GROUP 42A

BODY

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GENERAL DESCRIPTION

M2420000100949

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.<GTS>
- The front floor backbone brace has been installed.
- The upper frame to front pillar brace has been installed.

REDUCTION IN VIBRATION AND NOISE

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

IMPROVEMENT IN SAFETY

- The one-touch power window (operative after ignition switch is turned OFF) with safety mechanism has been installed. <Vehicles with auto down and auto up mechanism (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 shock absorbing hole has been adopted to the cowl top outer reinforcement.
- The fender padding structure has been adopted.

IMPROVEMENTS IN OPERATION PERFORMANCE

- The central door locking system which can lock/unlock all the doors has been adopted. <Vehicles with power window (auto down and auto up mechanism)>
- 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 power window (operative after ignition switch is turned OFF) has been installed. <Vehicles with auto down mechanism (Driver's seat only)>

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 protector film has been adopted onto the side sill. <Vehicles without side air dams>
- The sunroof with safety mechanism has been installed as an option. <ES, GTS>

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.

MAIN BODY

BODY PANELING

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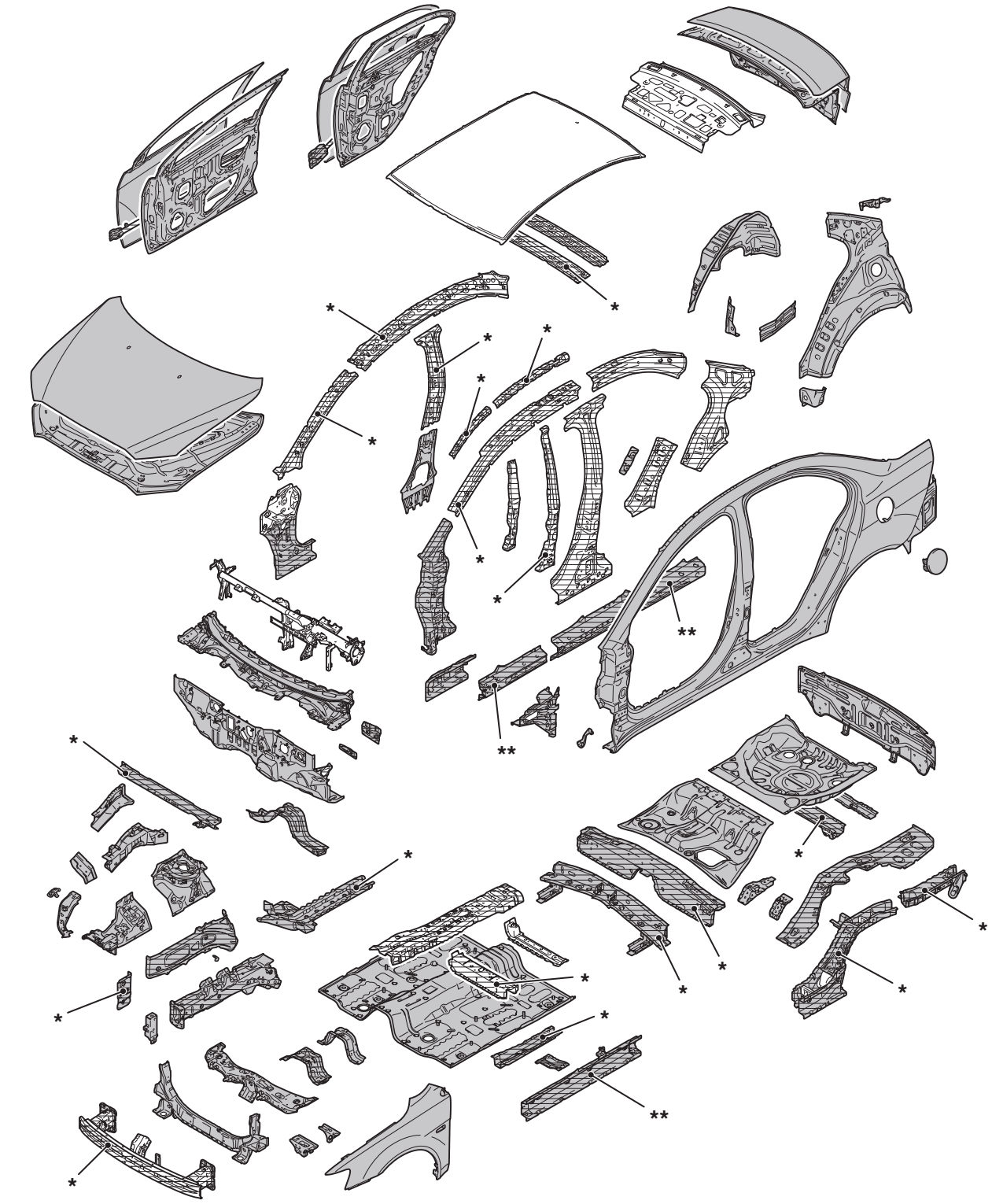

: Anti-corrosion steel panels
: High-tensile steel panels (*: Indicates 590MPa-high-tensile steel panels.)
(**: Indicates 980MPa-ultra-high-tensile steel panels.)

AB601700AC

- RISE (Reinforced Impact Safety Evolution) has been adopted for the main body in order to improve all-round impact safety at high level.
- The applications of anti-corrosion steel plates have been expanded to the hood, doors, inner panel of the trunk lid and reinforcements to improve the anti-corrosive properties of the main body.
- High-tensile steel panels of 590MPa-grade and 980MPa-grade have been used for some panels to improve collision safety and reduce weight.

BODY SHELL

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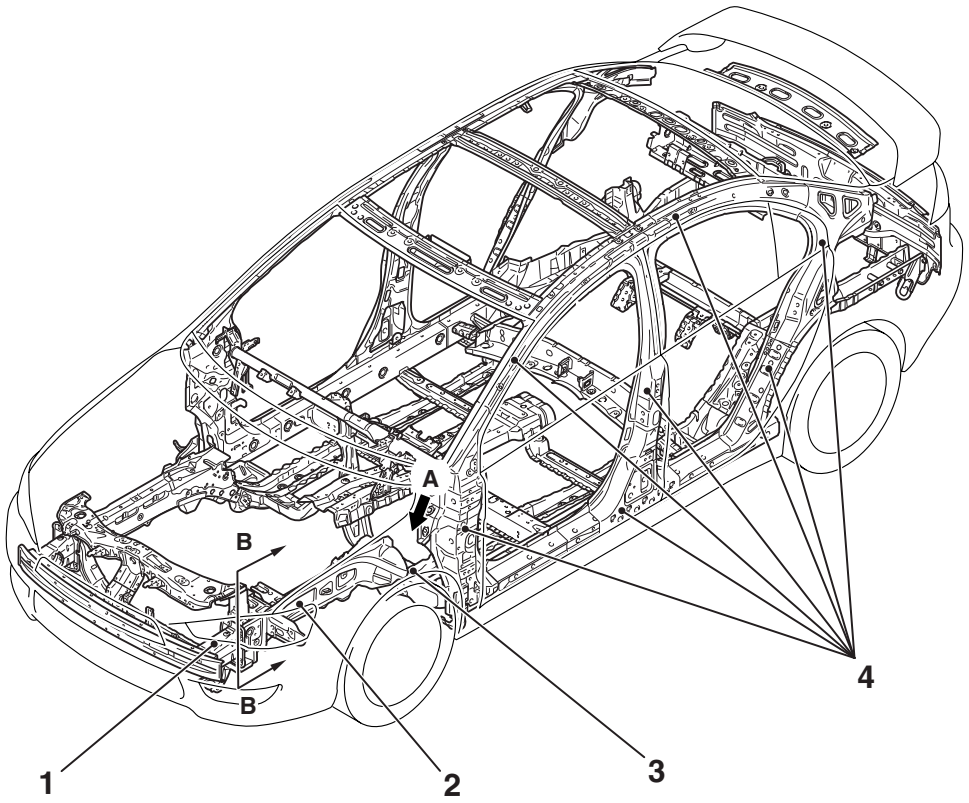
IMPACT SAFETY BODY RISE (REINFORCED IMPACT SAFETY EVOLUTION)



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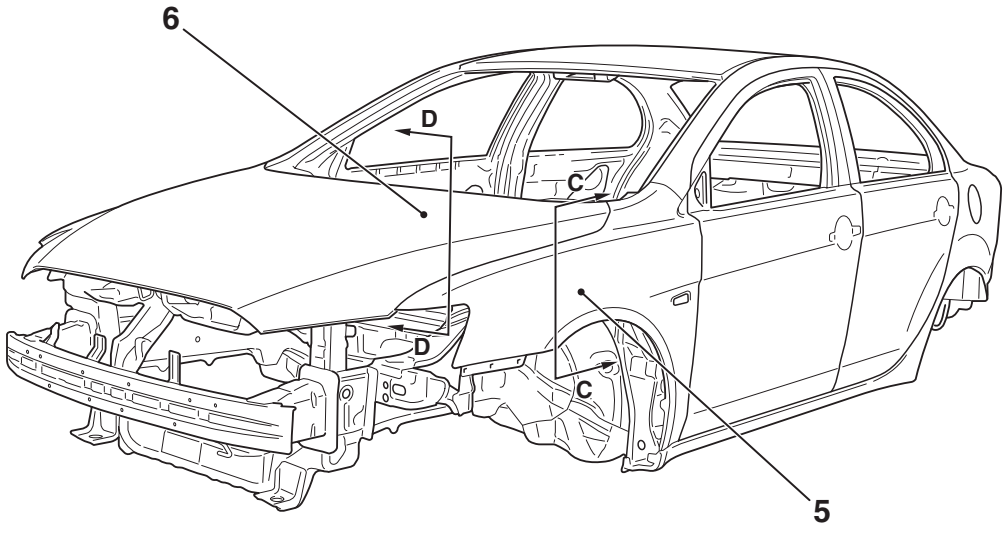

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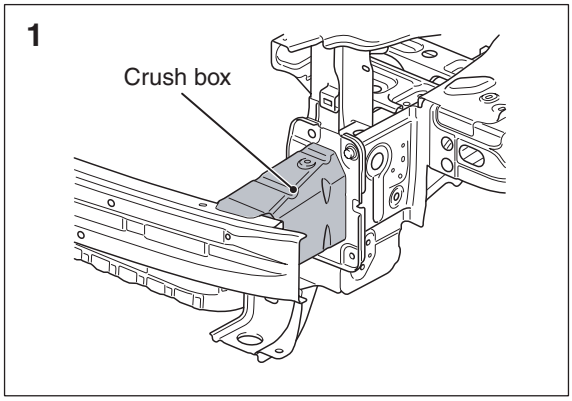

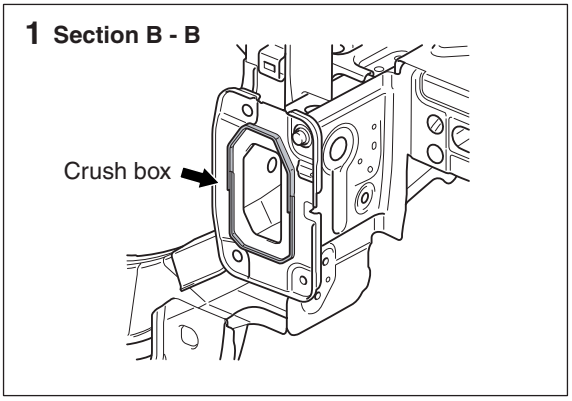

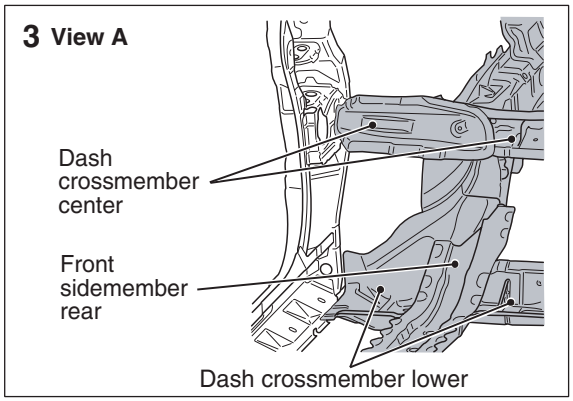

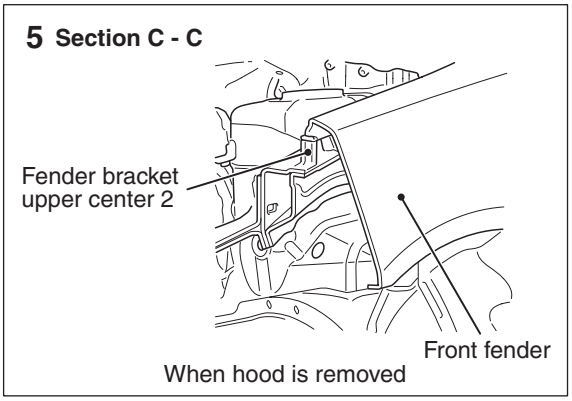

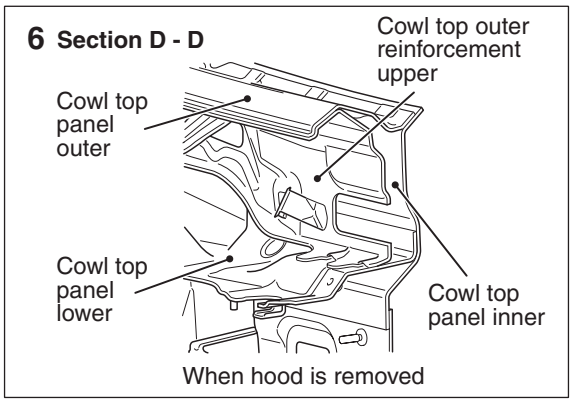

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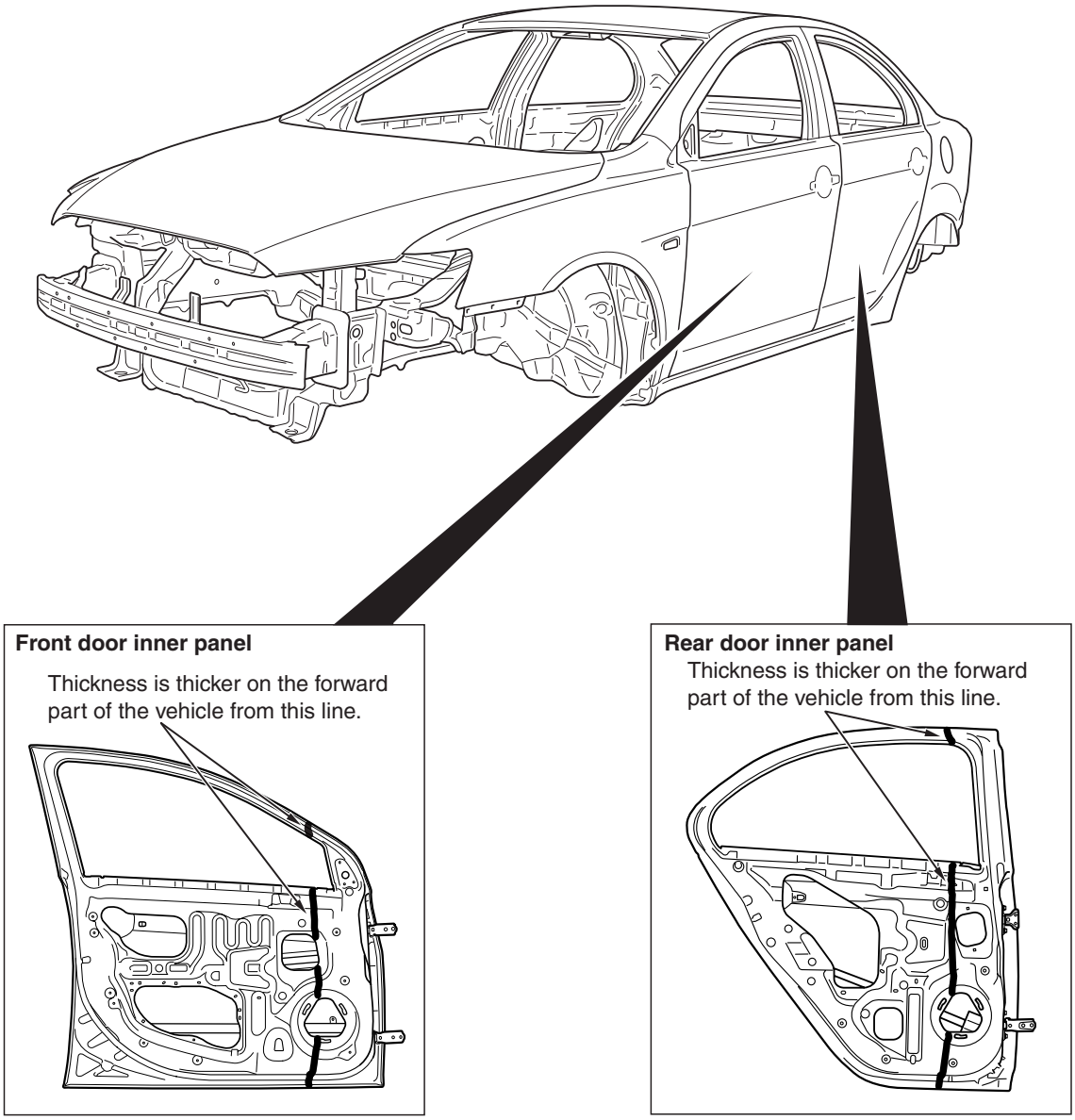
The front and rear structures to absorb high energy, and the highly tough cabin structure is adopted to reduce the risk of passenger injuries at front-, rear-, and side-impact collisions, secure the space for life protection, and facilitate rescuing passengers. The structures also have the following 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 construction has been used for the side structure reinforcement to improve collision safety and vehicle body rigidity.
5. The padding structure of the fender has been adopted to efficiently absorb energy upon impact and improve the pedestrian protection capability.
6. The impact absorbing opening on the cowl top outer reinforcement has been added to efficiently absorb energy upon impact and improve the pedestrian protection capability.

STEEL PLATE WITH UNEVEN THICKNESS



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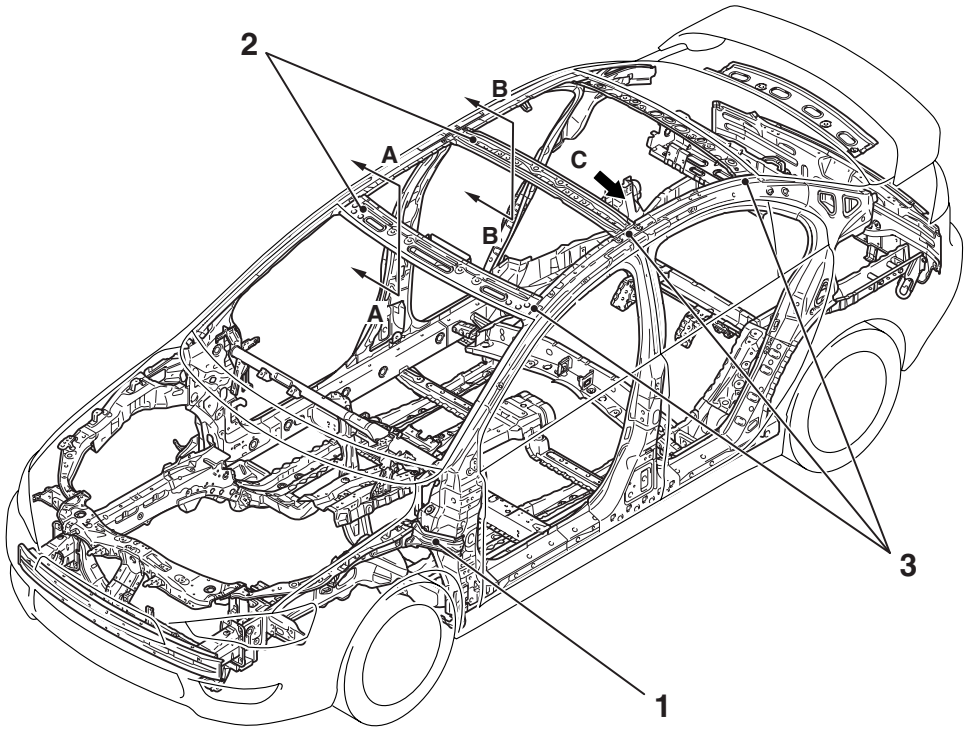
The uneven thickness steel panels* (in uneven thickness integrated structure) have been adopted for the parts shown in the figure to improve safety upon impact and reduce weight.

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

STEERING ABILITY



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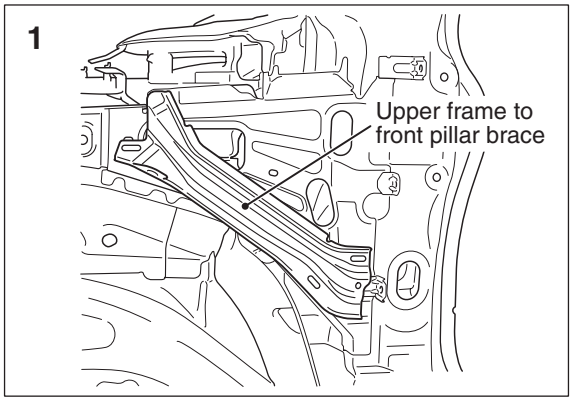

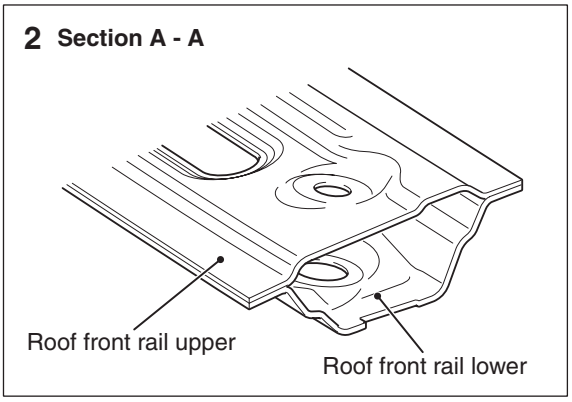

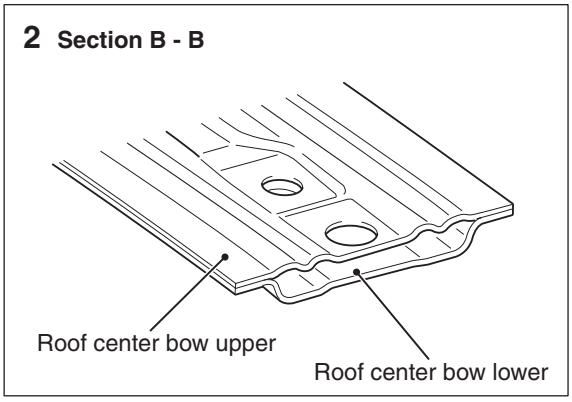

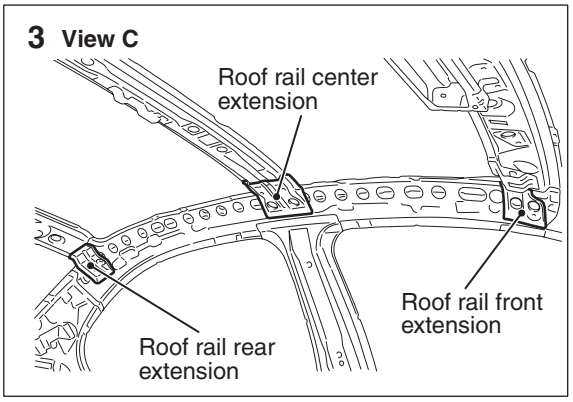

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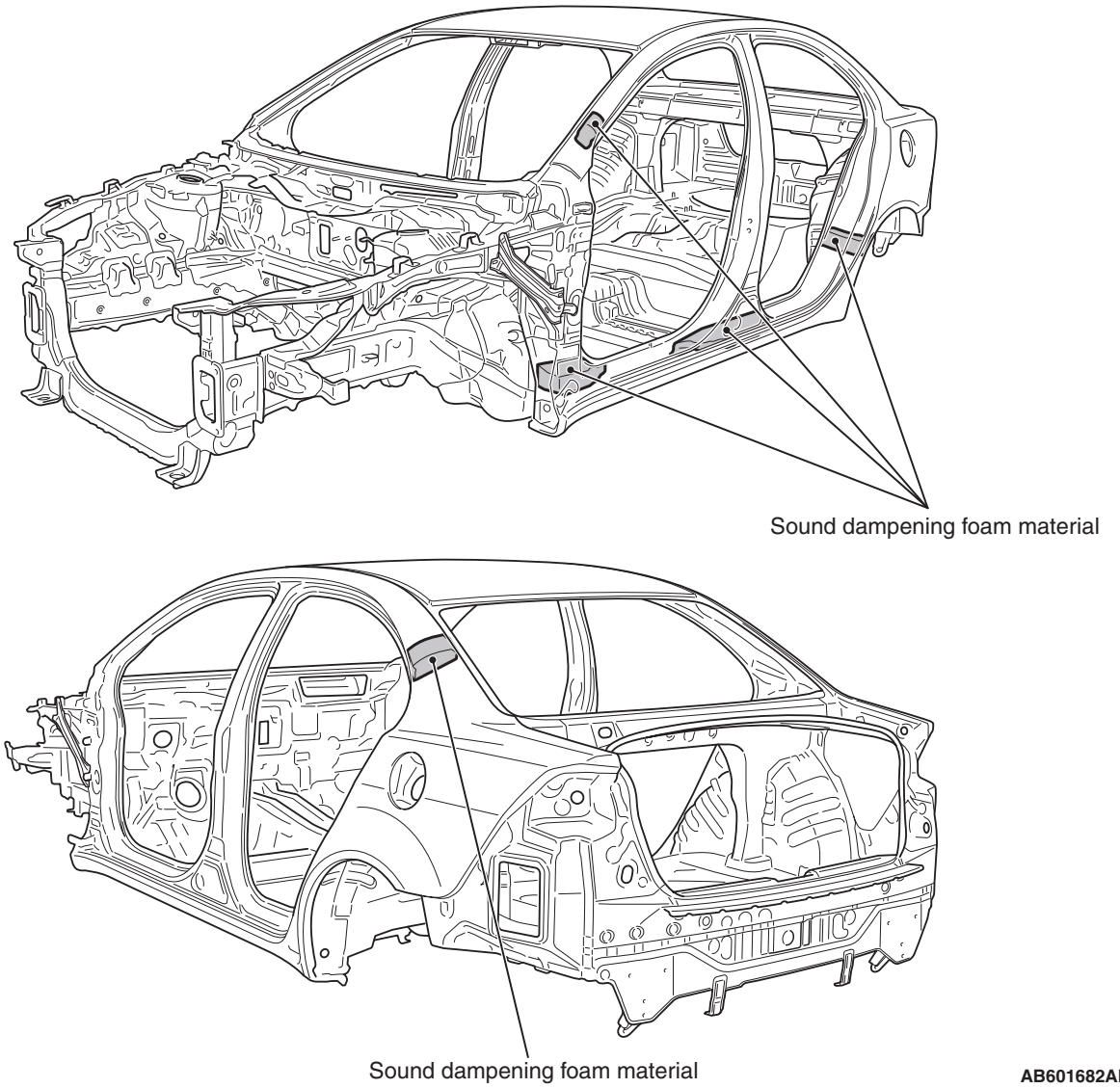
1. Rigidity was heightened and driving stability was improved by bonding the front upper frame outer and front pillar by the upper frame to front pillar brace.

2. The closed section structure has been adopted for the roof bow and roof rail to heighten rigidity, improve driving stability, and to reduce vibration and noise.
3. Rigidity was heightened and driving stability was improved by bonding the roof bow and roof rail and the side outer panel by the brace.

QUIETNESS

M2420004000568



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The front pillar upper and lower, center pillar lower, side roof rail and the rear wheel house front have been filled with the sound dampening foam material to reduce noise.

BODY COLOR CHARTS

M2420005001360

Check the vehicle's body color code, and then use this body color chart to determine the refinishing paint supplier from which the color can be purchased.

Color	Color code	Color number	Color name (Previous name)	Composition of film
SILVER	A31	CMA10031	Cool Silver Metallic	Metallic
MEDIUM PURPLISH GRAY	A39	CMA10039	Medium Purplish Gray Mica	Metallic + Interferenced Pearl
GREENISH SILVER	A86	CMA10086	Greenish Silver Metallic	Metallic + Interferenced Pearl
BLUE	T70	CMT10070	Blue Mica	Pearl
BEIGE	S18	CMS10018	Platinum Beige Metallic	Metallic + Interferenced Pearl
BLACK	X42	AC11342	Black Mica (Amethyst Black)	Interferenced Pearl
WHITE	W37	CMW10037	White Solid	Solid
RED	P26	CMP10026	Red Metallic	Metallic

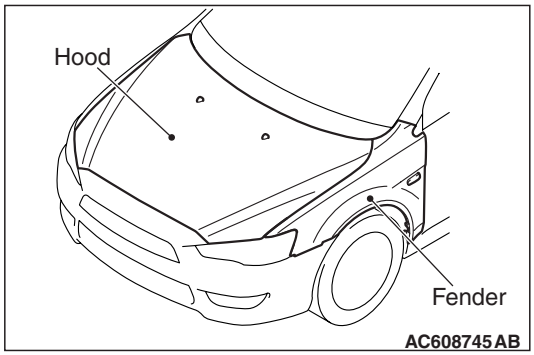
NOTE:

- *It is a solid, but clear coating is applied.*
- *For painting, inner panel colors should be similar to the outer panel colors.*

HOOD AND FENDER

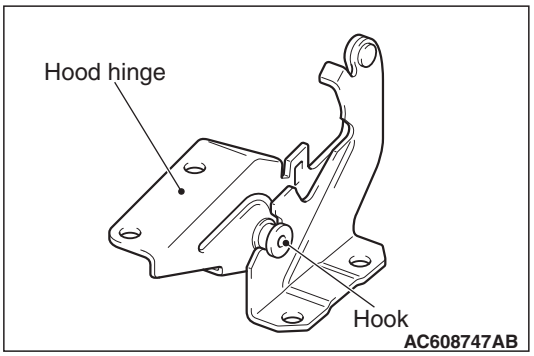
M2420001400125

PANEL



A shock absorbing structure has been adopted for the insertion in between hood and the engine room and the frame between the fender and the body to secure the space for shock absorbing, reducing a risk of injury to a pedestrian's head area during a collision.

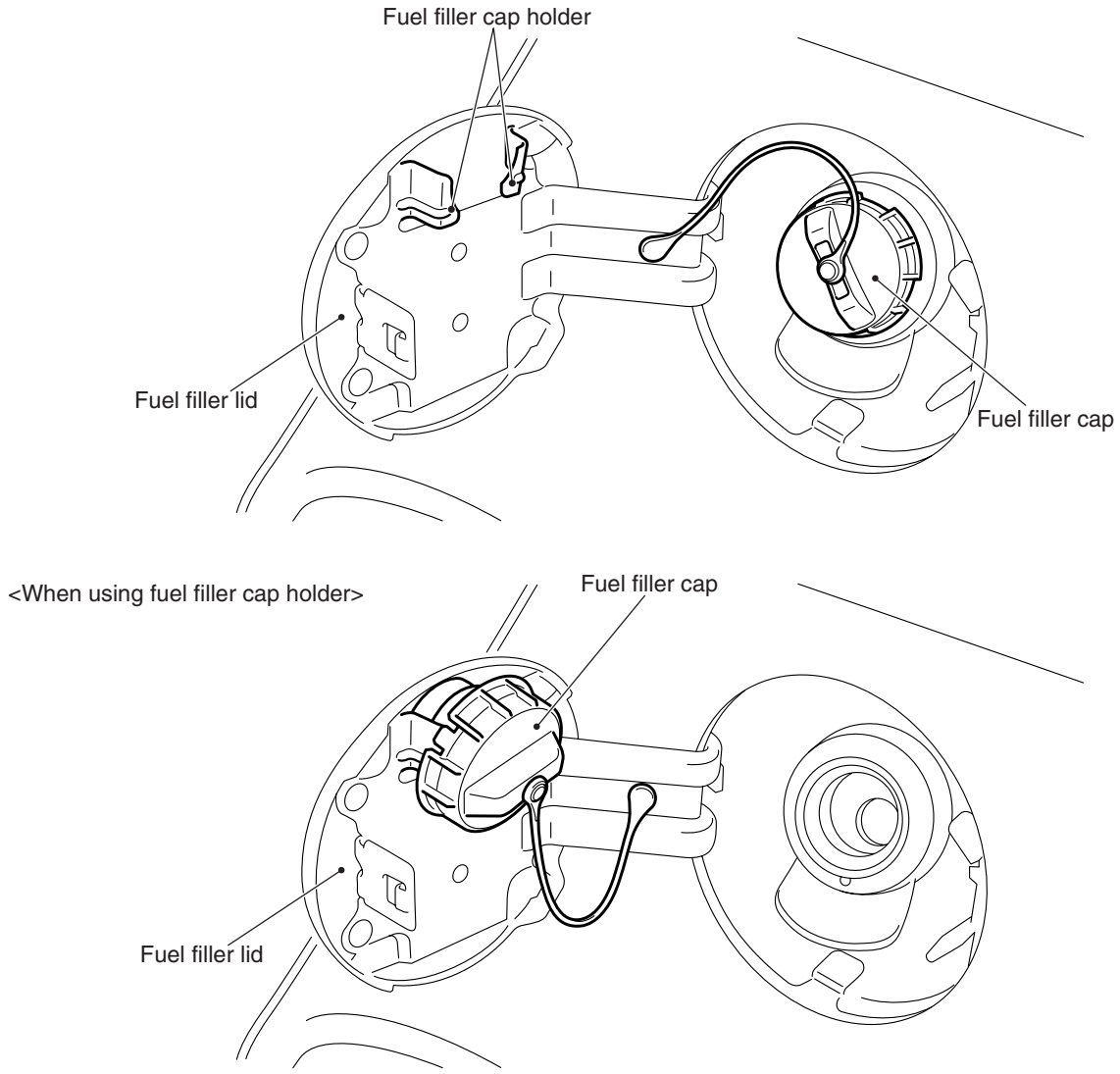
HOOD HINGE



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

FUEL FILLER LID

M2420014000257



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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.

STRUT TOWER BAR <GTS>

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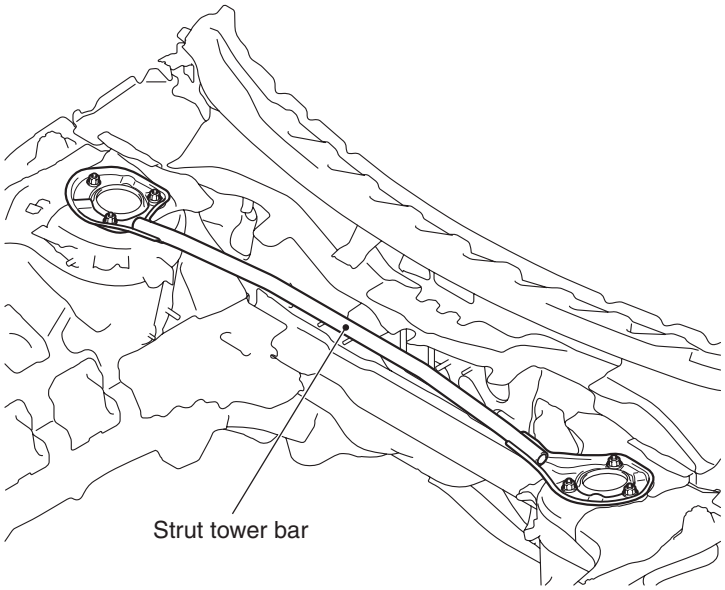

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The strut tower bar has been adopted to the strut attachment point to improve steering ability

DOOR

DOOR LOCK

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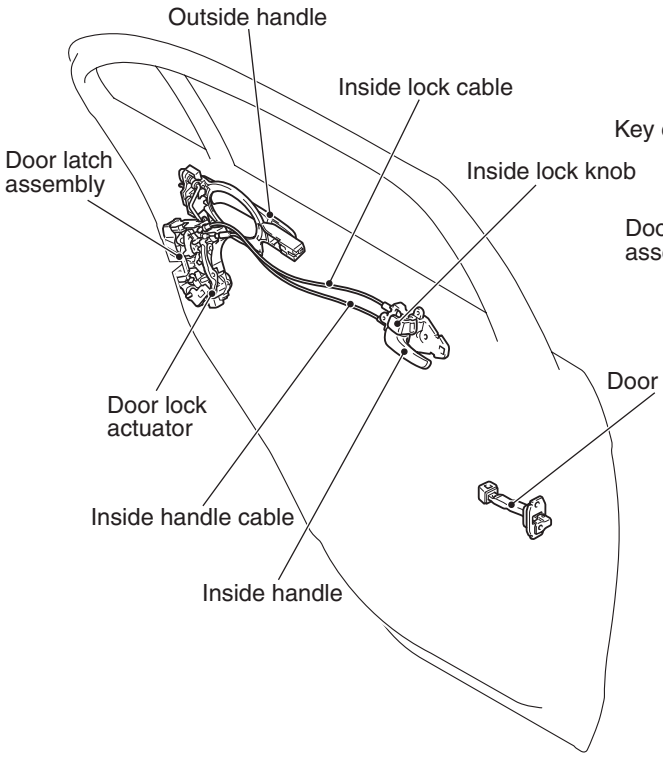
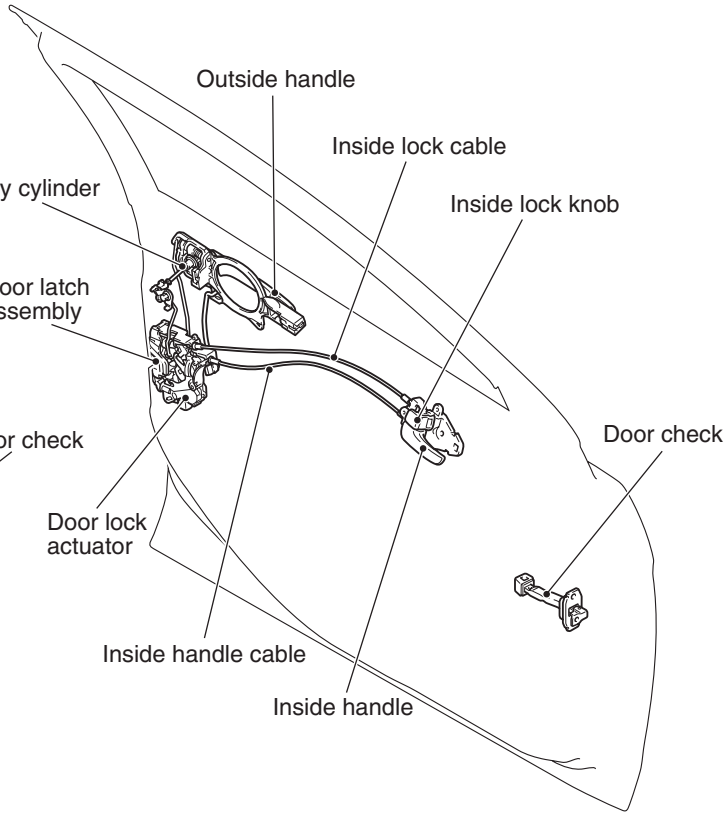
CENTRAL DOOR LOCKING <Except DE>

<Rear door>



<Front door>



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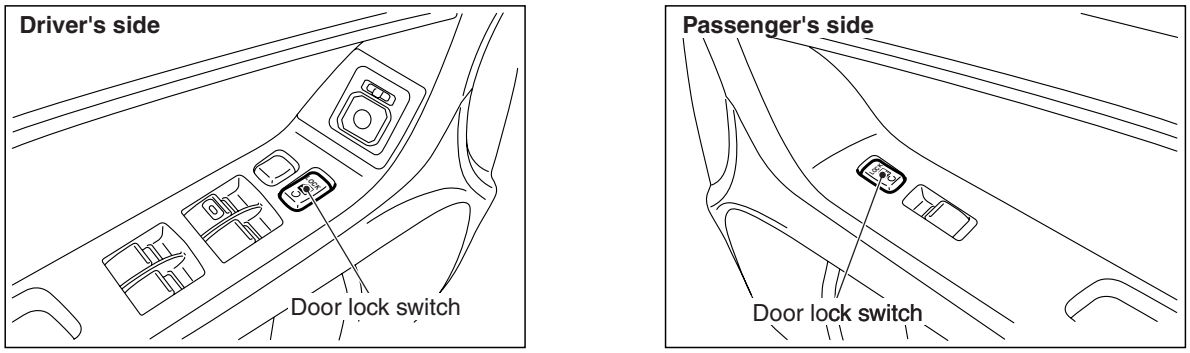
Location of the door lock switches



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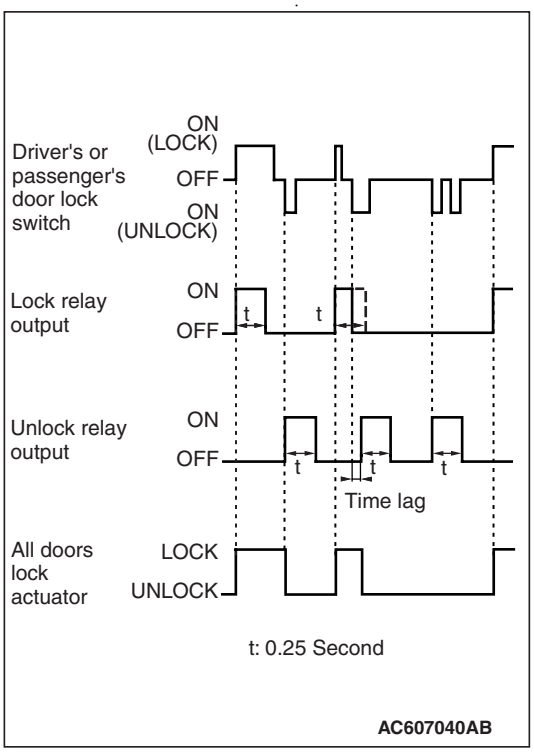
- The central door locking system that locks/unlocks all the doors using the door lock switch has been installed.
- The child protection function has been introduced to prevent the rear doors from being opened accidentally during driving.
- The key-in prevention function has been introduced.
- The selector "P" position-linked door unlocking function has been introduced.
- The direct combination key cylinder mechanism has been adopted.

DESCRIPTION OF CONSTRUCTION AND OPERATION

CENTRAL DOOR LOCKING

- All the doors 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".

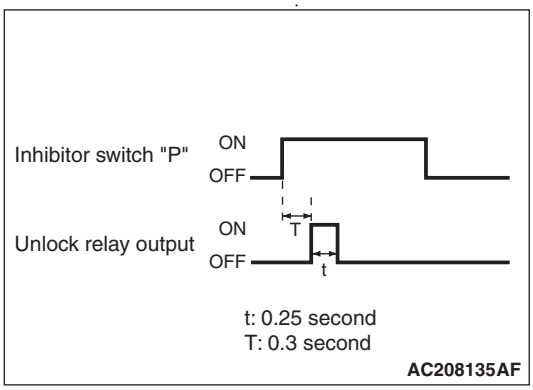


When the door is locked by the driver's or passenger's door lock switch, the ETACS-ECU operates its door lock relay and passes a current through the door lock actuators of all the doors for 0.25 second to lock all the doors.
When the door is unlocked by the driver's or passenger's door lock switch, the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

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. Then, 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. 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 are unlocked.

SELECTOR "P" POSITION-LINKED DOOR UNLOCKING FUNCTION

- 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-24).

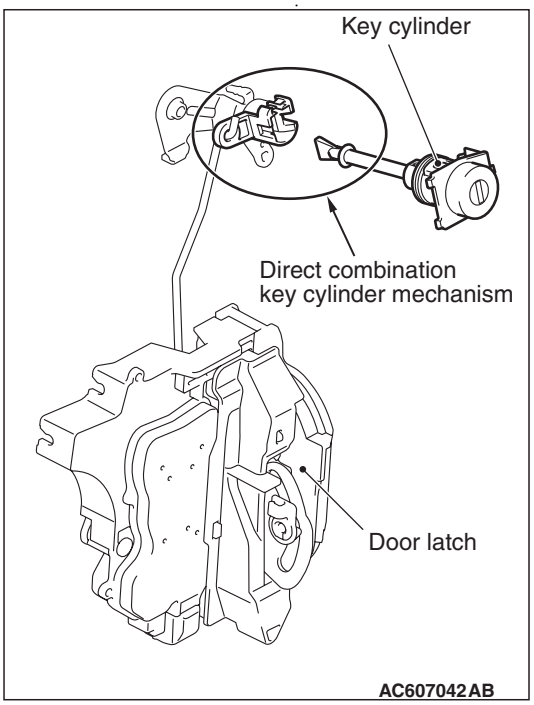


When the selector lever is shifted to the P position with the ignition switch turned ON, the inhibitor switch "P" turns ON, ETACS-ECU turns the unlock relay output ON for 0.25 seconds to unlock all the doors.

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.

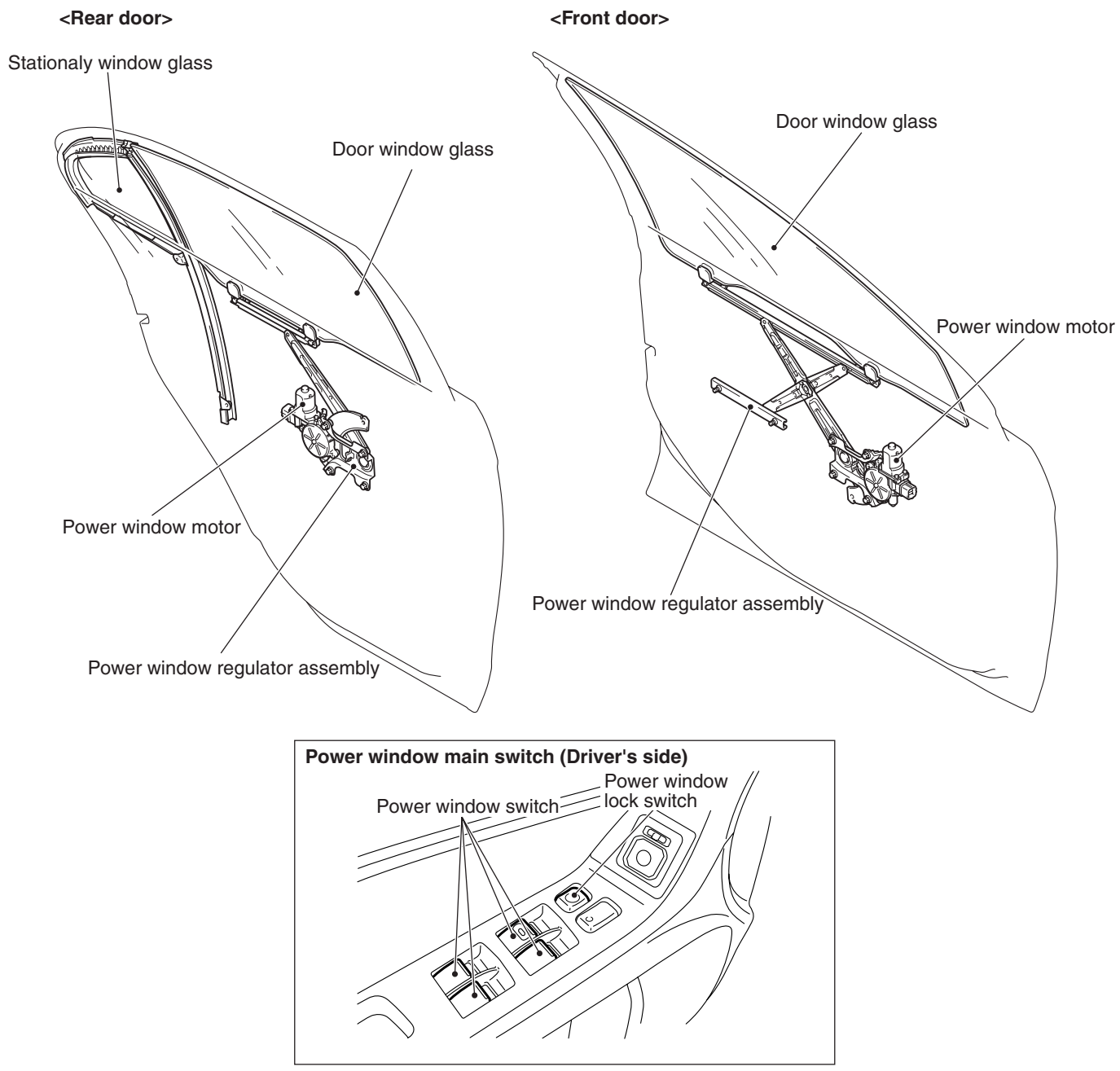
CENTRAL DOOR LOCKING SYSTEM

DOOR LOCK OPERATION TABLE

Operation			Driver's side door	Passenger's side door	Rear door	Trunk lid
Door lock key cylinder	Driver's side door	Lock	Lock			
		Unlock	Unlock			
	Passenger's side door <Vehicles with WCM (without keyless entry system)>	Lock		Lock		
		Unlock		Unlock		
Trunk lid lock key cylinder <Vehicles with WCM (without keyless entry system)>		Lock				Lock
		Unlock				Unlock
Door lock switch	Driver's side door	Lock	Lock	Lock	Lock	
		Unlock	Unlock	Unlock	Unlock	
	Passenger's side door	Lock	Lock	Lock	Lock	
		Unlock	Unlock	Unlock	Unlock	

POWER WINDOW

M2420022000274



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The power window has the following features:

- Safety mechanism <Vehicles with auto down and auto up mechanism (Driver's door only)>
- Power window timer function
- Power window lock switch

DESCRIPTION OF CONSTRUCTION AND OPERATION

POWER WINDOW SYSTEM <Vehicles with auto down and auto up mechanism>

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.

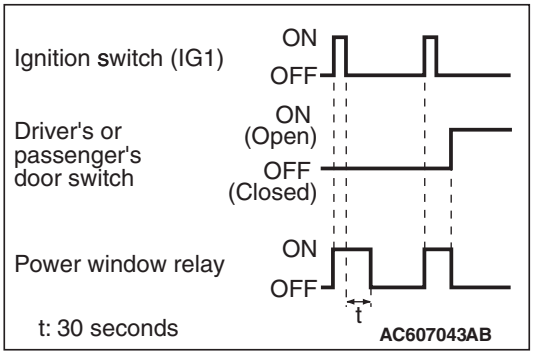
POWER WINDOW SWITCH

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 <Vehicles with auto down and auto up 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



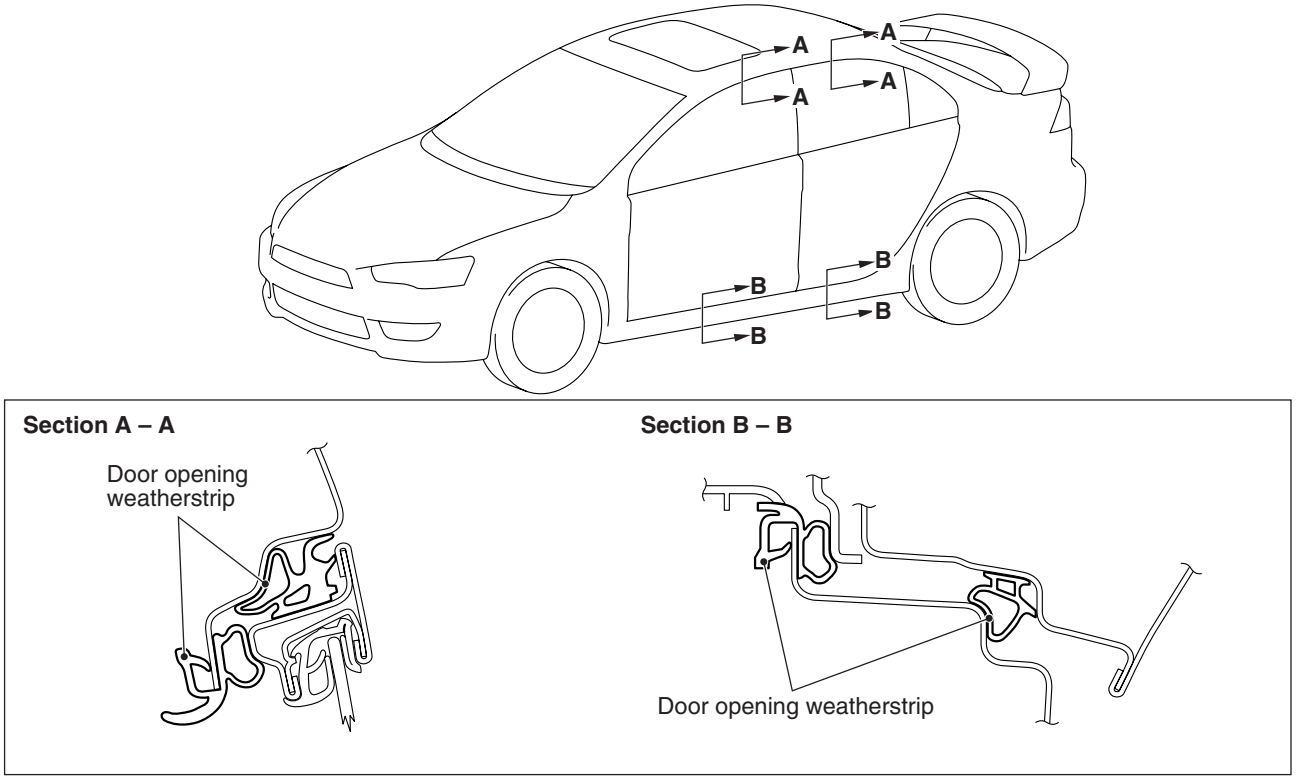
Even after the ignition is switched off, the ETACS-ECU keeps the power window relay activated for approximately 30 seconds, enabling raising or lowering of the power windows by using the power window switches. After approximately 30 seconds, the power window relay is deactivated.
During this timed operation, 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

M2420020000320



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

PROTECTOR FILM <Vehicles without side air dam>

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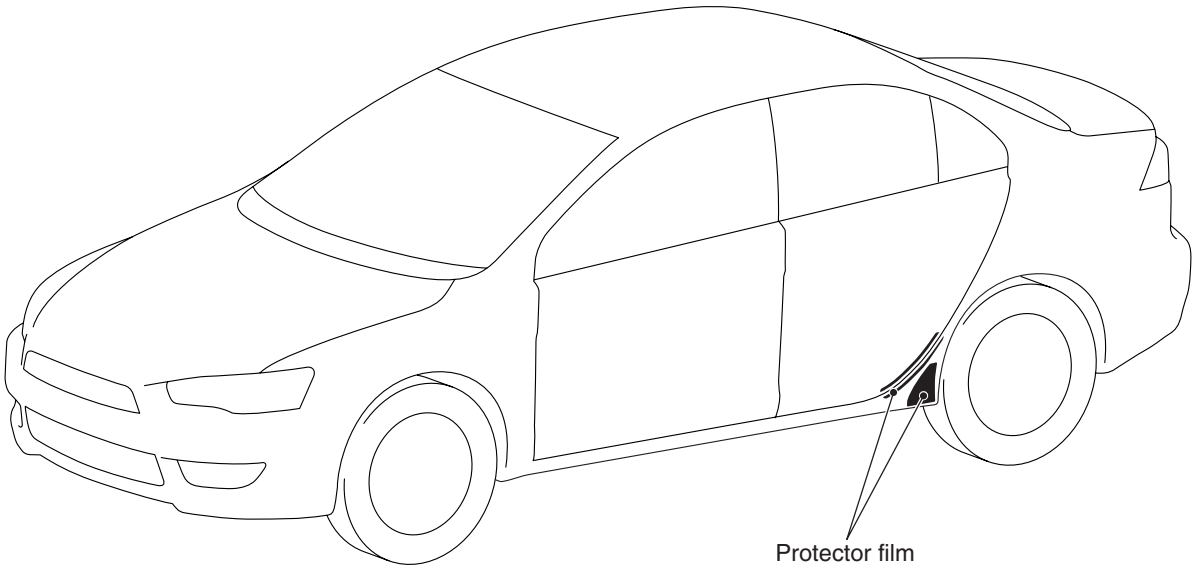

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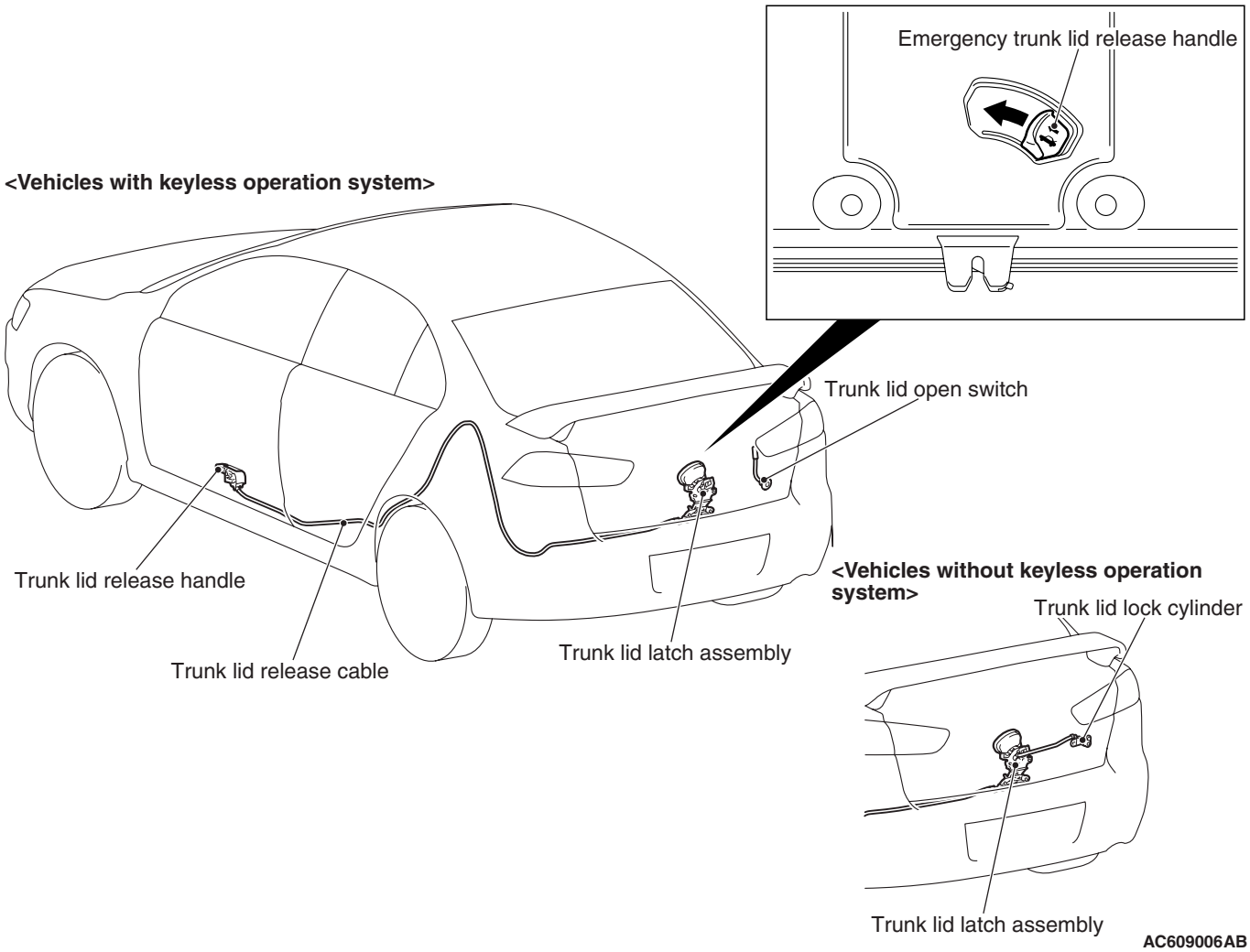
The lower parts of the side sill are equipped with a protector film to prevent paint chipping and scratches caused by stone chips.

TRUNK LID

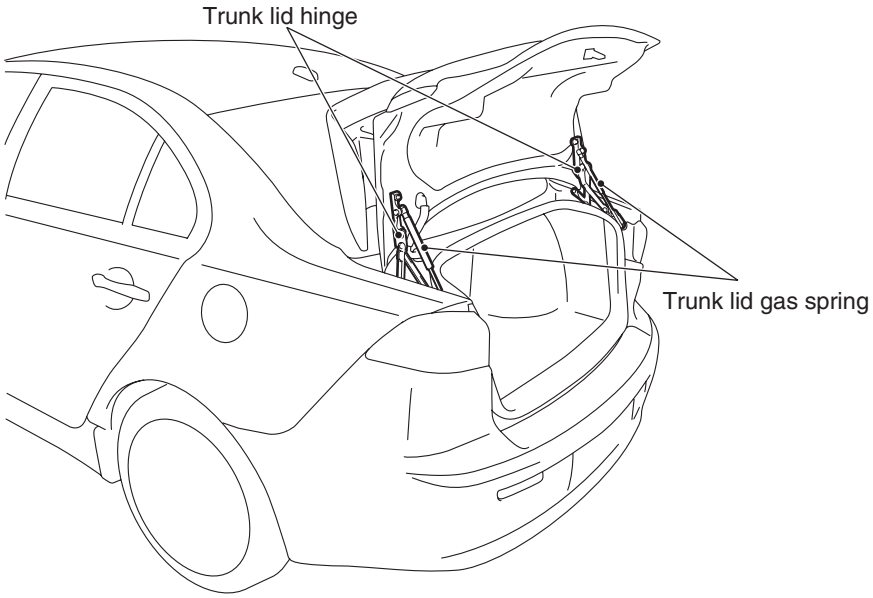
M2420013000135

TRUNK LID LATCH



- The trunk lid latch prevents a person from being confined in the luggage compartment in an accident.
  You can open the trunk lid by pulling an emergency trunk lid release handle to the arrow direction when you are confined in the luggage compartment in an accident.
- The emergency trunk lid release handle glows by absorbing light, so you can operate the handle even in a dark luggage compartment.
  NOTE: The glow time depends on the amount of light absorption, but the handle will glow four hours maximum when exposed to sunlight for 30 seconds or more. The glow performance depends on environmental conditions.

TRUNK LID GAS SPRING AND HINGE



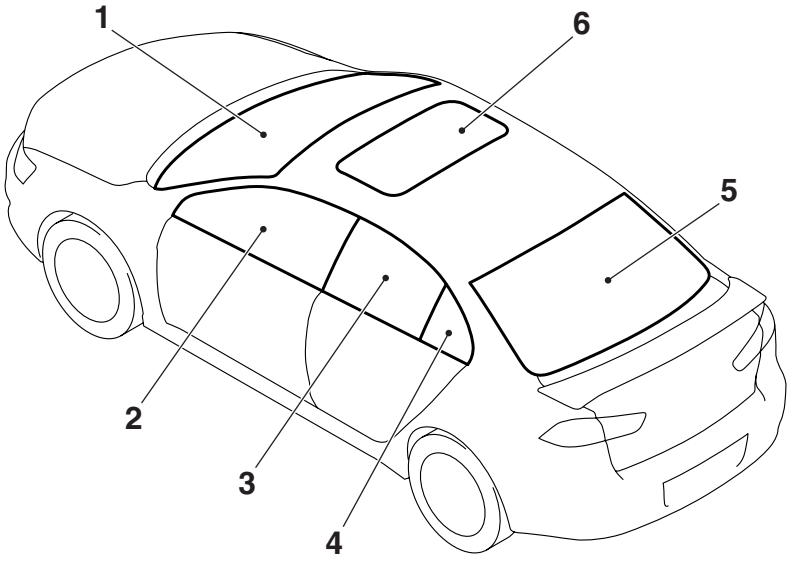
AC608743AB

- The gas springs allow the customer to open or close the trunk lid easily.
- The link type hinge has been adopted to control the backward protrusion on opening/closing the trunk lid and to eliminate the protrusion on closing the trunk lid, for retractility

WINDOW GLASS

M2420015000926

VISIBLE RAY TRANSMISSIVITY RATE FOR WINDOW GLASS



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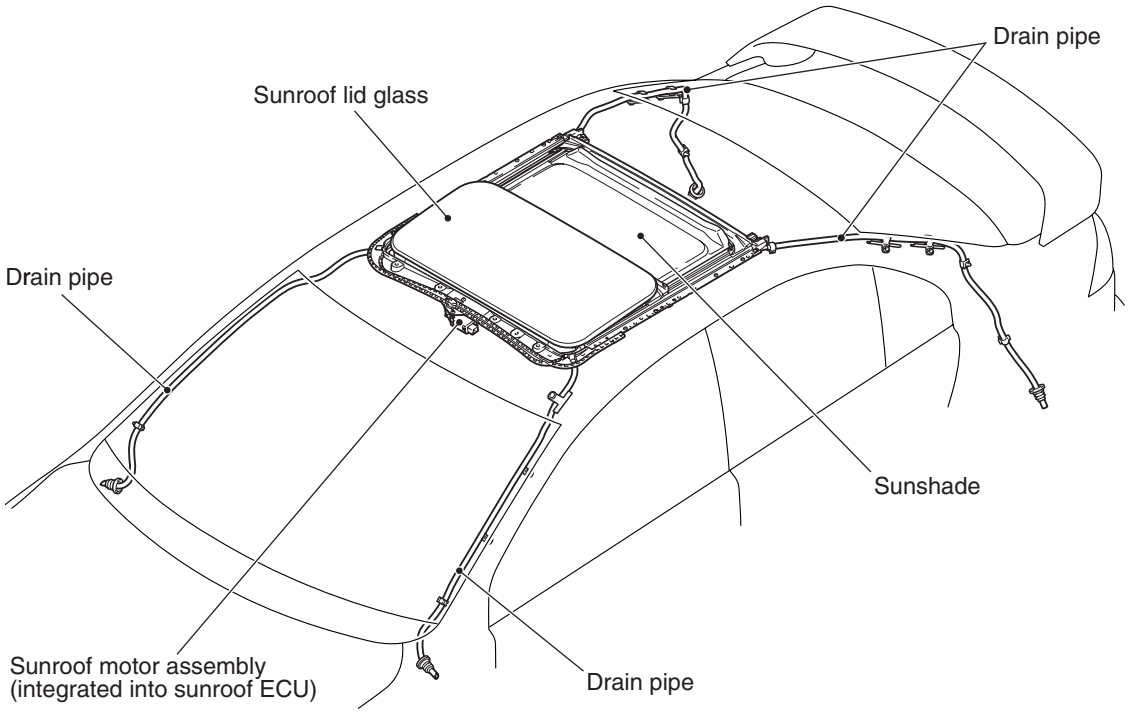
No.	Name	Type	Thickness mm (inch)	Color	Visible ray transmissivity rate (%)
1	Windshield	Laminated glass	4.7 (0.185)	Green	79
2	Front door window glass	Tempered glass	3.5 (0.138)	Green	81
3	Rear door window glass		3.1 (0.122)	Green	82
4	Rear stationary window glass		3.1 (0.122)	Green	82
5	Rear window 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 reinforced glass has been adopted for other windows.

SUNROOF

M2420016000491



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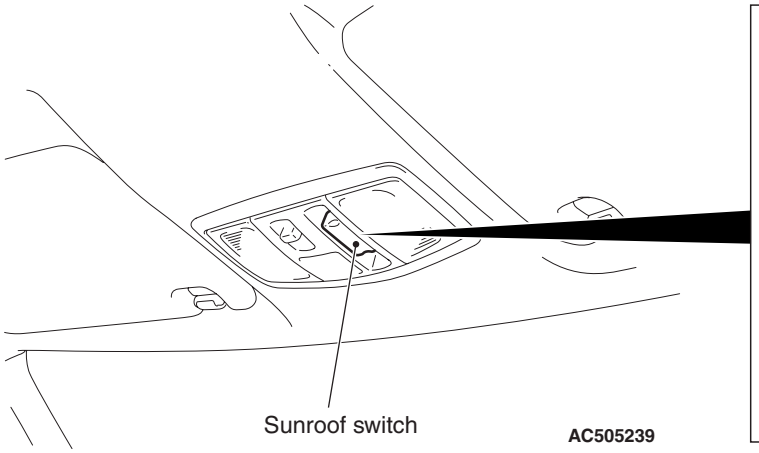

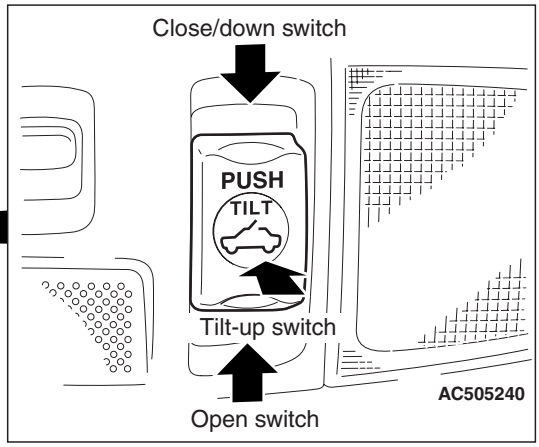

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The electric sliding glass sunroof with tilt-up mechanism has been adopted as an option. This sunroof has the following characteristics:

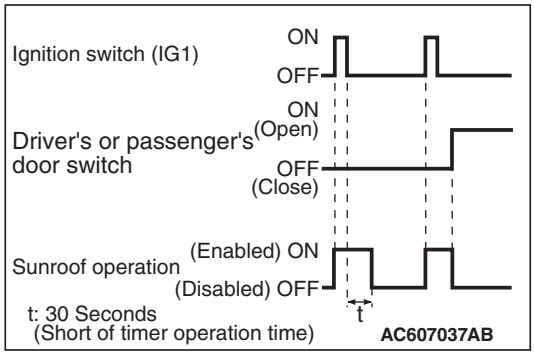
- A lightweight sunroof has been adopted.
- The sunroof tilts up for approximately 30 mm (1.2 inches) to improve ventilation.
- The integrated switch for the sunroof allows for all slide open/close, tilt up/down and stop operations. Operations other than open are available at one touch. When the open 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.
- By turning ON the sunroof window lock switch (integrated in the power window main switches) of the driver's power window switch, the sunroof operation is prevented.

DESCRIPTION OF CONSTRUCTION AND OPERATION

SAFETY MECHANISM

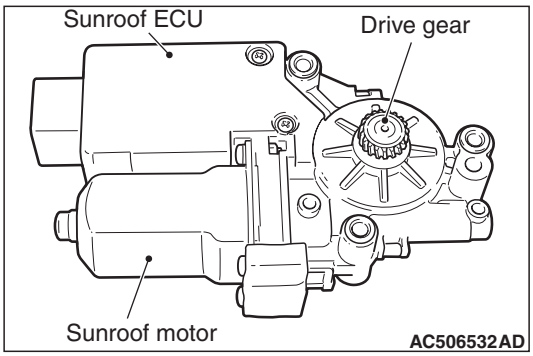
- If any obstacle such as a hand or a head is detected to be pinched during a sunroof lid glass closing operation, the sunroof lid glass is opened by approximately 200 mm (7.9 inches) or more.
- During the sunroof lid glass closing operation, by continuing the sunroof close switch operation, the sunroof 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



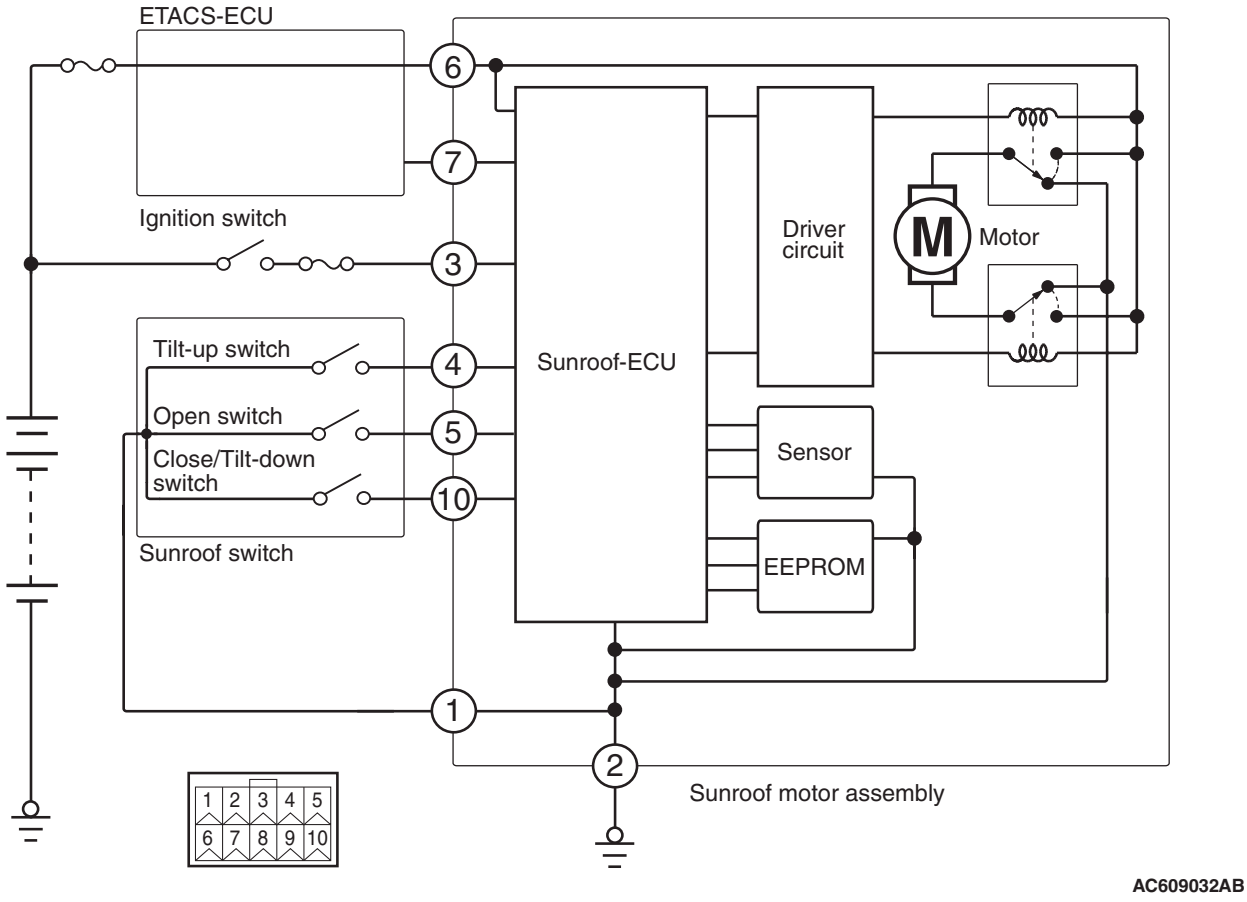
The sunroof ECU (integrated into the sunroof motor assembly) receives the ignition switch (IG1) signal transmitted by ETACS-ECU. If the ignition switch (IG1) signal turns OFF, the sunroof ECU allows the sunroof switch to open/close (timer activation) the sunroof for approximately 30 seconds. During the 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



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

LOOSE PANELS

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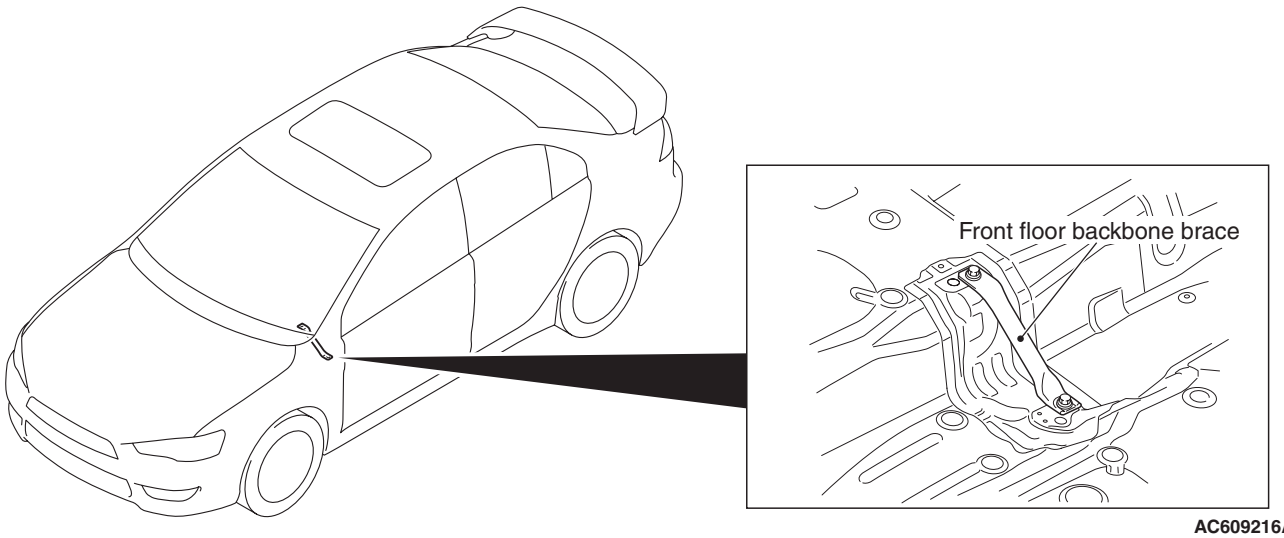

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The front floor backbone brace has been installed to improve the body rigidity.

CUSTOMIZATION FUNCTION

M2420002500169

With the scan tool MB991958 (M.U.T.-III sub assembly) operation, the following functions can be programmed. The programmed information is kept in memory even when the battery is disconnected.

Adjustment item (scan tool MB991958 M.U.T.-III display)	**Adjustment item**	**Adjusting contents (scan tool MB991958 display)**	**Adjusting contents**
Auto door unlock by P position	Auto door unlock by P position function <Vehicles with central door locking system>	Disable	No function (default)
		Always enabled	Always with function