BODY

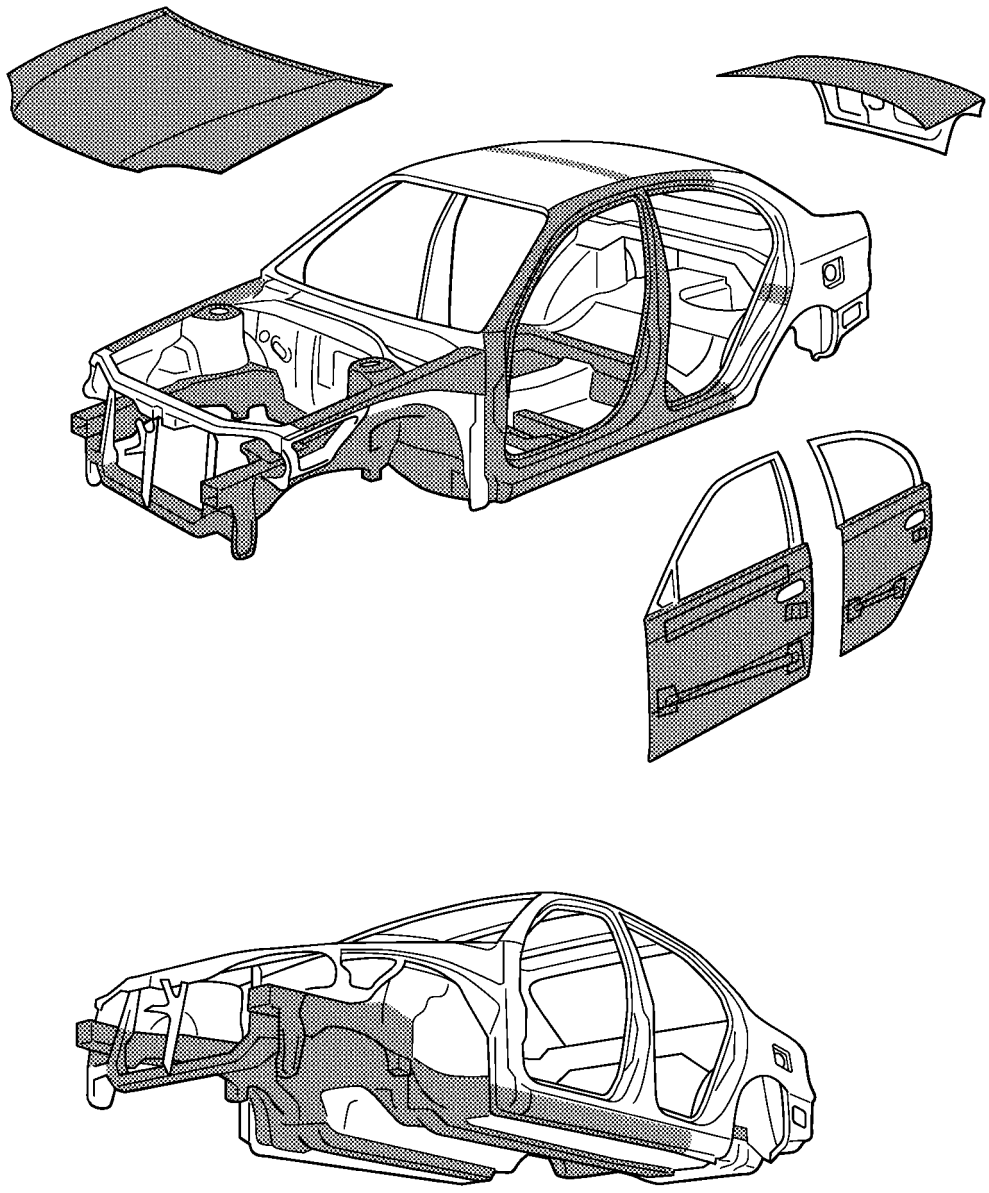
LIGHTWEIGHT AND HIGHLY RIGID BODY

The body of the new Avensis/Corona has been made lightweight and highly rigid by the optimised joining construction of the panels, adopting high-strength sheet steel, increasing the thickness of the reinforcements and members in the various areas of the body, and optimizing the allocation of materials.

■HIGH STRENGTH SHEET STEEL

High strength sheet steel is used for the hood, door panels and members.

: High Strength Sheet Steel

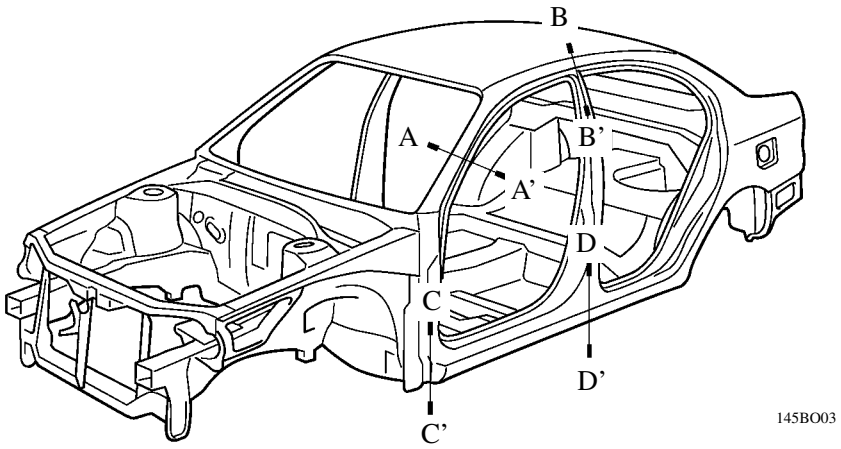


145BO01

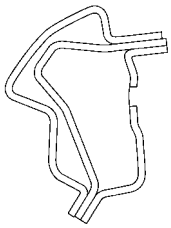
Sedan Model

■ BODY SHELL

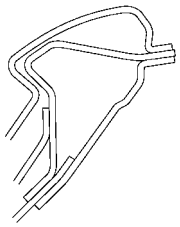
The body of the new Avensis/Corona is made highly rigid through the optimization of the location of reinforcements and the continuity in underbody members. Also, pillar joints and reinforcements are made larger and redesigned to realize the excellent joint rigidity.



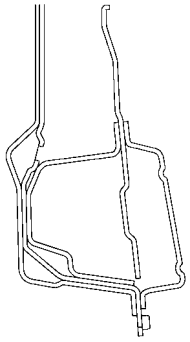
Sedan Model



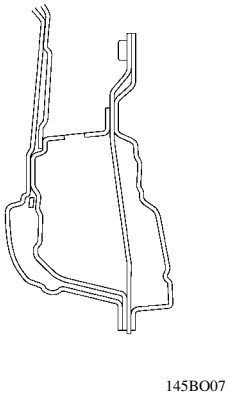
A – A' Cross Section



B – B' Cross Section



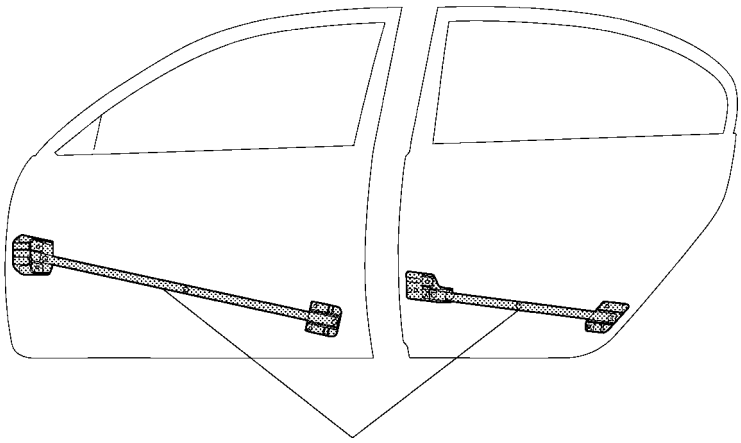
C – C' Cross Section



D – D' Cross Section

■DOORS

A pipe type side impact protection beams are mounted at the bottom of the front and rear doors.



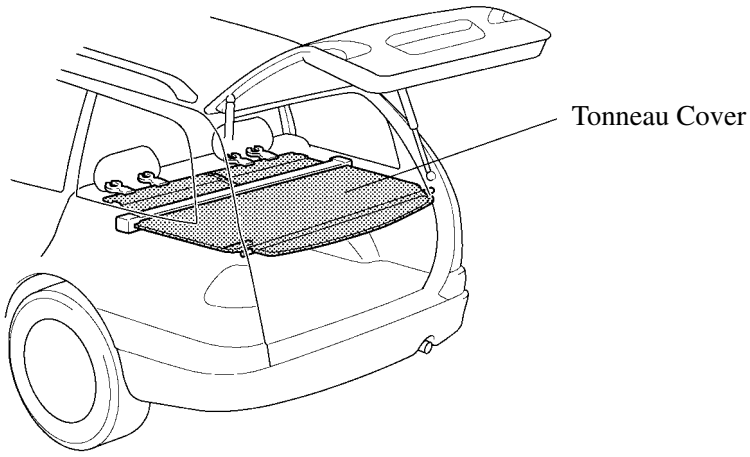
Side Protection Beams

145BO08

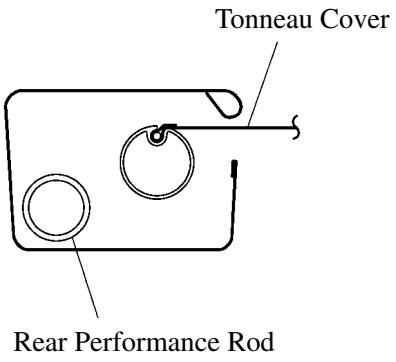
Sedan Model

■ REAR PERFORMANCE ROD

A rear performance rod that has been newly provided on the wagon model to connect the right and left rear wheelhouses and provide the excellent body rigidity of the rear suspension area.
The rear performance rod is integrated with the tonneau cover.
Also, to facilitate the use of the luggage room of the wagon model, a lock lever has been provided to enable the rear performance rod (with tonneau cover) to be removed and reinstalled easily.

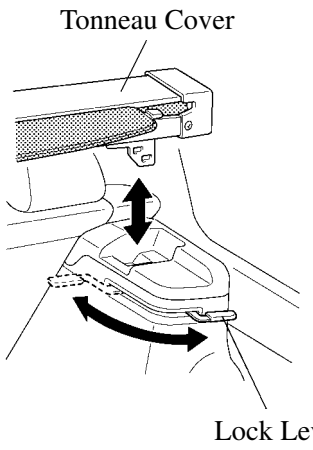


145BO64



145BO70

Cross Section



145BO65

■IMPACT ABSORBING STRUCTURE

1. General

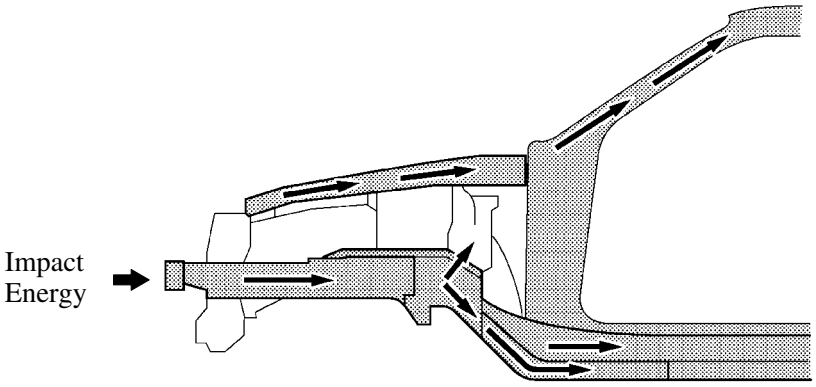
The impact absorbing structure of the new Avensis/Corona provides a body construction that can effectively absorb the energy of impact in the event of a front, rear, or side collision. Also, it realizes an excellent occupant protection performance through the use of reinforcements and members that help minimize cabin deformation.

2. Construction

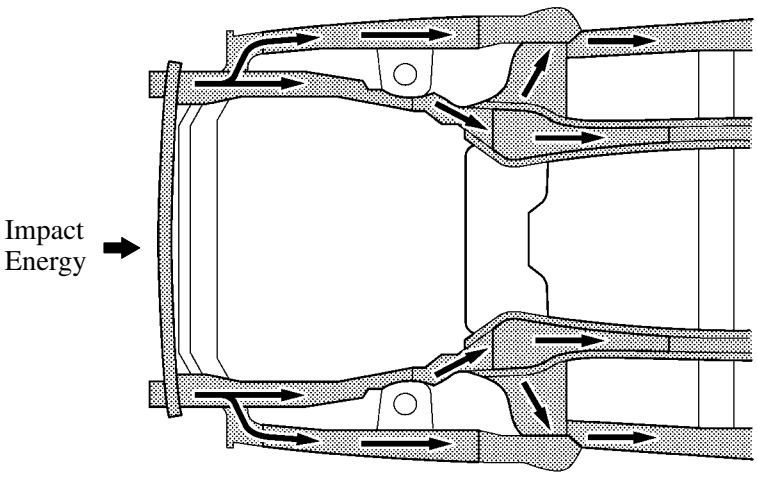
Impact Absorbing Structure for Front/Rear Collision

In conjunction with the revision made to the impact absorbing structure for front or rear collision, reinforcements and members around the cabin and the underbody have been changed in shape, their locations have been optimized, or they have been newly provided.
Accordingly, the underbody and cabin framework were made to efficiently absorb and dissipate the impact energy in case of a front or rear collision, thus realizing a body structure to help minimize cabin deformation.

▶ Impact Absorbing Structure for Front Collision ◀



145BO11

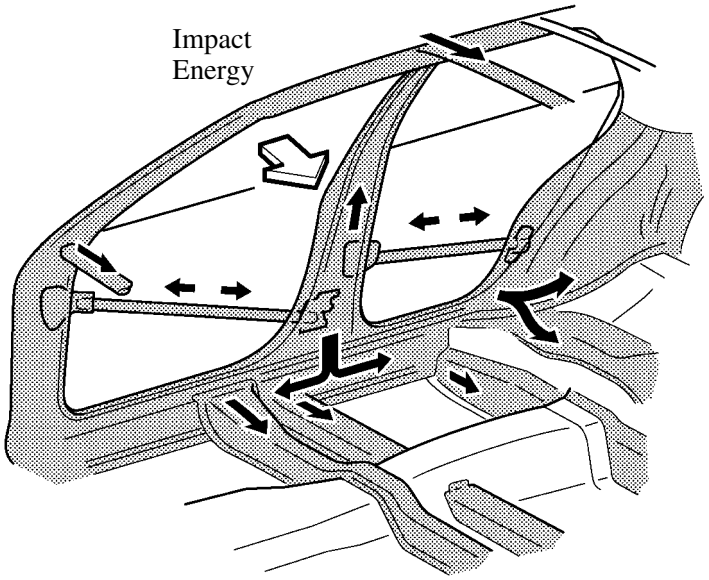


145BO12

Impact Absorbing Structure for Side Collision

Impact energy of a side collision directed to the cabin area is dispersed throughout the body via pillar reinforcements, side impact protection beams, floor cross members, etc. This dispersion of energy keeps the energy directed to the cabin to a minimum level. In addition, the body is made highly rigid through reinforced joints and the use of high strength sheet steel in order to maintain the maximum preservation of the cabin space.

▶ Impact Absorbing Structure for Side Collision ◀

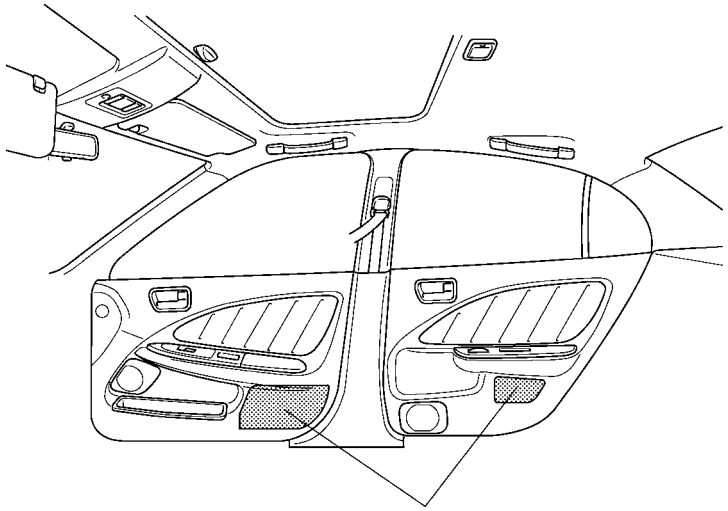


145BO13

Sedan Model

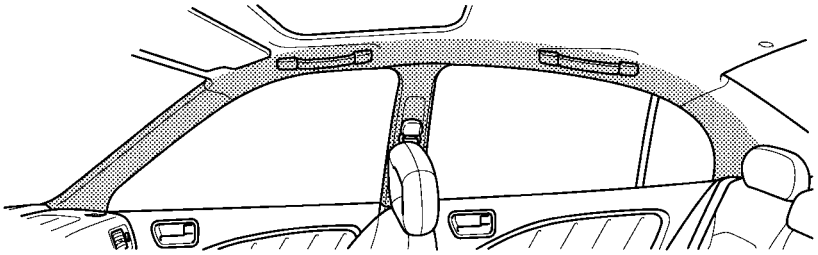
Trim and Garnish

- The door trim design is adapted to the side collision impact absorbing structure. A high impact absorbing material is used at the inside of door trim.



Sedan Model

- Also, a Head Impact Protection Structure has been adopted. With this type of construction, if the occupant's head hits against the roof side rail and pillar in reaction to a collision, the inner panel of the roof side rail and pillar collapses to help reduce the impact.



Sedan Model

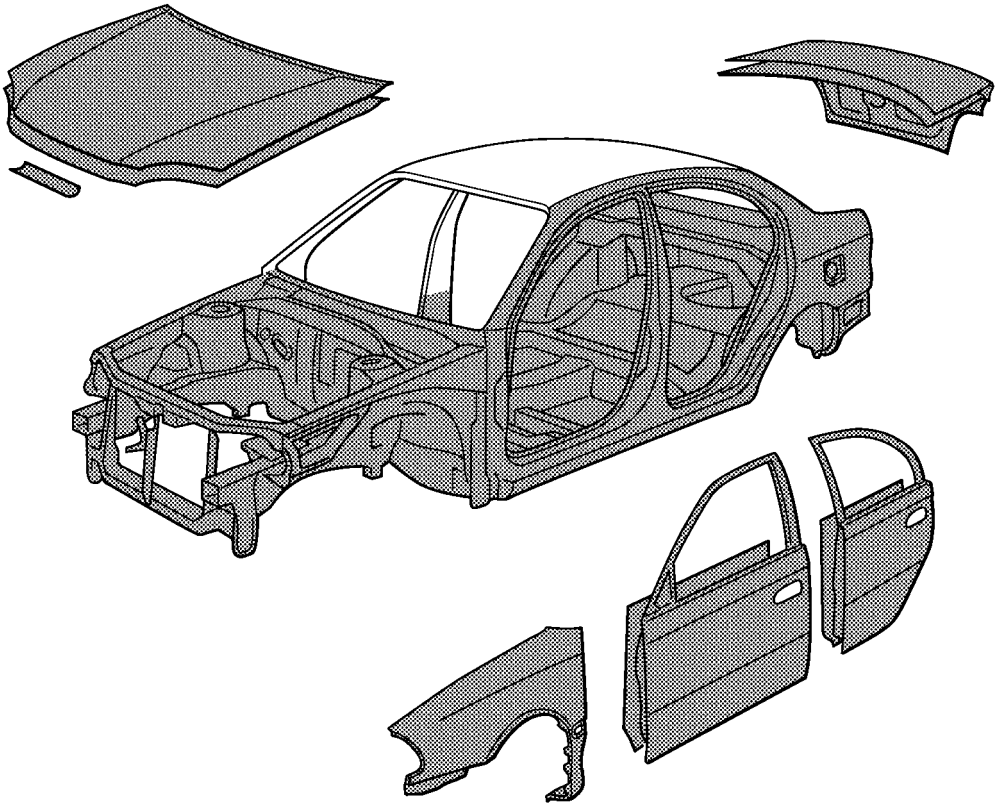
RUST-RESISTANT BODY

Rust-resistant performance is enhanced by extensive use of anti-corrosion sheet steel and an anti-corrosion treatment by applying wax, sealer and anti-chipping paint to easily corroded parts such as the hood, doors and rocker panels.

■ ANTI-CORROSION SHEET STEEL

Anti-corrosion sheet steel is used in all areas other than the roof and interior parts.

: Anti-Corrosion Sheet Steel



145BO15

Sedan Model

■WAX AND SEALER

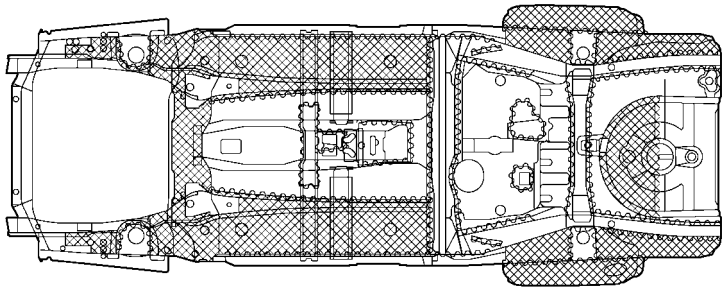
Wax and sealer are applied to the hemmed portions of he hood, door panels and luggage compartment door to improve rust-resistant performance.

■UNDER COAT

PVC (Polyvinyl Chloride) coating is applied to the under side of the body. A thick coating to improve rust resistant performance is applied to the bottom side of the cowl panel, the fender apron and other parts which are subject to damage by flying stones, etc.

: PVC Coating Area

: Edge Seal



145BO16

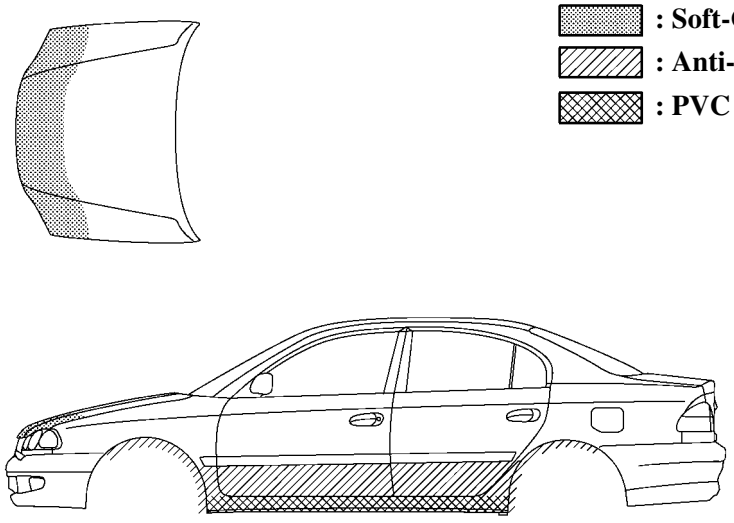
■ANTI-CHIPPING APPLICATION

Anti-chipping paint and PVC chipping primer are applied to the lower door panel area, front and rear wheel arches and the rocker panel area to protect them from flying stones. In addition, soft-chip primer is applied to the hood.

: Soft-Chip Primer

: Anti-Chipping Paint

: PVC Chipping Primer



145BO17

Sedan Model

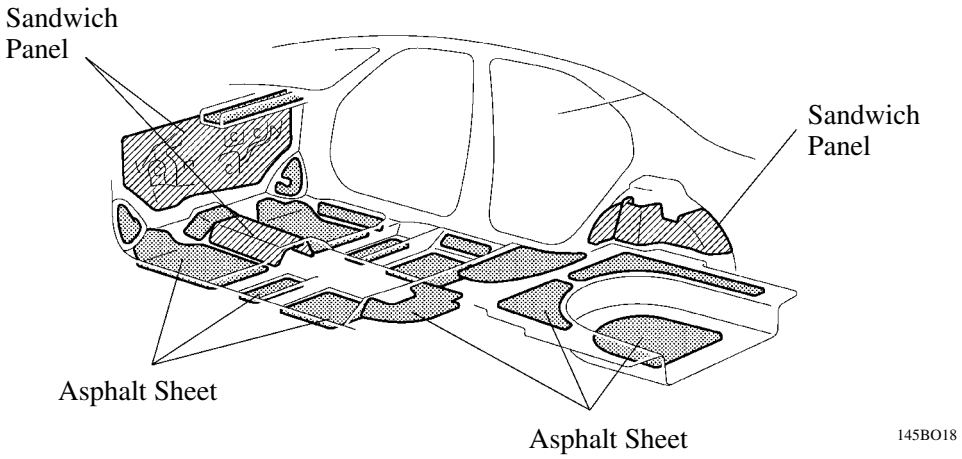
LOW VIBRATION, LOW NOISE BODY

Effective application of vibration damping and noise suppressant materials reduce engine and road noise.

■SOUND ABSORBING AND VIBRATION DAMPING MATERIALS

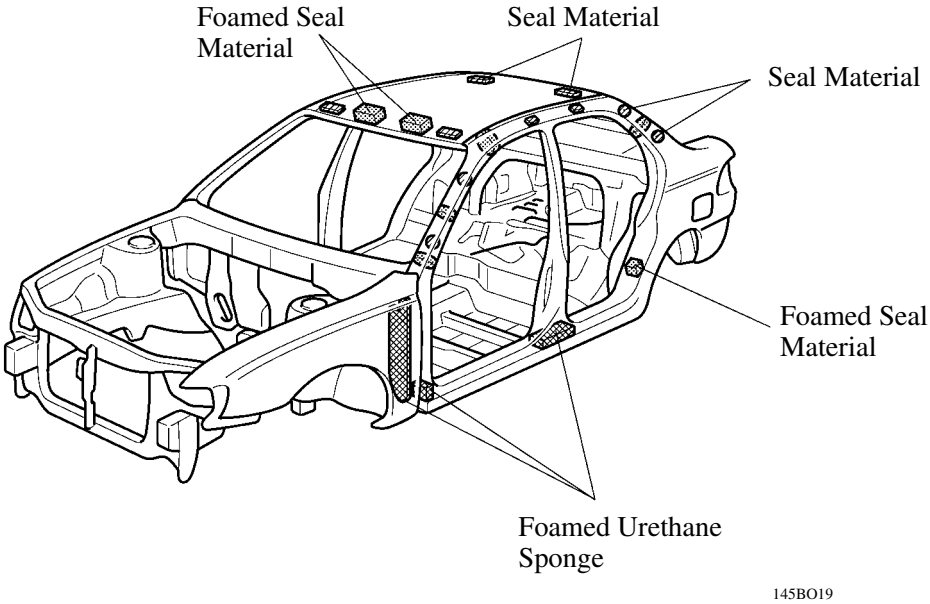
- Lightweight asphalt sheets are applied to most of the floor area to reduce engine and road noise during vehicle operation.
- Sandwich panel is used in the dash panel, front floor tunnel and rear wheel housings.
- Silencer is used in the various body shell areas to reduce engine, road, and wind noise.
- Foamed material and seal material are applied onto the roof panel and pillars to reduce wind noise.

▶ Asphalt Sheet and Sandwich Panel ◀



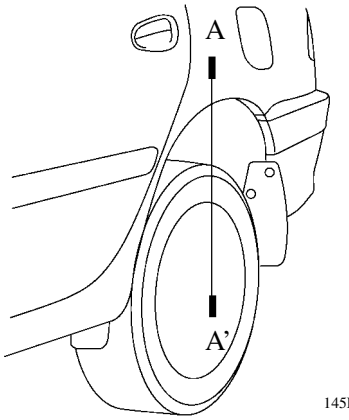
Sedan Model

▶ Foamed Material and Seal Material ◀

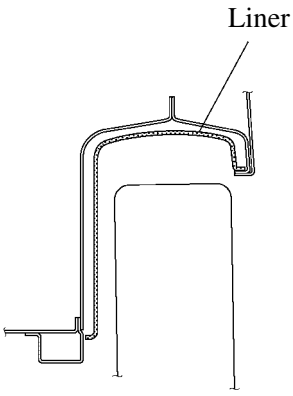


Sedan Model

- A liner is used inside the rear wheelhouse to reduce the noise that is created by the sand and pebbles hurled by the tire while the vehicle is in motion.



145BO20

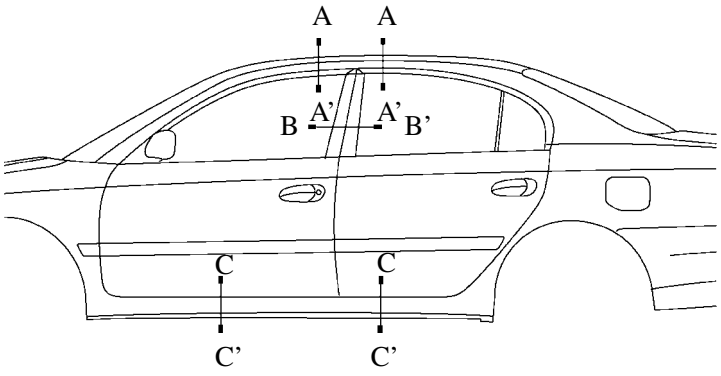


145BO21

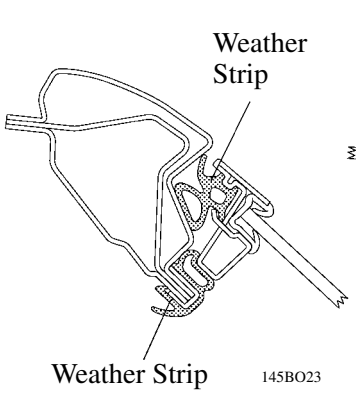
A – A' Cross Section

■ WEATHER STRIP

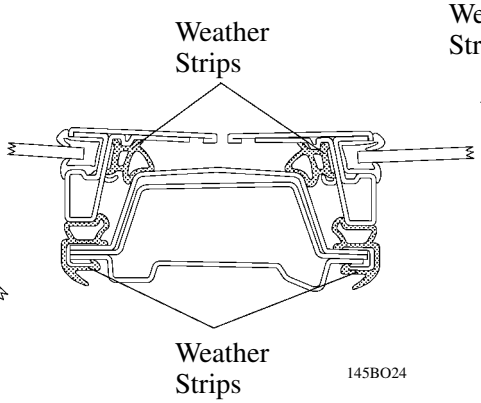
The weather strip around the doors provides double seals to reduce the wind noise created in the vicinity of the door.



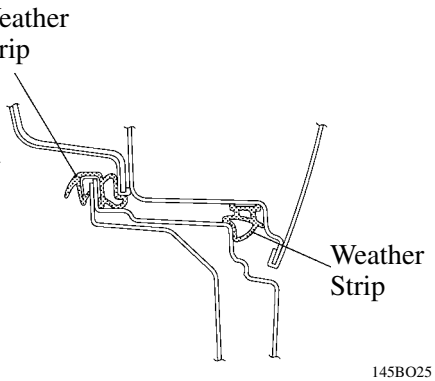
145BO22



145BO23



145BO24



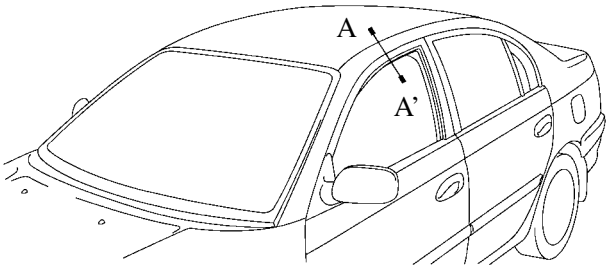
145BO25

A – A' Cross Section **B – B' Cross Section** **C – C' Cross Section**

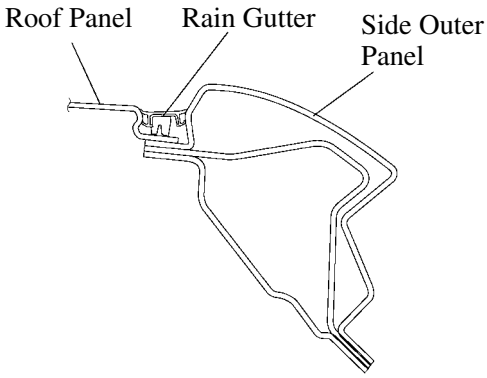
ENHANCEMENT OF PRODUCT APPEAL

■ ROOF

A rain gutter is provided between the side outer panel and the roof panel to reduce the amount of rain dripping from the sides of the roof.



145BO30

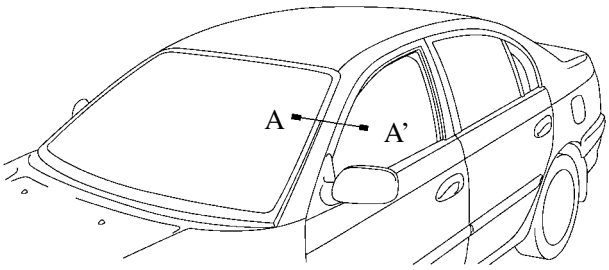


145BO31

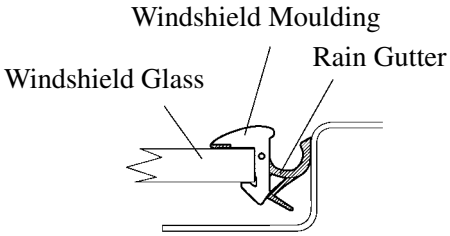
A – A' Cross Section

■ WINDSHIELD MOULDING

A rain gutter has been incorporated into the periphery of the windshield moulding in order to reduce the rain flow down from the roof panel to the windshield glass.



145BO30

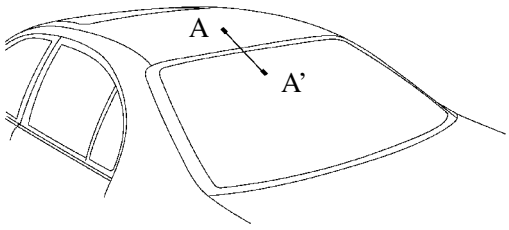


145BO34

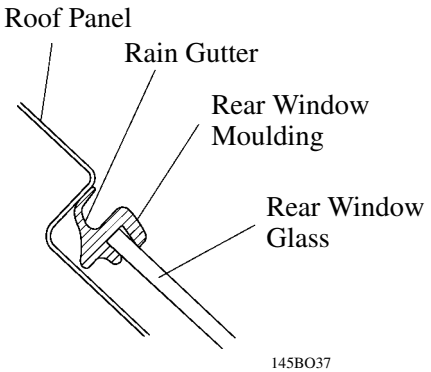
A – A' Cross Section

■REAR WINDOW MOULDING (SEDAN MODEL)

A rain gutter is incorporated in the rear window moulding to reduce the rain flow over the rear window. Also, the width of the rear window moulding has been reduced to realize a sleek design.



145BO36

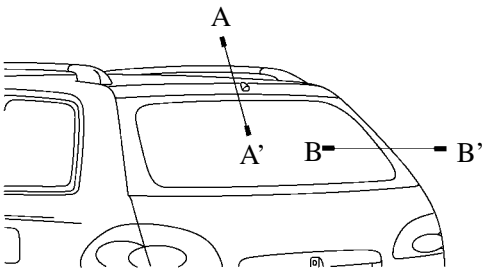


145BO37

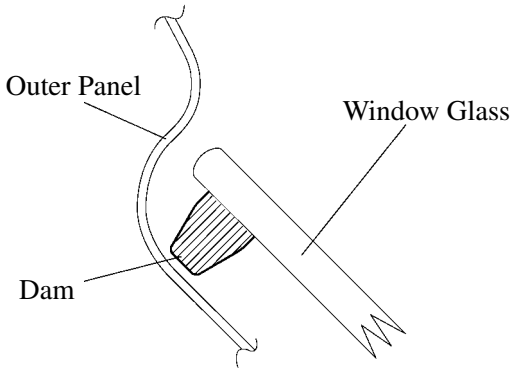
A – A' Cross Section

■BACK DOOR WINDOW MOULDING (WAGON MODEL)

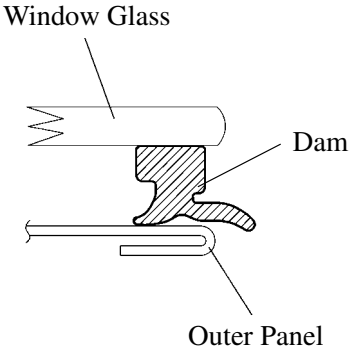
The upper and side window mouldings for the back door window glass have been discontinued to realize a sleek design.



145BO68



145BO71



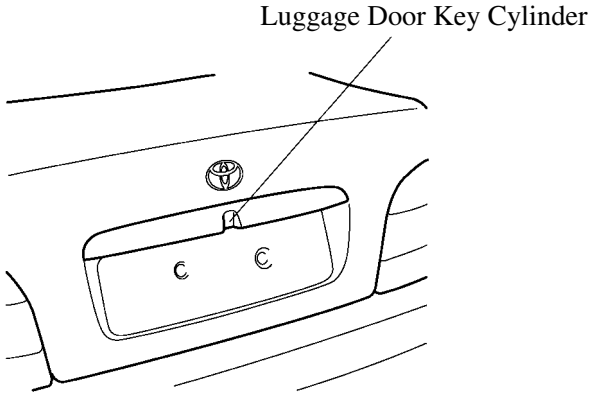
145BO72

A – A' Cross Section

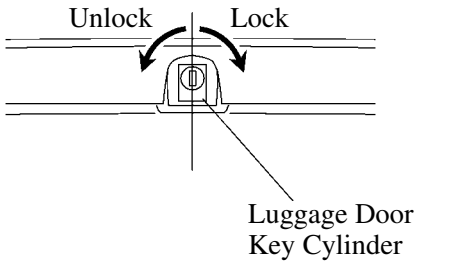
B – B' Cross Section

■LUGGAGE DOOR/BACK DOOR KEY CYLINDER

The power door lock switch or the transmitter's lock function can be used to lock/unlock the luggage door or the back door simultaneously with the front and rear doors.
However, if the luggage door or the back door has been locked by operating the key cylinder with the master key, they cannot be unlocked by operating the power door lock switch or the transmitter.



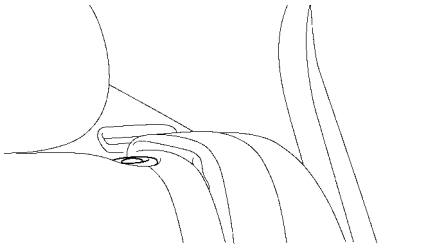
145BO44



145BO45

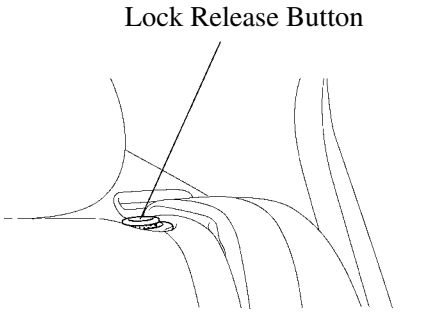
■SEAT

The new Avensis/Corona has newly adopted a mechanism that detects if the rear seat back latch is ajar.
If the seat back latch is ajar, the tip of the lock release button protrudes, exposing a red mark on the tip to inform the passenger that the seat back latch is ajar.



145BO42

Lock State



145BO43

Half Latch State

■SEAT BELT

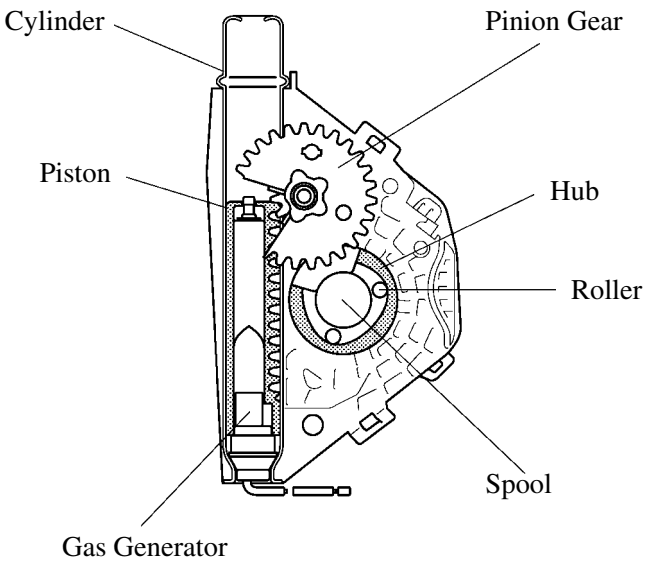
1. General

- On models for Europe, he front seats are provided with an electrical sensing type seat belt pretensioner and a seat belt force limiter.
  In the beginning of a collision, the seat belt pretensioner instantly takes up the seat belt, thus realizing the excellent belt's effectiveness in restraining the occupant.
  When the impact of a collision causes the tension of the seat belt that is applied to the occupant to reach a predetermined level, the force limiter restrains the tension, thus reducing the force that is applied to the occupant's chest area.
- In accordance with the ignition signal received from the airbag sensor assembly, the seat belt pretensioner activates simultaneously with the deployment of the SRS airbag for the driver and front passenger.

2. Seat Belt Pretensioner

Construction

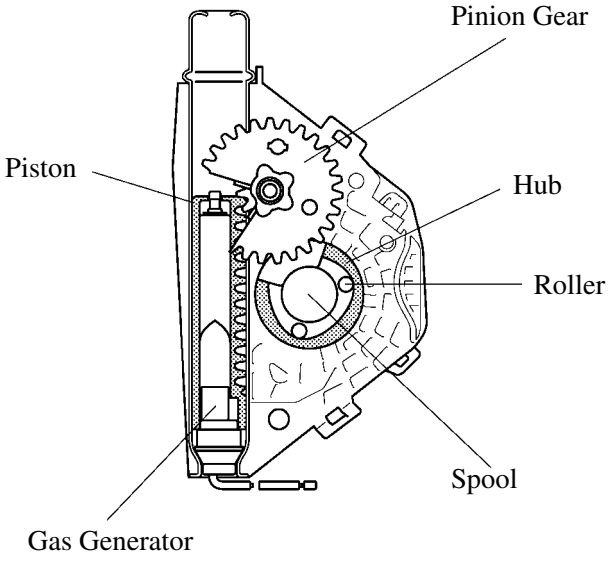
The seat belt pretensioner consists of the gas generator, piston, pinion gear, hub, rollers and spool.



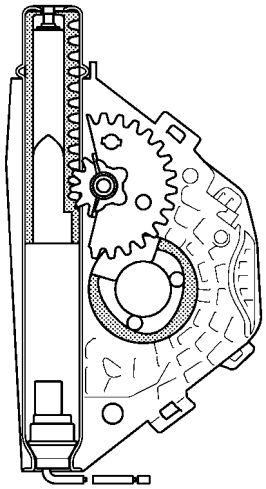
145BO73

Operation

When the gas generator ignites in response to the ignition signal received from the air sensor, the resultant combustion gas pushes the piston. The pushing of the piston causes the gear that is meshed to the periphery of the piston to rotate. The rotation of the gear rotates the hub, causing the roller to become wedged between the hub and the spool. As a result, the rotation of the hub is transmitted via the roller to the spool, thus retracting the seat belt.



145BO73



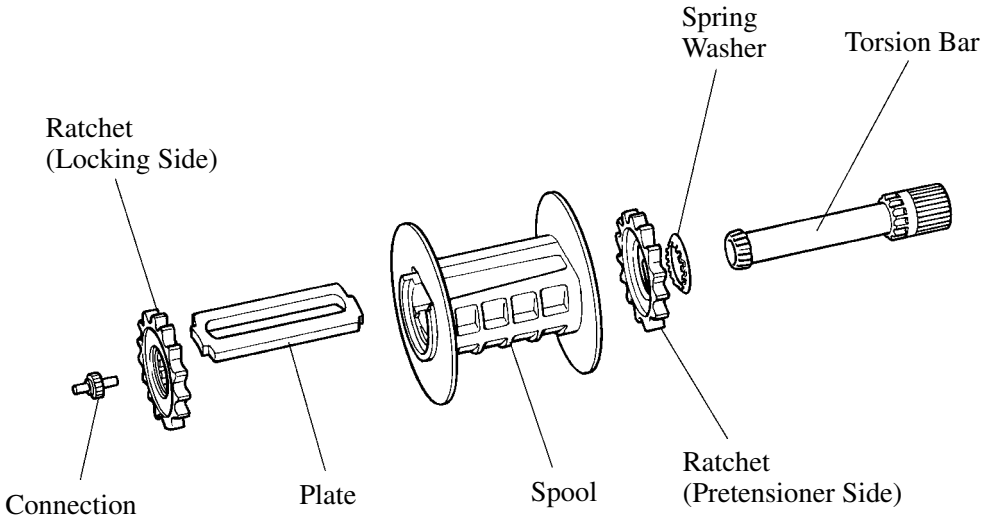
145BO74

Inactive **Activated**

3. Seat Belt Force Limiter

Construction

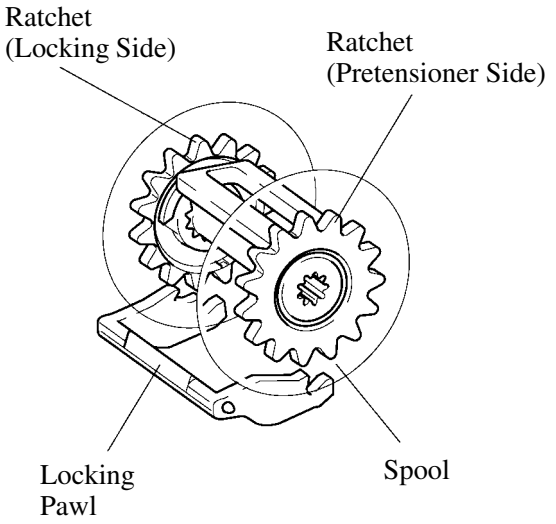
The seat belt force limiter consists of a locking pawl, ratchets, spool, torsion bar, and plate. The torsion bar is fitted into the spool at one end and into the ratchet at the other end.



145BO75

Operation

- If the seat belt is pulled out at an acceleration rate that exceeds a predetermined value, the ELR mechanism activates to engage the locking pawl with the ratchet, preventing the belt from pulling out.
- When the ELR mechanism is activated, if a force that exceeds the predetermined load is applied to the seat belt, the spool rotates, causing the seat belt to pull out. At this time, because the torsion bar is secured at one end by the ratchet and locking pawl, the torsion bar twists with the rotation of the spool (pulling out the seat belt). This twist in the torsion bar acts as a resistance against the pulling out of the seat belt. Further, as the spool rotates, the protrusion on the spool comes in contact with the plate, causing the force limiter operation to end.



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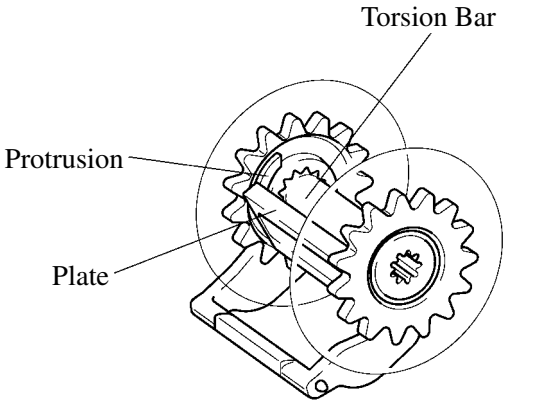
Inactive



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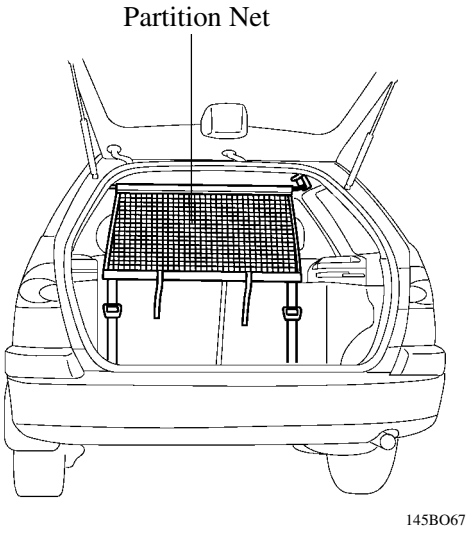
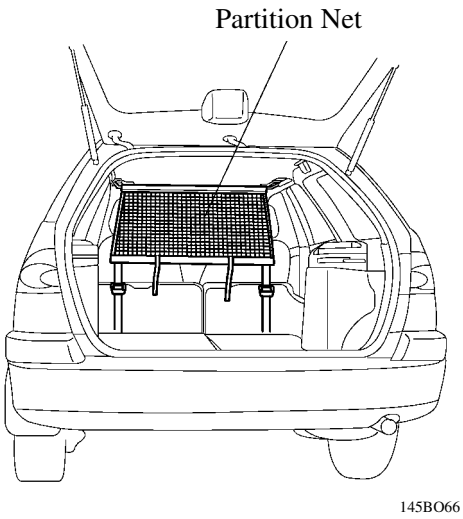
Activated

■ PARTITION NET

The wagon model has been provided with a partition net that separates the passenger area from the luggage area. When the vehicle is transporting luggage, the partition net is intended to prevent loosened luggage from intruding into the passenger area.
In addition, 2 locations have been provided for attaching the partition net, depending on whether or not the rear seat is being used.



When the rear seat is used

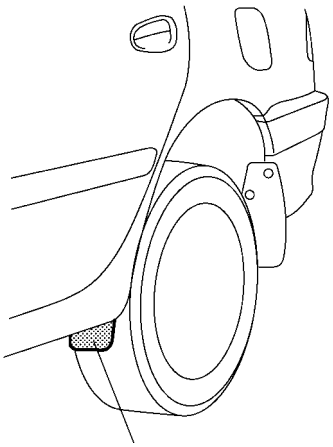


When the rear seat is not used

AERODYNAMICS

■ SPAT

A spat has been newly provided ahead of the rear tires to smooth out the airflow around the tires and reduce the air resistance while the vehicle is in motion.



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