

GROUP 42A

BODY

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GENERAL INFORMATION

M2420000101191

FEATURES

LIGHT WEIGHT, HIGH RIGIDITY, ANTI-CORROSIVE

- The application ranges of high-tensile steel panels, and anti-corrosion steel panels have been expanded.
- The strut tower bar has been installed.
- The front floor backbone brace has been installed.

REDUCTION IN VIBRATION AND NOISE

- More sound absorption/insulator and sound dampening foam material have been adopted.

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 crushable structure has been adopted for the hood, the fender and the cowl top to improve the pedestrian protection capability.

IMPROVEMENTS IN OPERATION PERFORMANCE

- The central door locking system which can lock/unlock all the doors 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 power window (operative after ignition switch is turned OFF) has been installed.

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 UV-reducing glass has been introduced to the front door glass as standard.
- The protector film has been adopted onto the rear door.
- The sunroof with safety mechanism has been installed as an option.

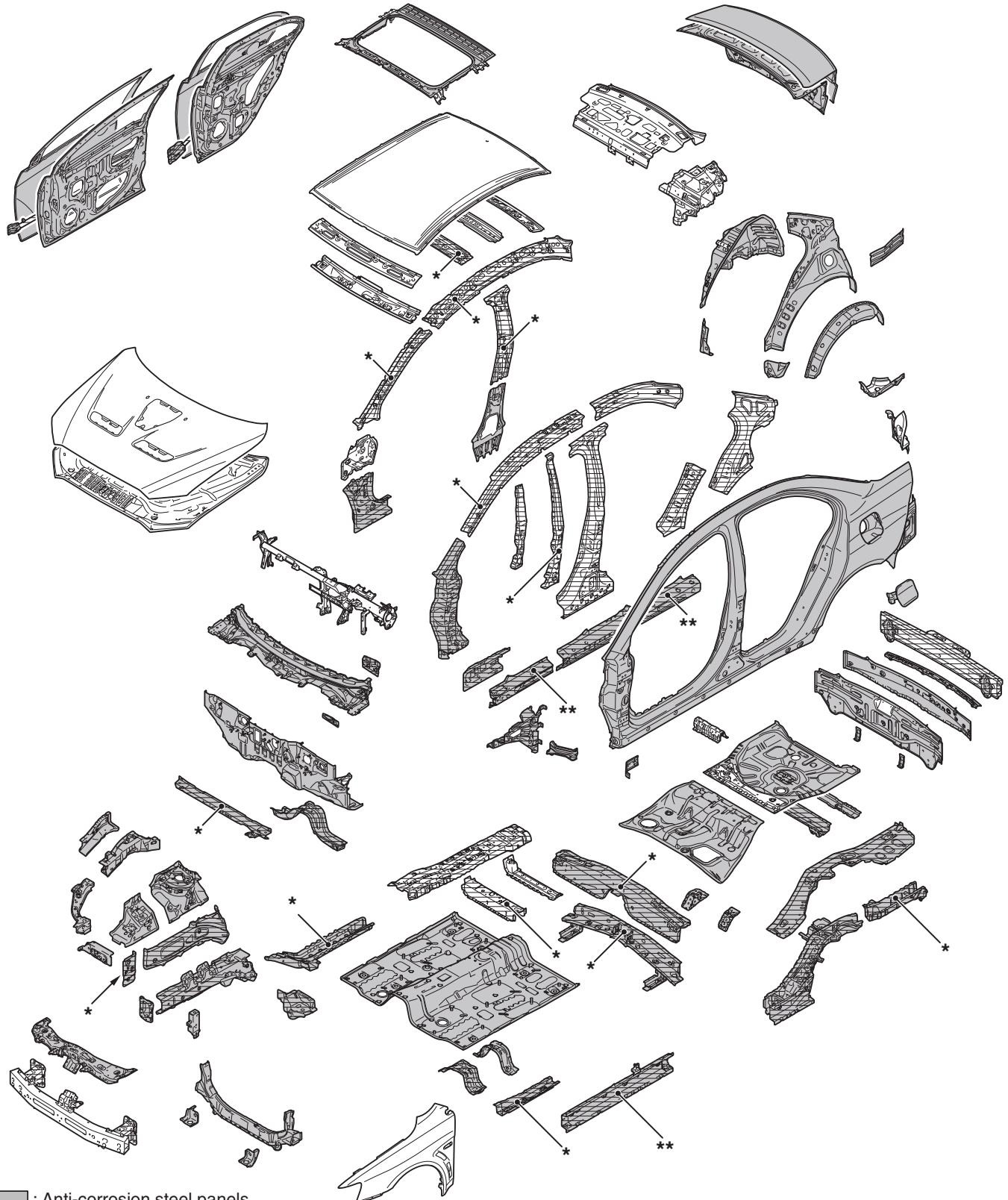
IMPROVEMENTS IN FUNCTIONALITY



- 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.

MAIN BODY

BODY PANELLING

M2420002001048



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

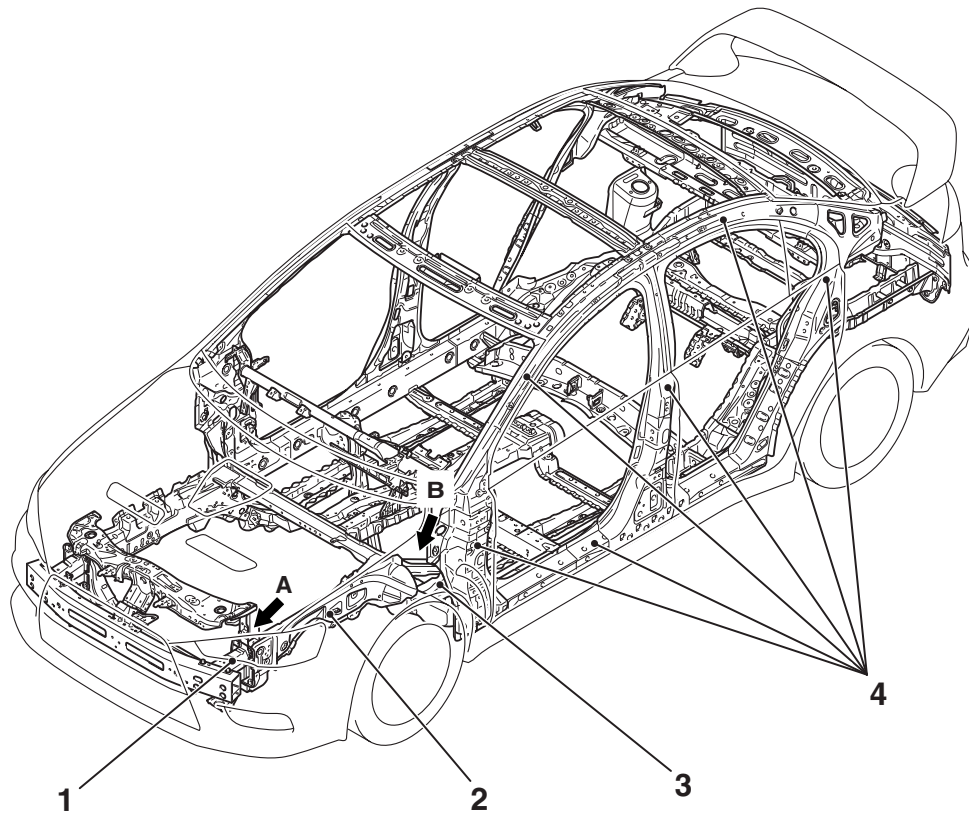
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- RISE (Reinforced Impact Safety Evolution) has been adopted for the main body in order to improve all-round impact safety at high level.
- The applications of anti-corrosion steel plates have been expanded to the doors, inner panel of the trunk lid 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.

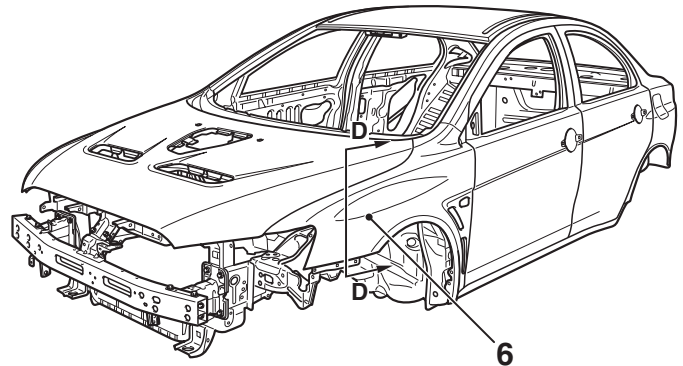
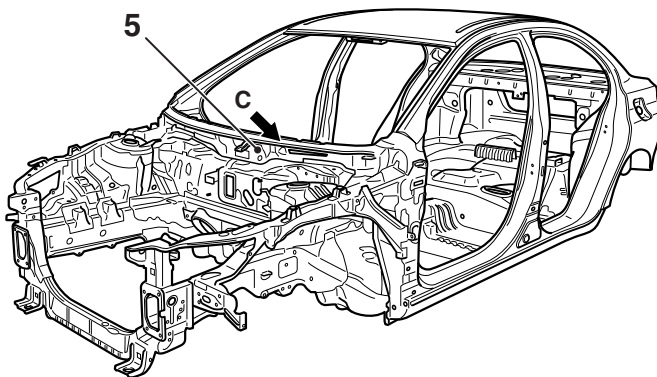
BODY SHELL

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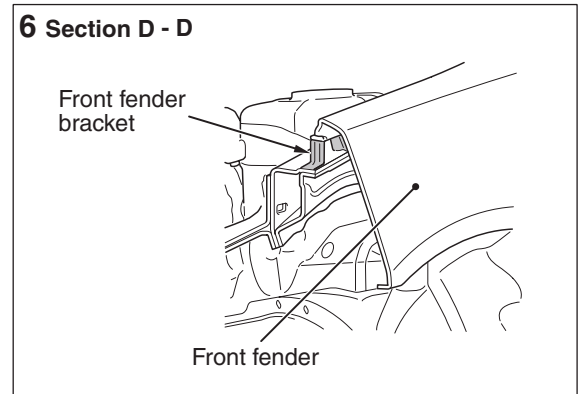
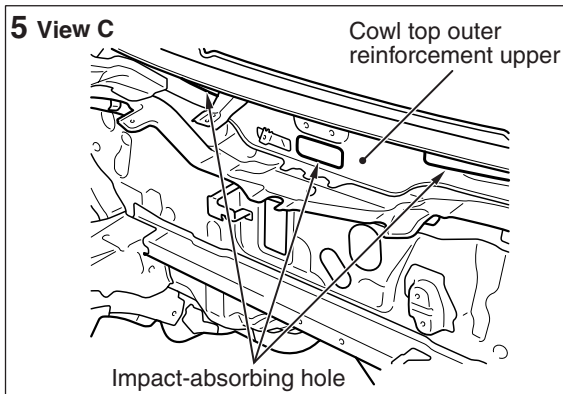
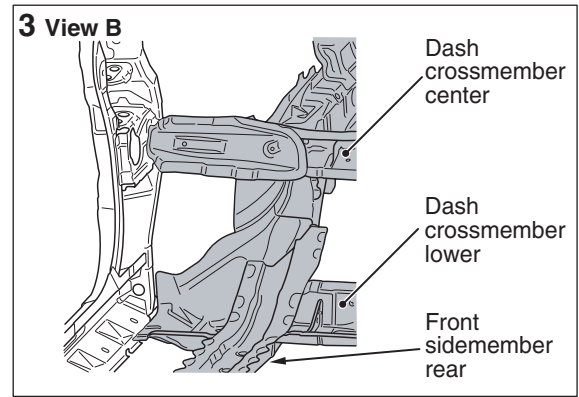
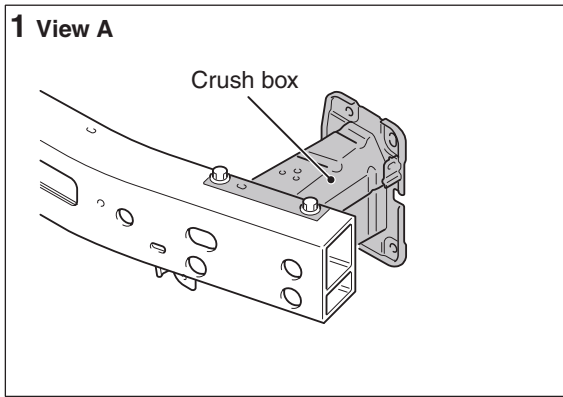
IMPACT SAFETY BODY RISE (REINFORCED IMPACT SAFETY EVOLUTION)



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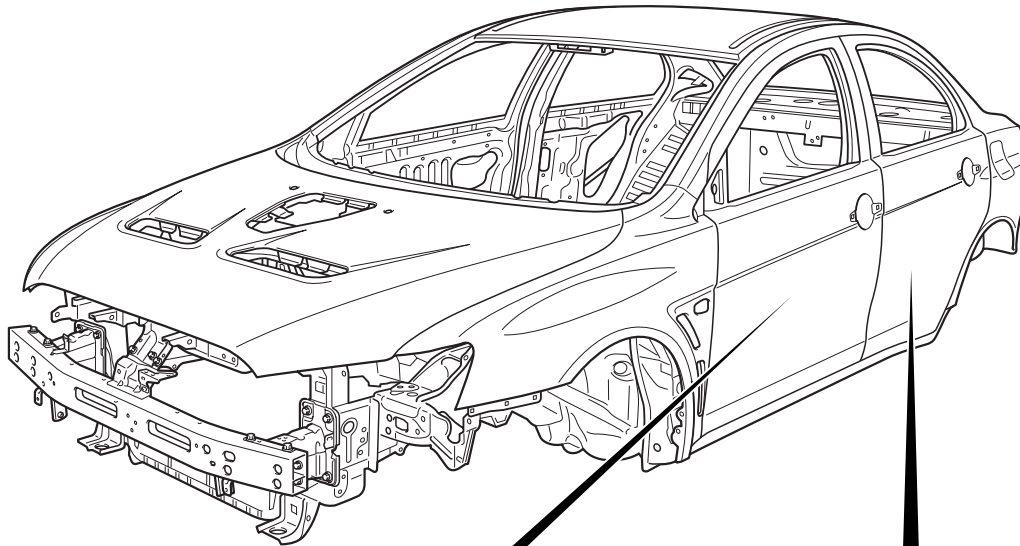


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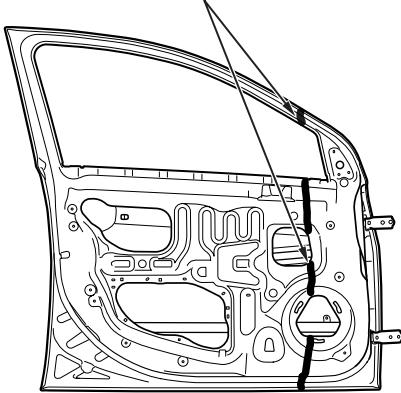
The front and rear structures to absorb high energy, and the highly tough cabin structure is adopted to reduce the risk of passenger injuries at front-, rear-, and side-impact collisions, secure the space for life protection, and facilitate rescuing passengers. The structures also have the following 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 front sidemember structure is changed to a straight frame structure with an octagonal cross section in order to improve the frontal collision characteristics.
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 opening 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 front fender bracket is adopted to have a crushable structure that efficiently absorbs energy upon impact, improving the pedestrian protection capability.

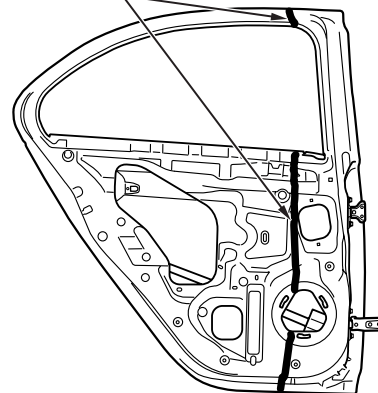
STEEL PLATE WITH UNEVEN THICKNESS

**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.

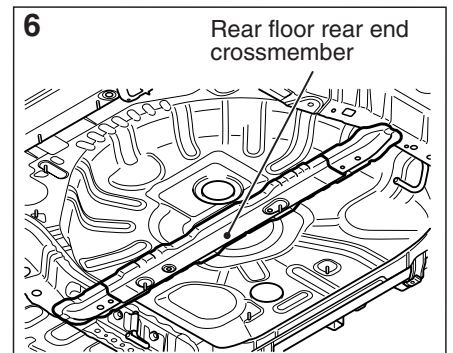
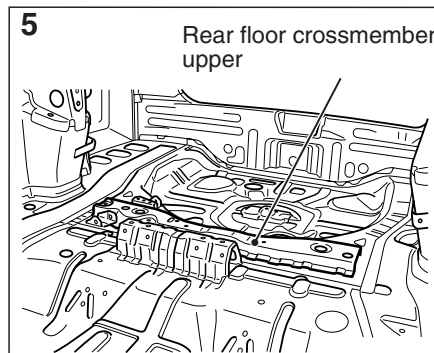
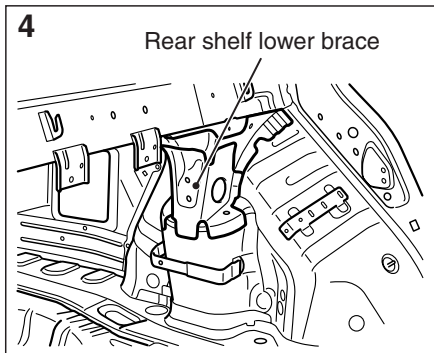
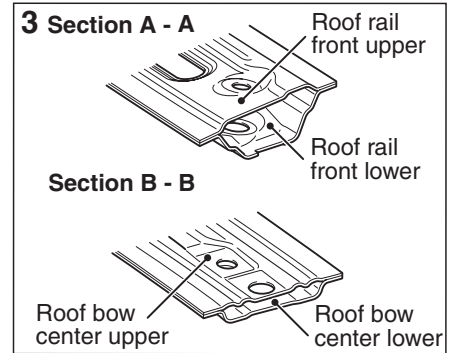
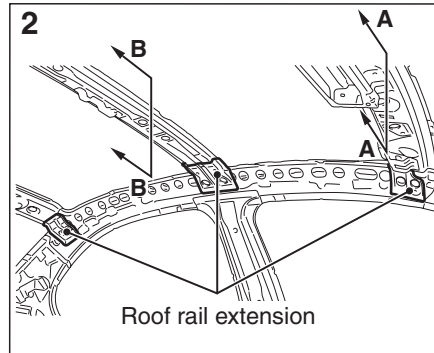
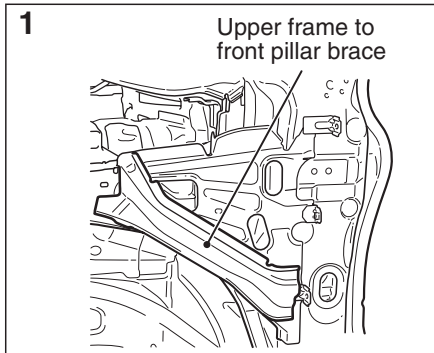
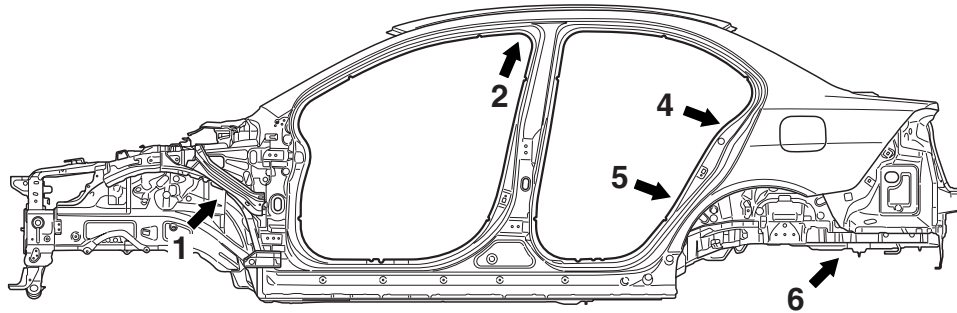


AB700985AB

The uneven thickness steel panels* (in uneven thickness integrated structure) have been adopted for the front and rear door panel inner to improve safety upon impact and reduce weight.

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

STEERING ABILITY

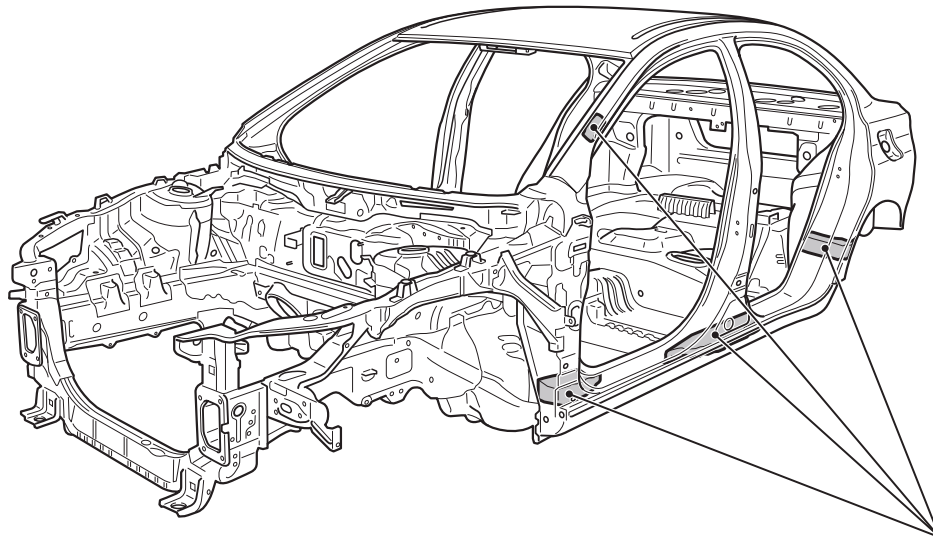


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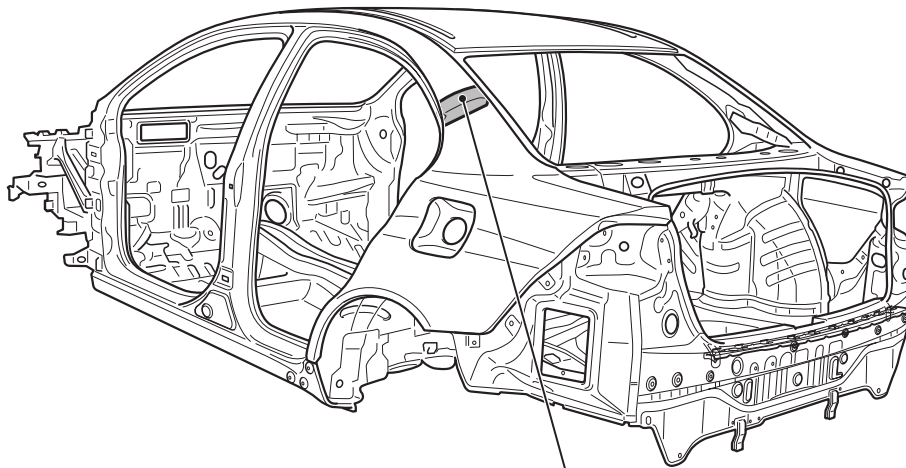
1. Rigidity was heightened and driving stability was improved by bonding the fender shield frame upper outer and front pillar by the upper frame to front pillar brace.
2. Rigidity was heightened and driving stability was improved by bonding the roof bow and roof rail and the roof side rail inner by the roof rail extension.
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. A rear shelf lower brace is used to connect the spring house middle panel and rear shelf upper brace, so that the body rigidity, handling stability, and riding comfort are improved.
5. The rear floor crossmember upper has been adopted in order to strengthen the body rigidity, improving the steering ability and riding comfort, and suppressing the vibration and noise.
6. The rear floor rear end crossmember has been straightened in order to strengthen the body rigidity, improving the steering ability and riding comfort, and suppressing the vibration and noise.

QUIETNESS

M2420004000717



Sound dampening foam material



Sound dampening foam material

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

BODY COLOR CHARTS

M2420005001661

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 | 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 |
| DARK GRAY | D06 | CMD10006 | Lightning Blue Mica | 2P | Interferenced Pearl |
| DARK GRAY | U02 | CMU10002 | Phantom Black Pearl | 2P | Interferenced Pearl |
| WHITE | W37 | CMW10037 | White Solid | 2S | Solid |
| RED | P26 | CMP10026 | Red Metallic | 2M | Metallic |

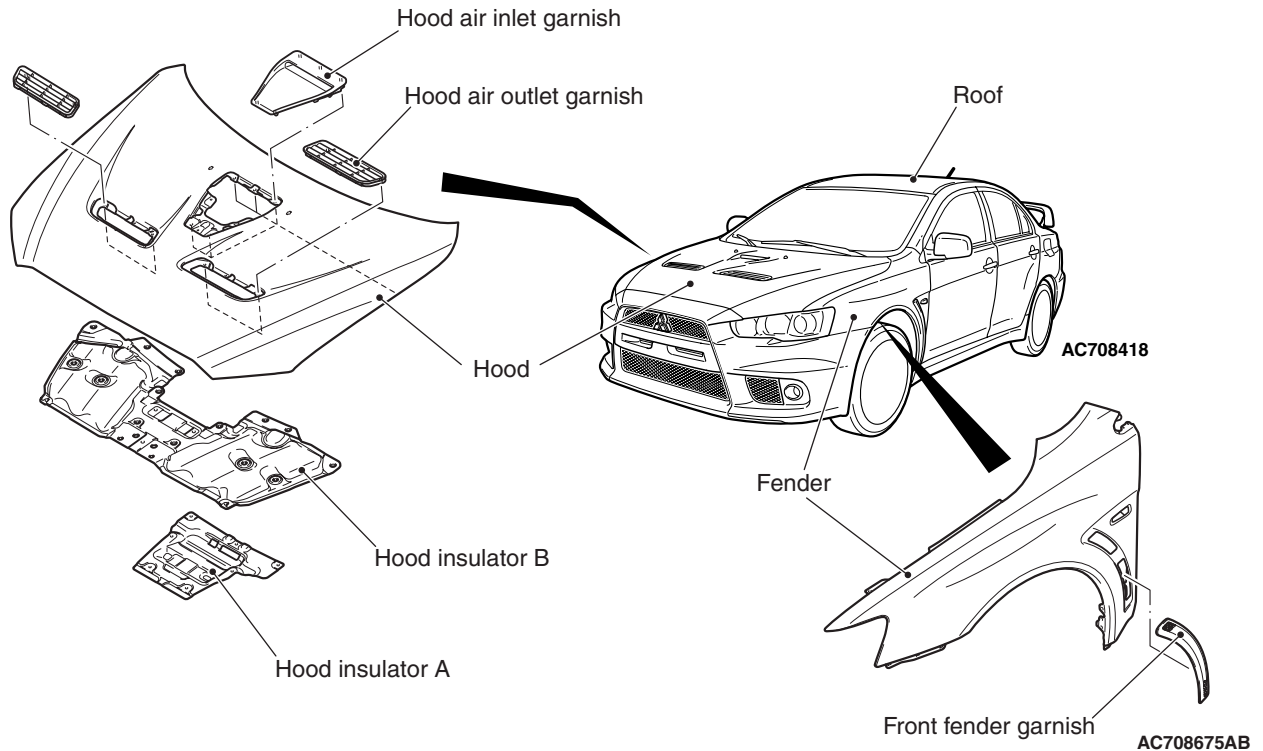
NOTE:

- *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.*

HOOD, FENDER AND ROOF

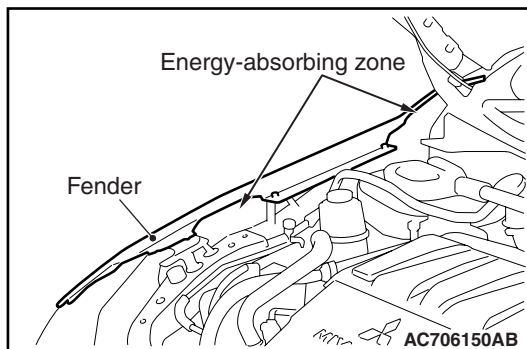
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PANEL

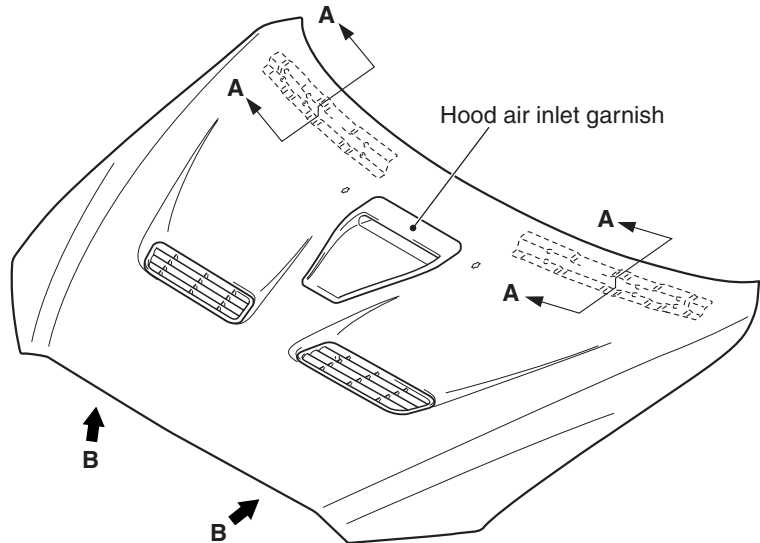
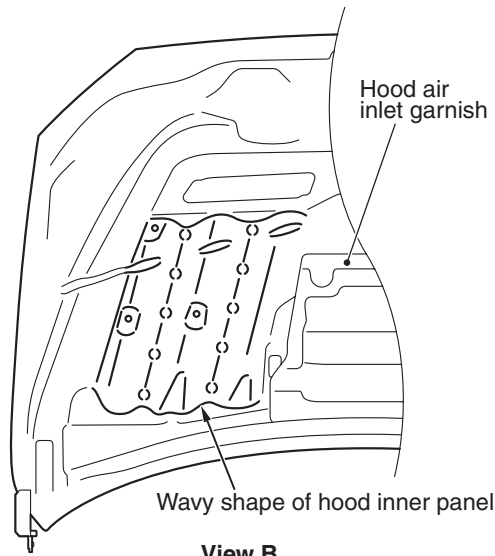
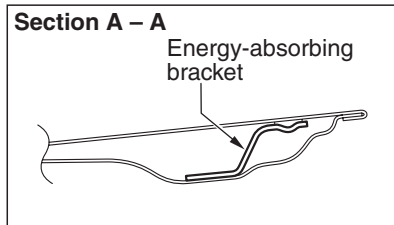


- The aluminum hood panel, fender panel, and roof panel <vehicles without sunroof> have been adopted to reduce the vehicle weight.
- The hood air inlet garnish has been mounted to the back of hood center in order to cool around the turbocharger and to emphasize sporty image.
- The hood air outlet garnish 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.
- The front fender garnish has been mounted to the fender in order to emit heat from the engine compartment and to emphasize sporty image.

Energy absorbing structure



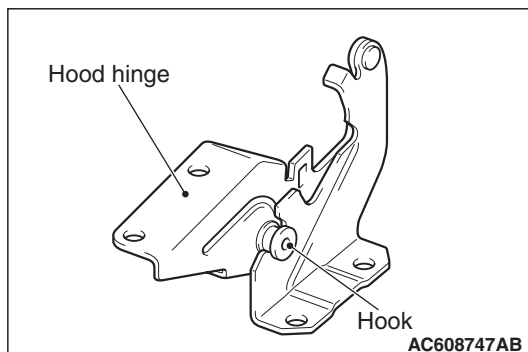
An energy absorbing zone has been established in between the fender and body frame to secure the space for shock absorption, reducing a risk of injury to a pedestrian's head area upon a collision.



AC706175AB

- 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.

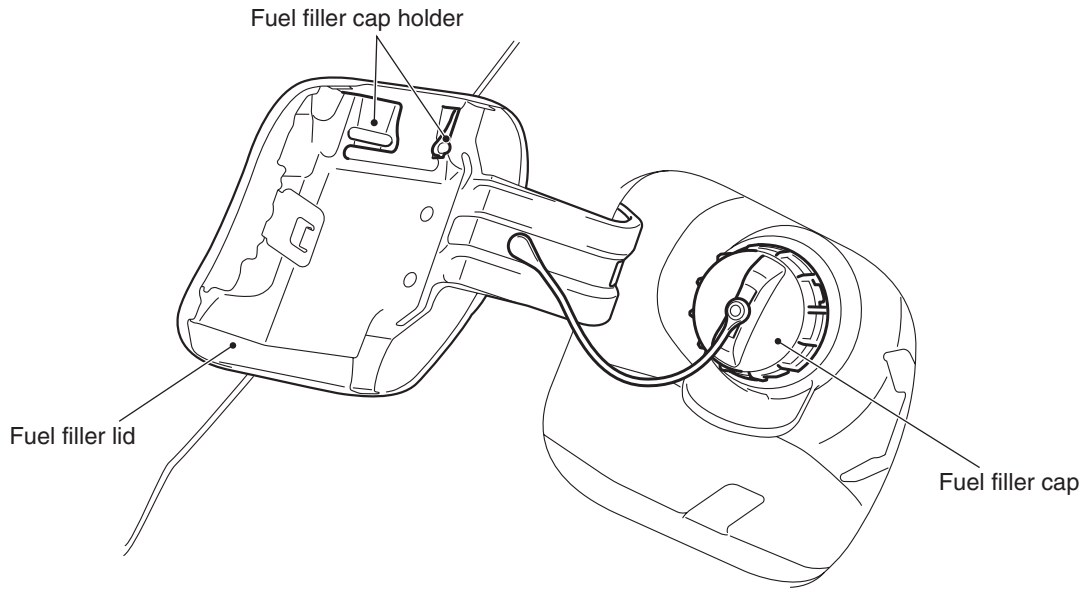
HOOD HINGE



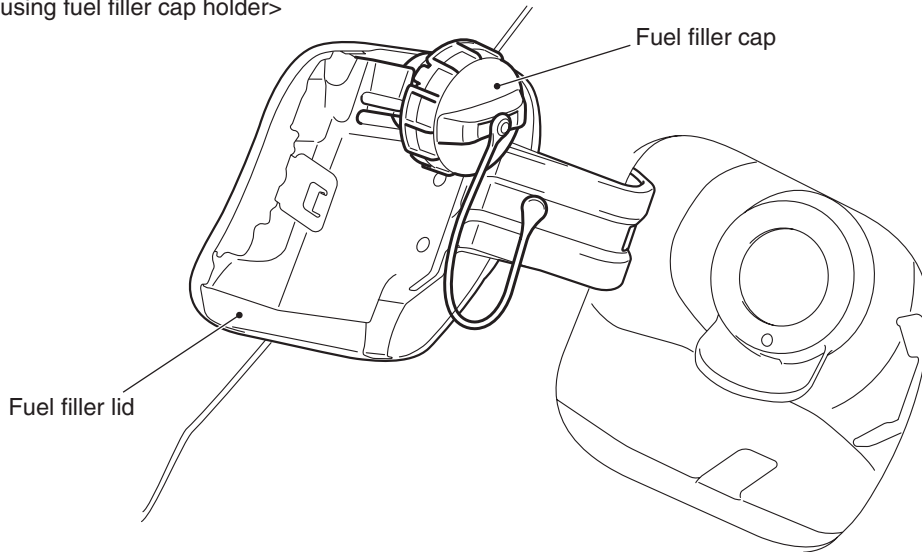
The bolt type hook has been adopted for the hood hinge to suppress cabin deformation and improve safety upon impact.

FUEL FILLER LID

M2420014000309



<When using fuel filler cap holder>

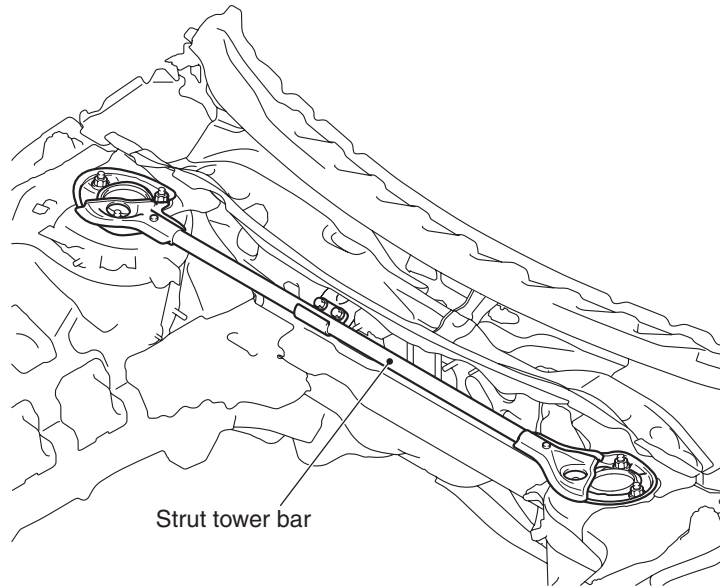


AC705786AB

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

STRUT TOWER BAR

M2420001300269



AC705426AB

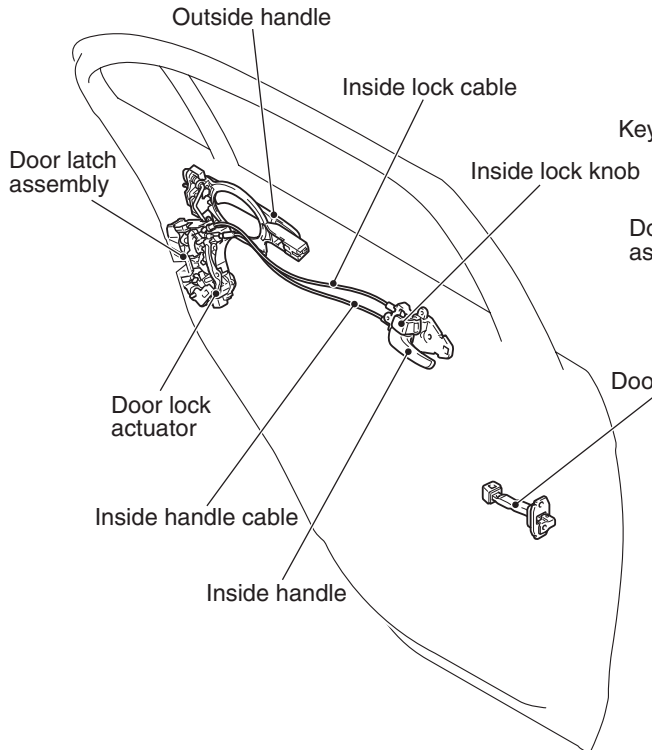
The strut tower bar has been adopted to the strut attachment point to improve steering ability

DOOR

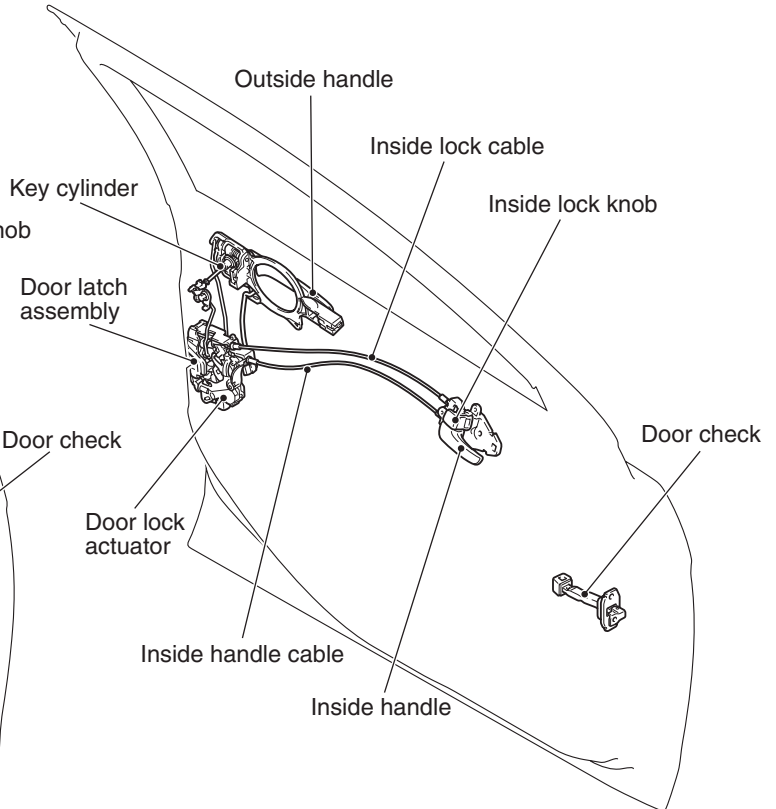
DOOR LOCK
CENTRAL DOOR LOCKING

M2420009000767

<Rear door>

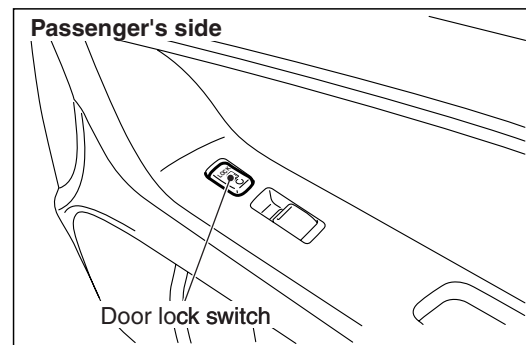
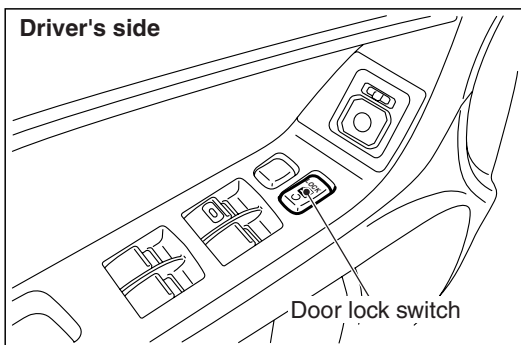


<Front door>



AC608386AB

Location of the door lock switches



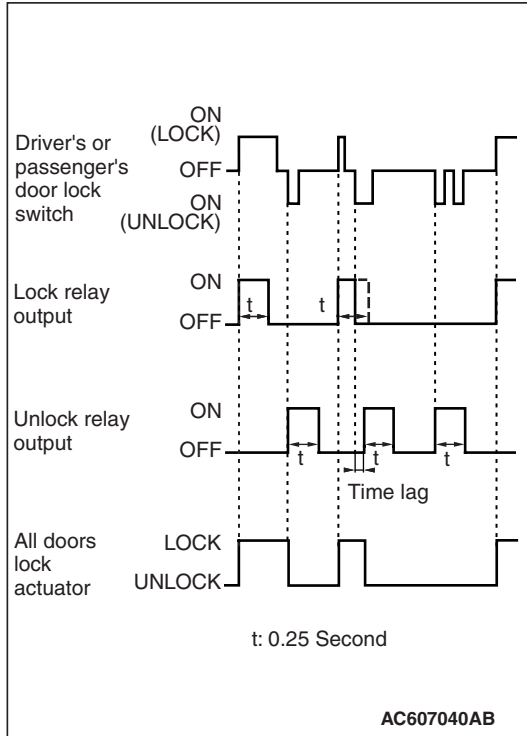
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- The central door locking system that locks/unlocks all the doors using the door lock switch has been installed.
- The child protection function has been introduced to prevent the rear doors from being opened accidentally during driving.
- The selector "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".

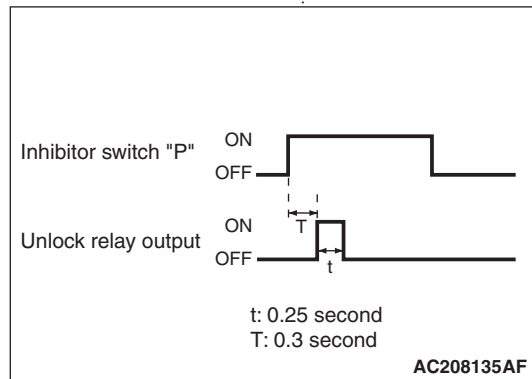


When the door is locked by the driver's or passenger's door lock switch, the ETACS-ECU operates its door lock relay and passes a current through the door lock actuators of all the doors for 0.25 second to lock all the doors. When the door is unlocked by the driver's or passenger's door lock switch, the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

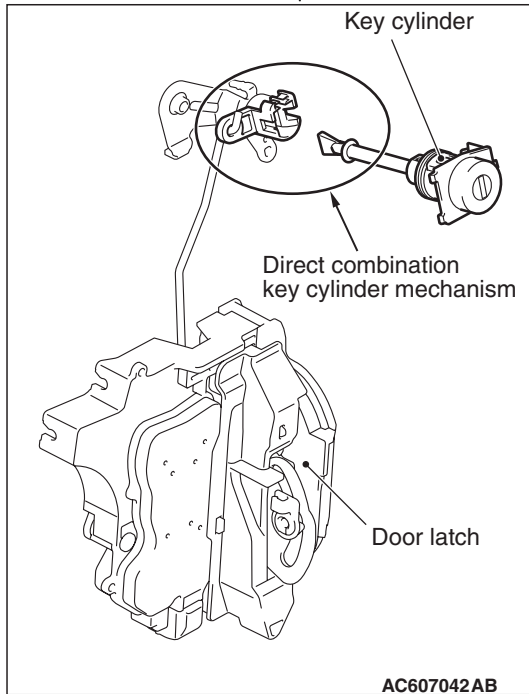
SELECTOR "P" POSITION-LINKED DOOR UNLOCKING FUNCTION

- 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-26).



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.

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.

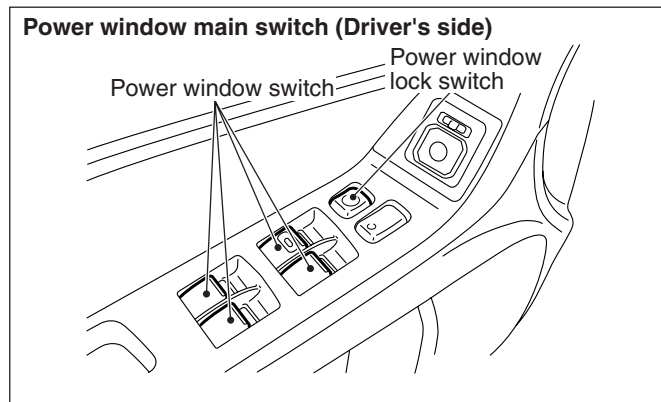
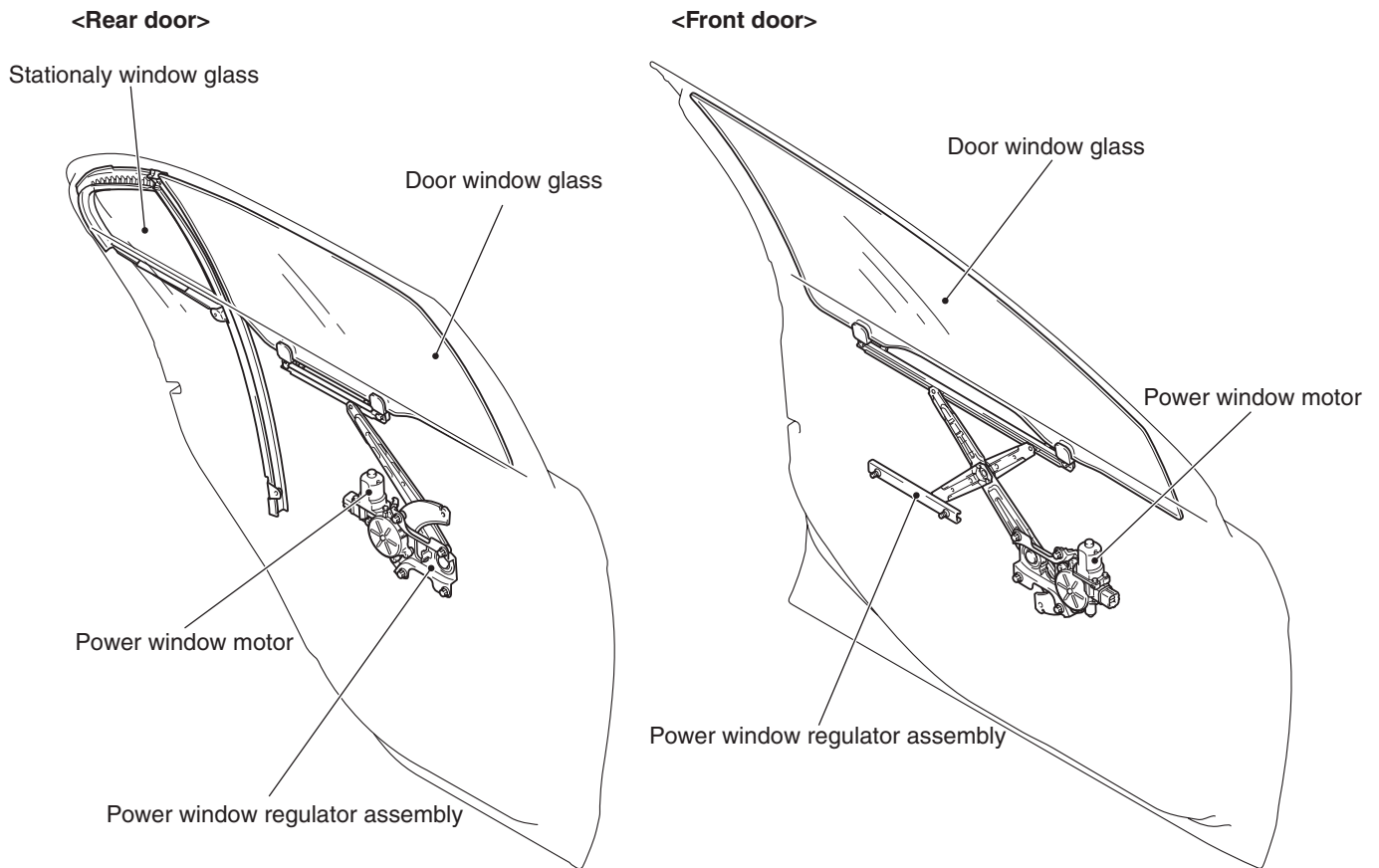
CENTRAL DOOR LOCKING SYSTEM

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 | | | |
| 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

M2420022000412



AC608387AB

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

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

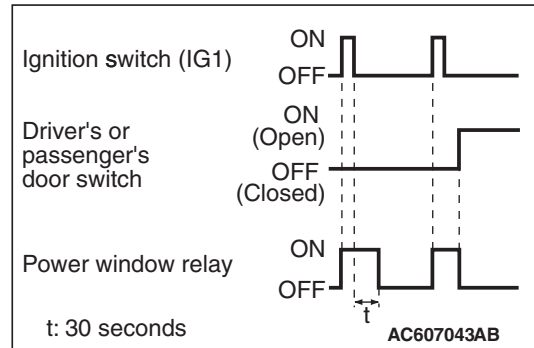
The power window switch has a push-pull operation method to enhance safety. To open a door window glass, press in the switch knob; and to close, pull it up.

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



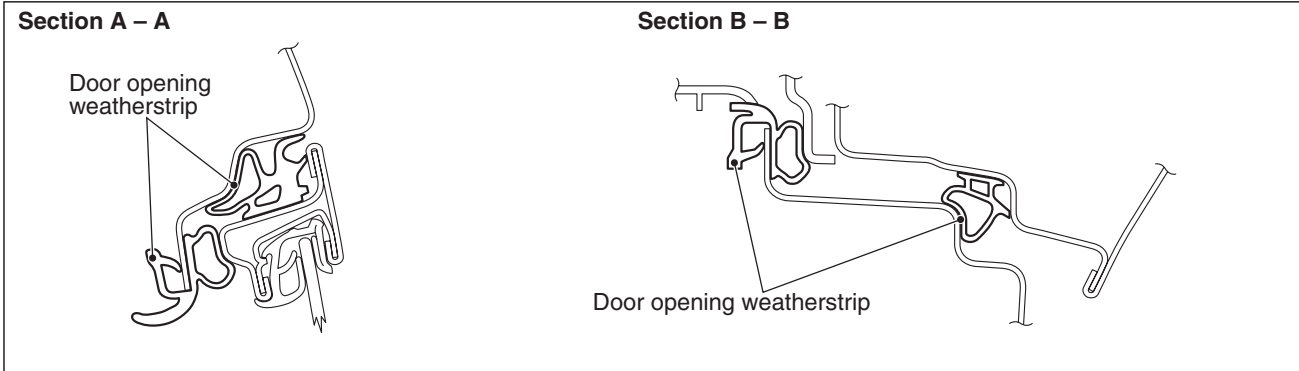
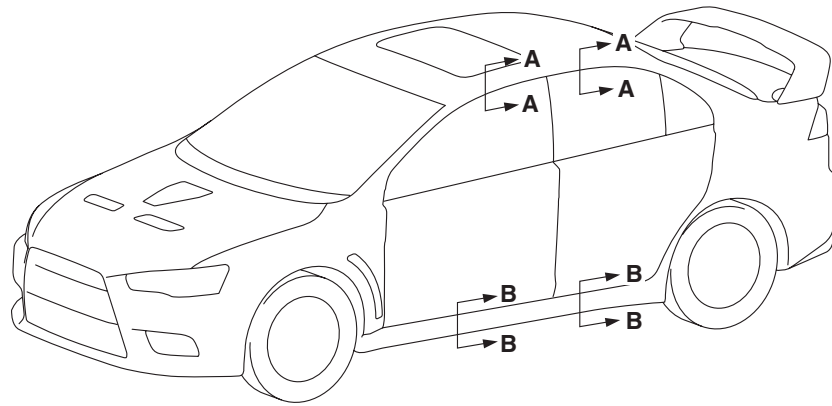
Even after the ignition is switched off, the ETACS-ECU keeps the power window relay activated for approximately 30 seconds, enabling raising or lowering of the power windows by using the power window switches. After approximately 30 seconds, the power window relay is deactivated. During this timed operation,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

M2420020000397

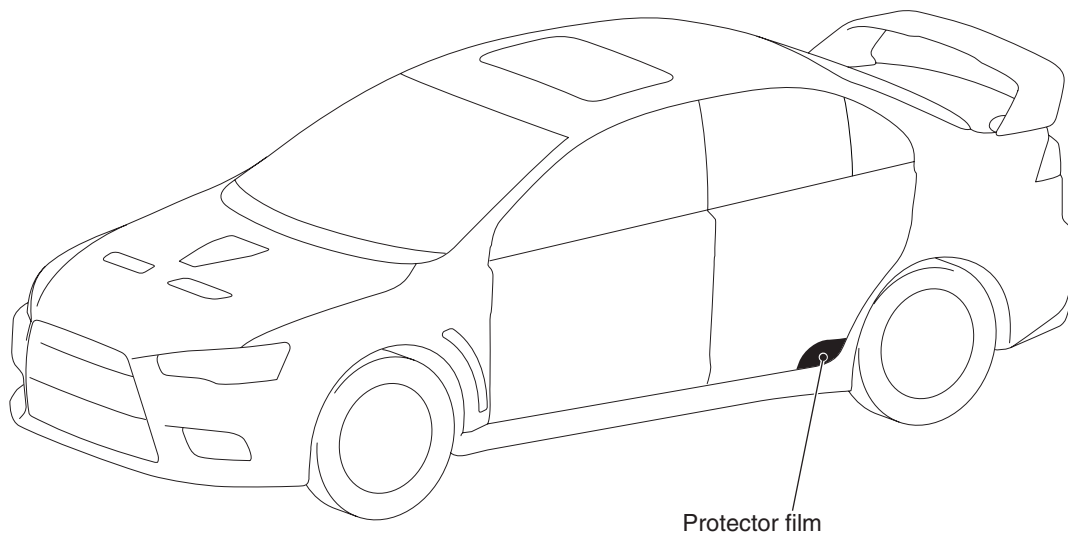


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The double weather strips have been installed along the perimeter of the door window to improve the sound-proof and water-proof performances.

PROTECTOR FILM

M2420021000271



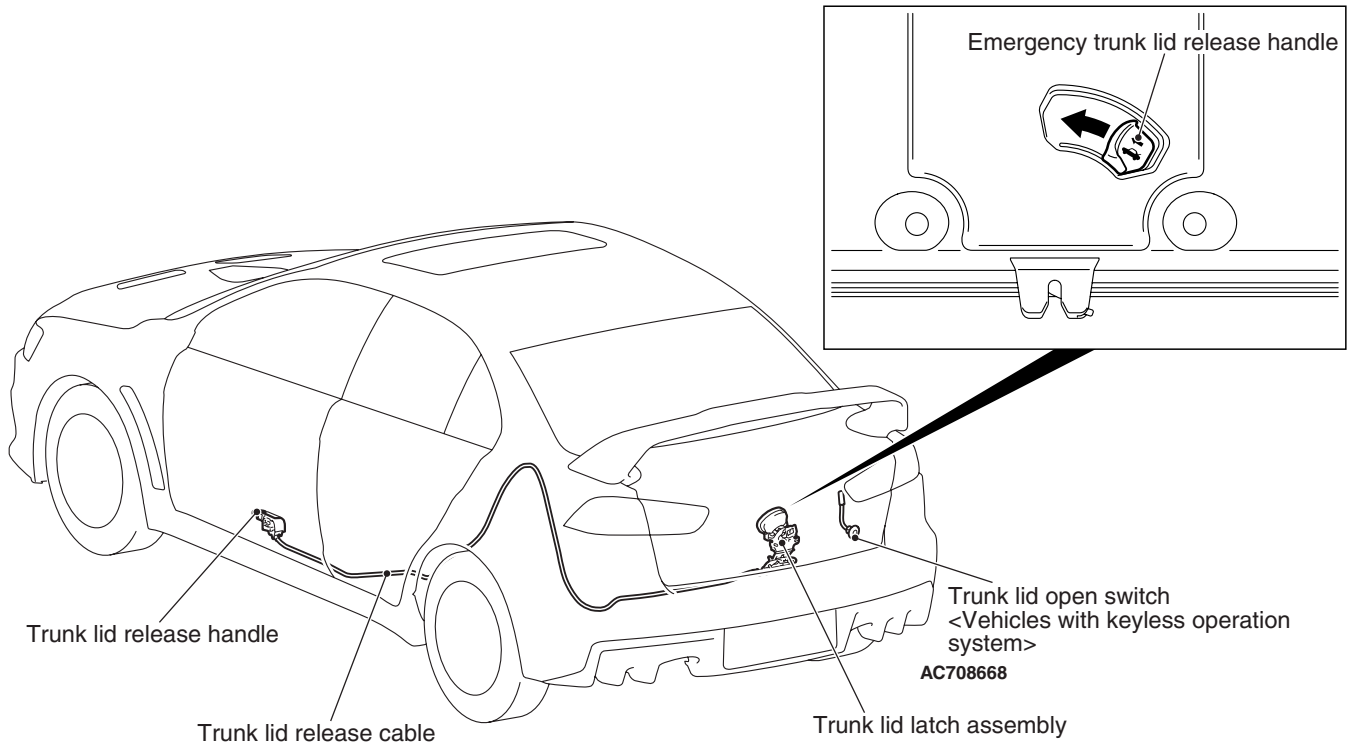
AC707659AB

The rear lower part of the rear door is equipped with a protector film to prevent paint chipping and scratches caused by stone chips.

TRUNK LID

M2420013000179

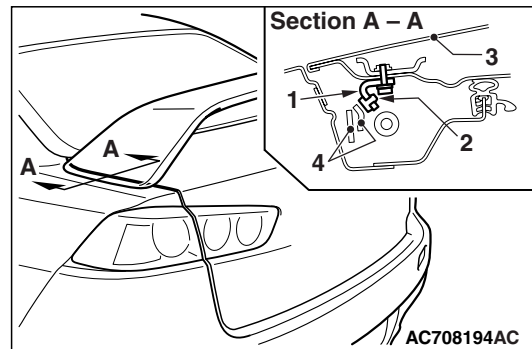
TRUNK LID LATCH



- 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.

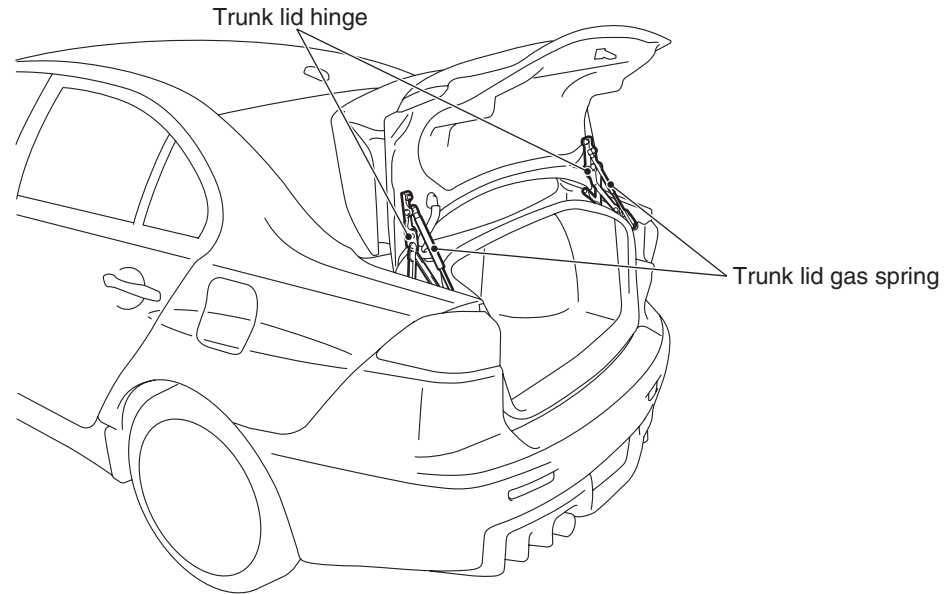
TRUNK LID LATERAL RUNOUT PREVENTION



To the backside of trunk lid, the trunk lid stay damper bracket and trunk lid damper have been added in order to prevent the trunk lid lateral runout during driving on rough roads.

1. Trunk lid stay bumper bracket
2. Trunk lid bumper
3. Trunk lid
4. Trunk lid hinge

TRUNK LID GAS SPRING AND HINGE



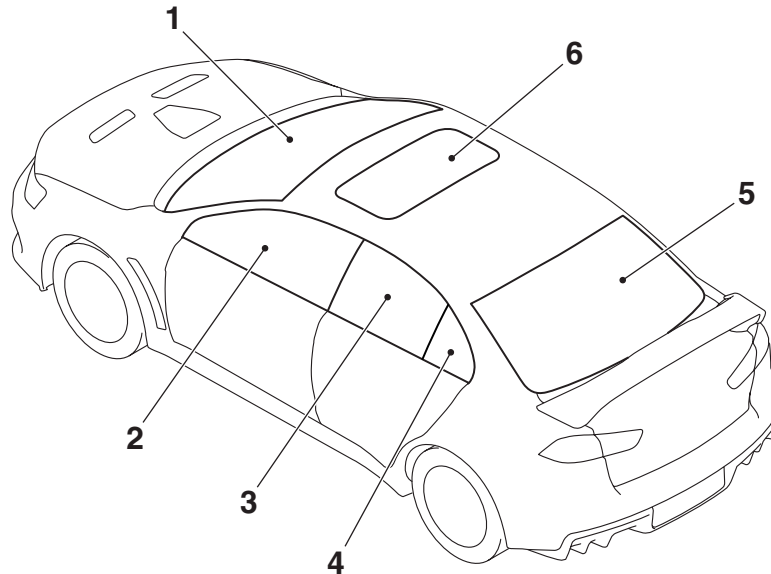
AC706493AB

- Trunk lid gas spring has been adopted to achieve the following upgrade.
 - Reduction of operating force when opening the lid
 - Prevention of sudden release when opening the lid by action of gas spring damper
- Link type trunk lid hinge has been adopted to offer the following convenience.
 - Expansion of luggage capacity
 - Improvement to loading/unloading of large-size luggage and ease of storing
 - Reduction of rearward lid protrusion when opening/closing the lid

WINDOW GLASS

M2420015001093

VISIBLE RAY TRANSMISSIVITY RATE FOR WINDOW GLASS



AC705467AC

| 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 (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 | Rear window glass | | 3.1 (0.122) | Green | 82 |
| 6 | Sunroof lid glass | | 3.5 (0.138) | Dark gray | 18 |

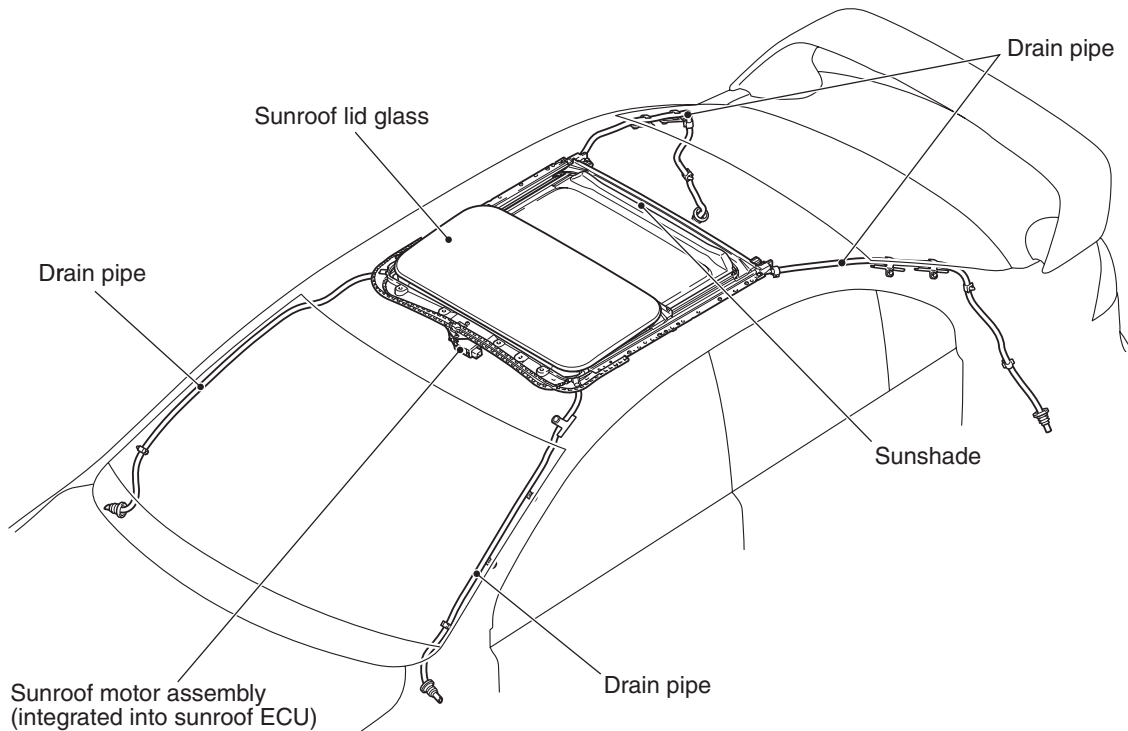
NOTE: The visible ray transmissivity rate (%) is a reference value.

The windshield is laminated glass and the other glass is made of reinforced glass. Window glass has the following features.

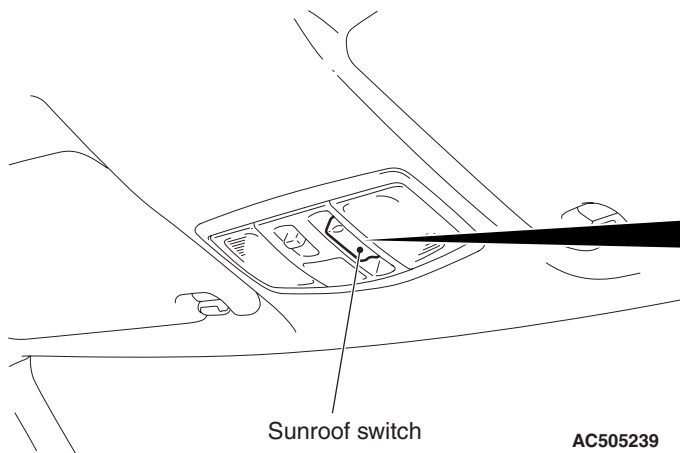
- The UV-reducing glass has been used to the front door glass as standard.

SUNROOF

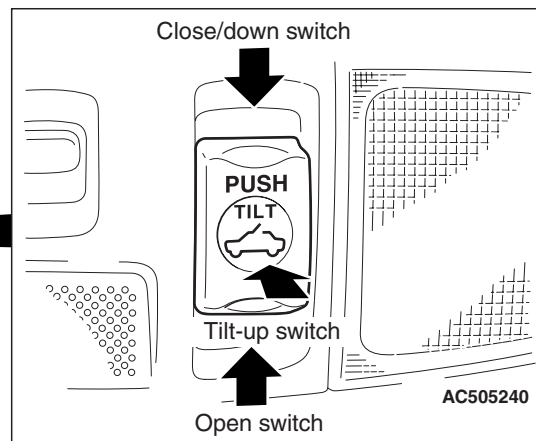
M2420016000617



AC705682AC



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.

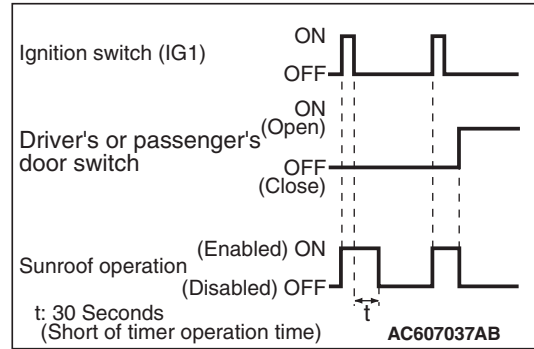
- If external force is applied during slide closing or tilt down operations that obstructs operations, the sunroof lid glass will move in the reverse direction.
- By turning ON the sunroof window lock switch (integrated in the power window main switches) of the driver's power window switch, the sunroof operation is prevented.

DESCRIPTION OF CONSTRUCTION AND OPERATION

SAFETY MECHANISM

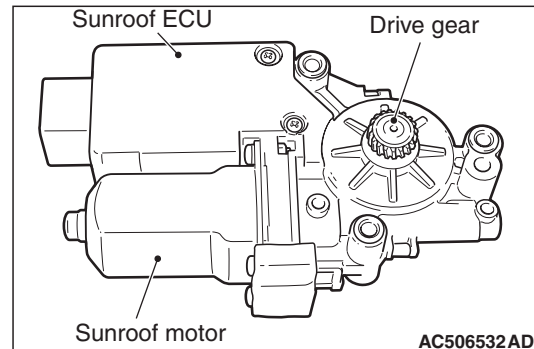
- If any obstacle such as a hand or a head is detected to be pinched during a sunroof lid glass closing operation, the sunroof lid glass is opened by approximately 200 mm (7.9 inches) or more.
- During the sunroof lid glass closing operation, by continuing the sunroof close switch operation, the sunroof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



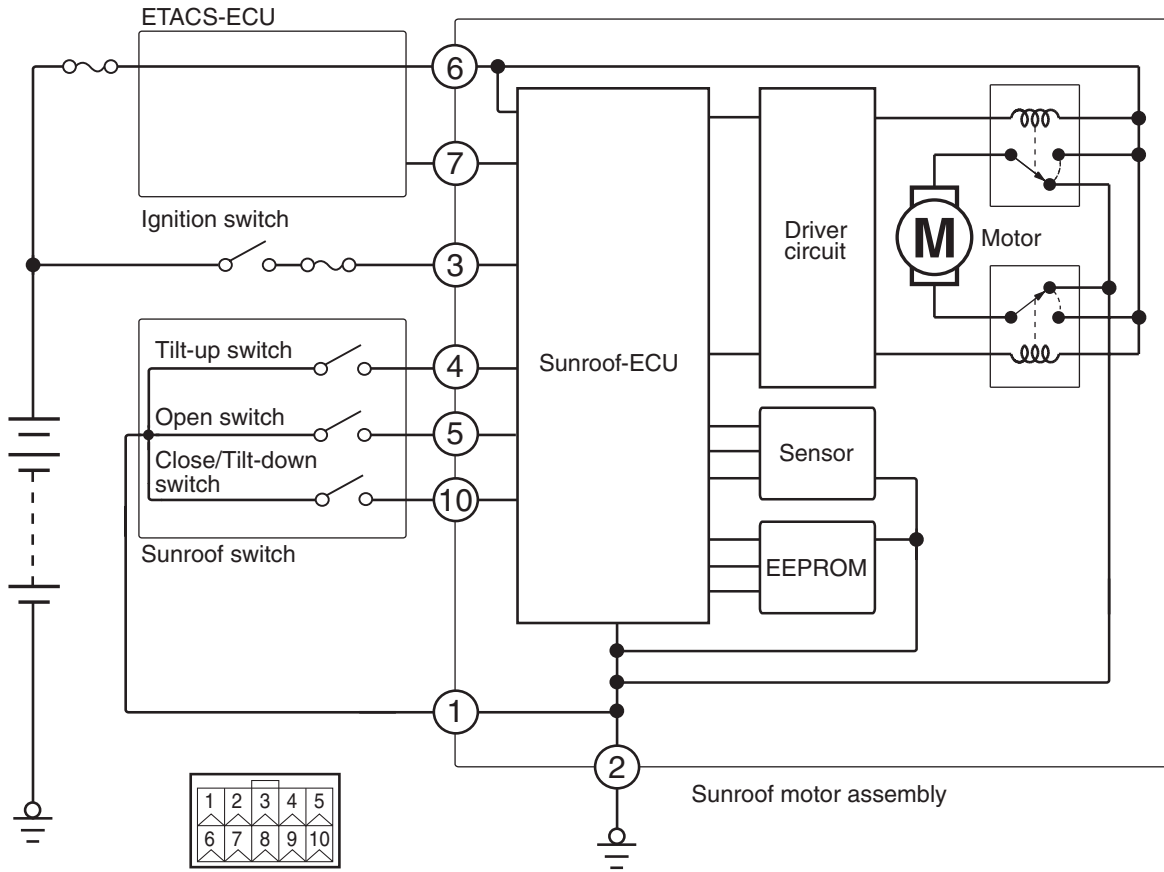
The sunroof ECU (integrated into the sunroof motor assembly) receives the ignition switch (IG1) signal transmitted by ETACS-ECU. If the ignition switch (IG1) signal turns OFF, the sunroof ECU allows the sunroof switch to open/close (timer activation) the sunroof for approximately 30 seconds. During the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

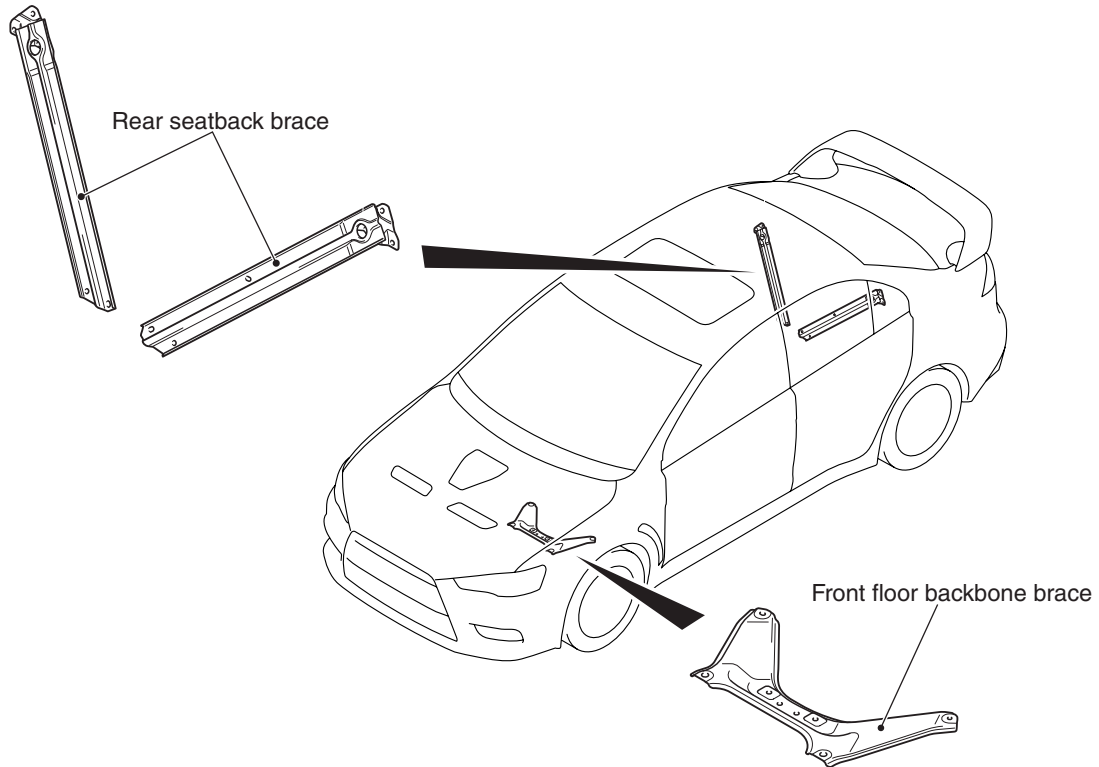


AC609032AB

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

LOOSE PANELS

M242000200247



AC705674AB

The front floor backbone brace and rear seat back brace have been installed to improve the body rigidity.

CONFIGURATION FUNCTION

M2420002500329

Using the ETACS system of scan tool MB991958, the following function can be programmed. The programmed information is held 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 TC-SST> | Disable | No function (default) |
| | | Always enabled | Always with function |