

**GROUP 42A****BODY****CONTENTS**

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## GENERAL INFORMATION

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### FEATURES

#### LIGHT WEIGHT, HIGH RIGIDITY, ANTI-CORROSIVE

- The application ranges of high-tensile steel panels, and anti-corrosion steel panels have been expanded.
- The ring structure for the side structure reinforcement has been adopted.
- The 3-way support structure for the front frame has been adopted.
- The strut tower bar has been installed.
- The front floor backbone brace has been installed.
- The upper frame to front pillar brace has been installed.
- The body sealant application range has been expanded.

#### REDUCTION IN VIBRATION AND NOISE

- More sound absorption/insulator and sound dampening foam material have been adopted.
- Adoption of closed section roof rail and roof bow.

#### IMPROVEMENT IN SAFETY

- The one-touch power window (operative after ignition switch is turned OFF) with safety mechanism has been installed <Driver's seat only>.
- The direct combination key cylinder and inside lock cables for the front doors have been adopted to improve door opening operation upon impact.
- RISE (Reinforced Impact Safety Evolution) has been adopted for the main body.
- The side door beam has been adopted.
- The crush box structure has been adopted to the side member front end.
- The impact absorbing hole has been adopted to the cowl top outer reinforcement upper.

- The fender padding structure has been adopted.

#### IMPROVEMENTS IN OPERATION PERFORMANCE

- The central door locking system which can lock/unlock all the doors and the liftgate has been adopted.
- The override function which allows to open the driver's door by pulling the driver's inside handle when all the doors are locked has been adopted.
- The electronic type which can be operated easily has been adopted to the liftgate lock release handle.
- A sound-insulating laminated glass has been adopted for the windshield <Vehicles with lighting control sensor (rain sensor)>.
- The UV-reducing front door window glass has been adopted.

#### IMPROVEMENTS IN MARKETABILITY AND APPEARANCE

- By improving the clicking sound when the door latch and striker are engaged, the door locking sound quality has been enhanced.
- The high rigidity pressed door has been adopted to improve the rigidity of the door sash bottom section.
- The sunroof with safety mechanism has been installed as an option.

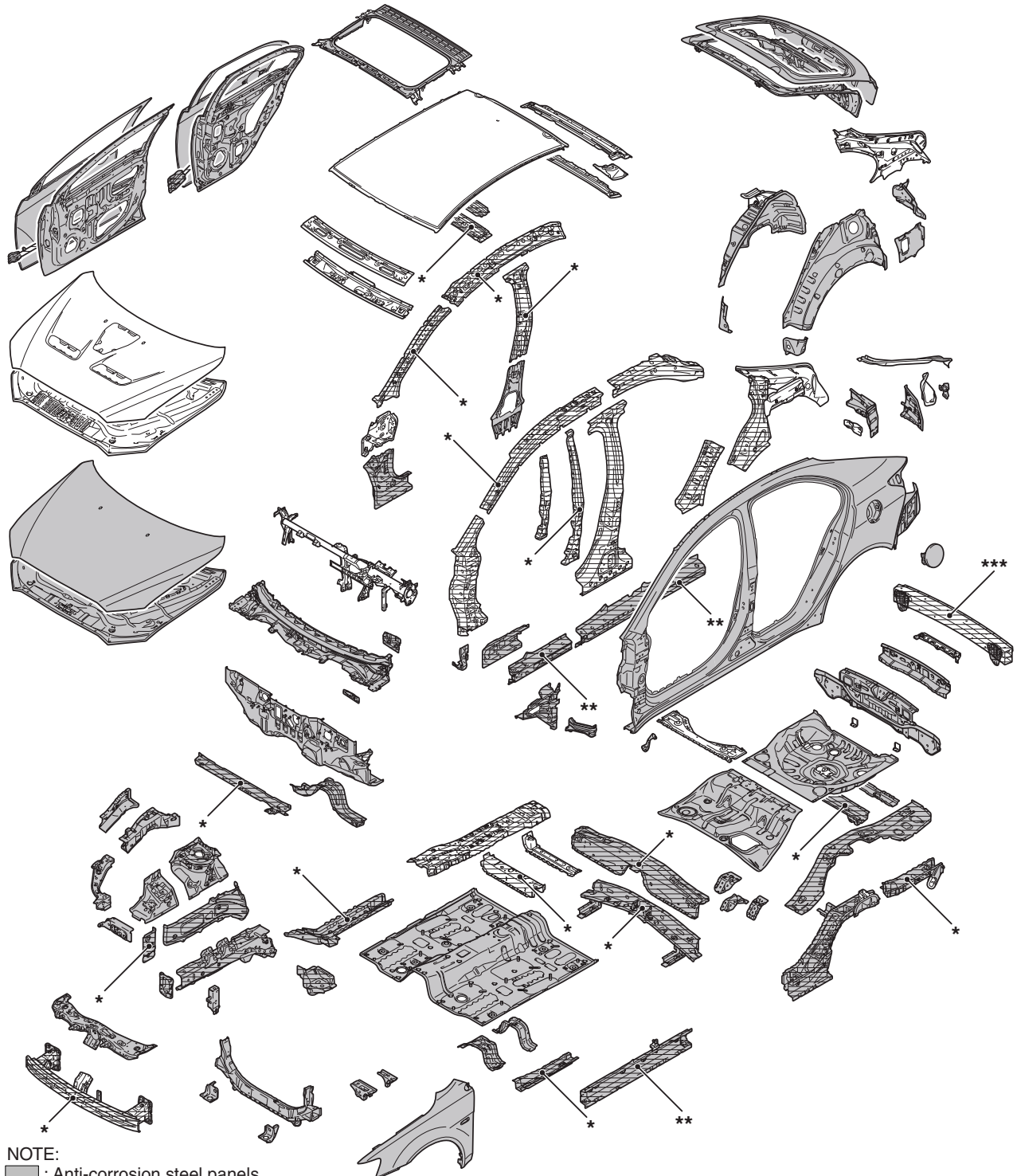
#### IMPROVEMENTS IN FUNCTIONALITY

- A fuel filler cap holder has been installed to the fuel door in order to prevent the fuel cap from being left open.
- The selector "P" position-linked door unlocking function has been introduced to the central door locking system <CVT, TC-SST>.

MAIN BODY

BODY PANELING

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NOTE:

■ : Anti-corrosion steel panels

▨ : High-tensile steel panels (\*: Indicates 590MPa-high-tensile steel panels.)

(\*\* : Indicates 980MPa-ultra-high-tensile steel panels.) (\*\*\*: Indicates 1180MPa-ultra-high-tensile steel panels.)

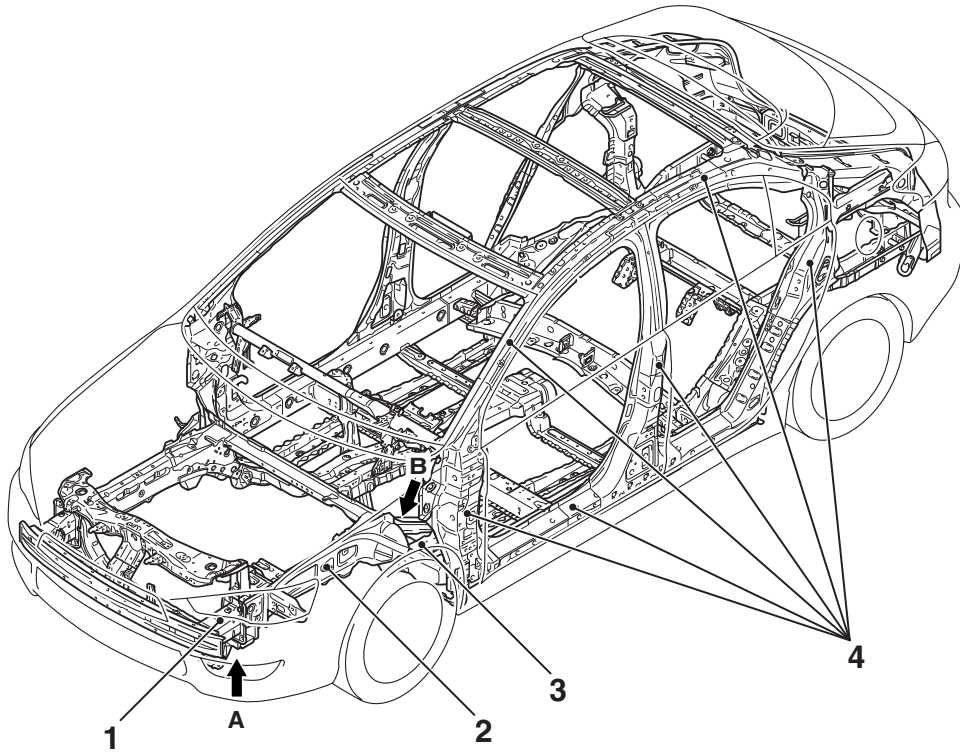
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- RISE (Reinforced Impact Safety Evolution) has been adopted for the main body in order to improve all-round impact safety at high level.
- More anti-corrosion steel plates have been used to improve anti-corrosive performance of the main body.
- High-tensile steel panels of 590MPa-grade, 980MPa-grade and 1180MPa-grade have been used for some panels to improve collision safety and reduce weight.

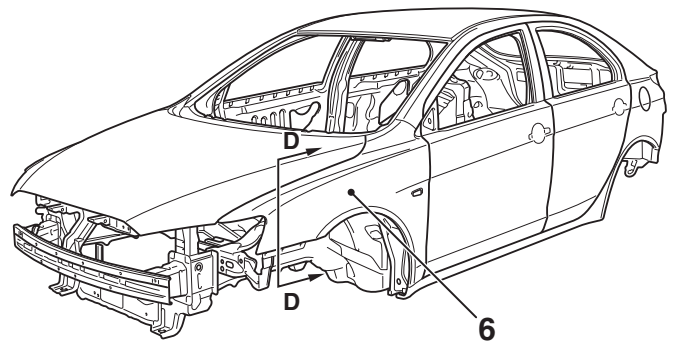
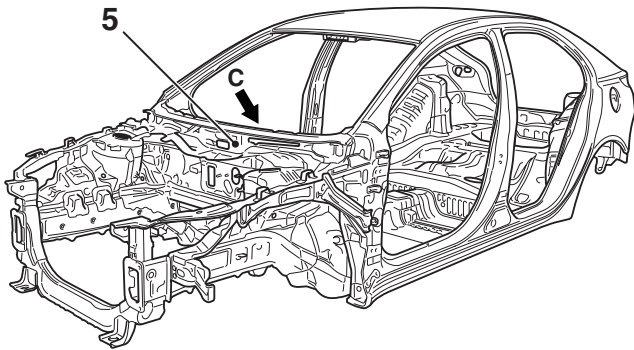
BODY SHELL

IMPACT SAFETY BODY RISE (REINFORCED IMPACT SAFETY EVOLUTION)

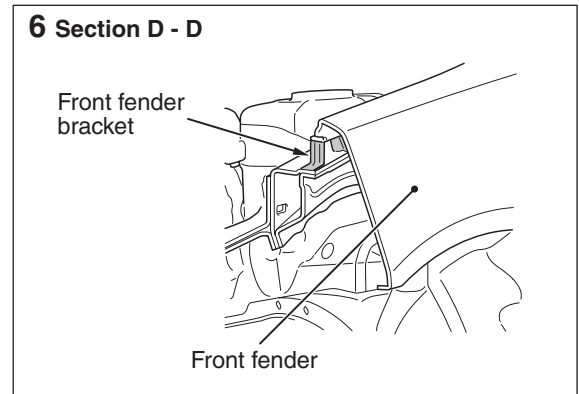
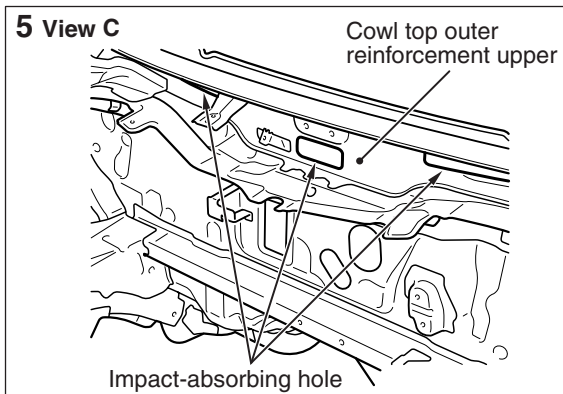
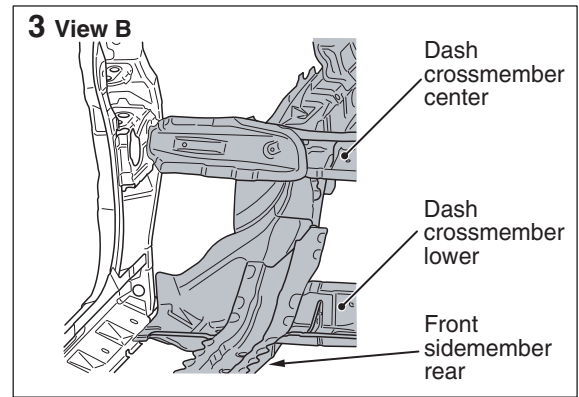
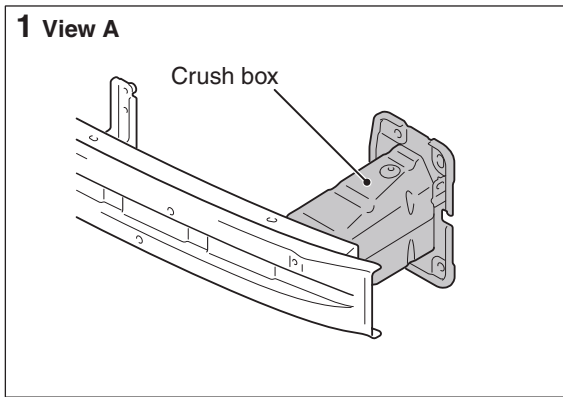
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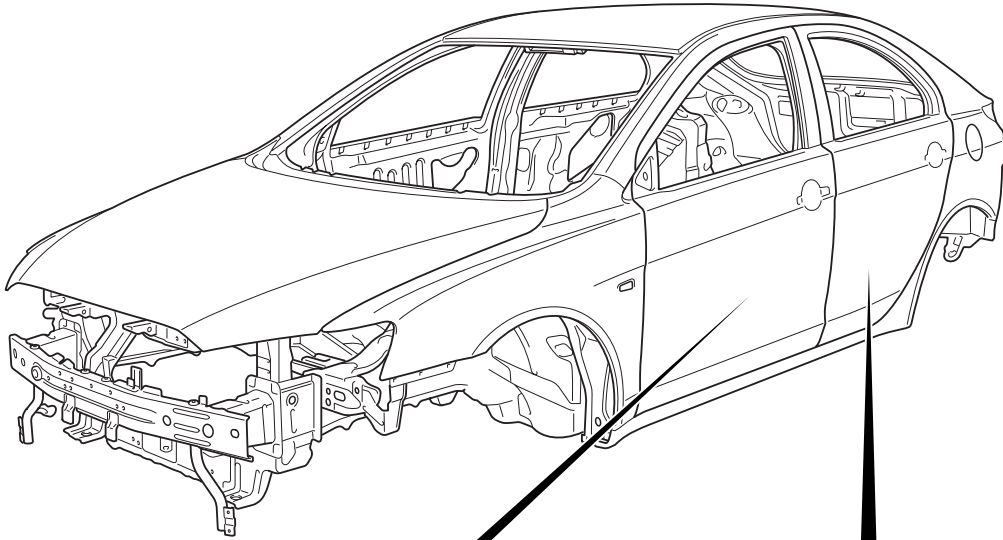


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The front and rear structures to absorb high energy, and the highly tough cabin structure is adopted to reduce the risk of passenger injuries at front-, rear-, and side-impact collisions, secure the space for life protection, and facilitate rescuing passengers. The structures also have the following features:

1. The crush box structure, which has an octagonal cross-section at the front end of the front sidemember, has been adopted. This structure can effectively absorb energy upon frontal impact and reduces the vehicle repair cost caused by a light collision.
2. The straight frame structure has been adopted for the front sidemember to improve performance upon frontal impact.
3. The front frame structure is supported in three directions by the dash crossmember center, dash crossmember lower, and front sidemember rear in order to improve the frontal collision characteristics, and increase the vehicle body rigidity.
4. An annular structure has been used for the side structure reinforcement to improve collision safety and vehicle body rigidity.
5. The impact absorbing hole on the cowl top outer reinforcement upper has been added to efficiently absorb energy upon impact and improve the pedestrian protection capability.
6. The padding structure of the front fender has been adopted to efficiently absorb energy upon impact and improve the pedestrian protection capability.

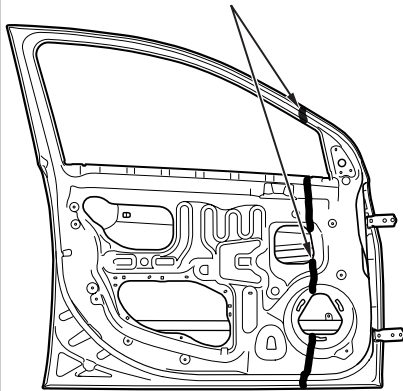
## STEEL PLATE WITH UNEVEN THICKNESS



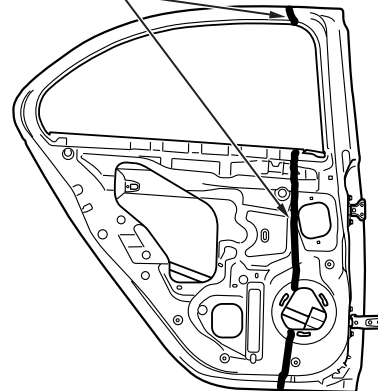
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**Front door panel inner**

Thickness is thicker on the forward part of the vehicle from this line.

**Rear door panel inner**

Thickness is thicker on the forward part of the vehicle from this line.



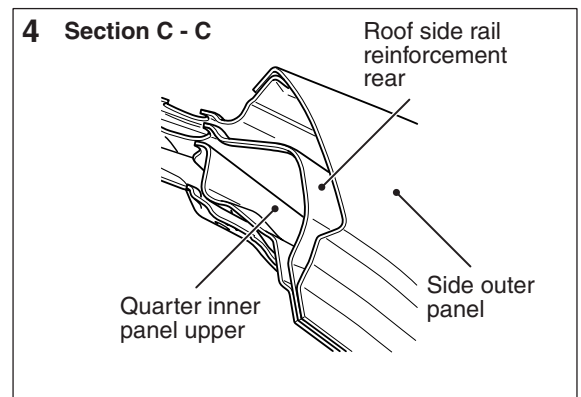
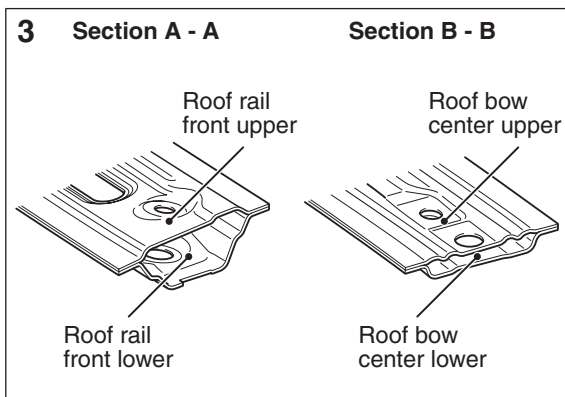
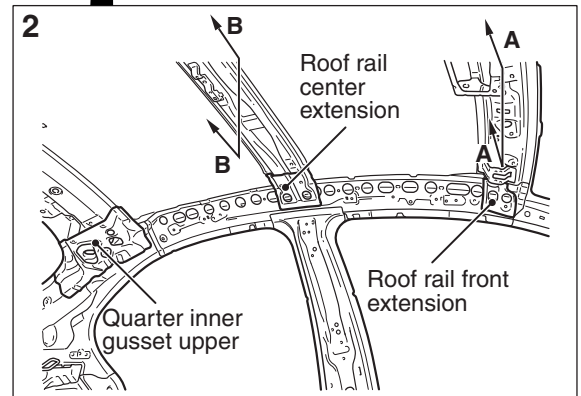
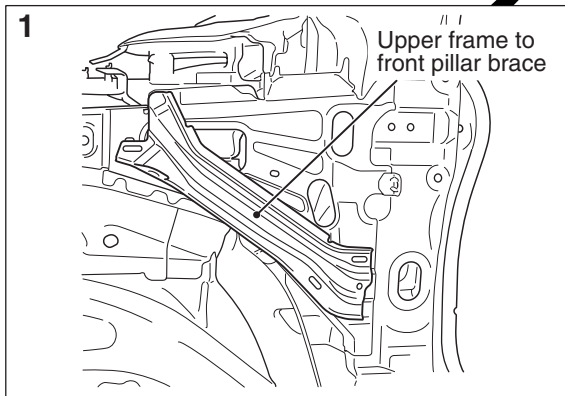
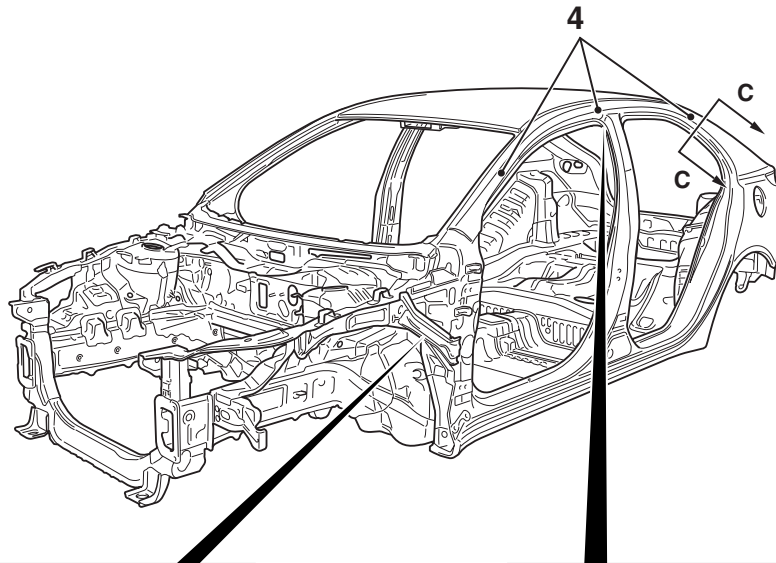
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The uneven thickness steel panels\* (in uneven thickness integrated structure) have been adopted for the parts shown in the figure to improve safety upon impact and reduce weight.

**NOTE:** \*: A steel sheet of varying thickness that is welded into one steel sheet.



STEERING ABILITY

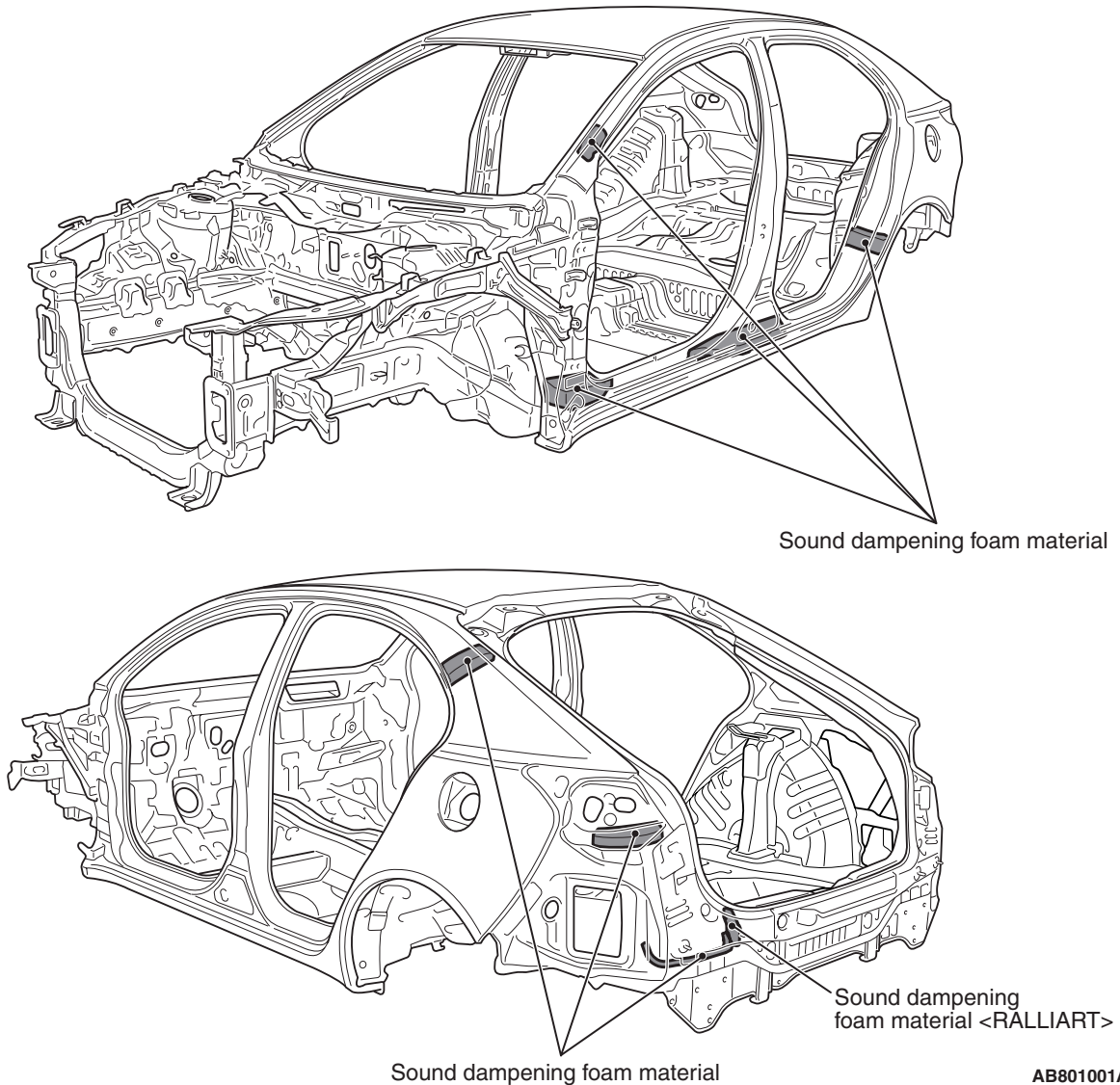


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1. Rigidity was heightened and driving stability was improved by bonding the front upper frame outer and front pillar by the upper frame to front pillar brace.
2. The roof rail extension has been adopted to connect the roof side rail inner to the roof rail and the roof bow. The quarter inner gusset upper has also been adopted to connect the quarter inner panel upper to the roof rail rear. This improves rigidity of the body, handling stability, and riding comfort.
3. The closed section structure has been adopted for the roof rail front and roof bow center to heighten rigidity, improve driving stability, and to reduce vibration and noise.
4. The closed section structure has been adopted for the front pillar through the gate pillar to heighten body rigidity, and to improve handling stability and riding comfort.

## QUIETNESS

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The front pillar upper and lower, center pillar lower, gate pillar, the wheel house arch, the rear combination light housing inside and rear end panel inner have been filled with the sound dampening foam material to reduce noise.

## BODY COLOR CHARTS

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Color	Color code	Color number	Color name	Coating film structure	Composition of film
SILVER	A31	CMA10031	Cool Silver Metallic	2M	Metallic
MEDIUM PURPLISH GRAY	A39	CMA10039	Medium Purplish Gray Mica	2P	Metallic + Interferenced Pearl
BLUE	D06	CMD10006	Lightning Blue Mica	2P	Interferenced Pearl
ORANGE	M08	CMM10008	Passion orange pearl	2M	Metallic



Color	Color code	Color number	Color name	Coating film structure	Composition of film
RED	P26	CMP10026	Red Metallic	2M	Metallic
WHITE	W37	CMW10037	White Solid	2S	Solid
BLACK	X42	AC11342	Black Mica	2P	Interferenced Pearl

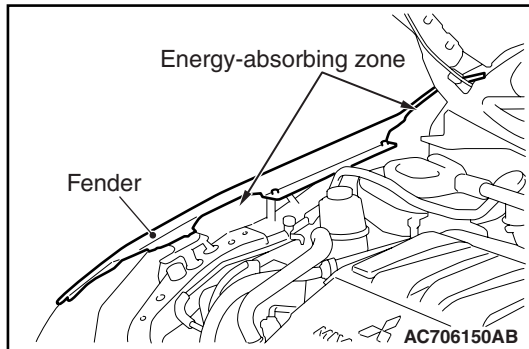
**NOTE:**

- The coating film structure indicates top coating only (2S: 2 coat solid, 2M: 2 coat metallic, 2P: 2 coat pearl).
- For painting, inner panel colors should be similar to the outer panel colors.

## PEDESTRIAN PROTECTION

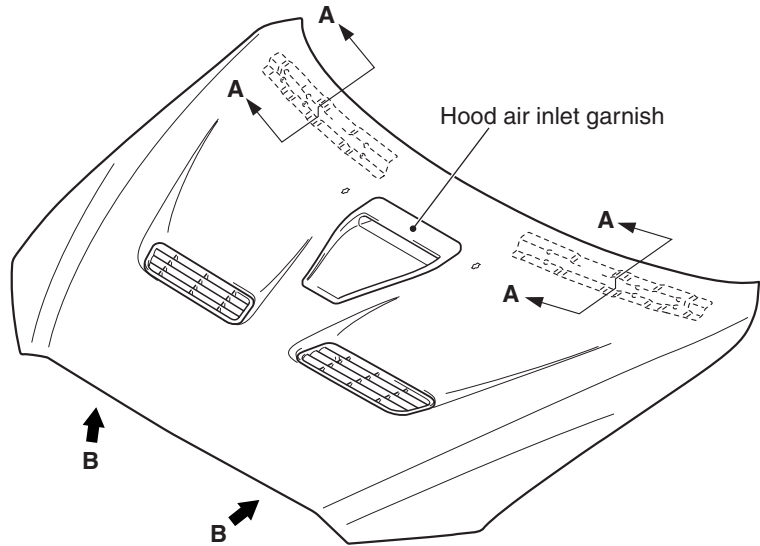
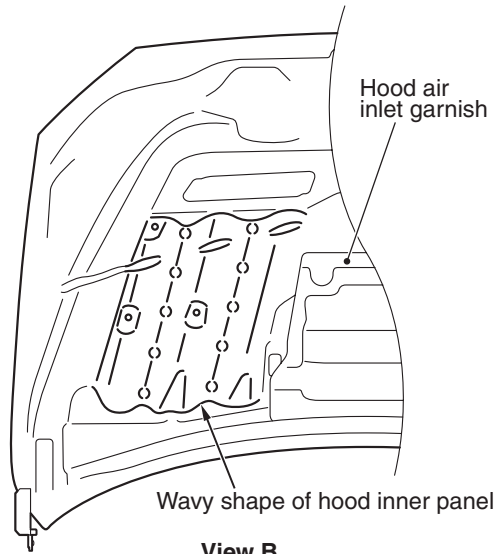
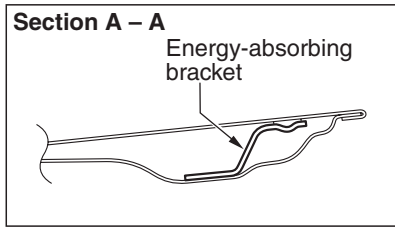
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### ENERGY ABSORBING STRUCTURE



An energy absorbing zone has been established in between the fender and body frame to secure the space for shock absorption, reducing a risk of injury to a pedestrian's head area upon a collision.

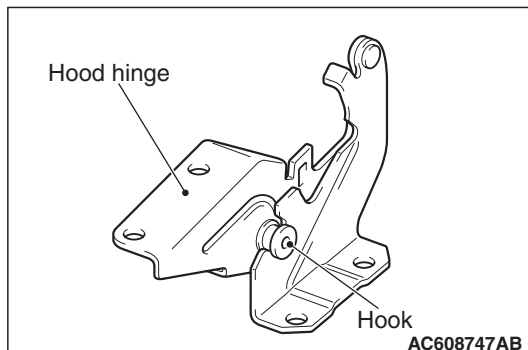
HOOD <RALLIART>



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- An impact absorbing space has been secured in between the hood and engine upper section, reducing a risk of injury to a pedestrian's head area upon a collision.
- The shape and opening area of hood air inlet garnish have been optimized to secure the cooling performance, providing protection and reducing the risk of injury to a pedestrian's head area in case of an accident.
- Corrugated shape has been adopted with the hood inner panels located at both sides of hood air inlet garnish inside the hood, absorbing the impact energy to a pedestrian's head area in case of an accident and reducing a risk of injury.
- Impact absorbing materials (energy absorbing bracket) are arranged to left and right of hood rear end, absorbing the impact energy to a pedestrian's head area in case of an accident and reducing a risk of injury.

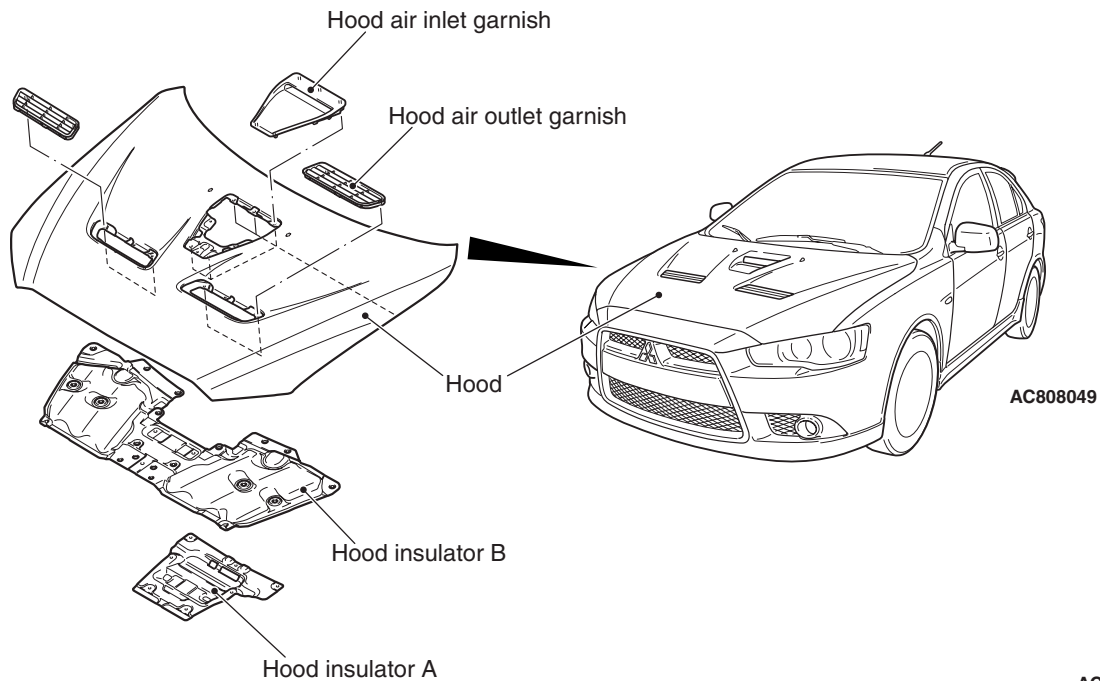
HOOD HINGE



The bolt type hook has been adopted for the hood hinge to suppress cabin deformation and improve safety upon impact.

## HOOD <RALLIART>

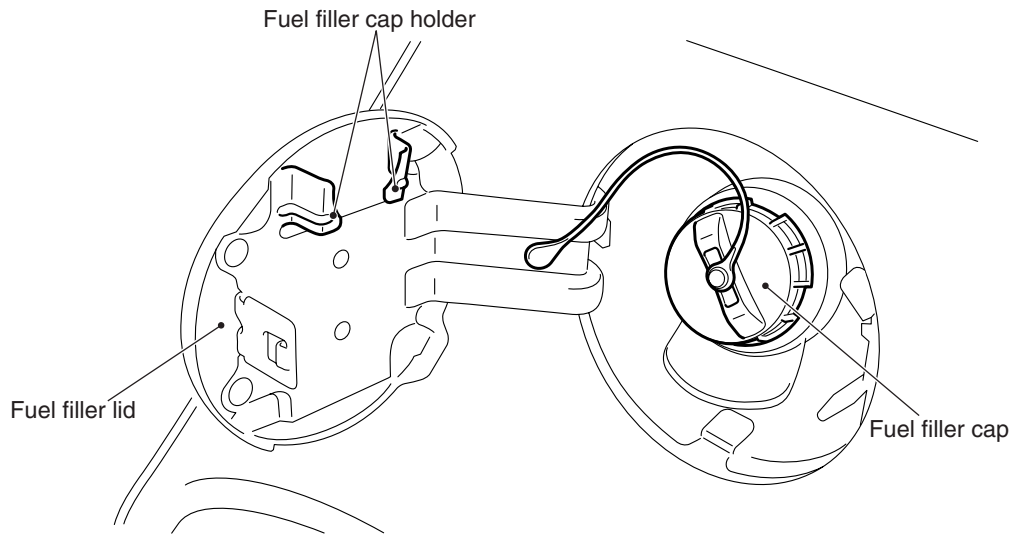
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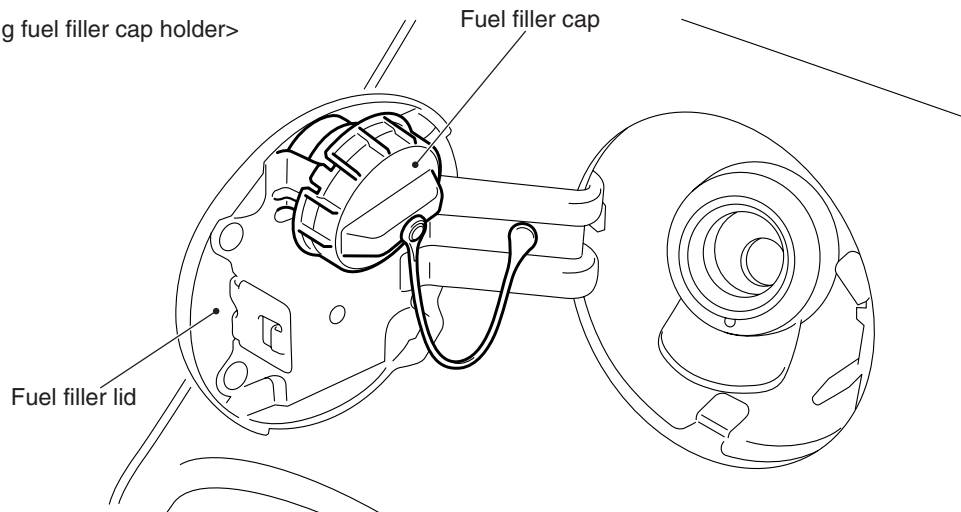
- The aluminum hood panel has been adopted to reduce the vehicle weight.
- The hood air inlet garnish has been mounted to the back of hood center in order to cool around the turbocharger and to emphasize sporty image.
- The hood air outlet garnish has been mounted to left and right of hood front in order to emit heat from inside the engine compartment.
- To inside the hood, the hood insulator A has been mounted to protect the hood air inlet garnish from the turbocharger heat, and the hood insulator B to block the heat from inside the engine compartment.

## FUEL FILLER LID

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&lt;When using fuel filler cap holder&gt;



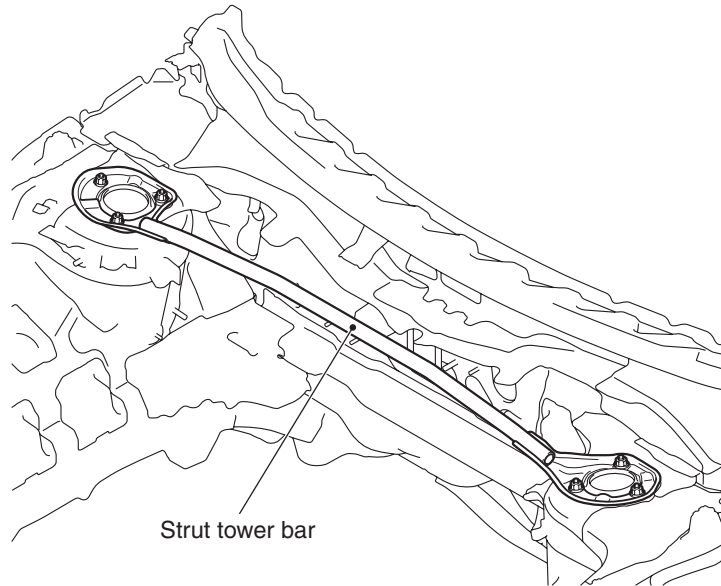
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The fuel filler cap holder has been installed to the fuel lid, holding the removed cap in refueling to prevent the fuel cap from being left open.

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# STRUT TOWER BAR

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The strut tower bar has been adopted to the strut attachment point to improve steering ability

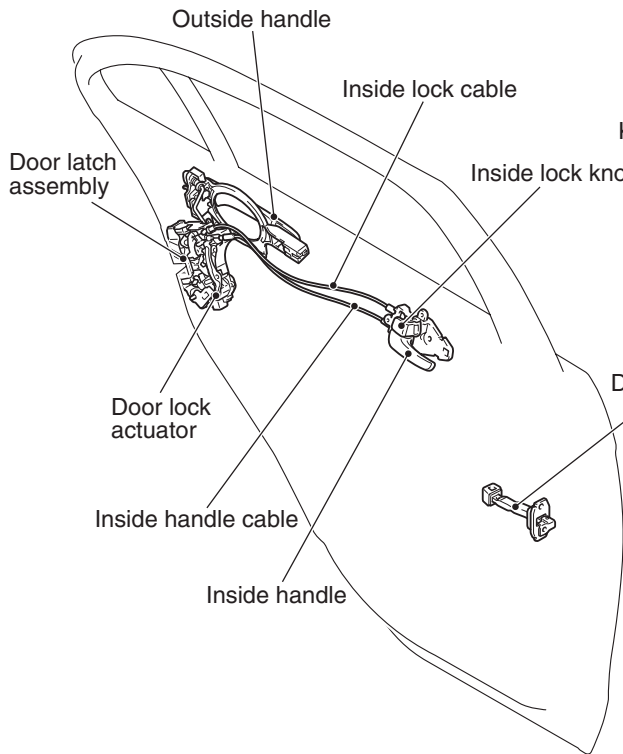
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# DOOR

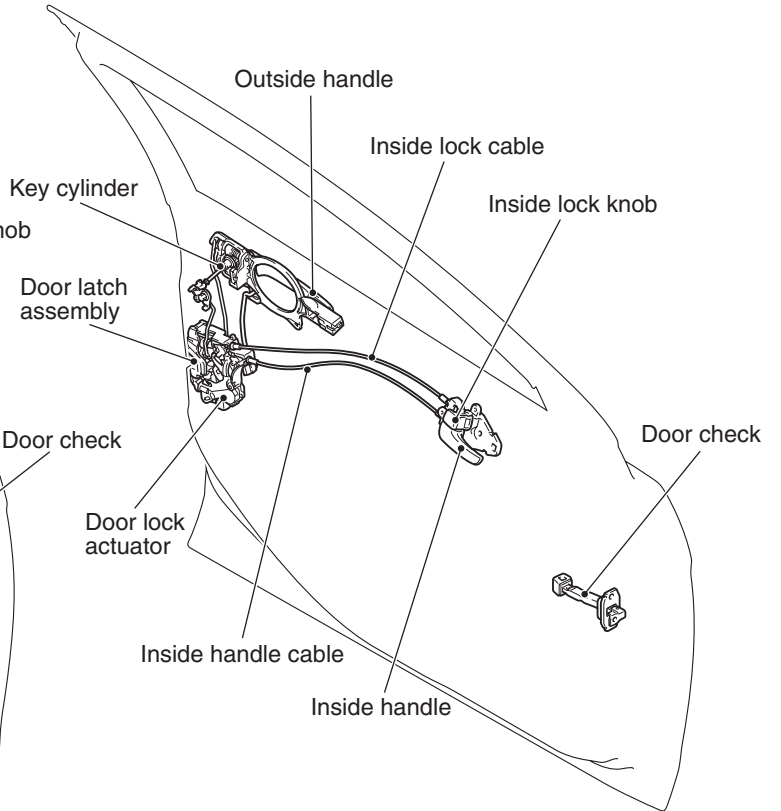
## DOOR AND LIFTGATE LOCK CENTRAL DOOR LOCKING

M2420001100298

<Rear door>



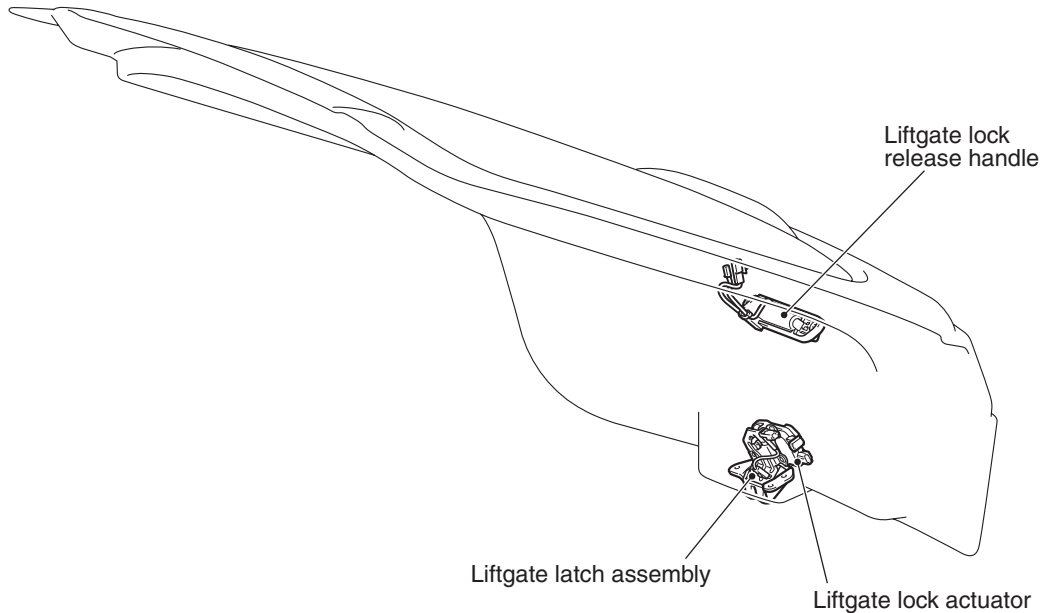
<Front door>



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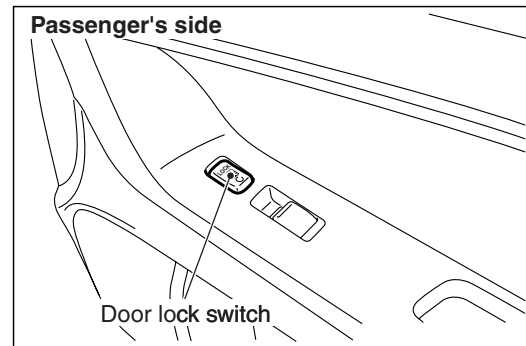
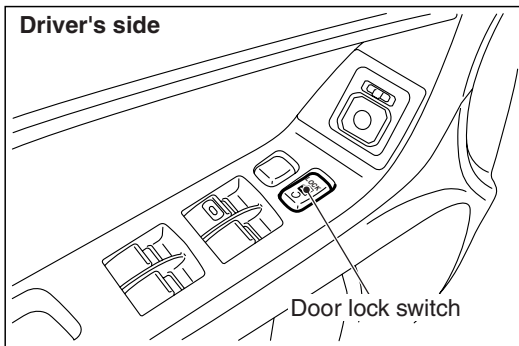


<Liftgate>



AC805832AB

Location of the door lock switches



AC608439AB

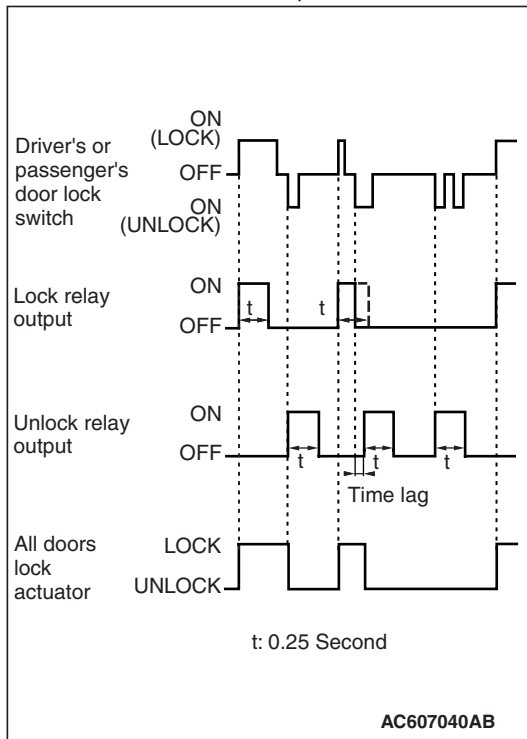
- The central door locking system that locks/unlocks all the doors and the liftgate using the door lock switch has been installed.
- The child protection function has been introduced to prevent the rear doors from being opened accidentally during driving.
- The key-in prevention function has been introduced.
- The selector "P" position-linked door unlocking function has been introduced <CVT, TC-SST>.
- The ignition switch "LOCK (OFF)" position-linked door unlocking function has been introduced <M/T, CVT, TC-SST>.

- The direct combination key cylinder mechanism has been adopted.

**DESCRIPTION OF CONSTRUCTION AND OPERATION**

**CENTRAL DOOR LOCKING**

- All the doors and the liftgate can be locked/unlocked, using the driver's side door lock switch or the passenger's side door lock switch.
- The function that allows the driver's door to be opened by pulling the driver's door inside handle even when the driver's door inside lock knob is in the lock position is called "override function".



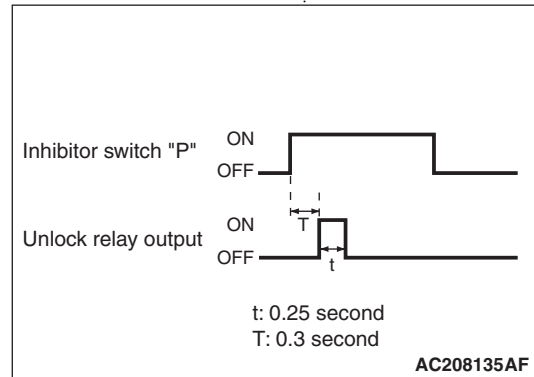
When the door is locked by the driver's or passenger's door lock switch, the ETACS-ECU operates its door lock relay and passes a current through the door lock actuators of all the doors for 0.25 second to lock all the doors and the liftgate.

When the door is unlocked by the driver's or passenger's door lock switch, the ETACS-ECU operates its door unlock relay and passes a current through the door lock actuators of all the doors for 0.25 second to unlock all the doors and the liftgate.

When the door is locked and unlocked by driver's or passenger's door lock switch consecutively, the ETACS-ECU operates its door lock relay and passes a current through the door lock actuators of all the doors for 0.25 second to lock all the doors and the liftgate. Then, the ETACS-ECU operates its door unlock relay and passes a current through the door lock actuators of all the doors and the liftgate for 0.25 second to unlock all the doors. Due to this, there may be a time lag between the driver's or passenger's door lock switch actuation and the time when all the doors and the liftgate are unlocked.

**SELECTOR "P" POSITION-LINKED DOOR UNLOCKING FUNCTION <CVT, TC-SST>**

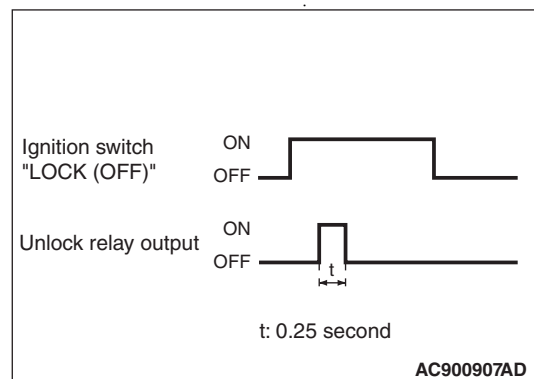
- When the selector lever is shifted to the "P" (parking) position with the ignition switch turned ON, all the doors will be unlocked automatically, improving passengers' convenience for getting out. Using a customization feature, the selector "P" position-linked door unlocking function can be switched (Refer to P.42A-28).



When the selector lever is shifted to the P position with the ignition switch turned ON, the inhibitor switch "P" turns ON, ETACS-ECU turns the unlock relay output ON for 0.25 second to unlock all the doors and the liftgate.

**IGNITION SWITCH "LOCK (OFF)" POSITION-LINKED DOOR UNLOCKING FUNCTION <M/T, CVT, TC-SST>**

- When the ignition switch is turned to the " LOCK (OFF)" position, all the doors will be unlocked automatically, improving passengers' convenience for getting out. Using a customise function, the ignition switch " LOCK (OFF)" position-linked door unlocking function can be changed (Refer to P.42A-28).

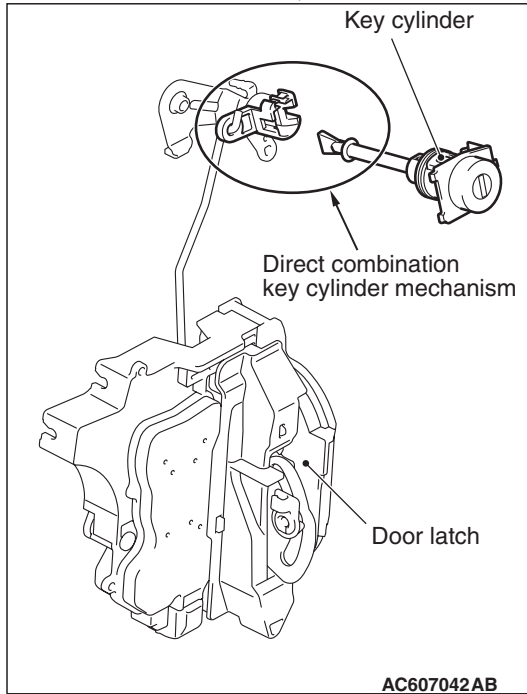


When the ignition switch is turned to the " LOCK (OFF)" position, ETACS-ECU turns the unlock relay output ON for 0.25 second to unlock all the doors.

### KEY-IN PREVENTION FUNCTION

When the driver's door inside lock knob is operated to the lock position with the driver's door opened, the driver's door cannot be locked, preventing it from being locked with the key inside the vehicle.

### DIRECT COMBINATION KEY CYLINDER MECHANISM

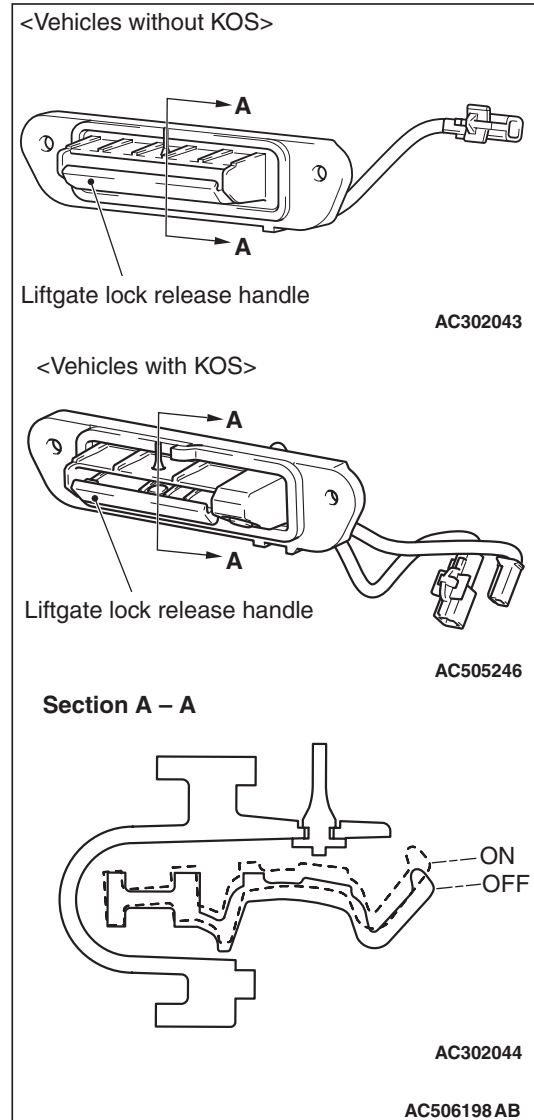


The impact of a side collision is not easily transferred to the door latch with the doors unlocked (to prevent passengers from falling out of the vehicle).

Even if any door key cylinder is attempted to be tampered with the doors locked, the tampering force is not easily transferred to the door latch, to deter thieves.

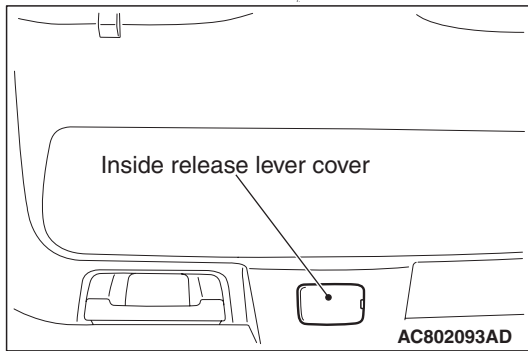
### LIFTGATE

### LIFTGATE LOCK RELEASE HANDLE

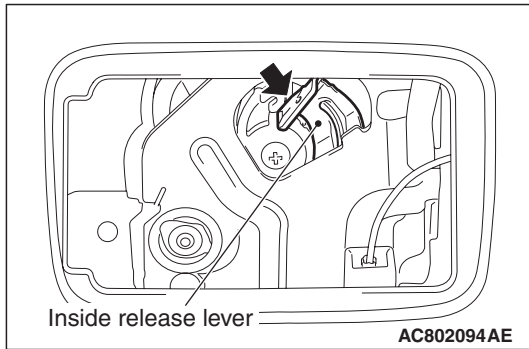


The electric liftgate lock release handle which requires a small operating force and has no temperature dependency has been adopted to improve the opening operation. When the liftgate lock release handle is operated, the switch is turned ON or OFF.

**NOTE:** If the liftgate cannot be opened from the outside of the vehicle due to any malfunction such as discharged battery, it can be opened from the inside of the vehicle using the following procedures:

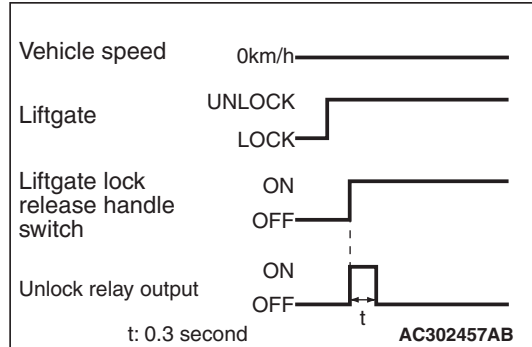


Remove the inside release lever cover installed to the liftgate trim from the inside of the vehicle.



Push down the inside release lever in the direction of the arrow shown in the figure.  
3. Open the liftgate while pushing it up.

**LIFTGATE OPENER CONTROL FUNCTION**



When the liftgate lock release handle is operated to open the liftgate (the liftgate lock release handle switch turns ON) while the vehicle is parked and the liftgate is unlocked, ETACS-ECU turns the unlock relay output ON for 0.3 second, thus the liftgate can be opened by the liftgate lock release handle.

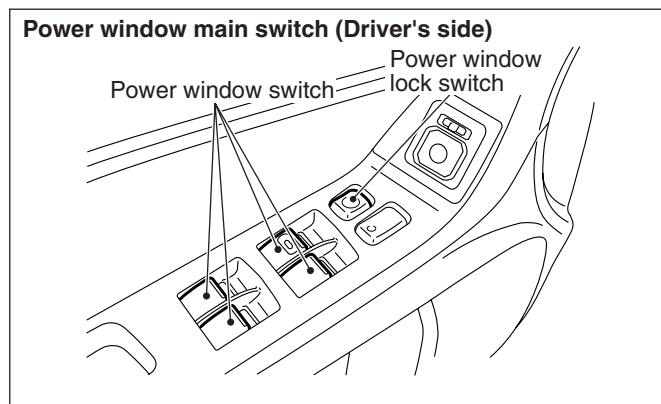
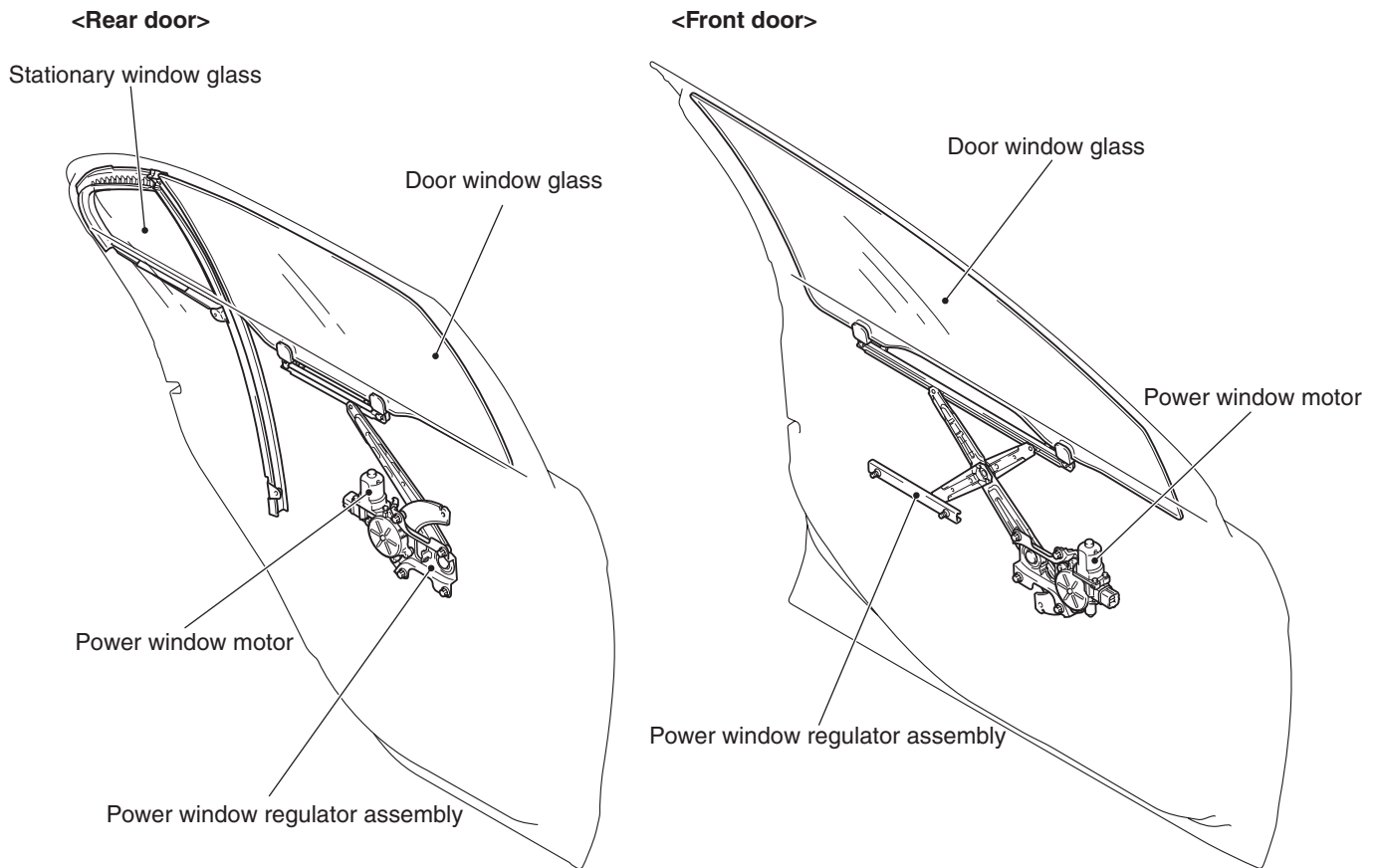
**CENTRAL DOOR LOCKING SYSTEM**

**DOOR LOCK OPERATION TABLE**

Operation			Driver's side door	Passenger's side door	Rear door	Liftgate
Door lock key cylinder	Driver's side door	Lock	Lock			
		Unlock	Unlock			
Door lock switch	Driver's side door	Lock	Lock	Lock	Lock	Lock
		Unlock	Unlock	Unlock	Unlock	Unlock
	Passenger's side door	Lock	Lock	Lock	Lock	Lock
		Unlock	Unlock	Unlock	Unlock	Unlock

POWER WINDOW

M2420022000564



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The power window has the following features:

- Safety mechanism <Driver's door only>
- Power window timer function
- Power window lock switch

**DESCRIPTION OF CONSTRUCTION AND OPERATION**

**POWER WINDOW SYSTEM <Driver's door only>**

The power window main switch has a waterproofing structure which prevents water (such as rain drops) from entering from above. Should water enter, it is drained through the hole located on the lower area of the switch, and no water may be accumulated.

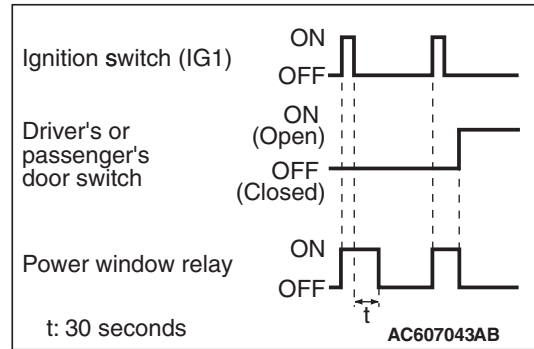
## POWER WINDOW SWITCH

The power window switch has a push-pull operation method to enhance safety. To open a door window glass, press in the switch knob; and to close, pull it up.

### SAFETY MECHANISM <Driver's door only>

- The power window with the safety mechanism has been adopted to enhance safety. If any obstacle such as a hand or a head is detected to be pinched during a door window glass closing operation, the door window glass is opened by approximately 150 mm (6.0 inches). The safety mechanism is activated when the power window switch is operated by one-touch closing operation (the status when the hand is released from the switch knob after one-touch closing operation).
- To prevent anyone from intruding into the vehicle, by performing the manual-closing operation of the power window switch, or by continuing the one-touch closing operation (keep pulling up the switch knob), the door window glass can be forcibly closed without safety mechanism activation even when the obstacle is detected to be pinched.
- When the power window switch manual-closing or one-touch closing operation is performed accidentally, and an obstacle is detected, the power window switch manual-closing and one-touch closing operations are prohibited for 3 seconds after the obstacle has been detected to be pinched, and activates the safety mechanism.

## POWER WINDOW TIMER FUNCTION



Even after the ignition is switched off, the ETACS-ECU keeps the power window relay activated for approximately 30 seconds, enabling raising or lowering of the power windows by using the power window switches. After approximately 30 seconds, the power window relay is deactivated. During this timed operation, if the driver's or passenger's doors are opened, the power window relay is deactivated from that moment.

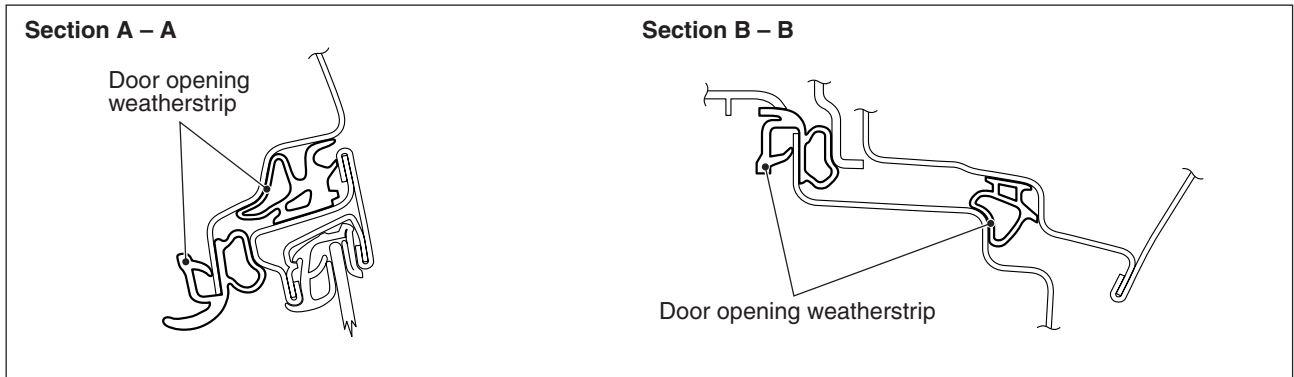
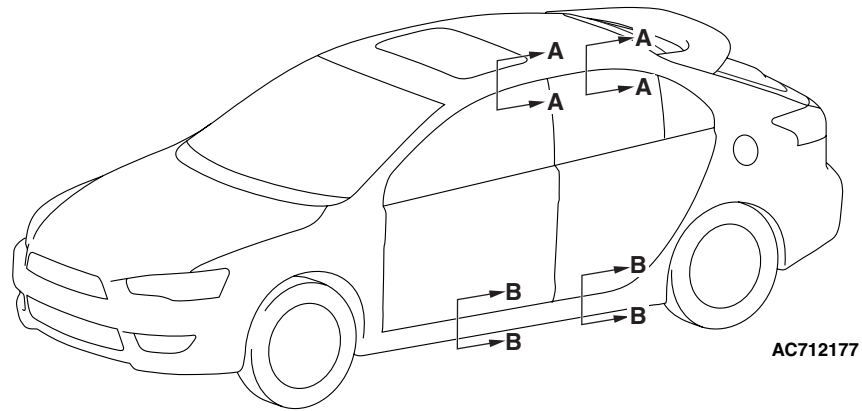
## POWER WINDOW LOCK SWITCH

The driver power window switch is equipped with the lock switch. This switch disables the opening/closing operation of the door window glass using each passenger's power window switch and rear power window switch.



WEATHERSTRIP

M2420020000461



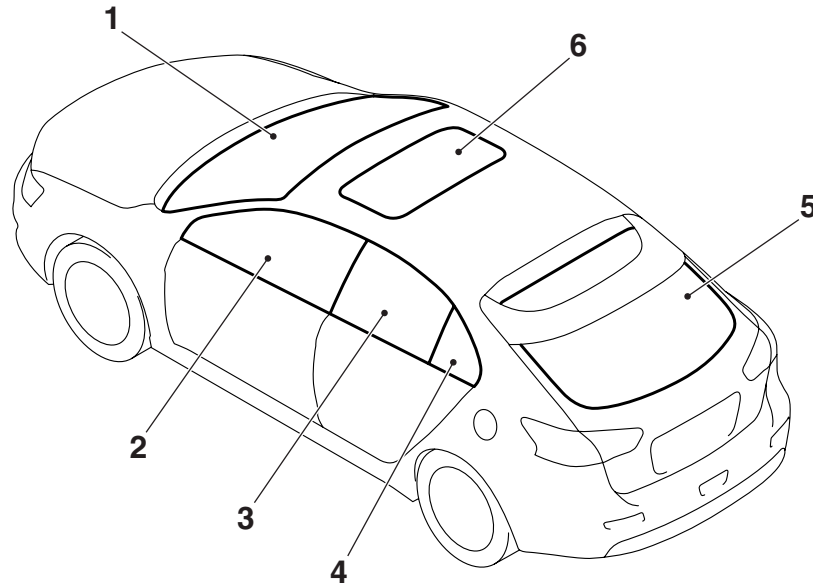
AC800273AE

The double weather strips have been installed along the perimeter of the door window to improve the sound-proof and water-proof performances.

## WINDOW GLASS

M2420015001521

## VISIBLE RAY TRANSMISSIVITY RATE FOR WINDOW GLASS



AC800272AD

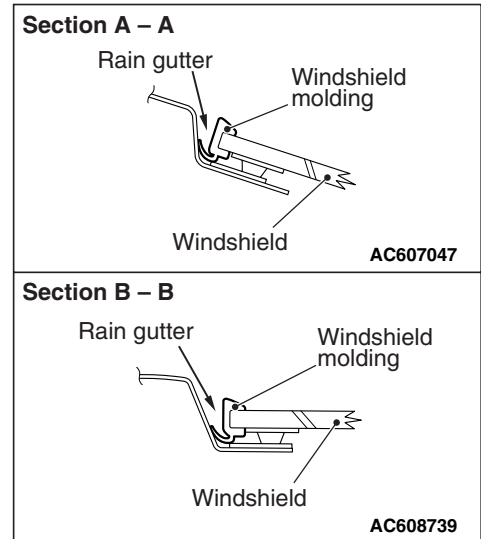
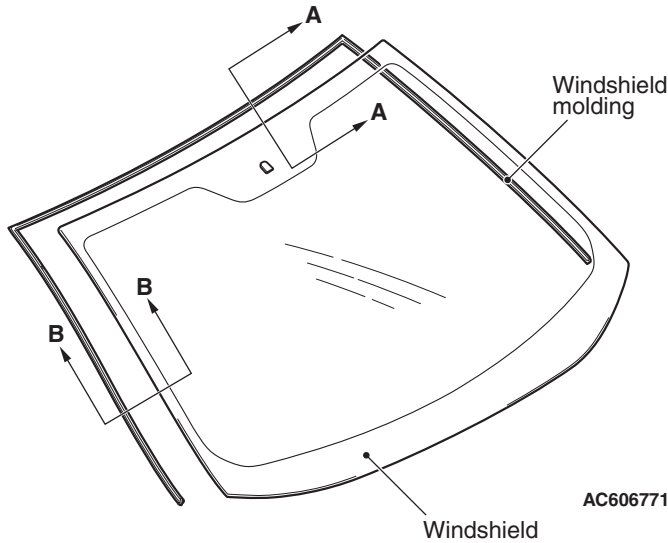
No.	Name	Type	Thickness mm (inch)	Color	Visible ray transmissivity rate (%)
1	Windshield	Laminated glass	4.7 (0.185)	Green	79
			4.7 (0.185)	Green (sound insulating glass)	79
2	Front door window glass	Tempered glass	3.5 (0.138)	Green (UV-reducing glass)	75
3	Rear door window glass		3.1 (0.122)	Green	82
4	Rear stationary window glass		3.1 (0.122)	Green	82
5	Liftgate window glass		3.1 (0.122)	Green	82
6	Sunroof lid glass		3.5 (0.138)	Dark gray	18

**NOTE:** The visible ray transmissivity rate (%) is a reference value.

The laminated glass has been adopted for the windshield, and the tempered glass has been adopted for other windows. The window glass has the following feature.

- The sound-insulating laminated glass of the windshield has been adopted to the vehicles with lighting control sensor (rain sensor).
- The UV-reducing glass for the front door window glass have been adopted as a standard.

**MOLDING**

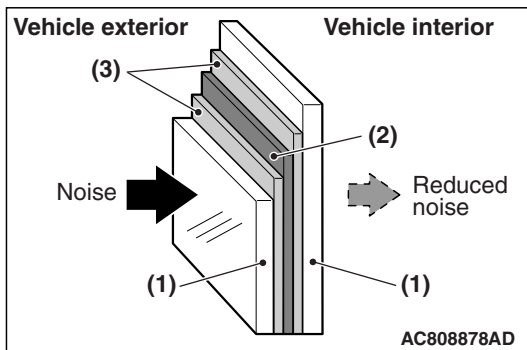


AC800598AD

Rain gutter has been installed to the windshield. The rain gutter offers the following features:

- Rain water flowing from the roof to windshield is drained to the left and right front pillar sides, decreasing the running of rain water from the roof.
- Rain water wiped by the windshield wipers is drained to the rear side, decreasing the running of rain water to the front door glass.

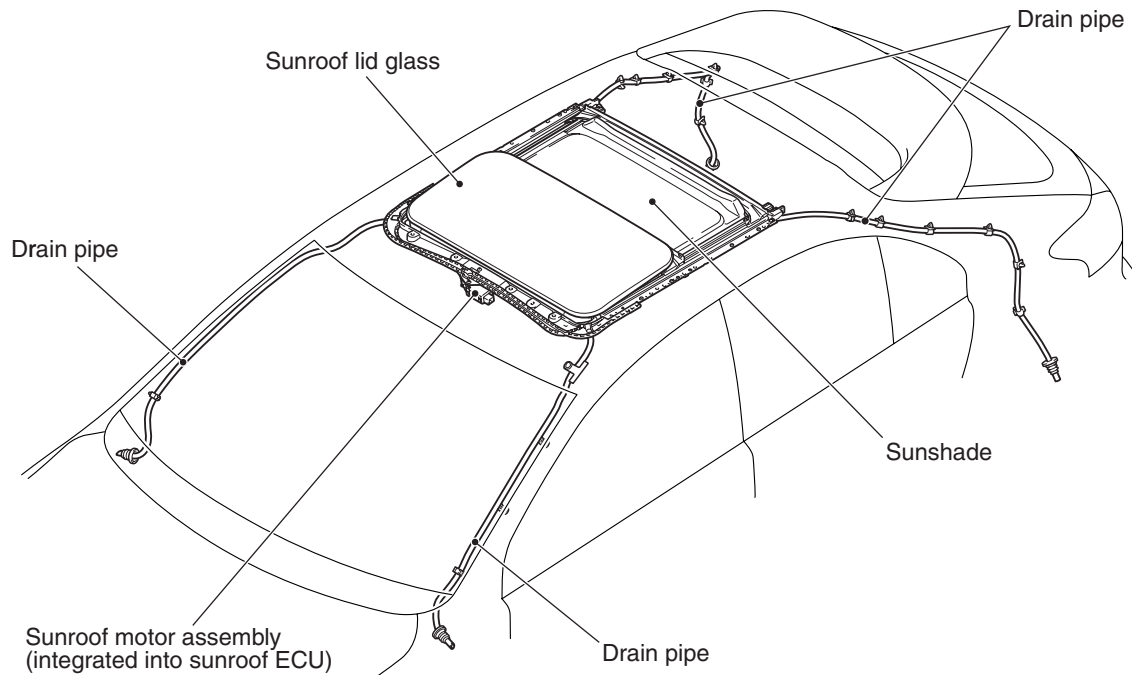
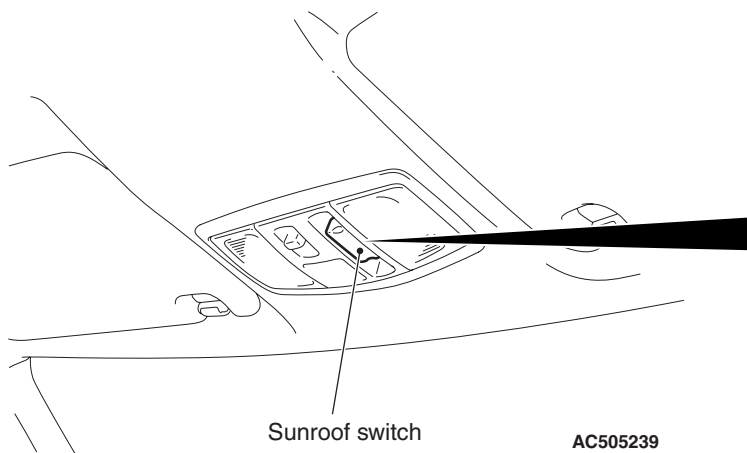
**THE SOUND-INSULATING LAMINATED GLASS OF THE WINDSHIELD <VEHICLES WITH LIGHTING CONTROL SENSOR (RAIN SENSOR)>**



The sound-insulating laminated glass has been adopted to improve quietness inside the vehicle by preventing noise from entering through the windshield. The laminated glass (1) has a soft sound-insulating layer (2) in the center, which absorbs propagation energy of sound and vibration. The sound-insulating layer (2) is wrapped with a special middle film (3). This structure achieves high sound-insulation. The structure reduces noise from outside the vehicle, wind noise, road noise, engine operation sound and vibration during driving and provides comfortable interior environment.

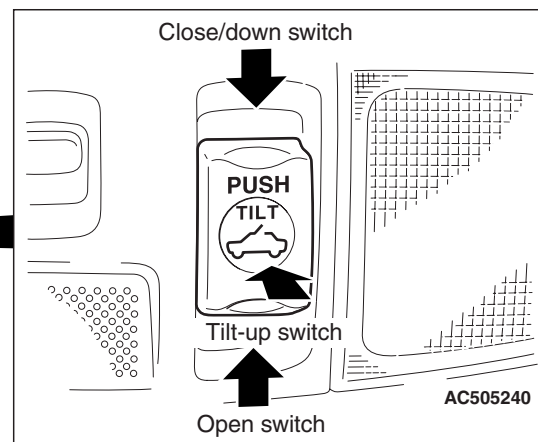
## SUNROOF

M2420016000770

AC800279  
AC802975AB

Sunroof switch

AC505239



AC505240

AC506511AC

The electric sliding glass sunroof with tilt-up mechanism has been adopted as an option. This sunroof has the following characteristics:

- A lightweight sunroof has been adopted.
- The sunroof tilts up for approximately 30 mm (1.2 inches) to improve ventilation.
- The integrated switch for the sunroof allows for all slide open/close, tilt up/down and stop operations. Operations other than open are available at one touch. When the open switch is operated, the sunroof lid glass stops approximately 30 mm (1.2 inches) before the fully-open position. This position is called comfort position. The sunroof lid glass can be fully opened by operating the open switch again.

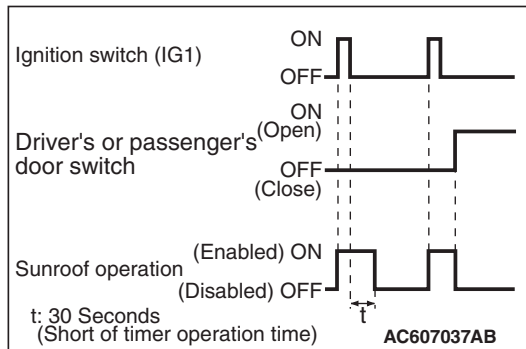
- If external force is applied during slide closing or tilt down operations that obstructs operations, the sunroof lid glass will move in the reverse direction.

## DESCRIPTION OF CONSTRUCTION AND OPERATION

### SAFETY MECHANISM

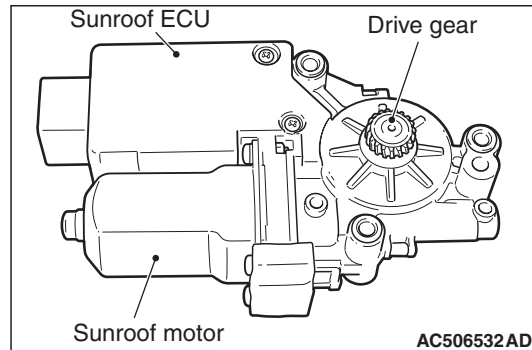
- If any obstacle such as a hand or a head is detected to be pinched during a sunroof lid glass closing operation, the sunroof lid glass is opened by approximately 200 mm (7.9 inches) or more.
- During the sunroof lid glass closing operation, by continuing the sunroof close switch operation, the sunroof can be forcibly closed without activating the safety mechanism even when the obstacle is detected to be pinched.
- During the safety mechanism activation, when the sunroof close switch is operated, the sunroof lid glass stops. By continuing the close switch operation, the sunroof lid glass can be forcibly closed without activating the safety mechanism even when the obstacle is detected to be pinched.

### SUNROOF TIMER FUNCTION



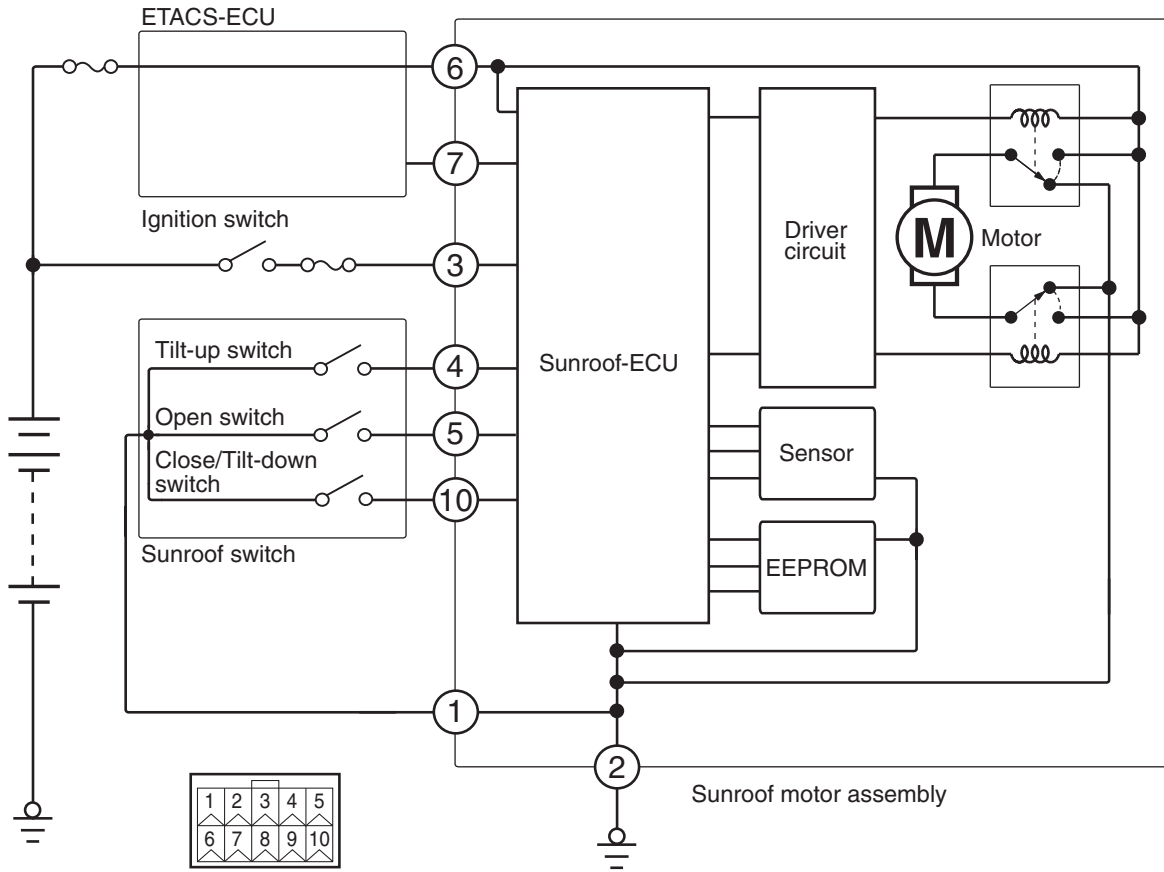
The sunroof ECU (integrated into the sunroof motor assembly) receives the ignition switch (IG1) signal transmitted by ETACS-ECU. If the ignition switch (IG1) signal turns OFF, the sunroof ECU allows the sunroof switch to open/close (timer activation) the sunroof for approximately 30 seconds. During the timer operation, if the driver's or passenger's door open is detected from the door switch signal transmitted by ETACS-ECU, the sunroof timer function stops at this time.

### SUNROOF MOTOR ASSEMBLY



The sunroof motor assembly, which consists of the motor main body, drive gear, and sunroof ECU, is installed in front of the housing.

SUNROOF ECU



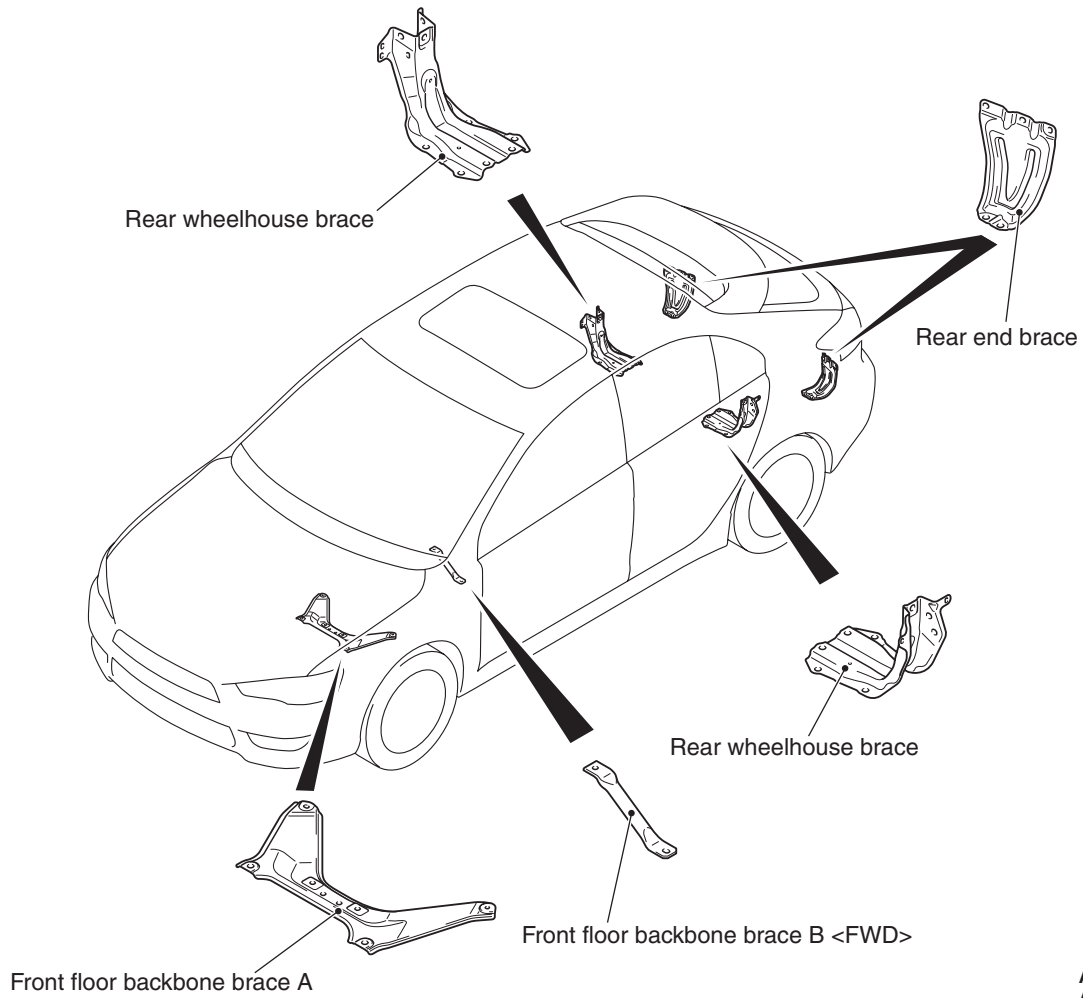
AC609032AB

The sunroof ECU incorporates a microcomputer and controls motor operations with the sunroof switch signals, depending on various conditions.



# LOOSE PANELS

M2420000200344



AC802922  
AC807280 AB

Front floor backbone brace A and front floor backbone brace B <FWD>, rear wheelhouse brace, and rear end brace have been adopted. This improves rigidity of the body, handling stability, and riding comfort.

## CUSTOMIZATION FUNCTION

M2420002500750

By operating the ETACS system or MMCS of scan tool MB991958, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (M.U.T.-III display)	Adjustment item	Adjusting contents (M.U.T.-III display)	Adjusting contents
Door unlock mode	Adjustment of power door locks with selective unlocking	All doors unlock	Without function: The first operation of keyless entry system or unlock operation by KOS unlocks all doors.
		Dr door unlock	With function: The first operation of keyless entry system or unlock operation by KOS unlocks the driver's door only, and the second unlock operation within 2 seconds after that unlocks all doors. (initial condition)
Auto door unlock	Adjustment of the auto door unlock function	Disabled	Without function (initial condition) <M/T, CVT, TC-SST>
		Always (P pos)	With function: Operates when the shift lever or the selector lever is moved to the P position. <CVT, TC-SST>
		P/W unlock (P)	With function: Operates when the shift lever or the selector lever is moved to the P position with the power window lock switch in the OFF position. <CVT, TC-SST>
		Always(Lock pos)	With function: Operates when the ignition switch is moved to the LOCK (OFF) position. <M/T, CVT, TC-SST>
		P/W unlock(Lock)	With function: Operates when the ignition switch is turned to the LOCK (OFF) position with the power window lock switch in the OFF position. <M/T, CVT, TC-SST>