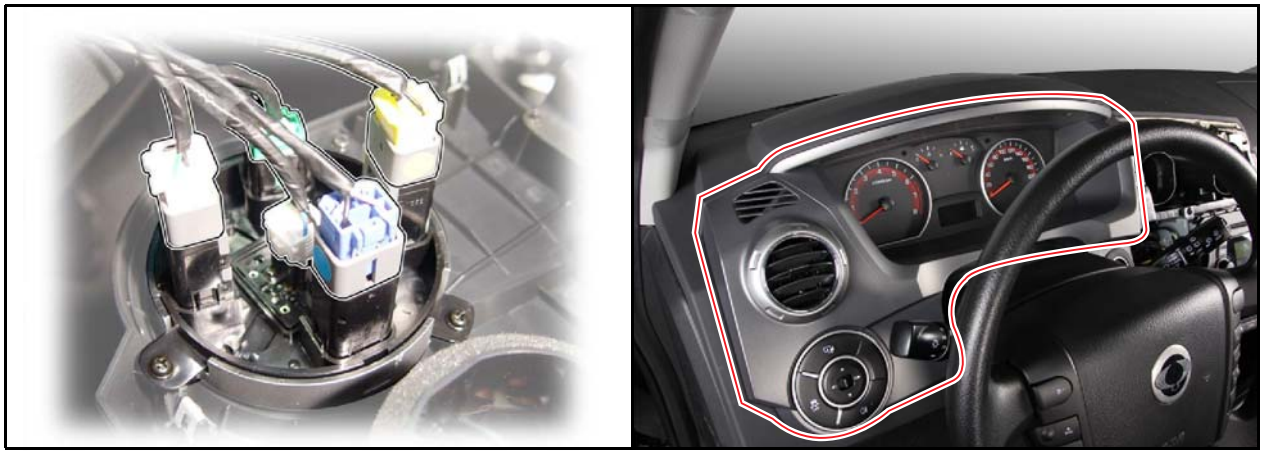
Modification basis	
Application basis	
Affected VIN	

1. Remove the center fascia panel and unscrew four screws on the meter cluster fascia panel.

2. Disconnect the connector from the outside rearview mirror switch bezel assembly and remove the meter cluster fascia panel.

CAUTION

- To make the operation easier, move down the steering wheel.

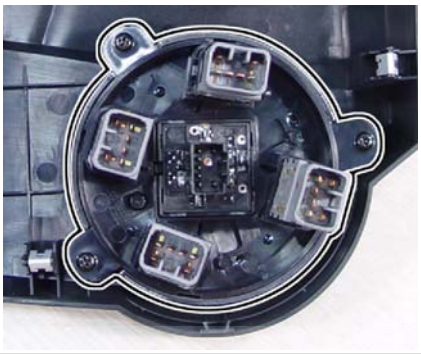


Modification basis	
Application basis	
Affected VIN	

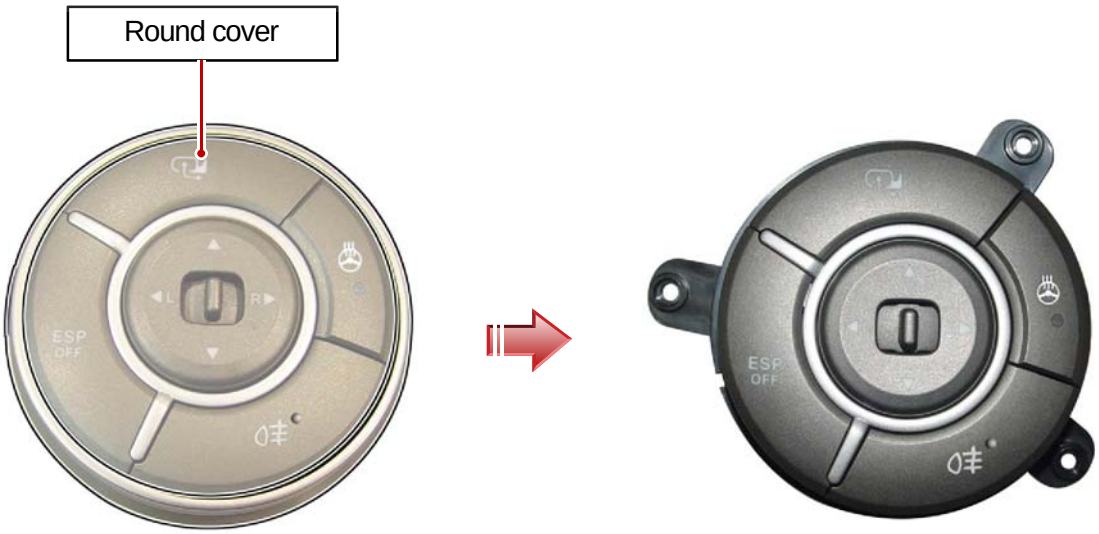
3. Remove the switch assembly from the removed meter cluster fascia panel.

Front View

Rear View



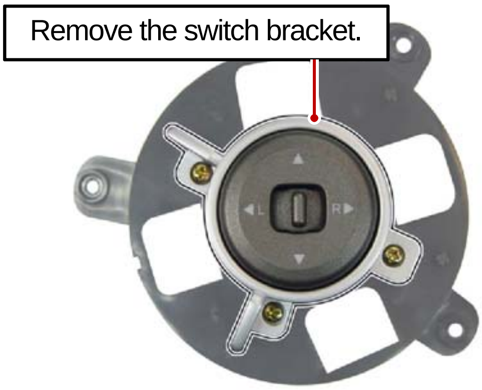
4. Remove the round cover on the switch assembly.



Modification basis	
Application basis	
Affected VIN	

5. Remove each switch from the outside rearview mirror switch bezel assembly.

Switch Assembly



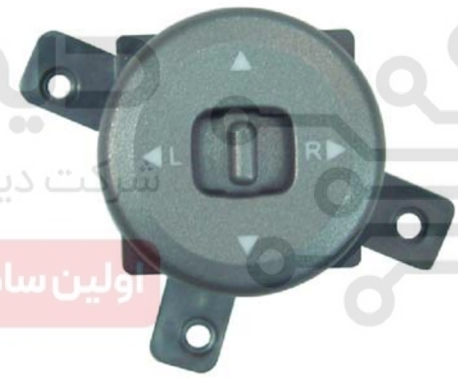
ESP OFF Switch

Outside Rearview Mirror Folding Switch

Steering Wheel Heating Switch

Rear Fog Lamp Switch

Outside Rearview Mirror Adjusting Switch

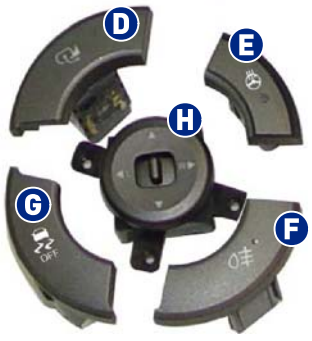


Modification basis	
Application basis	
Affected VIN	

Meter Cluster Fascia Panel

IP fascia panel assembly

Cluster assembly



A. Round cover
B. Switch bracket
C. Outside rearview mirror adjusting switch bracket
D. Outside rearview mirror folding switch
E. Steering wheel heating switch
F. Fog lamp switch
G. ESP switch
H. Outside rearview mirror adjusting switch

Modification basis	
Application basis	
Affected VIN	

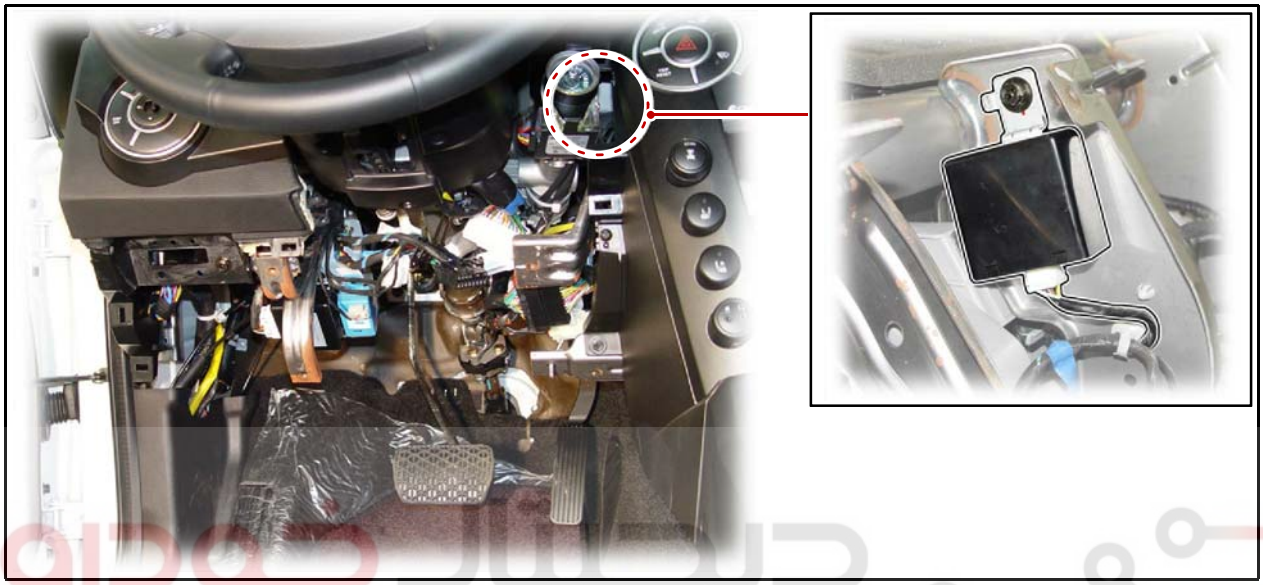
S.G.N. 8510-52

OUTSIDE REARVIEW MIRROR FOLDING UNIT

Preceding work

1. Disconnect the negative battery cable.

1. Remove the lower instrument panel and inner bracket at the driver's side (refer to "Body" section).



2. Remove the connector and mounting bolt of the outside rearview mirror folding unit to remove the unit.

SWITCH

undefined

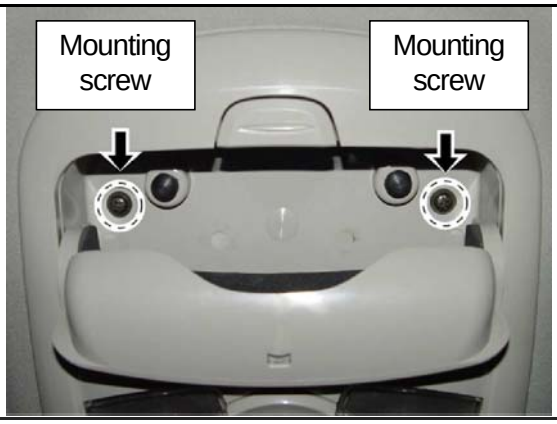
Modification basis	
Application basis	
Affected VIN	

S.G.N. 7770-20

OVERHEAD CONSOLE SWITCH

Preceding work 1. Disconnect the negative battery cable.

1. Open the sunglasses box and unscrew the mounting screws (2 EA).



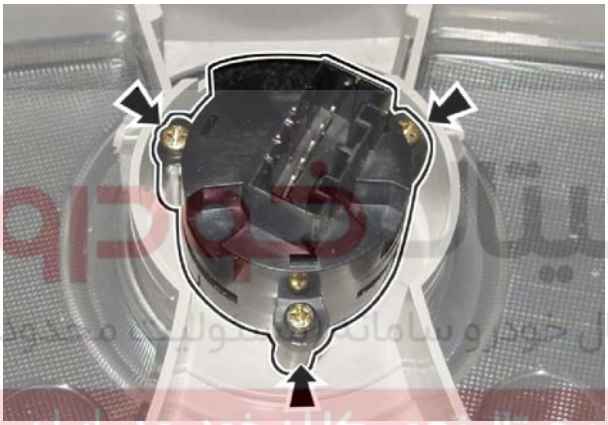
CAUTION
- For details, refer to the "LAMP" section.

2. Remove the overhead console switch assembly and disconnect the connector.

Modification basis	
Application basis	
Affected VIN	

3. Remove the front room lamp switch from the removed overhead console switch assembly.

4. Unscrew three mounting screws and remove the sunroof switch.



Components

A. Sunroof switch
B. Lamp
C. Room lamp main switch

SWITCH

undefined

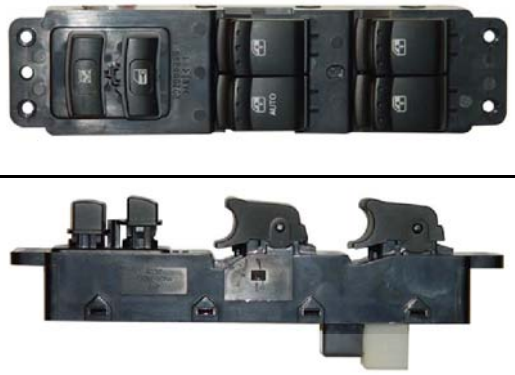
Modification basis	
Application basis	
Affected VIN	

S.G.N. 8510-05

MAIN POWER WINDOW SWITCH

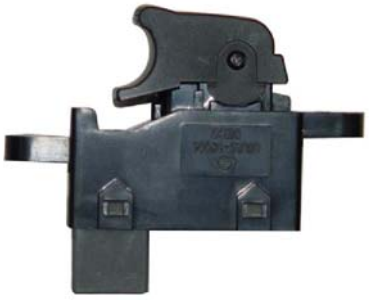
Preceding work 1. Disconnect the negative battery cable.

Driver's Door Power Windows Switch



Driver's Door Power Windows Switch

Rear Door Window Switch (LH/RH)



Modification basis	
Application basis	
Affected VIN	

SWITCH

undefined

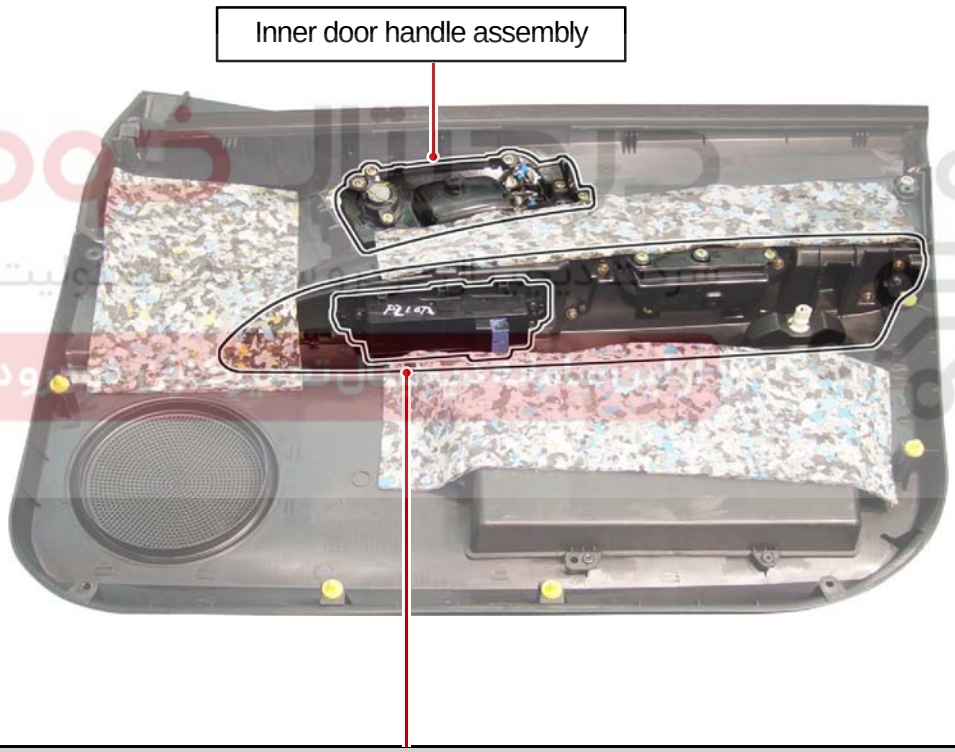
1) Front Door (Driver's)

Preceding work 1. Disconnect the negative battery cable.

1. Remove the driver's door trim.

CAUTION
- Be careful not to damage the door trim.
- For more information, refer to the "Body" section.

Location



Power Window Switch Assembly

SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

2. Unscrew ten mounting screws on the inner door handle of the door trim.

3. Remove the inner door handle and the memory seat switch assembly.

Switch Assembly

Door Trim Armrest

Modification basis	
Application basis	
Affected VIN	

4. Remove the switch from the memory seat switch assembly.

Unscrew two mounting screws and remove the switch.

Front View

Side View

Connector

Modification basis	
Application basis	
Affected VIN	

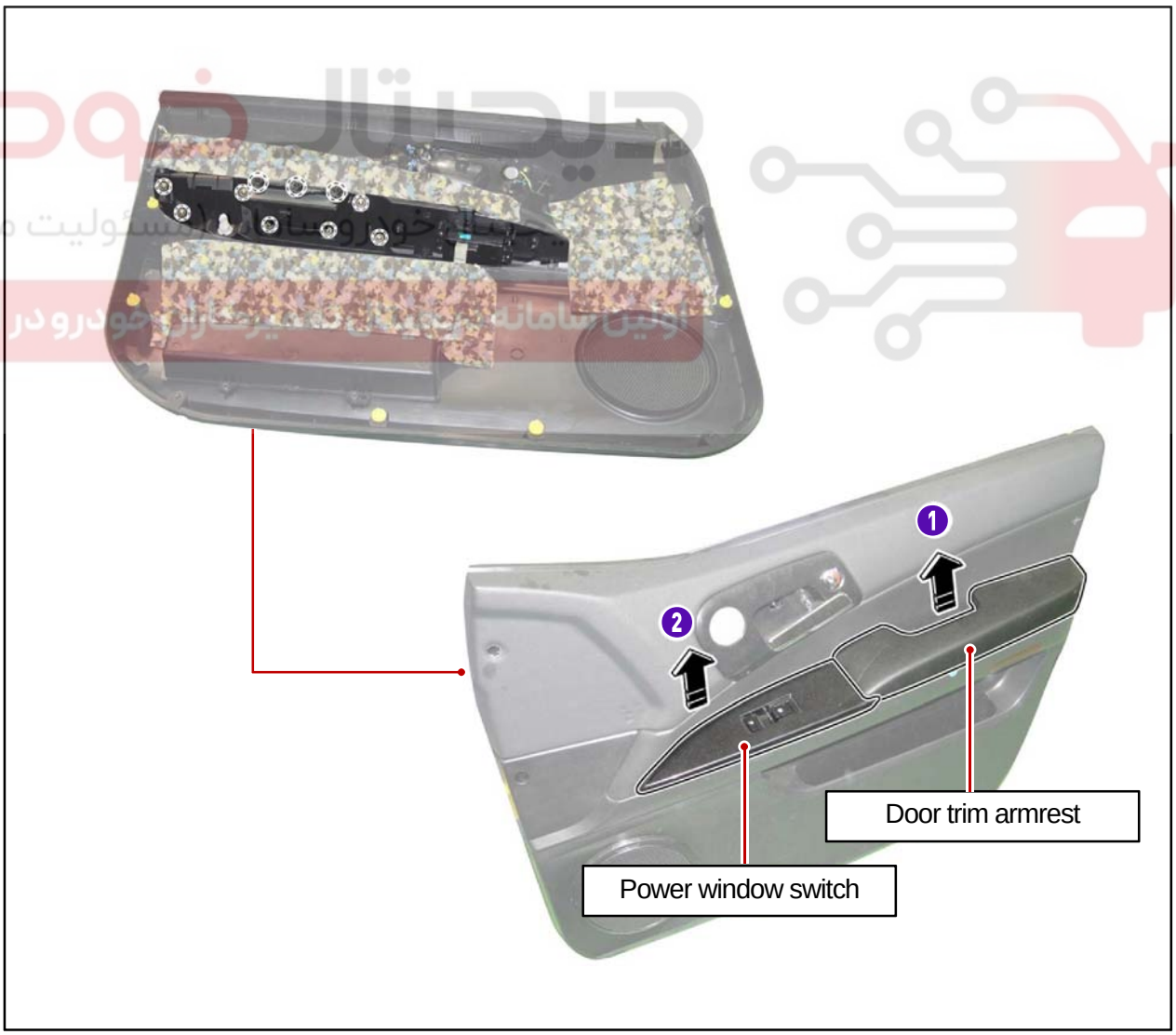
2) Front Door (Passenger's)

Preceding work 1. Disconnect the negative battery cable.

1. Remove the driver's door trim.

CAUTION
- Be careful not to damage the door trim.
- For more information, refer to the "Body" section.

2. Unscrew the mounting screws and remove the inner door handle and the memory seat switch assembly from the passenger's door trim.



Modification basis	
Application basis	
Affected VIN	

3. Remove the switch.

Front View	Connector
	
Side View	
	

SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

3) Rear Door Power Window Switch

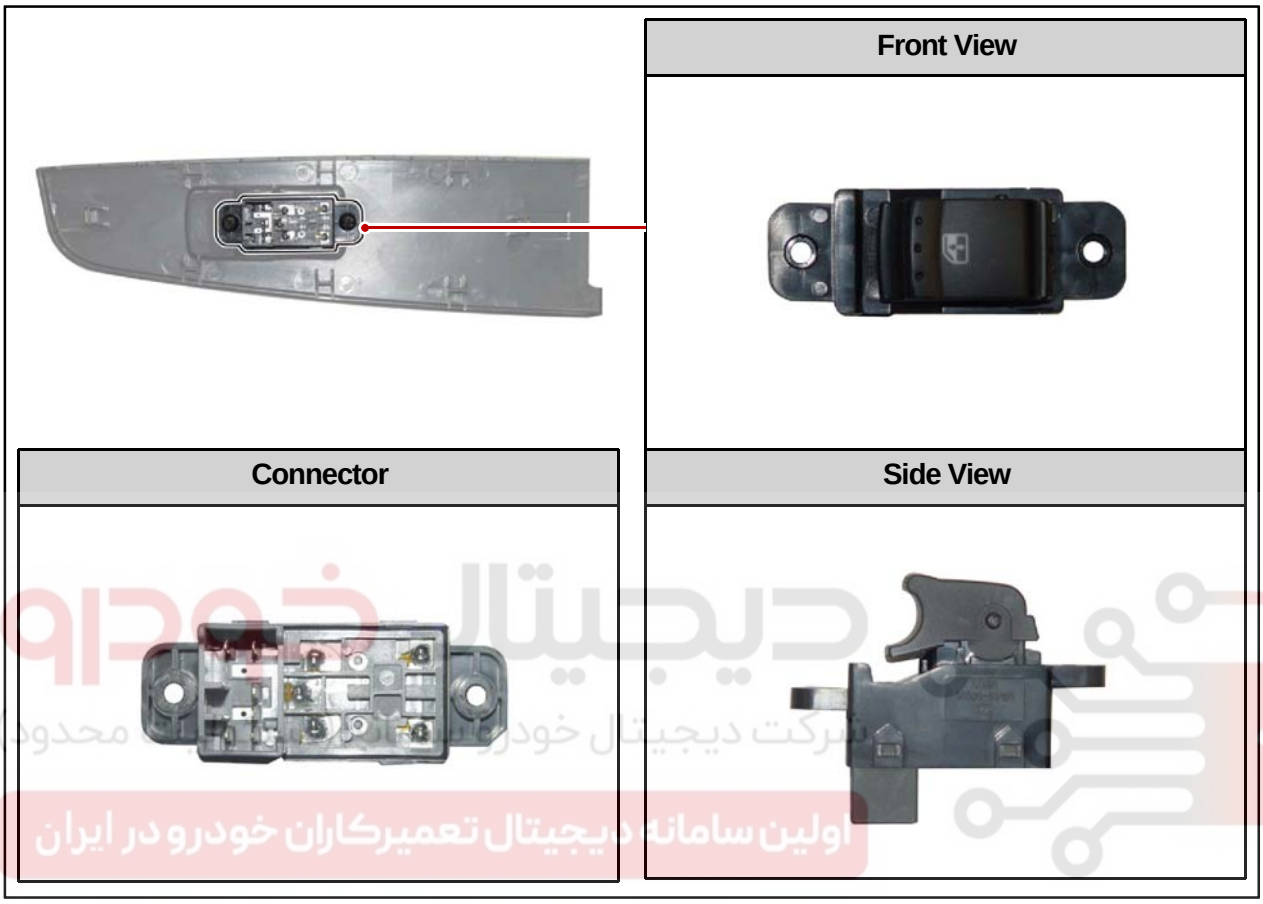
Preceding work 1. Disconnect the negative battery cable.

1. Separate the power window switch assembly with a special tool.

2. Disconnect the switch connector and remove the switch assembly.

Modification basis	
Application basis	
Affected VIN	

3. Remove the switch.



Modification basis	
Application basis	
Affected VIN	

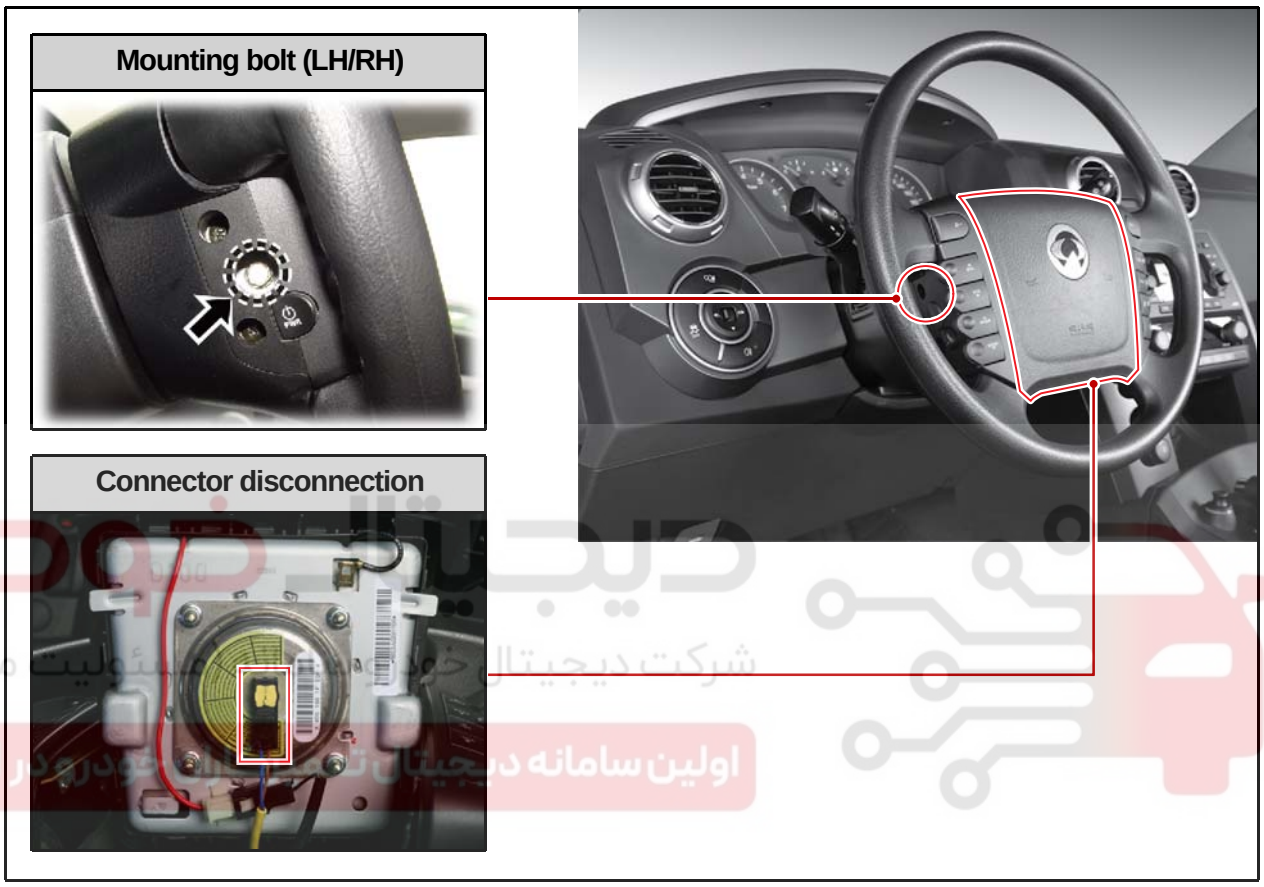
S.G.N. 8510-01

AUDIO REMOTE CONTROL SWITCH

Preceding work

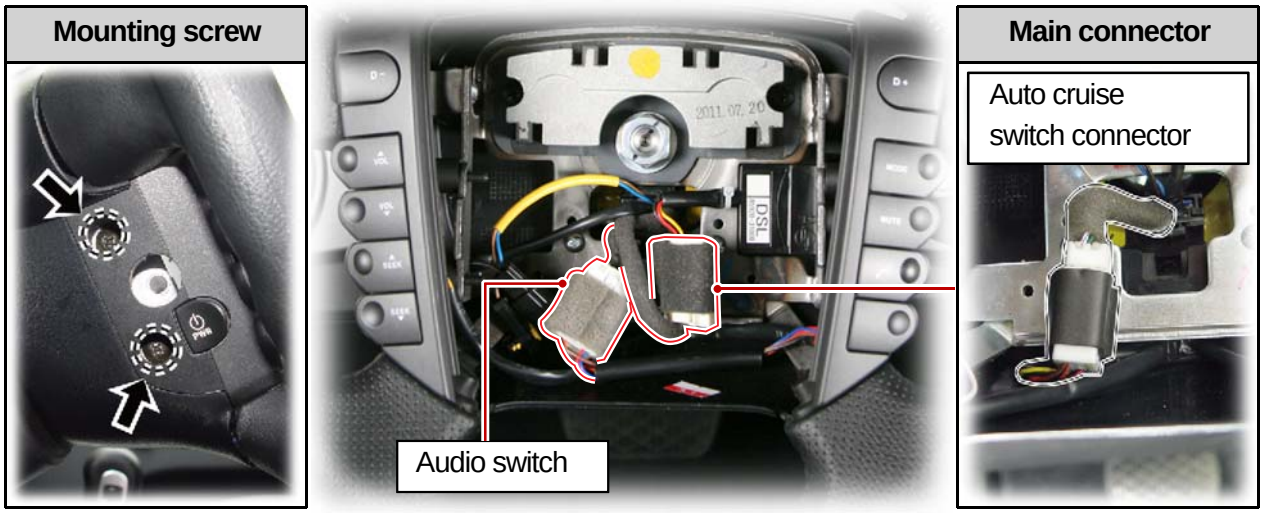
1. Disconnect the negative battery cable.

1. Unscrew the mounting bolts on sides of the steering wheel and remove the airbag module assembly.



Modification basis	
Application basis	
Affected VIN	

2. Remove two audio switch mounting screw from each sides from the steering wheel and disconnect the main connector. Then, remove the audio switch assembly from the steering wheel.



3. Install in the reverse order of removal.

Modification basis	
Application basis	
Affected VIN	

S.G.N. 8510-21

MULTIFUNCTION SWITCH

Preceding work

1. Disconnect the negative battery cable.

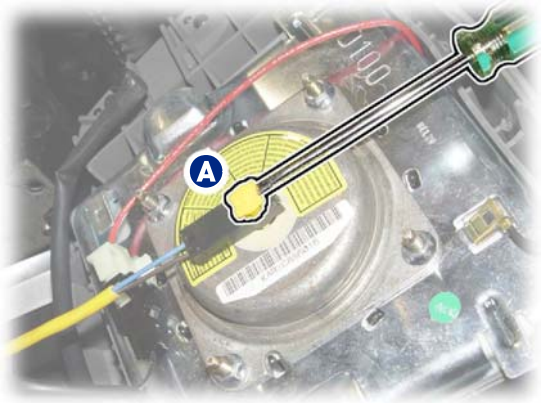
1. Remove the air bag module and steering wheel

Driver Air Bag (DAB)

CAUTION

- Be careful not to drop or shock the air bag module during removal procedures.

Lift up the hook when disconnecting the air bag contact coil connector (A).

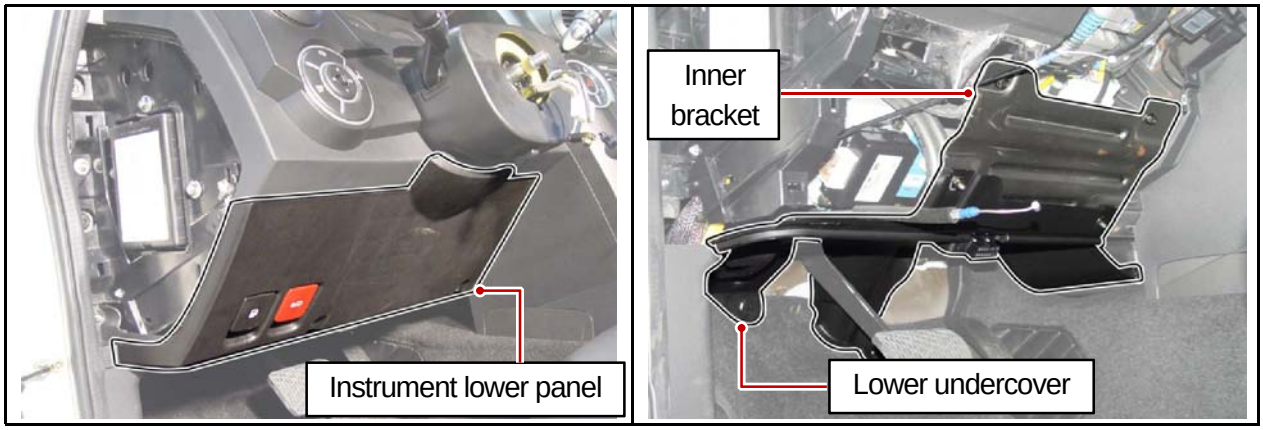


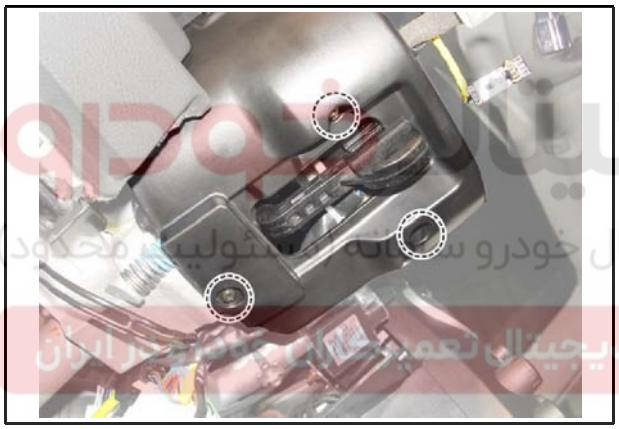
Steering Wheel Assembly

Put an installation mark on the steering wheel, column shaft and nut when removing the steering wheel.
Place the steering wheel to the straight forward direction.

Modification basis	
Application basis	
Affected VIN	

2. Remove the driver side instrument lower panel, inner bracket and lower undercover.
   For details, refer to the "Body" section.





3. Unscrew three screws from the steering column cover and remove the upper and lower covers.

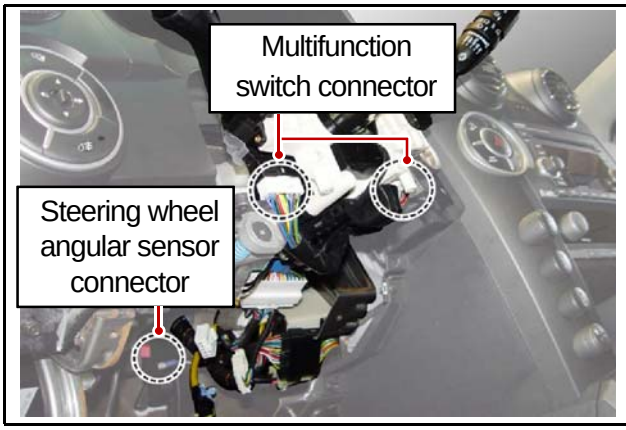
4. Unscrew four screws and remove the air bag contact coil assembly.

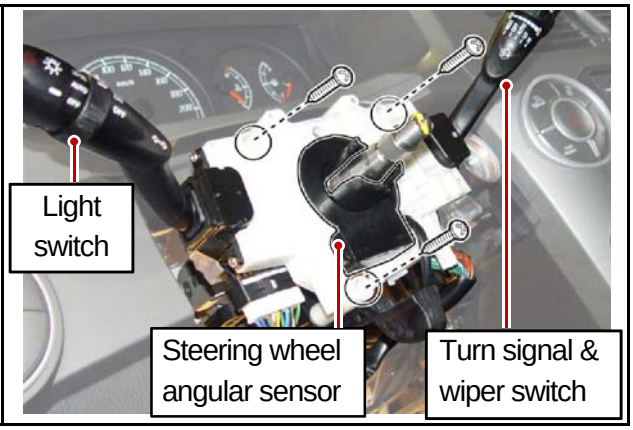
CAUTION

- For installation, align the steering wheel to the installation mark and tighten the nut to the specified tightening torque.

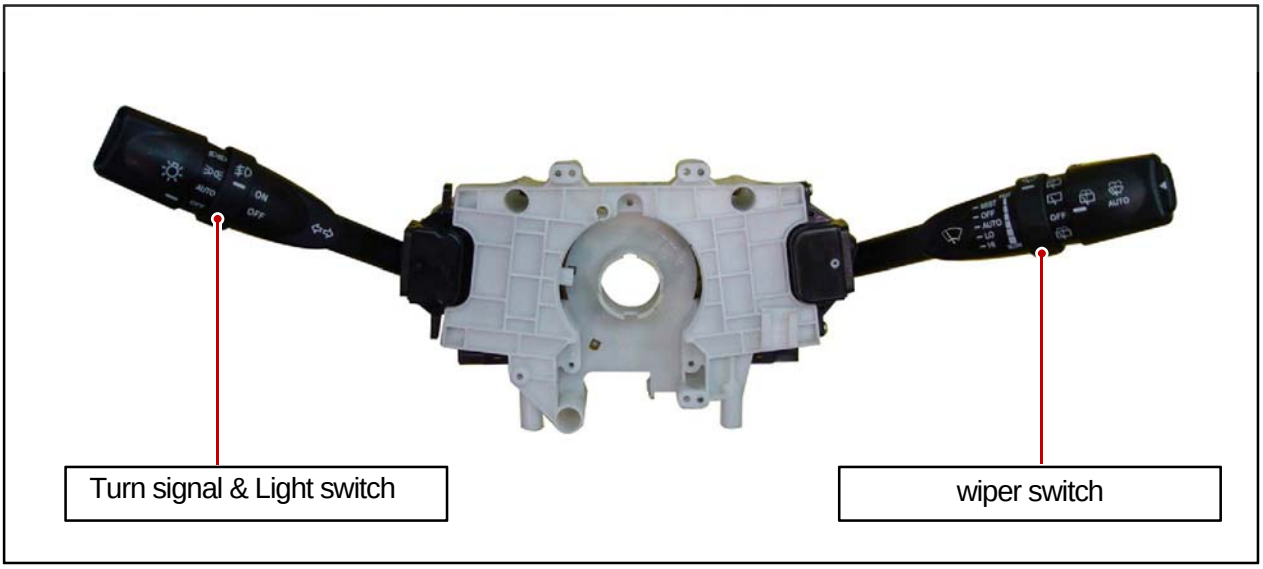
Modification basis	
Application basis	
Affected VIN	

5. Remove the mounting screws (3 EA) from the steering will steering wheel sensor and the multifunction switch (3 EA) at this moment, disconnect the connectors.





6. Remove the steering wheel angular sensor from the removed multifunction switch assembly.



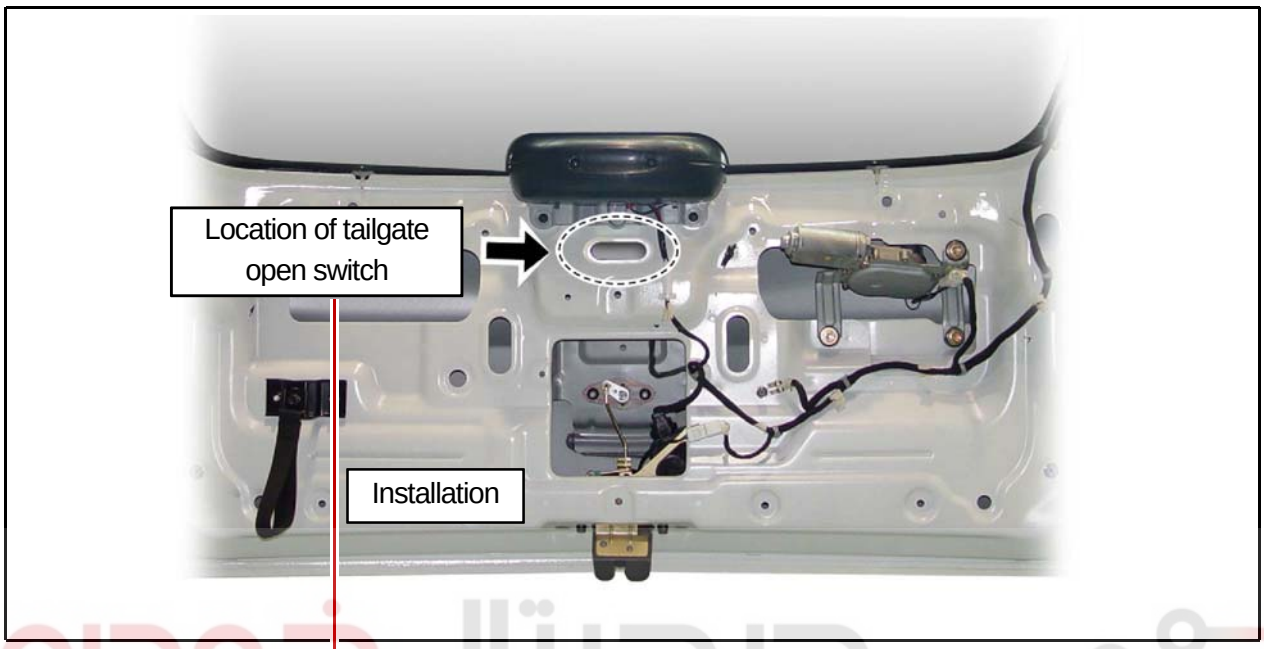
Modification basis	
Application basis	
Affected VIN	

SWITCH
undefined

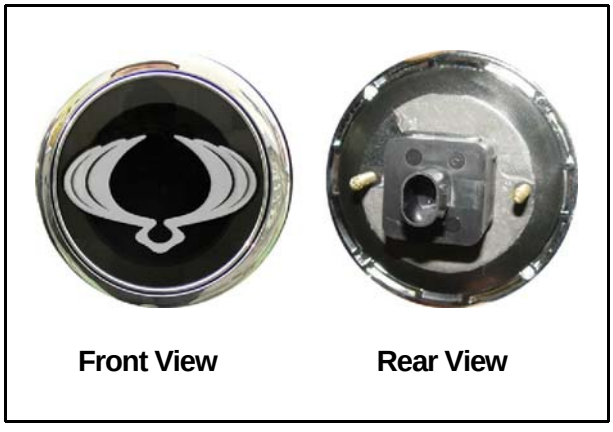
S.G.N.
8510-13 TAILGATE OPEN SWITCH

Preceding work

1. Remove the tailgate trim assembly.



1. Disconnect the electric connector and unscrew two mounting nuts to remove the tailgate open switch.



Front View **Rear View**

SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

S.G.N. 7632-16

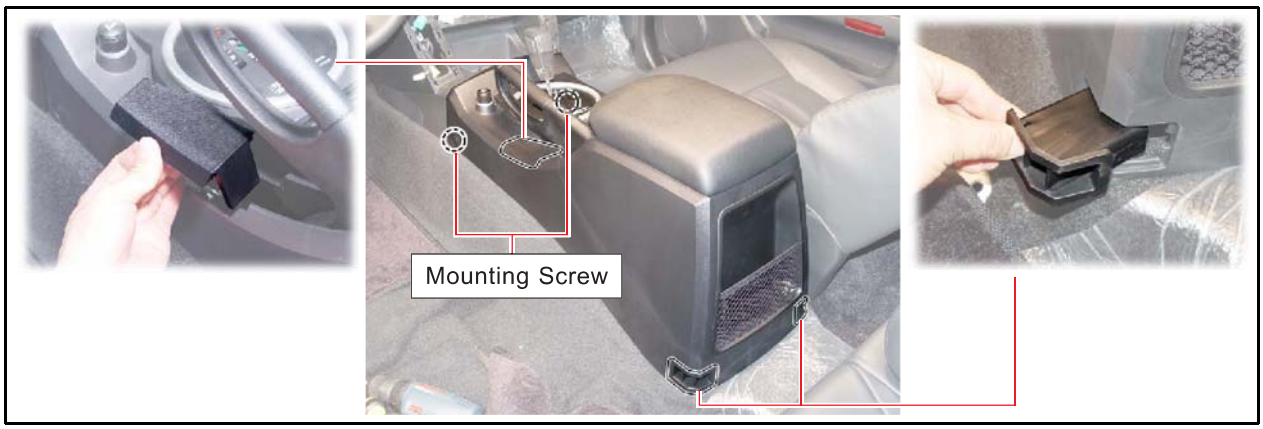
CIGARETTE LIGHTER

Preceding work

1. Disconnect the negative battery cable.
2. Loosen the parking brake cable to raise the lever as high as possible.

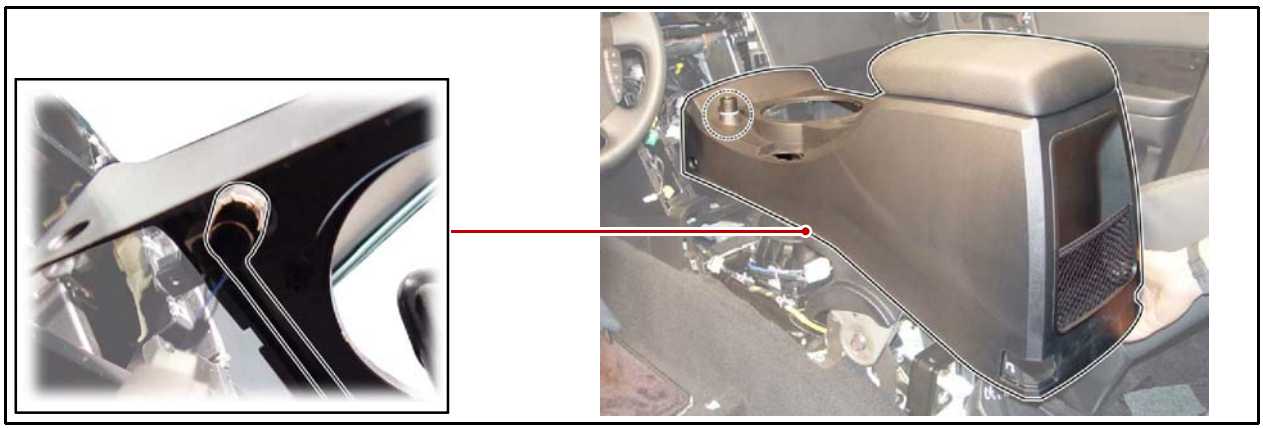
1. Pull the parking brake and place the gear selector lever to "N" position to remove the center console box cover (1).

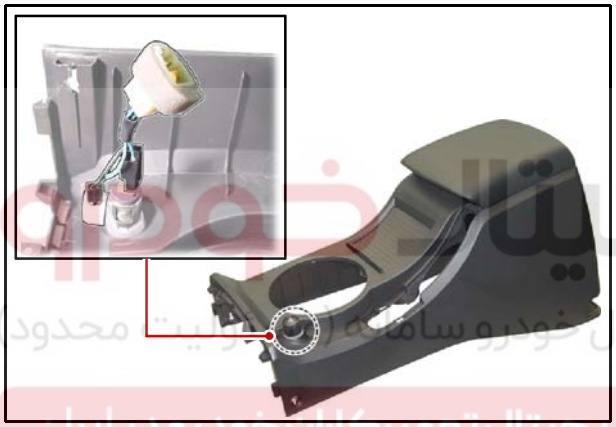
2. Remove the brackets around center console and unscrew two mounting screws.



Modification basis	
Application basis	
Affected VIN	

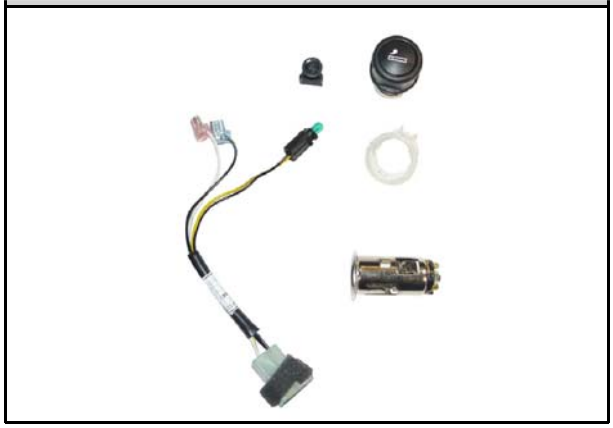
3. Pull up the gear selector lever all the way and disconnect the electric connector from cigarette lighter. Then, remove the center console.





4. Remove the cigarette lighter assembly from the removed center console box.

Cigarette Lighter Assembly



5. Adjust the tension of the parking brake cable.

Modification basis	
Application basis	
Affected VIN	

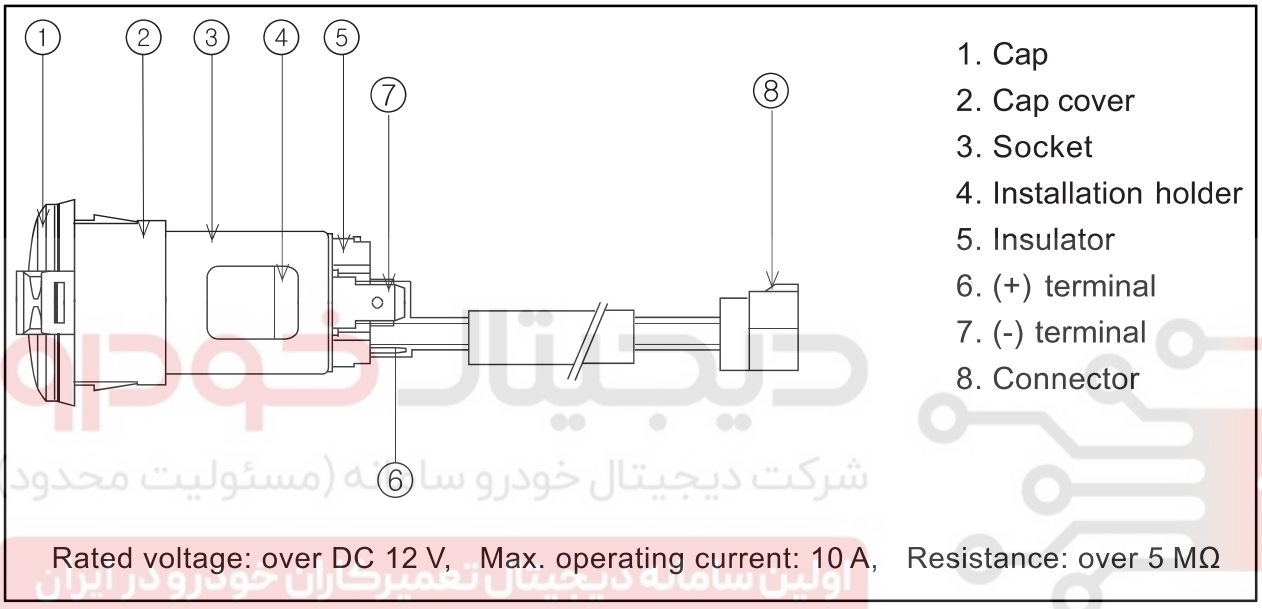
S.G.N.
7610-54 POWER OUTLET

1. Remove the power outlet bracket from the center console (passenger side).

2. Disconnect the power outlet connector

Modification basis	
Application basis	
Affected VIN	

3. Remove the power outlet from the bracket.



1. Cap
2. Cap cover
3. Socket
4. Installation holder
5. Insulator
6. (+) terminal
7. (-) terminal
8. Connector

Rated voltage: over DC 12 V, Max. operating current: 10 A, Resistance: over 5 MΩ

SWITCH

undefined

Modification basis	
Application basis	
Affected VIN	

S.G.N. 7610-54

REAR POWER OUTLET

Preceding work 1. Disconnect the nagetive battery cable

1. Remove the rear lower quarter panel (RH) and disconnect the power outlet connector.

2. Unscrew eight screws and remove the power outlet mounting bracket.

Modification basis	
Application basis	
Affected VIN	

3. Remove the power outlet from the removed bracket.

Modification basis	
Application basis	
Affected VIN	

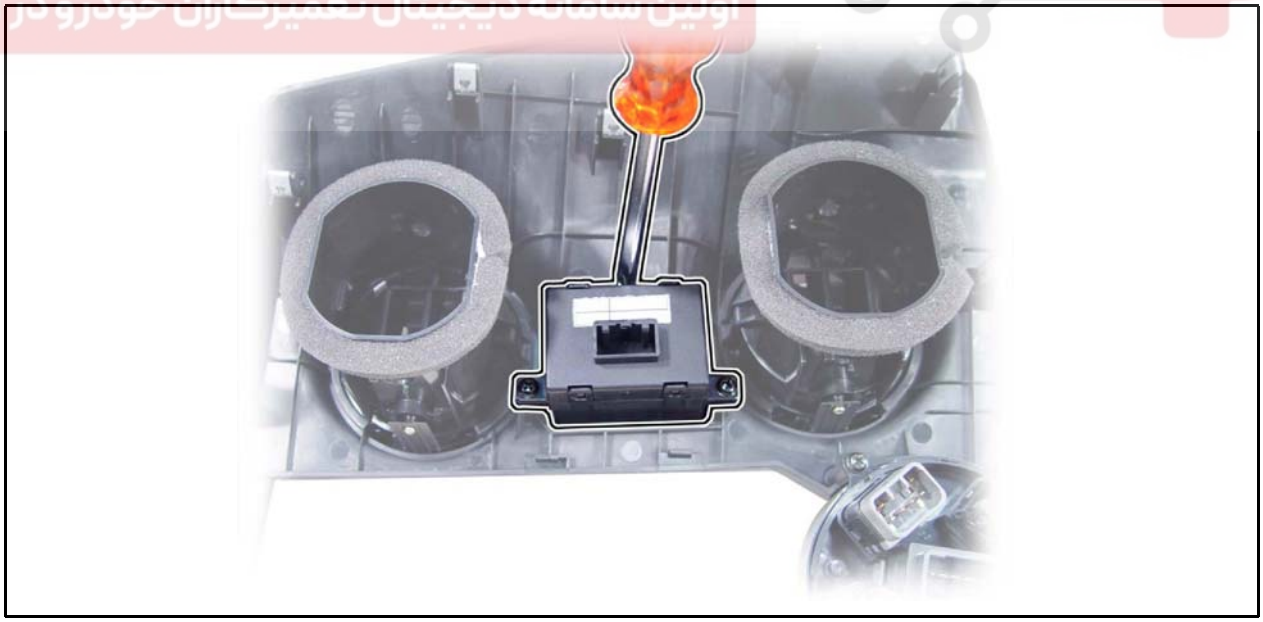
S.G.N. 8610-08

DIGITAL CLOCK

Preceding work 1. Disconnect the negative battery cable.

1. Remove the center fascia panel (refer to "Body" section in this manual).

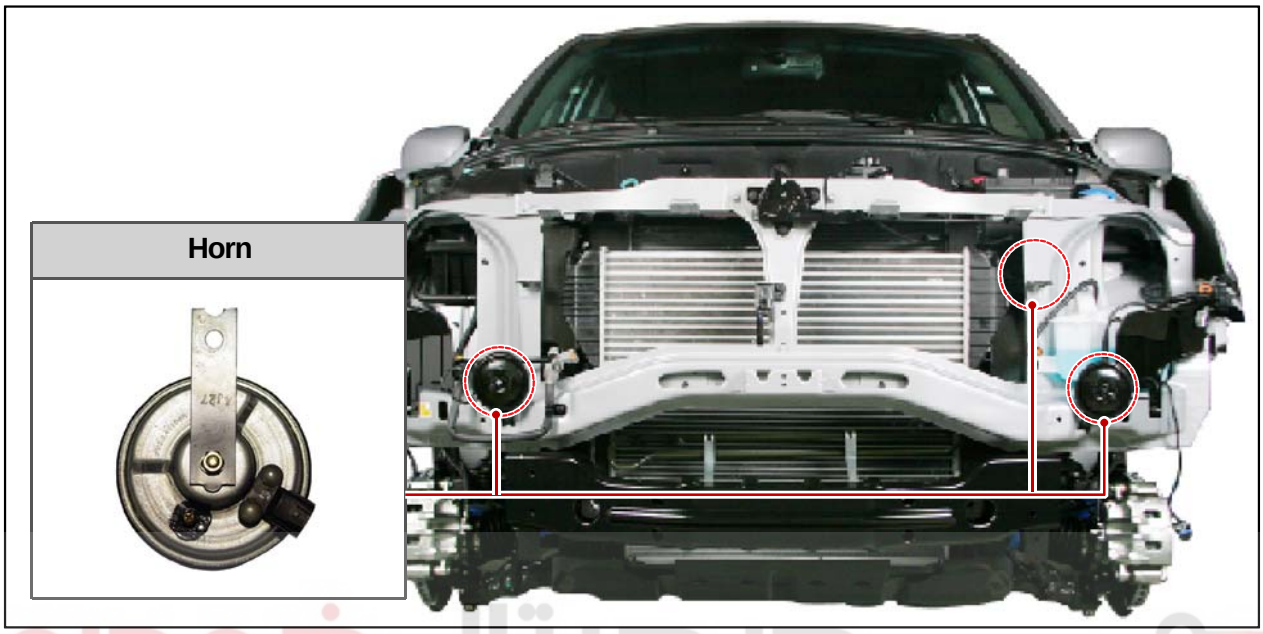
2. Unscrew three mounting screws and remove the digital clock from the center fascia panel.



Modification basis	
Application basis	
Affected VIN	

S.G.N. 8610-06 HORN (INCLUDING THEFT DETERRENT HORN)

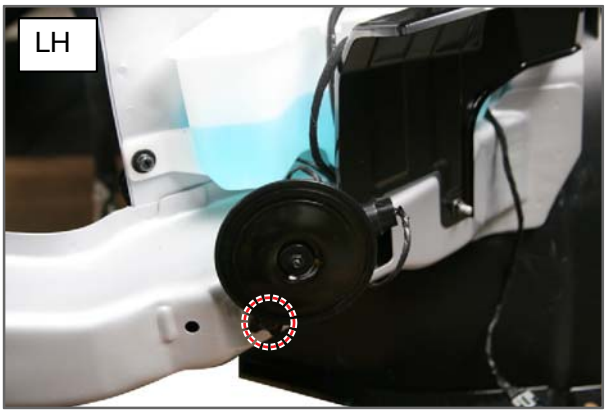
Preceding work - Disconnect the negative cable from the battery.



▶ Removing Horn

1. Open the engine hood and unscrew the 10 mounting screw rivets on the front end upper cover to remove the front end upper cover.

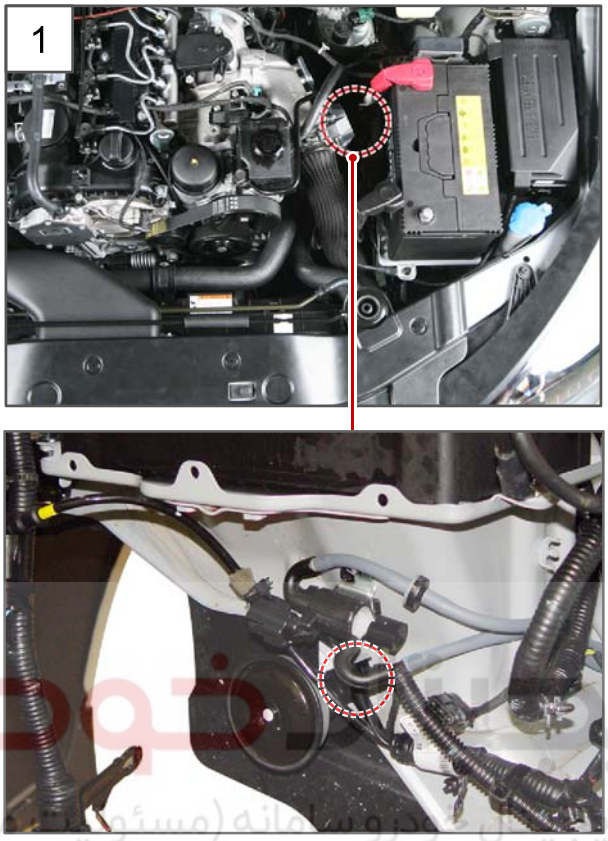
2. Disconnect the connector and unscrew the one mounting bolt (12 mm) on the side to be removed.



Modification basis	
Application basis	
Affected VIN	

▶ Removing Theft Deterrent Horn

1



1. It is located under the battery. Disconnect the connector and unscrew the one mounting bolt (12 mm) to remove it.

2

2. Installation is in the reverse order of removal.

Modification basis	
Application basis	
Affected VIN	

Memo