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Chapter 1 Interior Decoration System

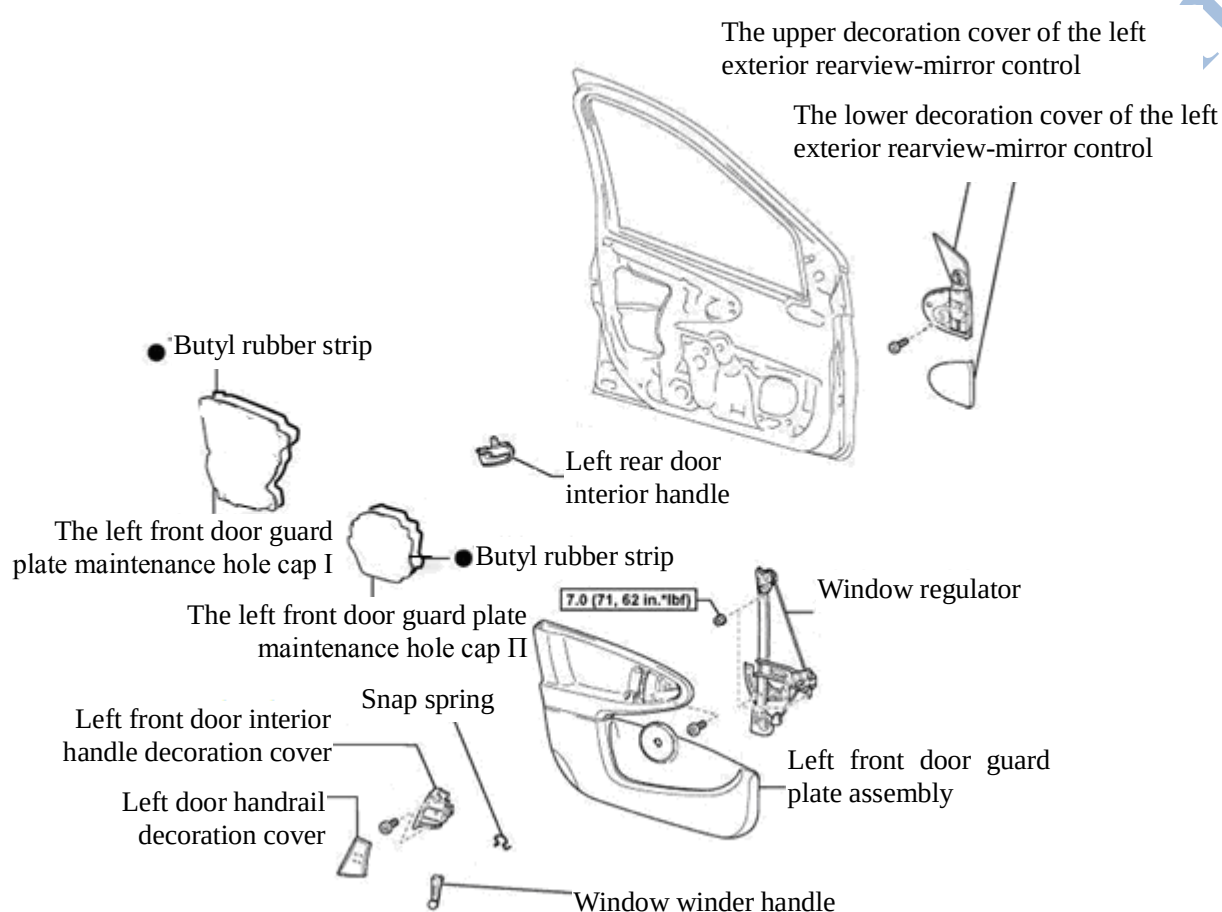
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Section 1 Door Guard Plate System

1.1 Left Front Door Guard Plate

1.1.1 Structure Components

Function: The left front door guard plate plays major roles in sheet-metal shielding and decoration, at the same time provides space for placing drinking cups, papers and magazines. The primary components are the handrail for opening and closing the door, the handle of the window winder and so on, as shown in the following figure.

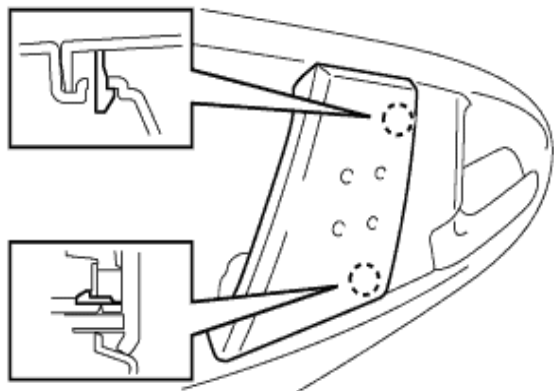


1.1.2 Removal

1.1.2.1 Remove the decoration cover of the left front door handrail.

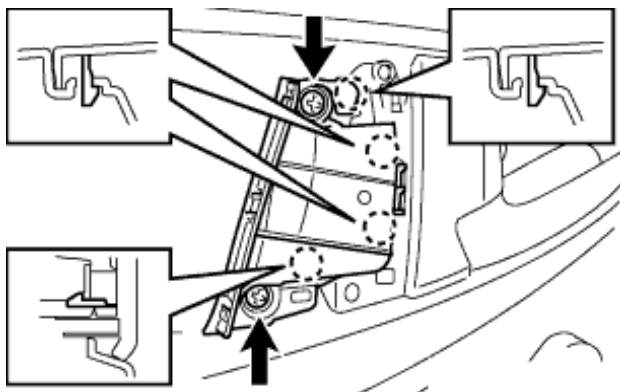
Prize the claw as shown in the figure up with a flat-tip screwdriver wrapped in tape.

Then remove the decoration cover of the left front door handrail.



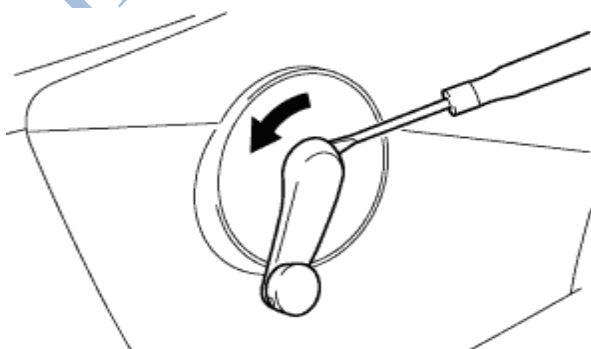
1.1.2.2 Remove the decoration cover of the left front door interior handle

Unscrew 2 screws, and pull out the decoration cover of the interior handle along the direction of the claw to remove it.



1.1.2.3 Remove the handle of the window wind

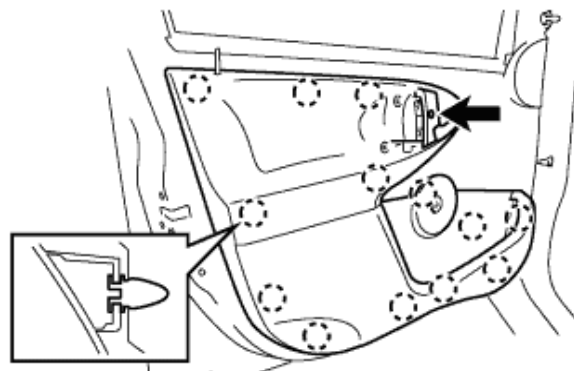
Prize gently with a flat-tip screwdriver with a rotation movement in the direction as shown in the figure to remove it.



1.1.2.4 Remove the left front door guard plate assembly

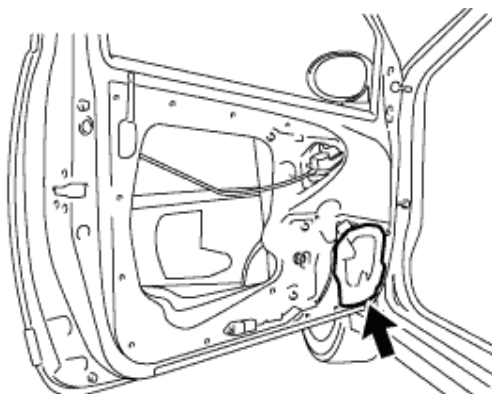
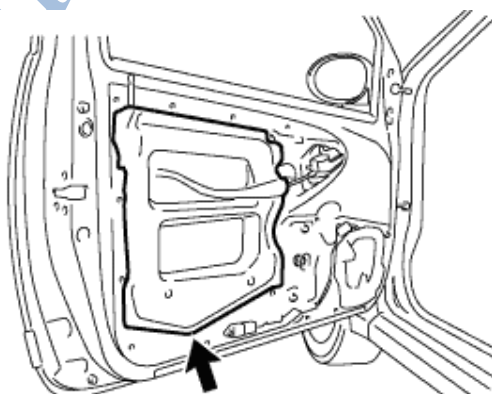
1.1.2.4.1 Unscrew the screw as shown in the figure.

1.1.2.4.2 Prize at the position of the snap in the top-left corner with a flat-tip screwdriver wrapped in tape, then pull along the direction of the snap to remove the assembly.



1.1.2.5 Remove the cap of the maintenance hole

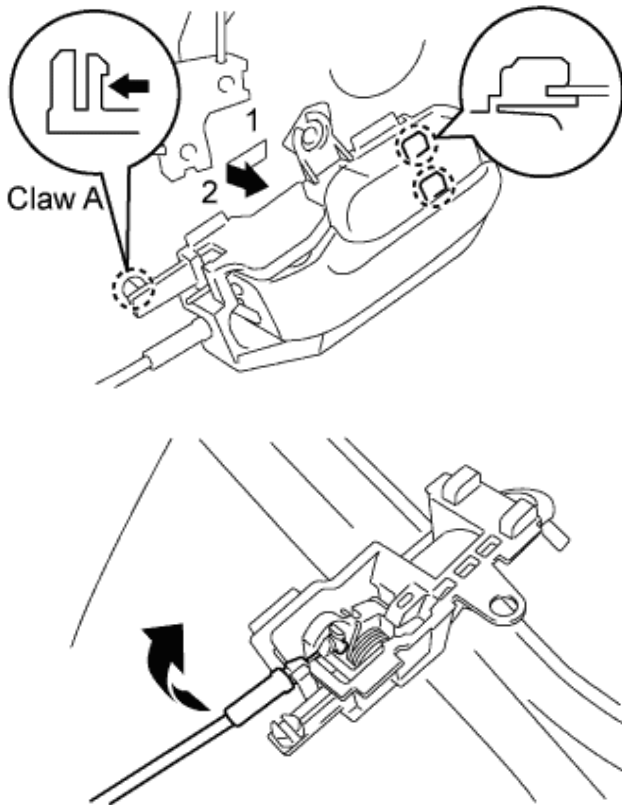
Note: Clear up the viscous butyl rubber strip



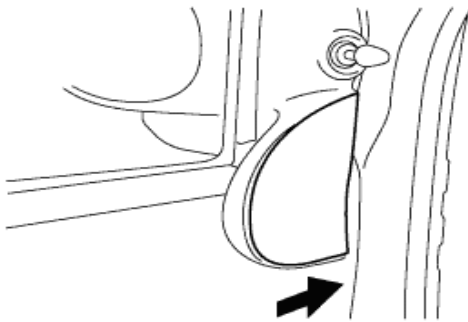
1.1.2.6 Remove the left front door interior handle assembly

1.1.2.6.1 Push the interior handle hard along the direction of the cable and at the same time pull the cross bar above the claw A outwards to prize off A.

1.1.2.6.2 Take the interior handle off in the direction as shown in the figure, then remove the cable to remove the assembly.

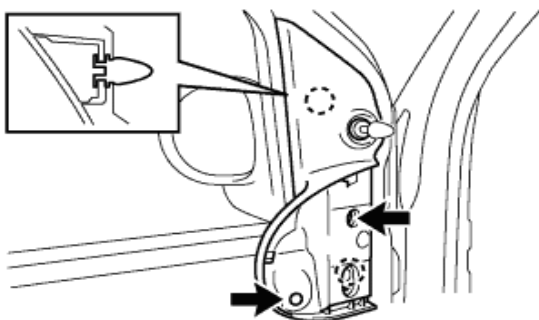


1.1.2.7 Remove the upper decoration cover of the exterior rearview-mirror control
Push in the direction as shown in the figure to remove it.



1.1.2.8

Remove the lower decoration cover of the exterior rearview-mirror control
Unscrew the screw, and prize both the snaps off to remove it.



1.2 Right Front Door Guard Plate

The right front door is symmetrical with the left front door, so the components and removing methods are the same.

1.3 Left Rear Door Guard Plate

1.3.1 Structure Components

Function: The left rear door guard plate also plays major roles in sheet-metal shielding and decoration, at the same time provides space for placing drinking cups, papers and magazines. The primary components of that are the handrail for opening and closing the door and so on, as shown in the following figure.

The left rear door guard plate maintenance hole cap I

Butyl rubber strip

The left rear door guard plate maintenance hole cap II

Left rear door handrail decoration cover
Left door handrail decoration cover

Left door interior handle

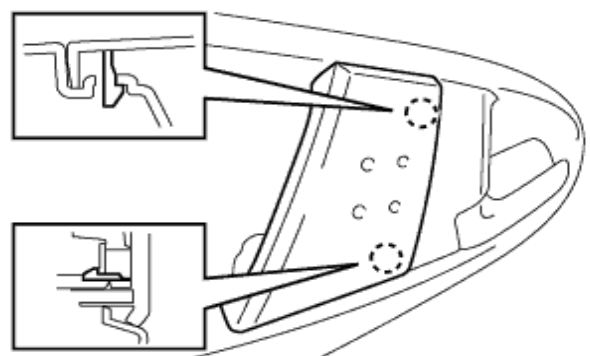
Left rear door interior guard plate assembly

1.3.2 Removal

1.3.2.1 Remove the decoration cover of the left rear door handrail.

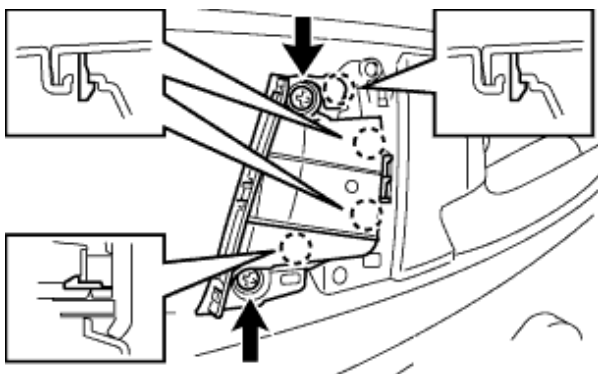
Prize off the claw as shown in the figure with a flat-tip screwdriver wrapped in tape.

Remove the decoration cover of the left rear door handrail.



1.3.2.2 Remove the decoration cover of the left rear door interior handle

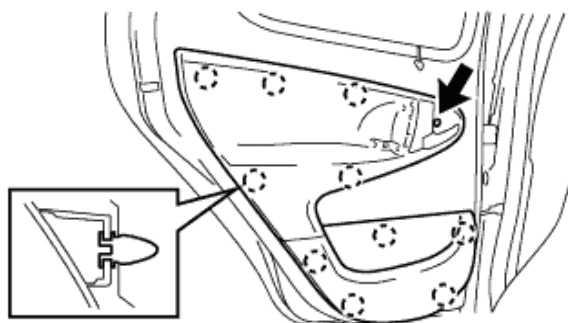
Unscrew 2 screws, and pull out the cover along the direction of the claw to remove the door interior handle.



1.3.2.3 Remove the left rear door guard plate assembly

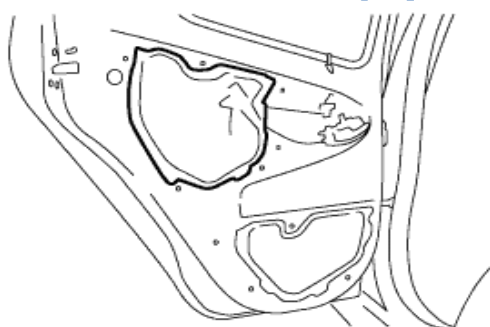
1.3.2.3.1 Unscrew the screw as shown in the figure

1.3.2.3.2 Prize the snap in the top-left corner with a flat-tip screwdriver wrapped in tape, then pull out along the direction of the snap to remove the assembly.



1.3.2.4 Remove the cap of the maintenance hole

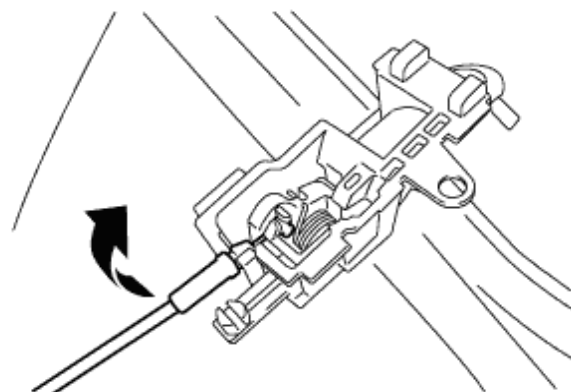
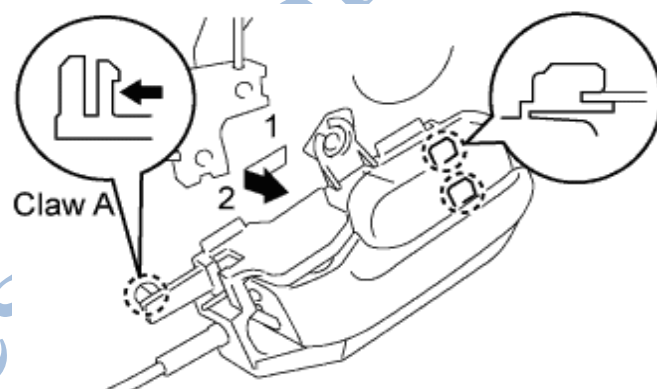
Note: Clear up the viscous butyl rubber strip



1.3.2.5 Remove the left rear door interior handle assembly

1.3.2.5.1 Push the interior handle hard in the direction of the cable and at the same time pull the cross bar above the claw A outwards to prize off A.

1.3.2.5.2 Take the interior handle off in the direction as shown in the figure, and remove the cable to remove the assembly.



1.4 Right Rear Door Guard Plate

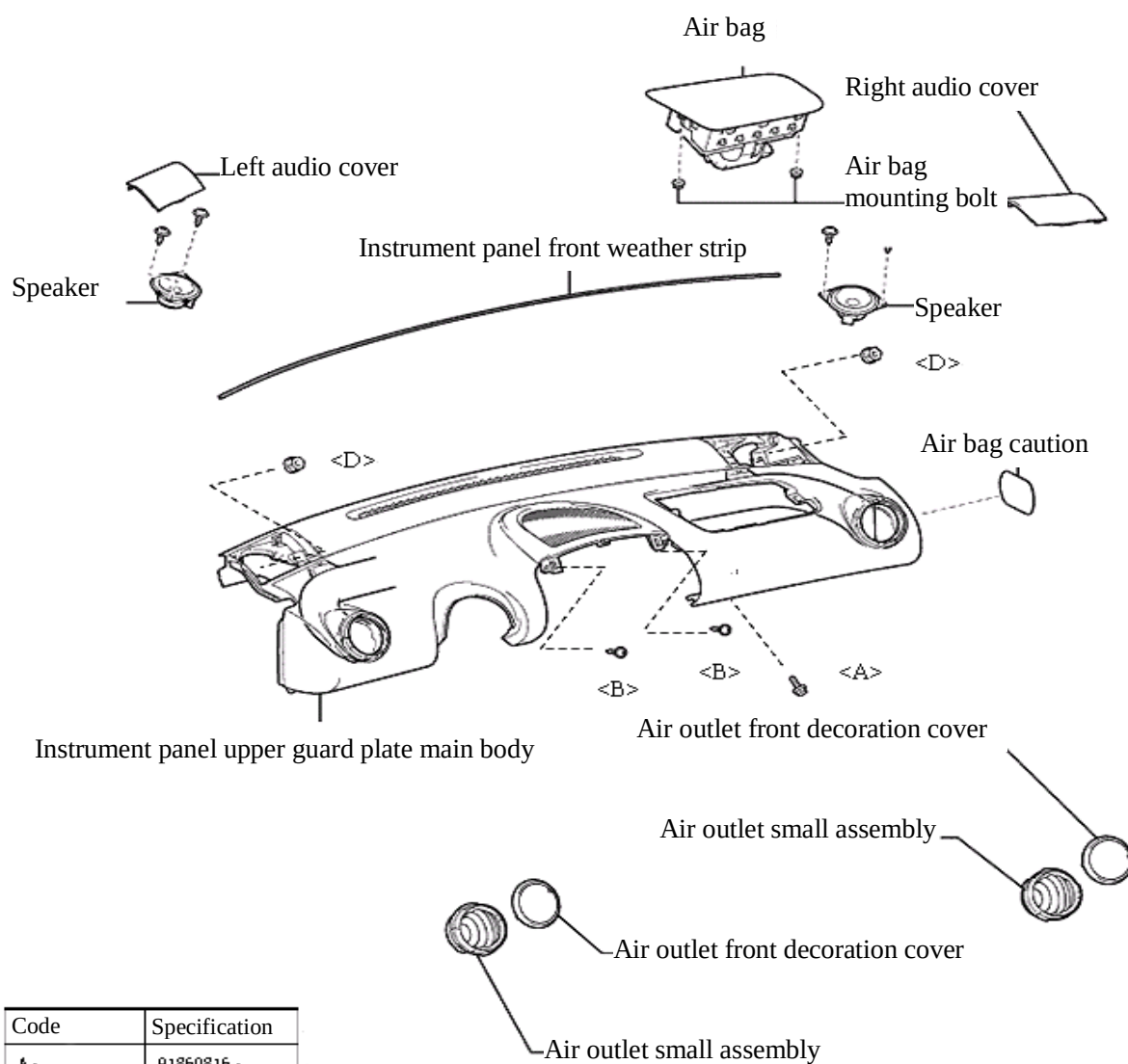
The right rear door is symmetrical with the left rear door, so the components and removing methods are the same.

Section 2 Instrument Panel Assembly

2.1 The Upper Guard Plate Assembly of the Instrument Panel

2.1.1 Parts & components

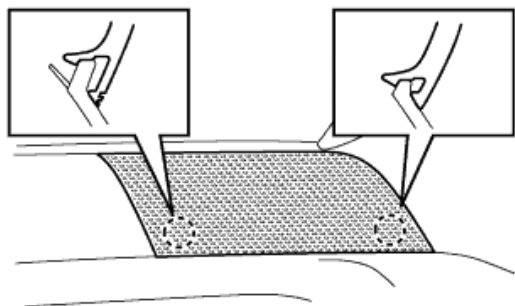
Exploded view



Code	Specification
A.	Q1860816.
B.	Q2204813.
D.	Q32006.

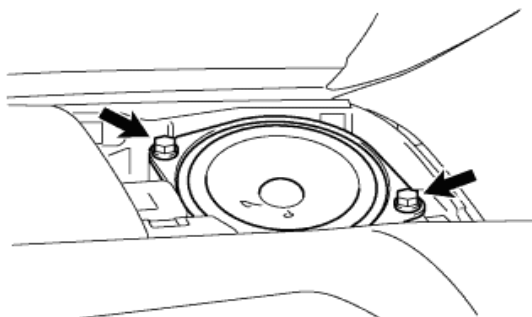
2.1.2 Removing procedure:

2.1.2.1 Prize the audio cover open with a flat-tip screwdriver wrapped in tape.

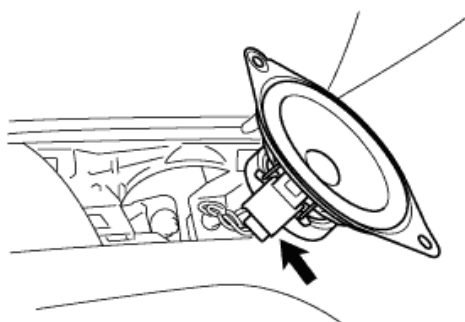


2.1.2.2 Remove the loudspeaker

2.1.2.2.1 Unscrew the two mounting screws of the speaker

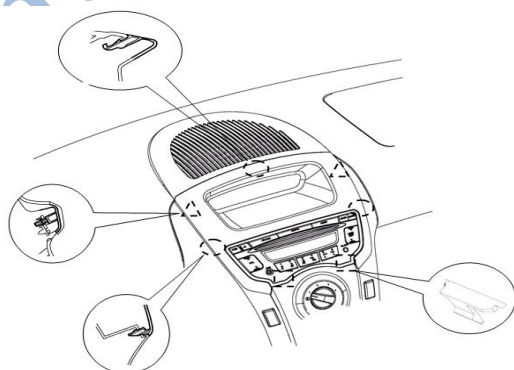


2.1.2.2.2 Take out the speaker



2.1.2.3 Remove the central control panel

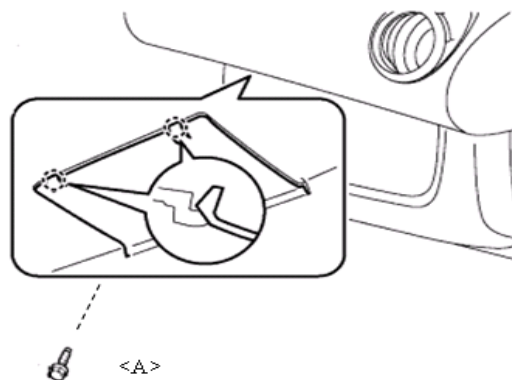
2.1.2.3.1 Prize the both sides with a flat-tip screwdriver wrapped in tape to release the snap.



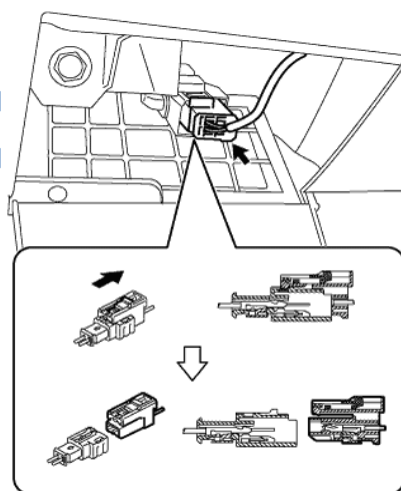
2.1.2.3.2 Pull out the connecting harness of the CD, and then take out the central control panel assembly

2.1.2.4 Remove the airbag fastening point

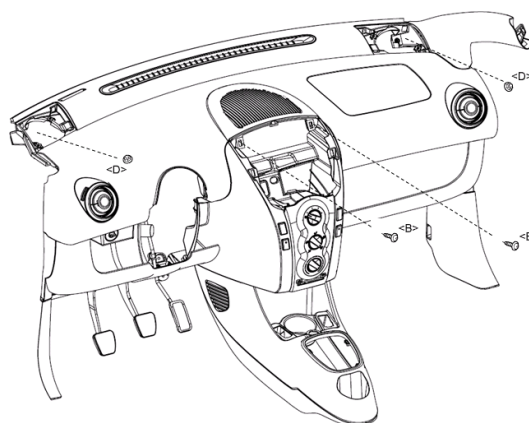
2.1.2.4.1 Open the airbag service hole cap, and unbolt the fixing bolt of the airbag and the tubular beam



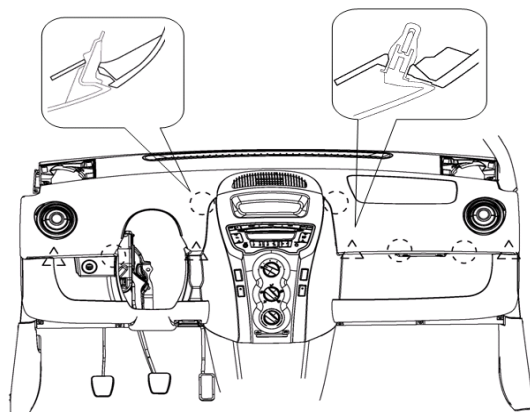
2.1.2.4.2 Pull out the airbag connecting harness as shown in the figure.



2.1.2.5 Unscrew the mounting screws of the instrument panel upper guard plate.



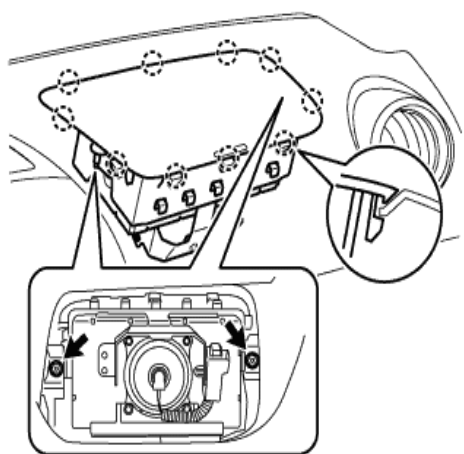
2.1.2.6 Prize the fastening points of the upper and lower guard plate snaps gently to release the snap.



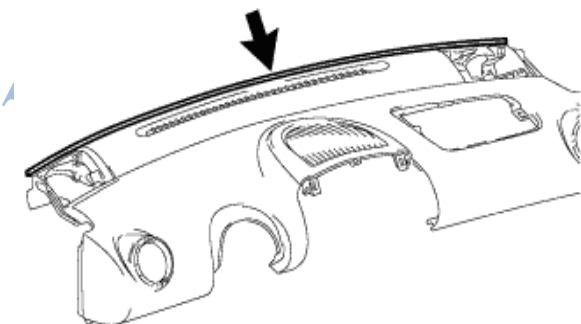
2.1.2.7 Remove and take out the airbag

2.1.2.7.1 Unbolt the two mounting bolts fixing the airbag on the instrument panel upper guard plate.

2.1.2.7.2 Release ten mounting snaps fixing the airbag on the instrument panel upper guard plate.



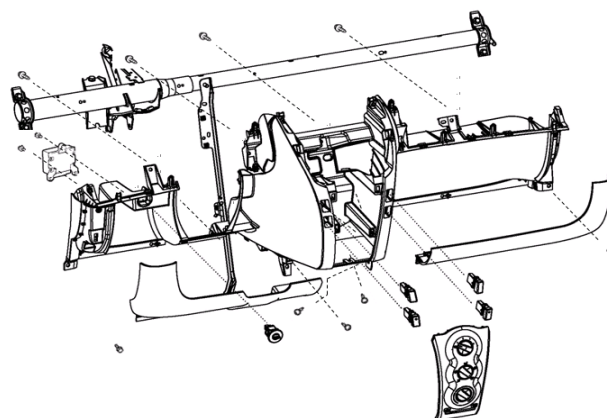
2.1.2.8 Remove the instrument panel upper guard plate.



2.2 The Lower Guard Plate Assembly of the Instrument Panel

2.2.1 Parts & components

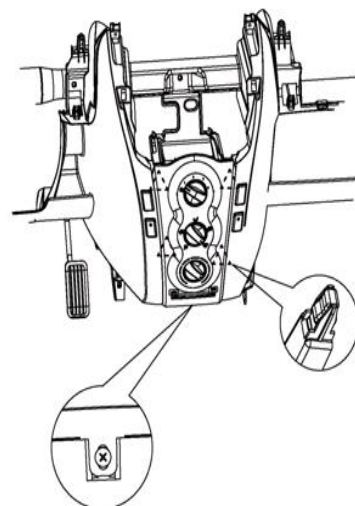
Exploded view



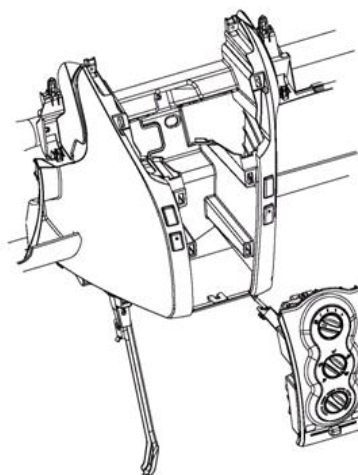
2.2.2 Removing procedure:

2.2.2.1 Remove the air conditioning control panel

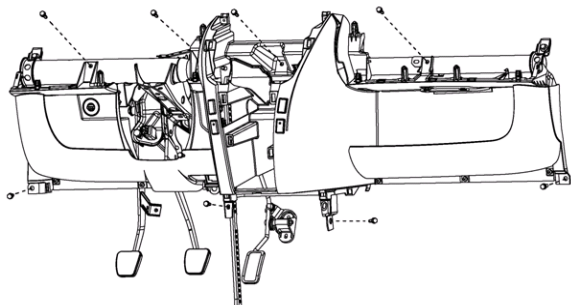
2.2.2.1.1 Unscrew one fastening screw and four mounting snaps



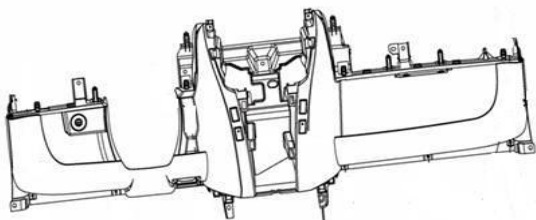
2.2.2.1.2 Pull out air conditioning speed regulation wire and other harness



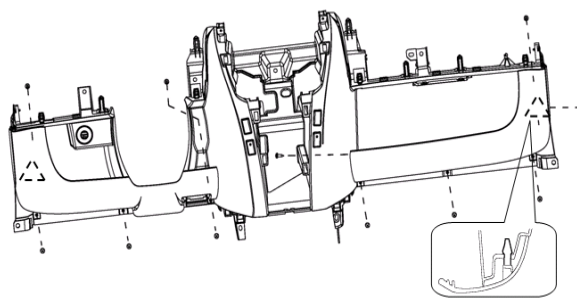
2.2.2.2 Unbolt the fixing bolt of the instrument panel lower guard plate to tubular beam and body, and draw out the fastening snaps on both sides of the instrument panel lower guard plate and tubular beam



2.2.2.3 Remove the instrument panel lower guard plate

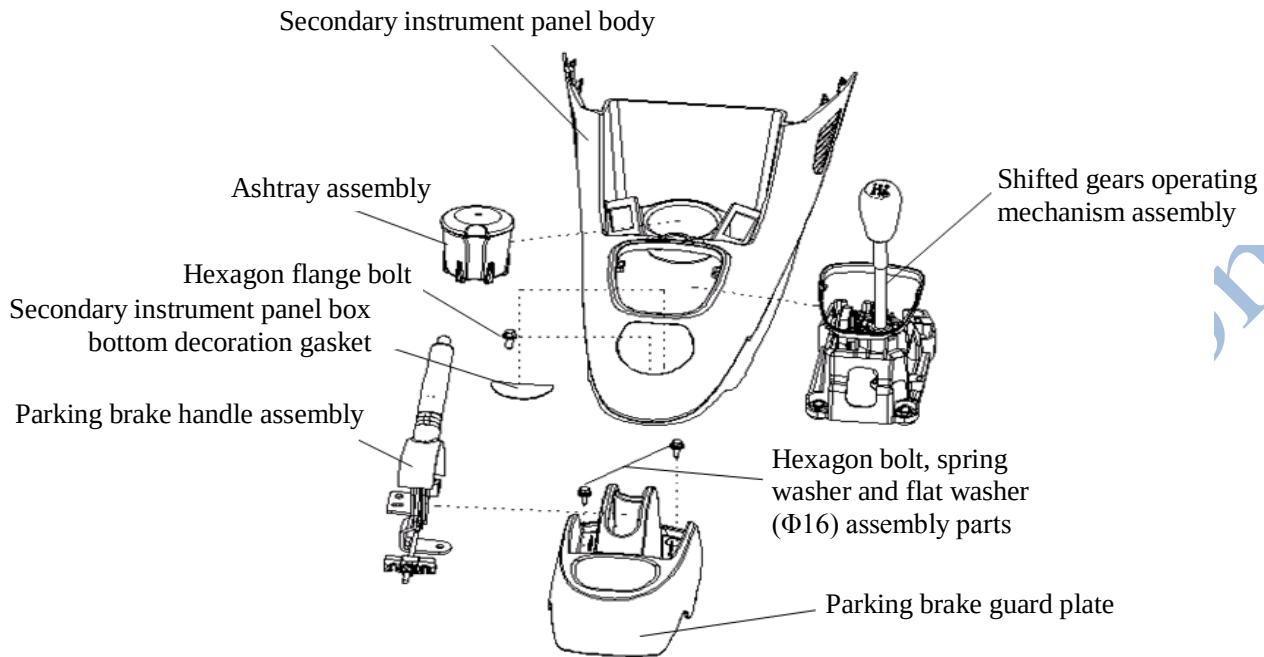


2.2.2.4 Remove the cover of glove compartment.



Section 3 Secondary Instrument Panel Assembly

3.1 Secondary Instrument Panel Assembly Components



3.2 Replacement

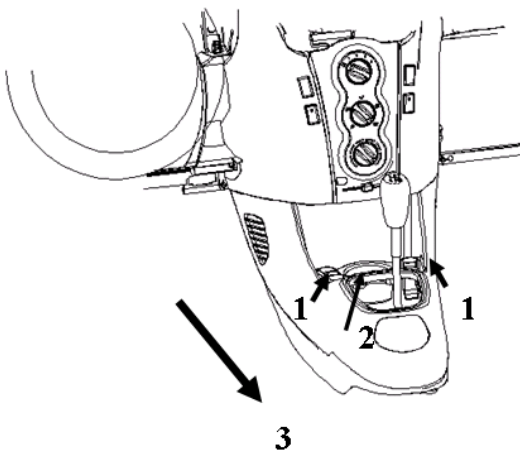
(Removing procedure is opposite to installing procedure, so only the removing procedure is described below)

3.2.1 Removing the body of the secondary instrument panel

3.2.1.1 Pull the dust cover near the shifting handle hard out the body of the secondary instrument panel, and remove the two power window switches at the place of arrow 1 and the cigar lighter and the on-board power supply at the place of arrow 2, with a flat-tip screwdriver wrapped in tape.

3.2.1.2 Take off the decoration gasket at the bottom of the secondary instrument panel box, unbolt the hexagon bolt with flange, then pull the secondary instrument panel body hard in the direction of arrow 3 to separate the connection of the secondary instrument panel body and the instrument panel lower guard plate; lift it along the shifting handle to remove the secondary instrument panel body.

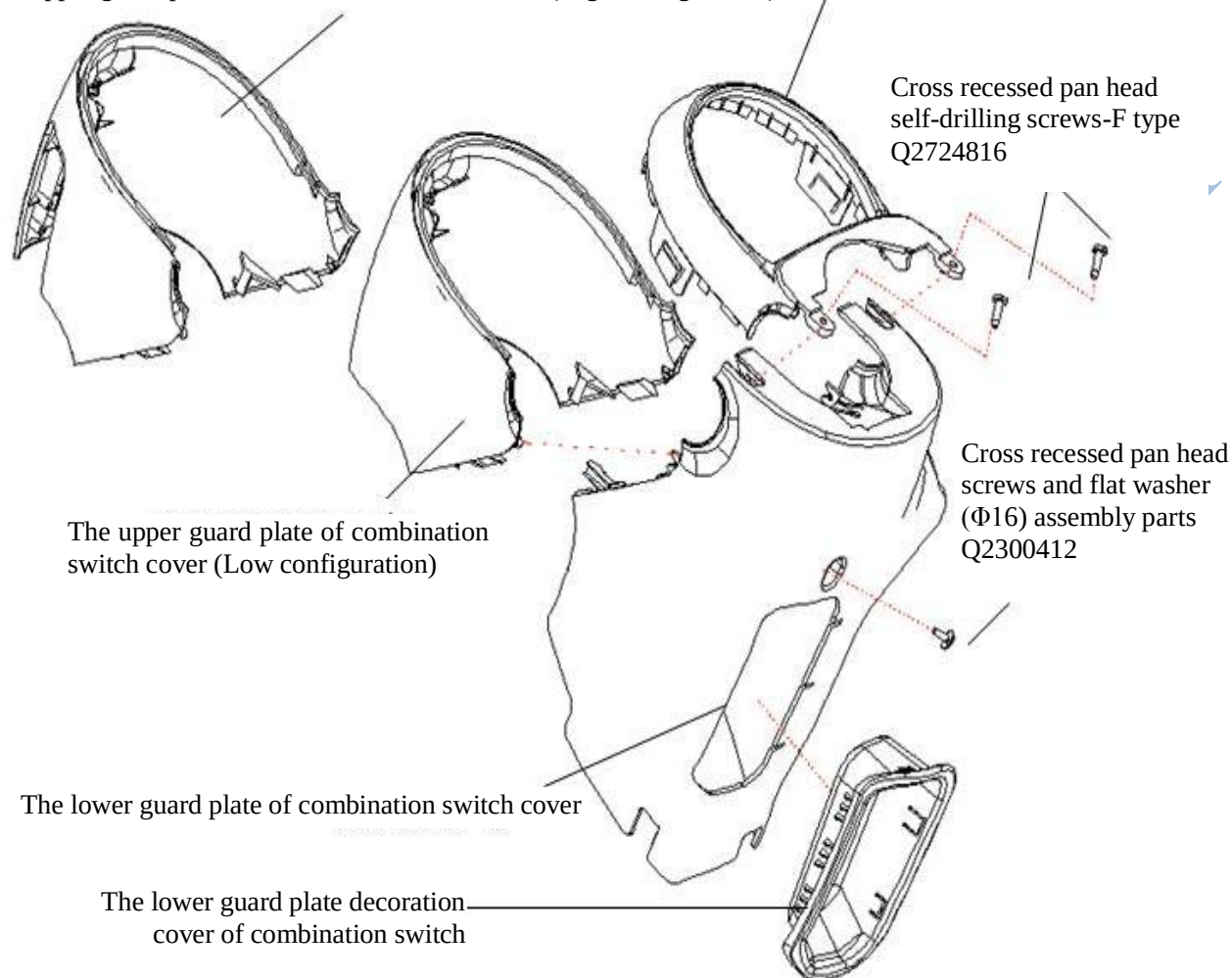
3.2.2 Removing the grip brake guard plate
Unbolt 2 groups of hexagonal bolts, spring washers and flat washers (φ16) assembly sets on the grip brake guard plate, lift it along the parking brake handle to remove the grip brake guard plate.



Section 4 Combination Switch Cover Assembly

4.1 Combination Switch Cover

The upper guard plate of combination switch cover (High configuration) Combination instrument front cover



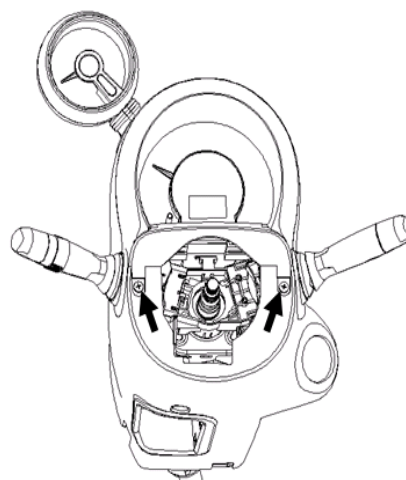
4.2 Replacement

(Removing procedure is opposite to fitting procedure, so only the removing procedure is described below)

4.2.1 Removing the combination instrument front cover and the combination switch cover upper guard plate

4.2.1.1 Removing the combination instrument front cover

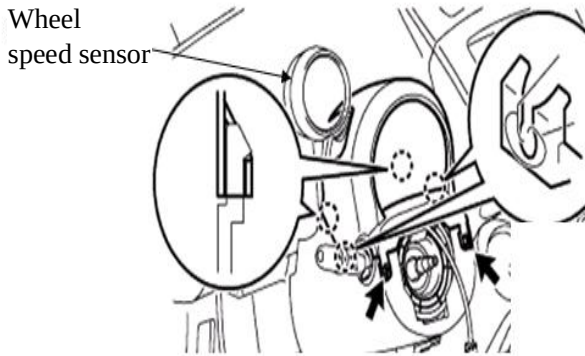
After removing the steering wheel, unscrew the cross recessed pan head self-drilling screws at the two arrows as shown in the figure with cross-head screwdriver. Pull out the front cover hard along the direction of the column.



4.2.2.2 Removing the combination switch cover upper guard plate

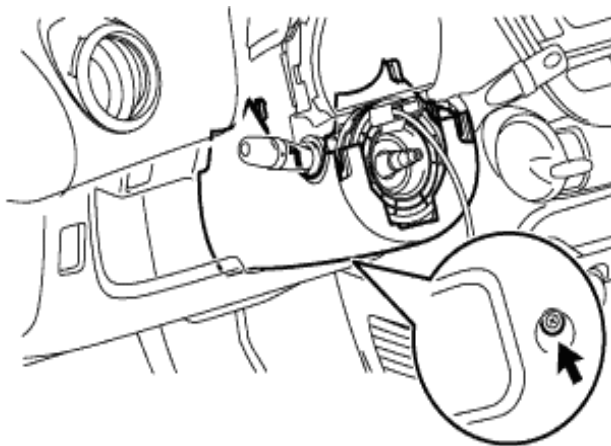
After pulling the front cover out, release the jaw of the upper guard plate forcibly and then remove the upper guard plate.

For standard configuration, the upper guard plate can be pulled out along the direction of the wheel speed sensor pedestal.



4.2.2 Removing the combination switch lower guard plate and the decoration cover

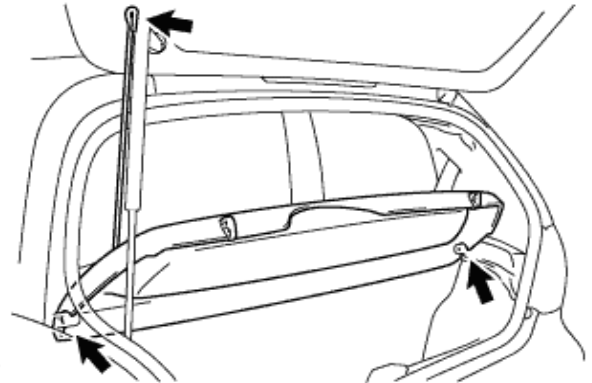
Unscrew the screw as shown in the figure with screw driver, lift the steering column integrally, then remove the combination switch lower guard plate and the decoration cover.



Section 5 Roof Assembly and Trunk lid Assembly

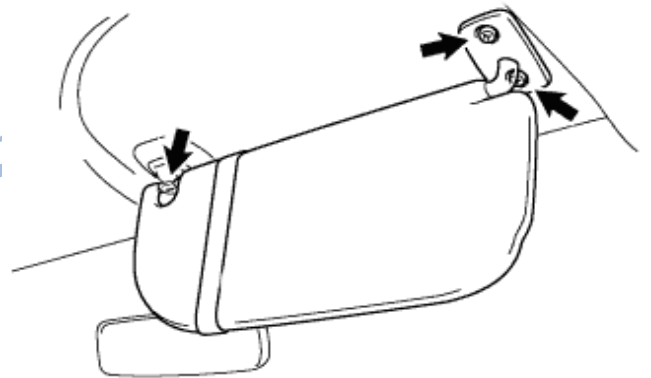
5.1 Removing Luggage Compartment

Remove the trunk lid



5.2 Removing Roof

5.2.1 Remove the right sun visor assembly



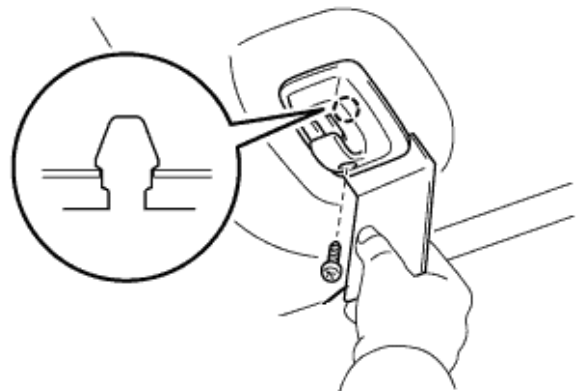
5.2.1.1 Remove the sun visor from the bracket;

5.2.2.2 Unbolt 2 bolts and remove the sun visor

5.2.2 Remove the left sun visor assembly

Tip: Take the same method as for the right.

5.2.3 Remove the sun visor fixing bracket

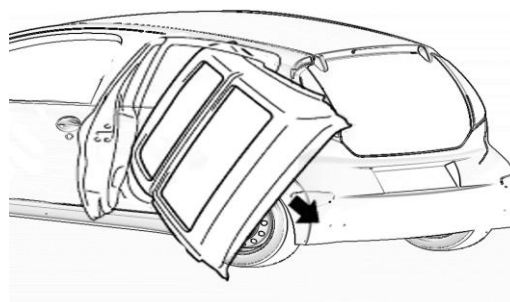
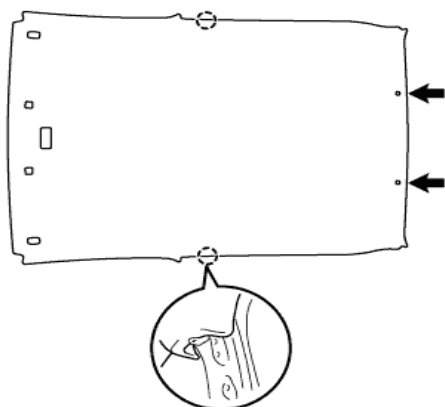


Tip: Take the same method to remove the fixing brackets on both sides.

5.2.3.1 Unbolt the bolt;

5.2.3.2 Remove the fixing bracket.

5.2.4 Remove the roof trim panel.

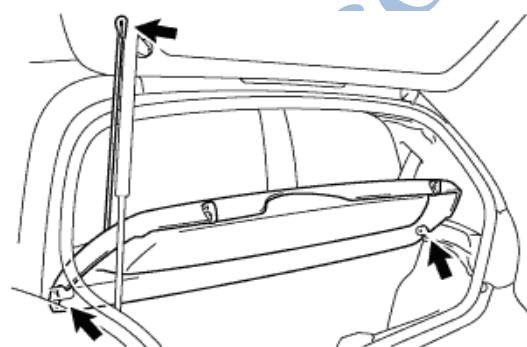
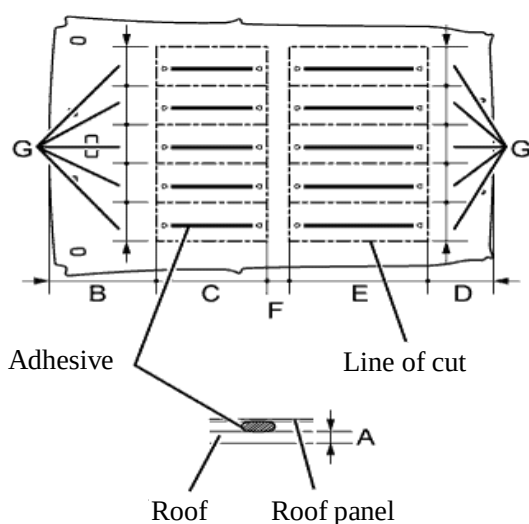


5.2.4.4 Take the roof trim off.

5.3 Assembling Luggage Compartment

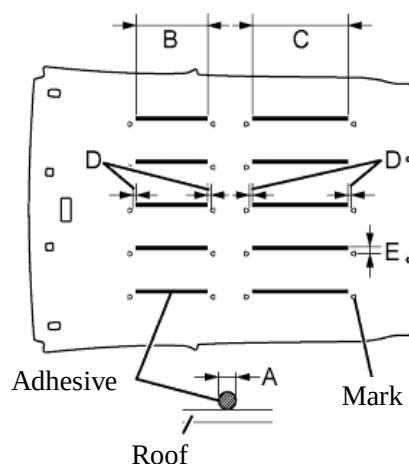
Assemble the trunk lid

5.2.4.1 Release 2 snaps;



5.4 Assembling Roof

5.4.1 Assemble the roof trim panel.



5.2.4.2 Cut the roof adhesive off as shown above.
Specifications:

Location	Length
A	6 mm (0.236 in.)
B	380 mm (14.961 in.)
C	390 mm (15.354 in.)
D	230 mm (9.055 in.)
E	495 mm (19.488 in.)
F	76 mm (2.992 in.)
G	167 mm (8.575 in.)

Note: don't cut in more than 6mm in depth, so as not to damage the roof.

5.2.4.3 Put fingers into the gap between the roof sheet-metal and the roof trim, separate the sheet-metal from the roof trim carefully.

Note: don't remove the roof trim by force, so as not to avoid damage the trim.

5.4.1.1 Clean off the residual adhesive on the roof carefully.

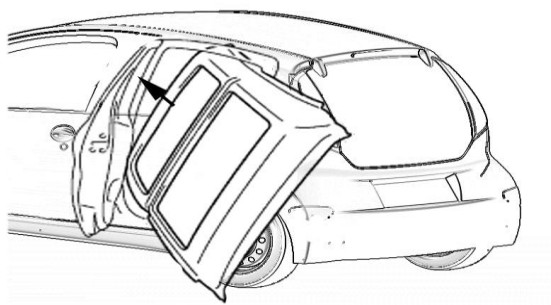
Note: No need to clean off all adhesive.

5.4.1.2 Usage of the adhesive as shown in the following table (8,595N/MT):

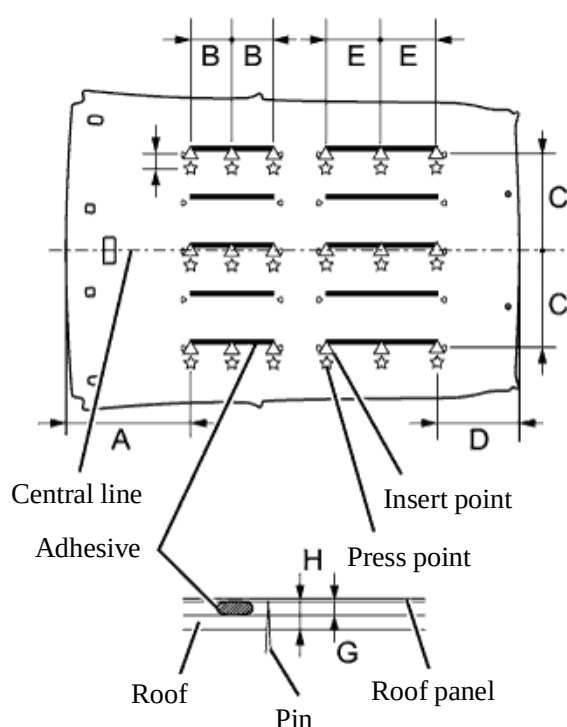
Specifications:

Location	Length
A	φ6 to 8 mm (0.236 to 0.315 in.)
B	290 mm (11.417 in.)
C	395 mm (39.500 cm.)
D	20 to 30 mm (0.787 to 1.181 in.)

Note: The spacing between adhesive is 20-30mm to prevent the adhesive too thick.



5.4.1.3 Assemble the roof trim on the roof.



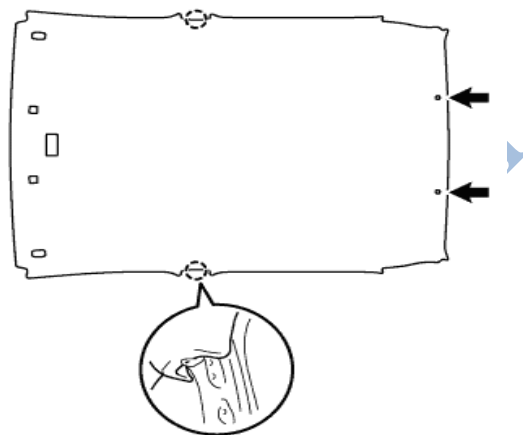
5.4.1.4 Press the roof cover trim onto the roof, until the spacing between the trim and sheet-metal at all the 18 points shown in figure above are less than 4mm.
Specifications:

Location	Length
A	430 mm (16.929 in.)
B	145 mm (5.709 in.)
C	335 mm (13.189 in.)
D	280 mm (11.024 in.)
E	197 mm (7.756 in.)
F	20 mm (0.787 in.)
G	4 mm or less (0.157 in. or less)
H	10 mm or less (0.394 in. or less)

Note: Do make sure your hands are clean when press the roof.

Press the roof with evenly as so not to damage the roof because of over strength at individual point.

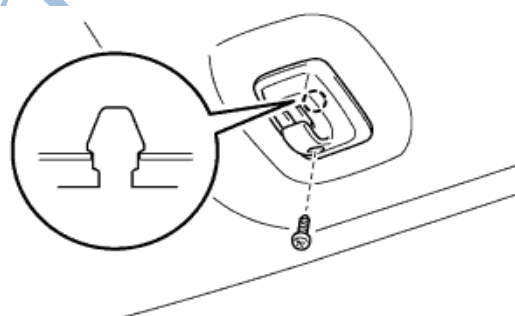
5.4.1.5 Insert a pin between roof and roof cover, then press roof cover until the spacing is less than 10mm.
Note: Don't insert the pin into adhesive on the roof so that the roof will not get dirty.



5.4.1.6 Install 2 snaps.

5.4.1.7 Flap the roof to make it abutted with the roof cover sufficiently.

5.4.2 Install the sun visor fixing bracket

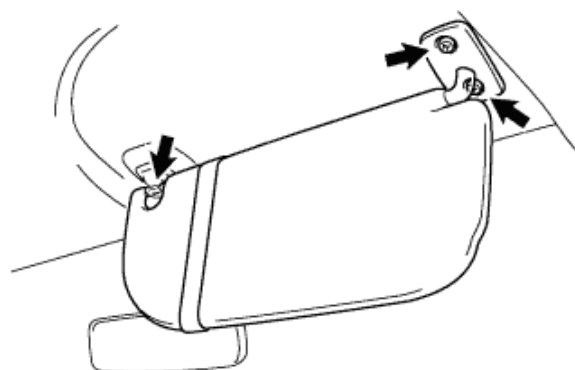


Tip: Take the same method to remove the fixing brackets on both sides.

5.4.2.1 Assemble the upper fixing bracket.

5.4.2.2 Tighten the nut.

5.4.3 Assemble the right sun visor assembly



5.4.3.1 Assemble the sun visor, and tighten 2 bolts.

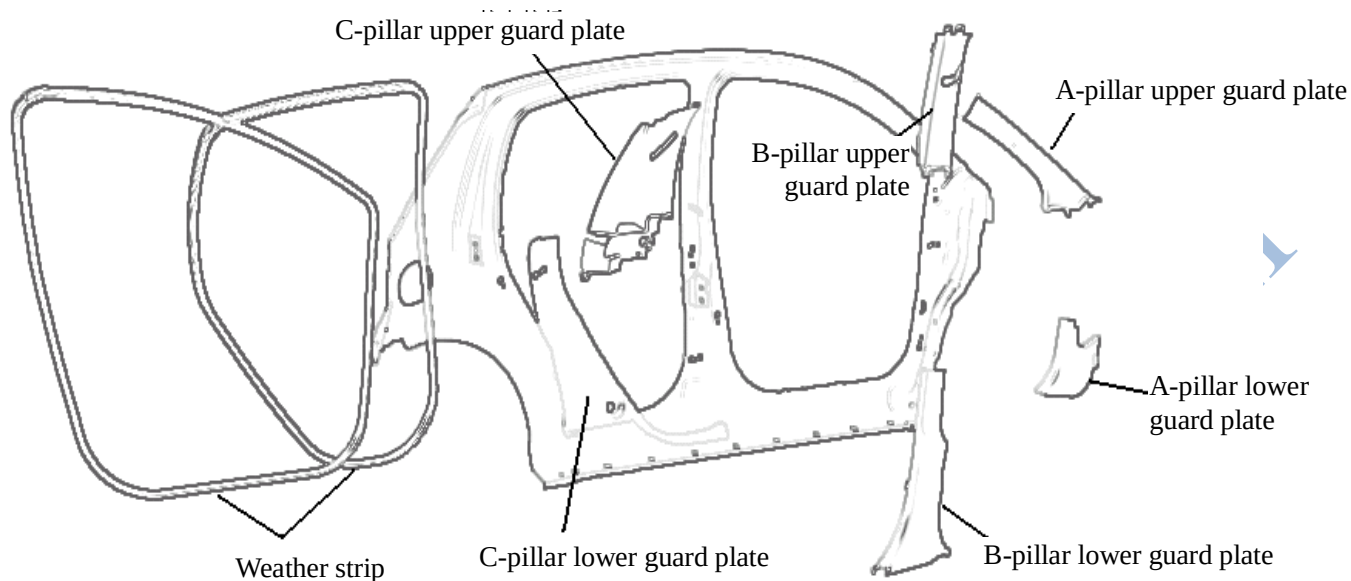
5.4.3.2 Assemble the sun visor onto the bracket.

5.4.4 Assemble the Left sun visor assembly

Tip: Take the same method as for the right.

Section 6 Side Wall Guard Plate Assembly

6.1 Side Wall Components



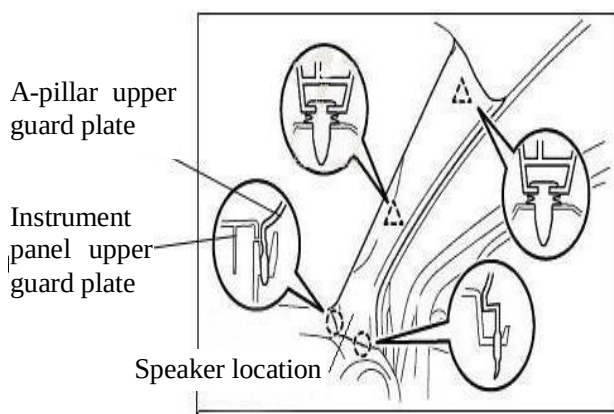
6.2 Replacement

(Removing procedure is opposite to fitting procedure, so only the removing procedure is described below)

6.2.1 Replacing A-pillar guard plate

6.2.1.1 Replace A-pillar upper guard plate

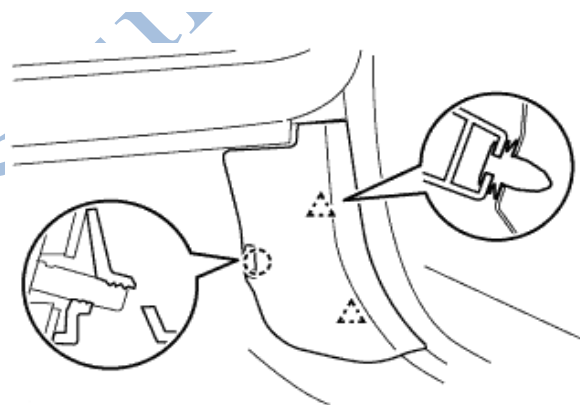
First tear down the front door weather strip, then release 2 snaps with a flat-tip screwdriver wrapped in tape, pull the 2 claws of the A-pillar upper guard plate out of the instrument panel and then remove the A-pillar upper guard plate.



Tip: Wrap the flat-tip screwdriver in tape before using it, so as not to scuff the guard plate. (Same as below)

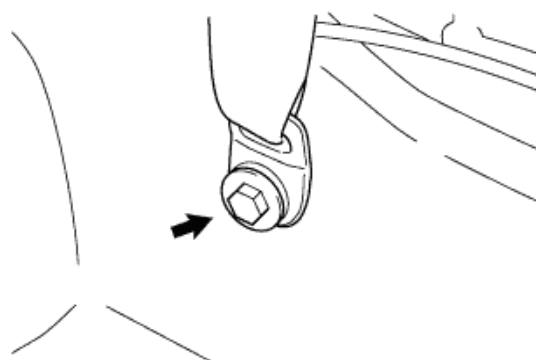
6.2.1.2 Replace A-pillar lower guard plate

First tear down the weather strip, then release 2 snaps and 1 jaw, remove the A-pillar lower guard plate.

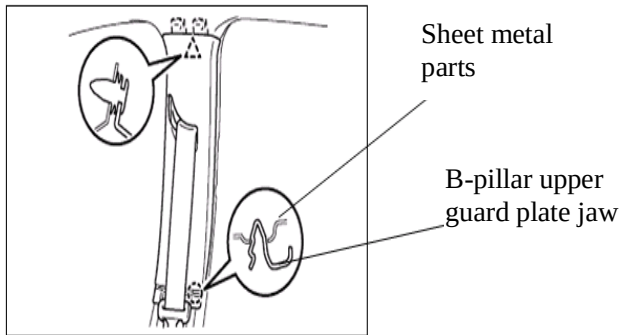


6.2.2 Replacing B-pillar guard plate

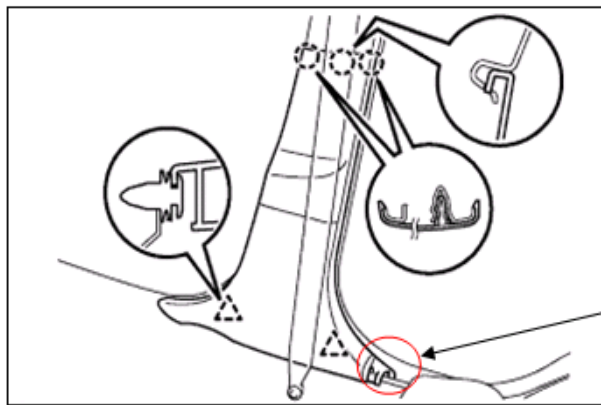
6.2.2.1 Remove the safety-belt mounting bolt, and the bolt is near the assistant driver, at the bottom of the B-pillar lower guard plate.



6.2.2.2 Tear down the door weather strip, then release the upper guard plate snap with a flat-tip screwdriver, pull the claw out the sheet-metal component, and the jaw is part of the upper guard plate structure itself.



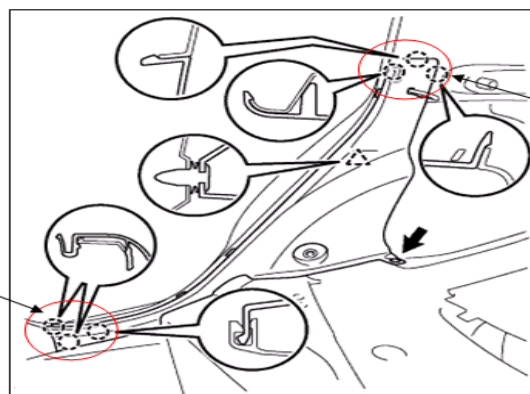
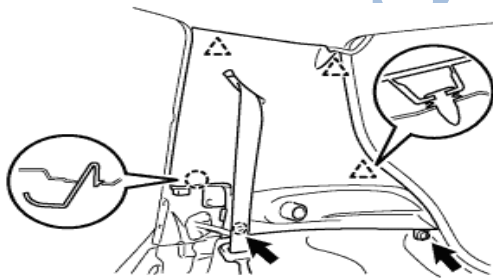
6.2.2.3 Draw out one end of the C-pillar lower guard plate on the B-pillar lower guard plate with the assistance of flat-tip screwdriver, then release 2 snaps of the B-pillar lower guard plate with flat-tip screwdriver and remove the entire B-pillar guard plate. Exert force on the junction (as shown in the dashed circle in the figure below) of the B-pillar upper and lower guard plates, and separate the upper guard plate from the lower.



6.2.3 Replacing C-pillar guard plate

6.2.3.1 Tear down the door weather strip, and unbolt the safety-belt bolt with spanner, draw out the snaps in the lower-left and lower-right arrows in the figure below, draw out the jaw snapped with sheet metal on the C-pillar upper guard plate, then release 3 snaps on the upper guard plate with flat-tip screwdriver.

6.2.3.2 Release the snaps as shown in the place of triangle and arrow in the figure below with flat-tip screwdriver, draw out the C-pillar lower guard plate from the B-pillar lower guard plate with the assistance of flat-tip screwdriver, and remove the entire C-pillar guard plate. Exert force on the joint of C-pillar upper and lower guard plate slightly, and remove the C-pillar upper guard plate from the lower.



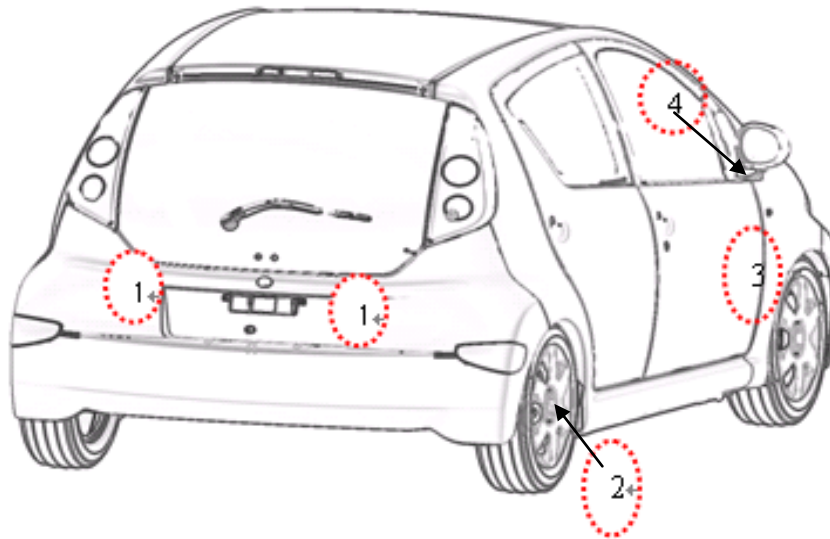
The joint between B-pillar lower guard plate and C-pillar lower guard plate

The joint between C-pillar upper and lower guard plates

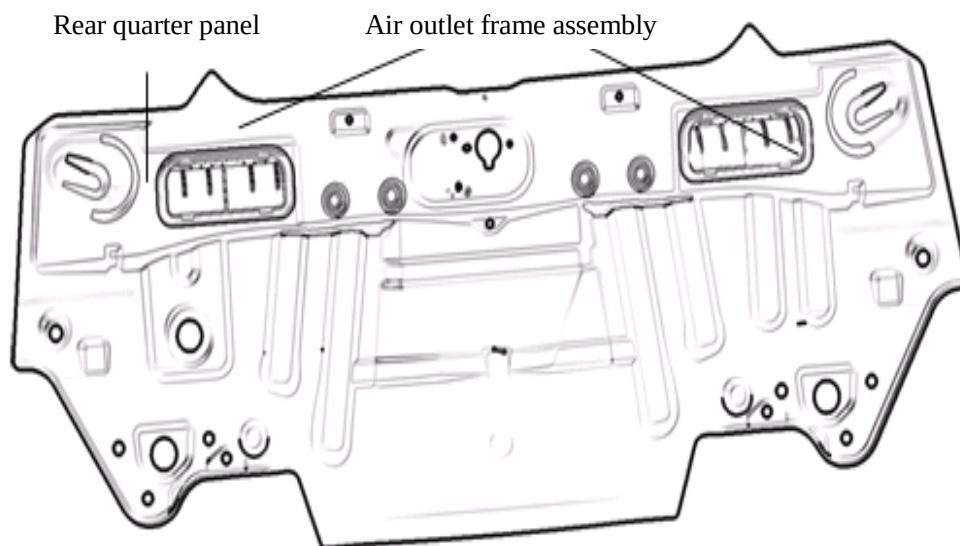
Chapter 2 Exterior System

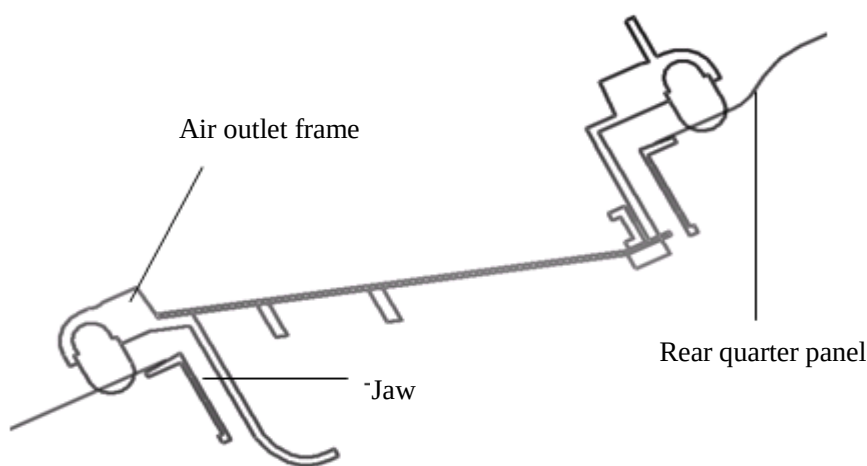
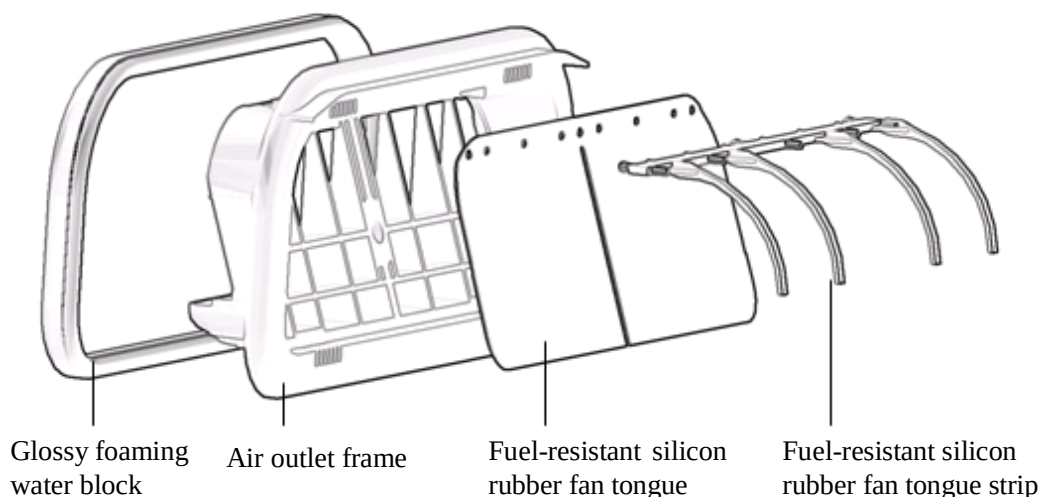
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Section 1 Air Outlet Frame



1. Air Inlet and Outlet Frame Assembly. 2. Rigid Wheel Decoration Cover Assembly.
3. Fender Panel Rear Closed Panel Assembly. 4. Fender Panel Decoration Panel Assembly





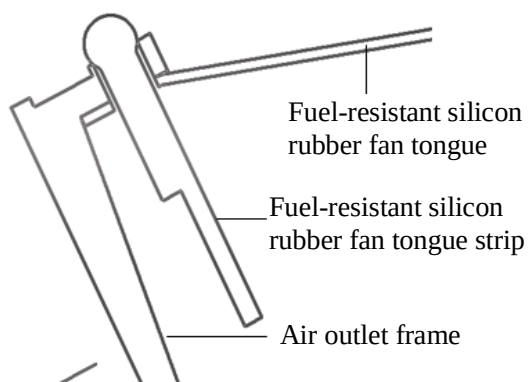
Replacement

Tip: Fitting procedure is opposite to removing procedure, so only additional fitting procedure is described in detail below.

1.1 Removing the Air Outlet Frame

1.1.1 Remove rear bumper;

1.1.2 Release 4 claws in turn with evenly, and remove the lower air outlet frame.



1.2 Removing Fuel-Resistant Silicon Rubber Fan Tongue Strip

1.2.1 Hold the air outlet frame with left hand

1.2.2 Pull the claw of one end of the fuel-resistant silicon rubber wind tongue strip gently with pliers in right hand, then pull retaining jaws of the middle and another end in the same way.

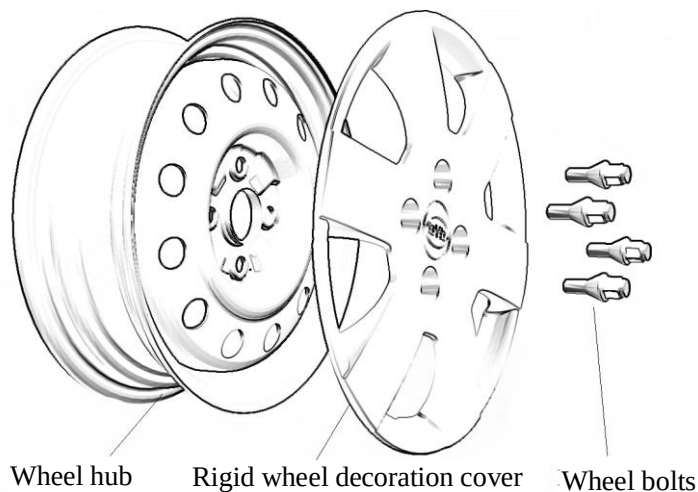
Tip: Don't pull with excessive force, so as not to get hurt.

1.3 Removing Fuel-Resistant Silicon Rubber Fan Tongue

After remove the fuel-resistant silicon rubber fan tongue strip, the fuel-resistant silicon rubber fan tongue is removed with the strip, then drag the fan tongue out gently with hand.

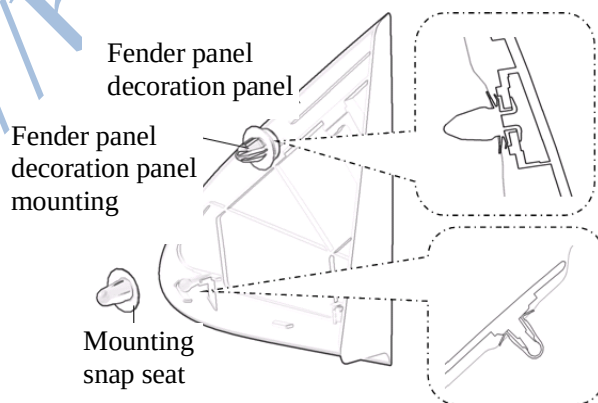
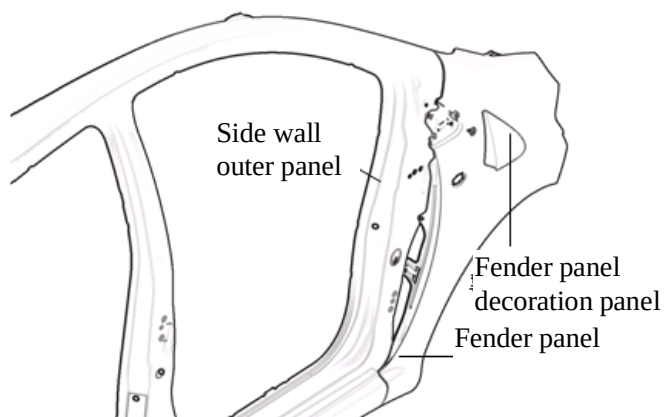
Tip: Be sure not use excessive force, so as not to tear up the fan tongue.

Section 2 Rigid Wheel Decoration Cover



Replacement: Remove the rigid wheel decoration cover
 Unbolt 4 wheel bolts with torque spanner, and take off the rigid wheel decoration cover.

Section 3 Fender Panel Decoration Panel



Replacement

3.1 Removing Right Fender Panel Decoration Panel

3.1.1 Press protective tape into the outer edge of the fender panel decoration panel.

3.1.2 Prize off the fender panel decoration panel gently with screw driver, release 1 claw, 1 snap and 1 jaw, and

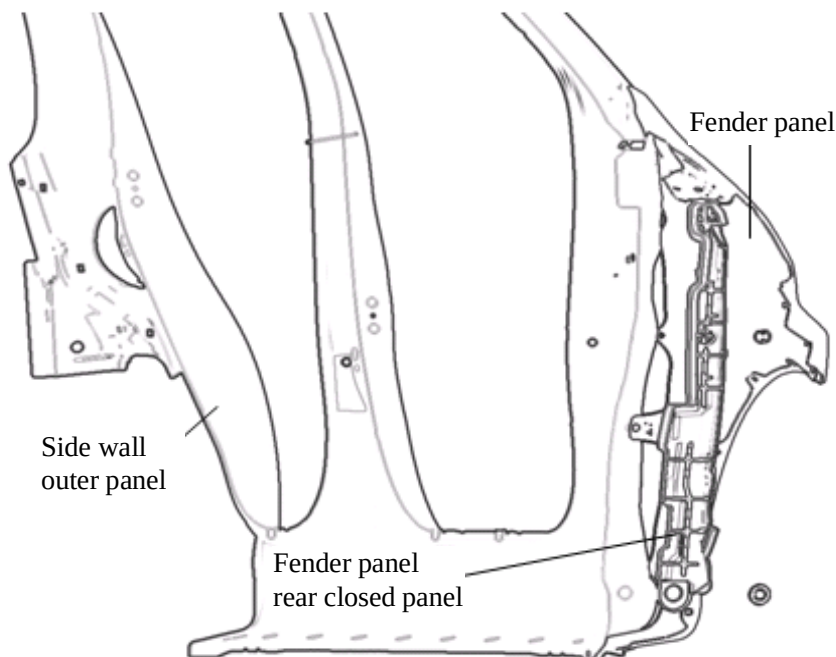
separate them from the fender panel decoration panel and the side wall exterior panel.

Tip: Be sure not use excessive force, so as not scuff body paint.

3.2 Removing Left Fender Panel Decoration Panel

Tip: The removing method is the same as the steps in 3.1.

Section 4 Fender Panel Rear Closed Panel



Replacement

4.1 Removing Right Front Wheel Mudguard

Remove 3 square snaps and 3 snap buttons on the rear side of the right front wheel mudguard.

Tip: No need to remove the right front wheel mudguard completely, but remove the Fender Panel Rear Closed Panel partially.

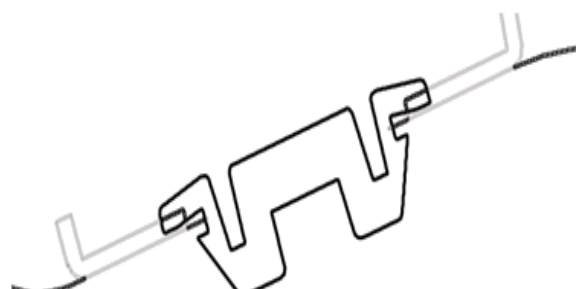
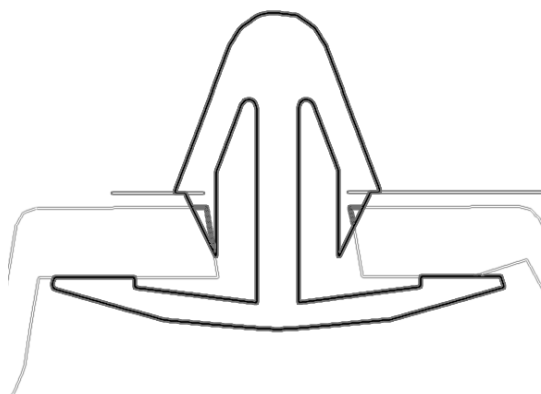
4.2 Removing the Fender Panel Rear Closed Panel

Remove the mounting snap of fender panel rear closed panel and the rubber cap of right fender panel rear closed panel separately with screw driver, separate the right fender panel rear closed panel.

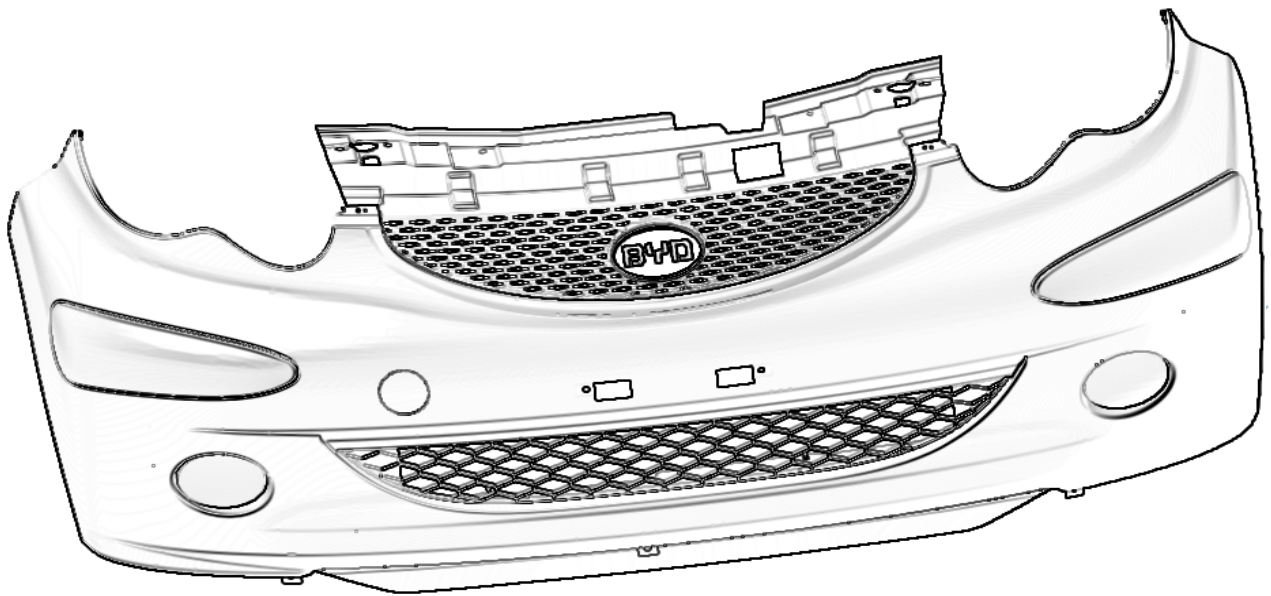
Tip: Some snaps are disposable.

4.3 Removing Left Front Wheel Mudguard

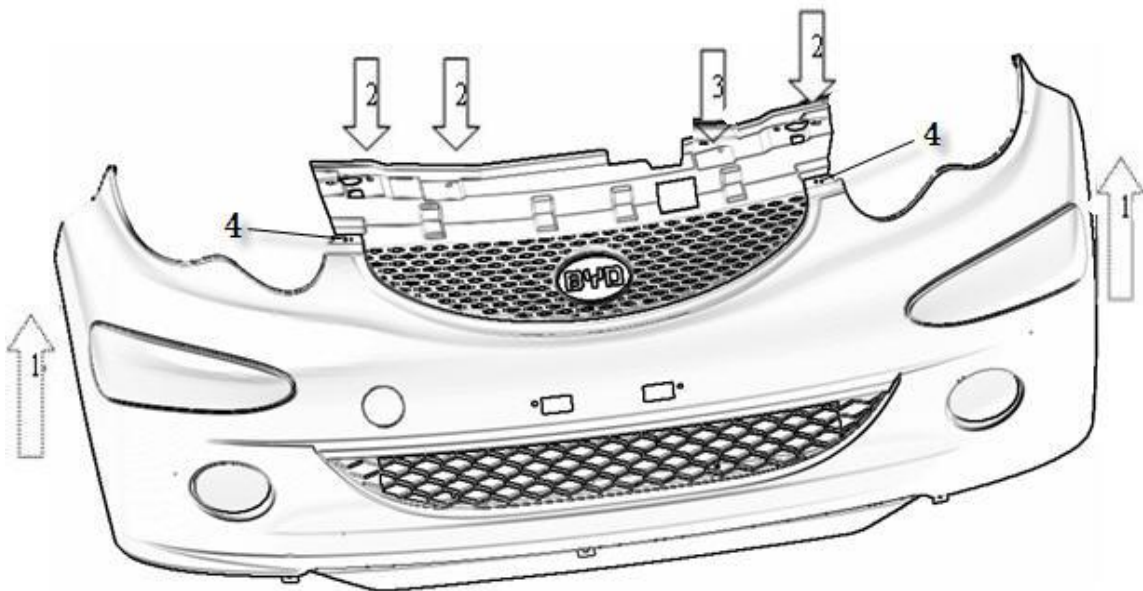
Tip: The removing method is the same as the steps in 4.1.



Section 5 Front Bumper



5.1 Front Bumper Components



1. Small snap button. 2. Combinatory bolt. 3. Snap button. 4. Rubber head bolt

5.2 Removal

5.2.1 Remove the front bumper;

Radiator hood right support plate

Radiator hood

Radiator hood left support plate

Lower anti-impact frame

Front bumper right connecting bracket

Front bumper left connecting bracket

Lower air deflector

Front bumper right decoration strip

Towing hole cap

Front bumper lower air inlet grille

Front bumper

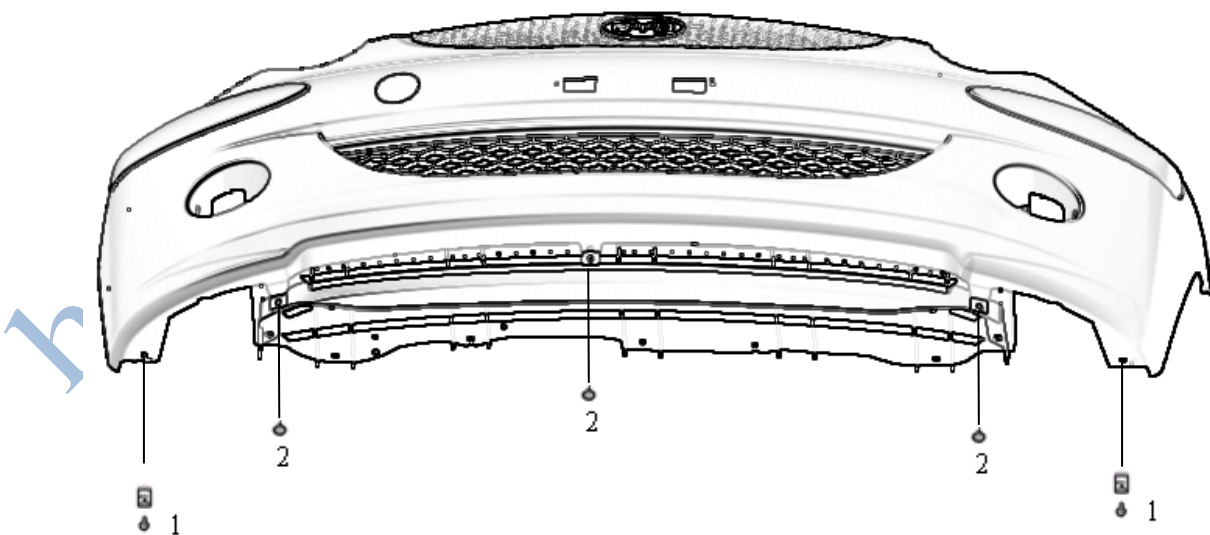
Front bumper left decoration strip

5.2.1.1 Overlay the front bumper around with protective tape.

5.2.1.2 Remove 3 combinatory bolts and 1 snap button with spanner.

5.2.1.3 Release 2 rubber head bolts and 2 small snap buttons with screw driver.

5.2.1.4 Release 4 jaws on the right and left with screw driver.

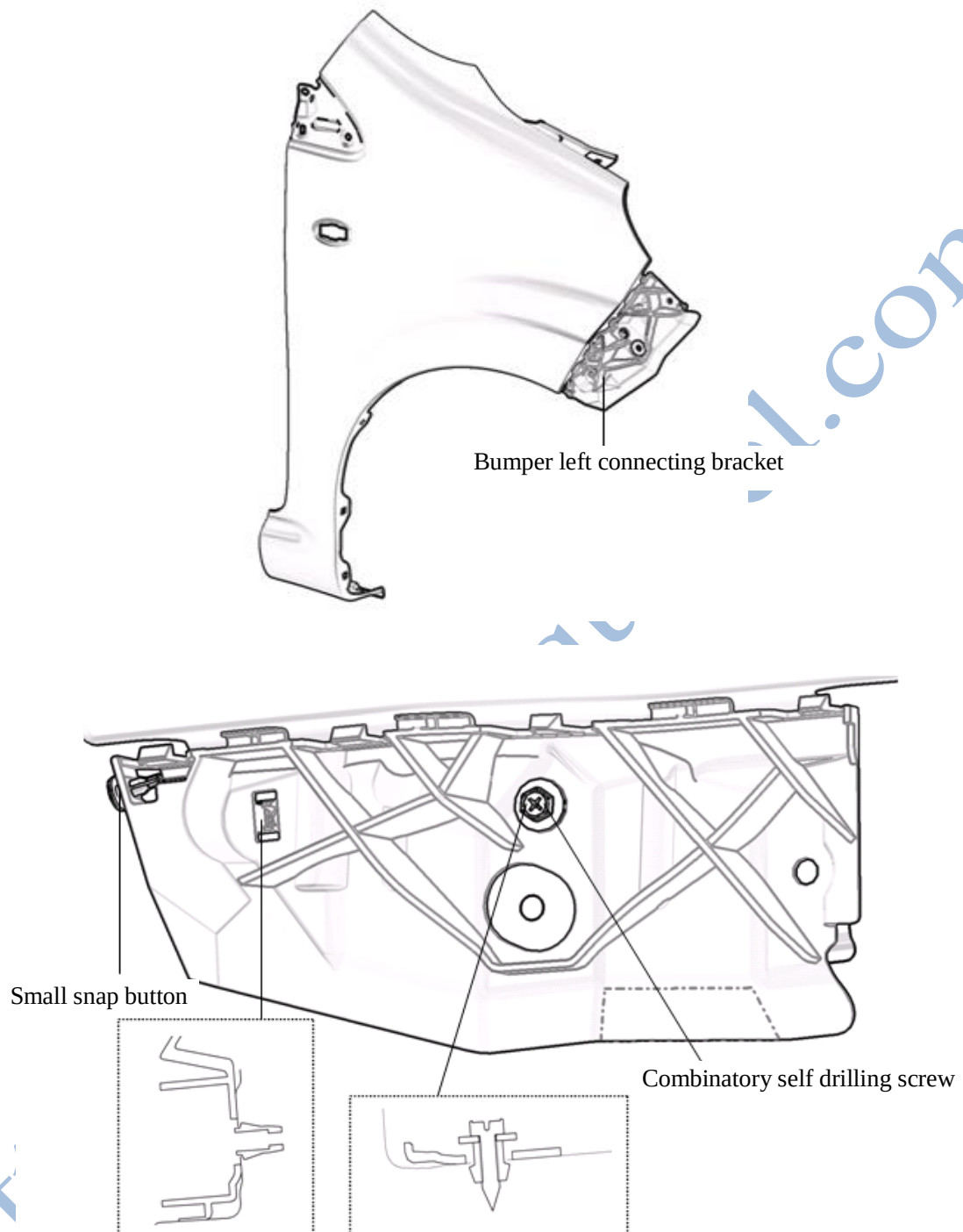


1. Front bumper mounting sleeve. 2. Screw

5.2.1.5 Remove 2 front bumper mounting sleeves;

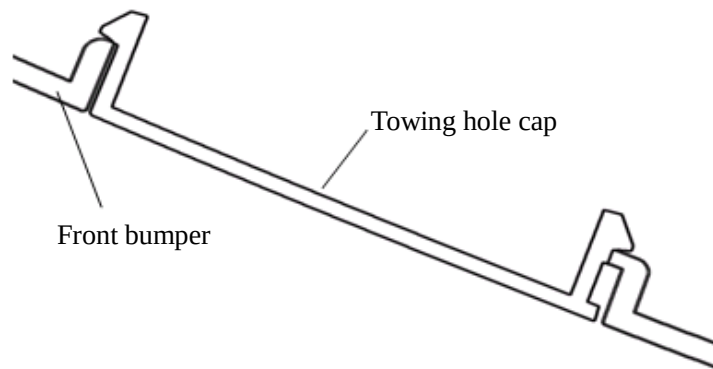
5.2.1.6 Unscrew 3 screws;

5.2.1.7 Remove the front bumper.



5.2.2 Remove the towing hole cap

Release 2 claws gently with screw driver, and take off the towing hole cap.

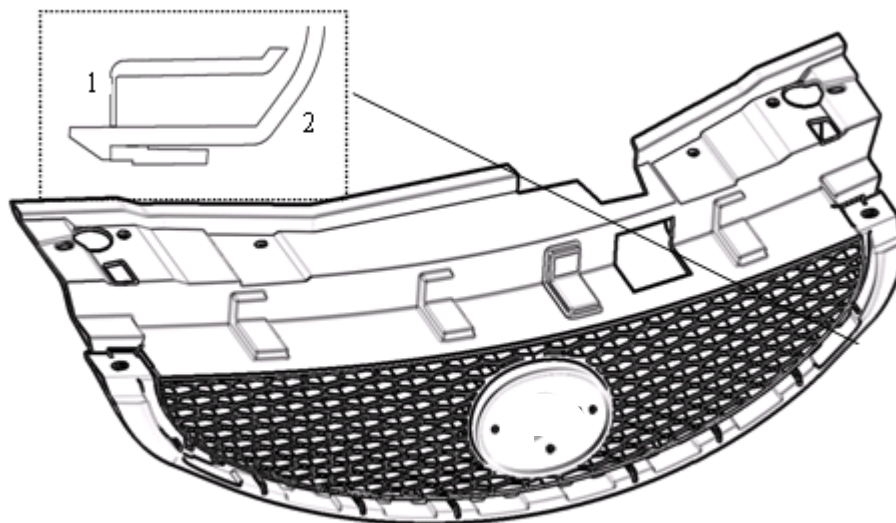


5.2.3 Remove LOGO

5.2.3.1 Overlay the mark insignia emblem LOGO around with protective tape.

5.2.3.2 Separate LOGO from radiator hood with evenly with screw driver.

Tip: LOGO is bonded to the radiator hood with adhesive, so it may take destructive method to remove LOGO.



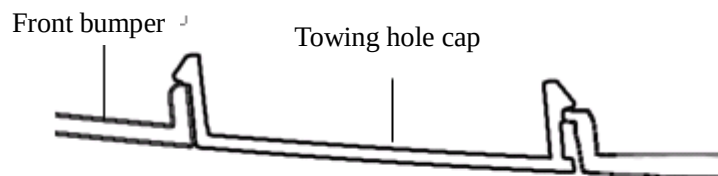
1 Front bumper 2 Front grille

5.2.4

Remove front grille

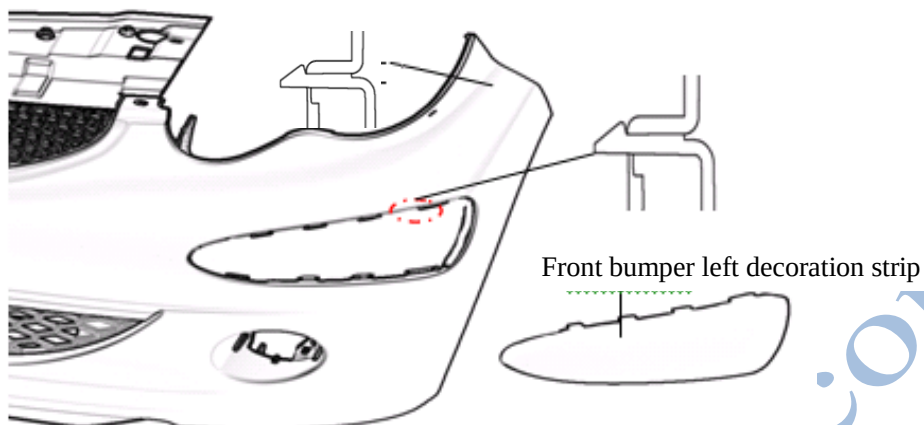
Release 10 jaws with screw driver and remove the front grille.

Tip: Wrap the screwdriver edge in tape before using it.



5.2.5 Remove the towing hole cap

Release 2 claws gently with screw driver, and remove the towing hole cap.

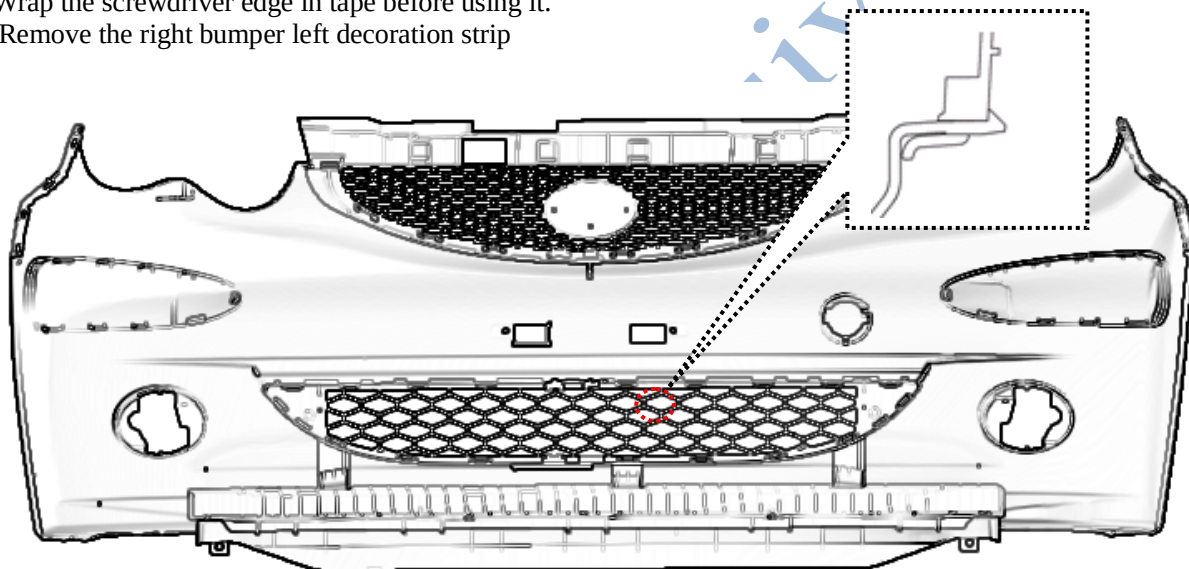


5.2.6 Remove the front bumper left decoration strip

Release 8 jaws with screw driver and remove the front bumper left decoration strip.

Tip: Wrap the screwdriver edge in tape before using it.

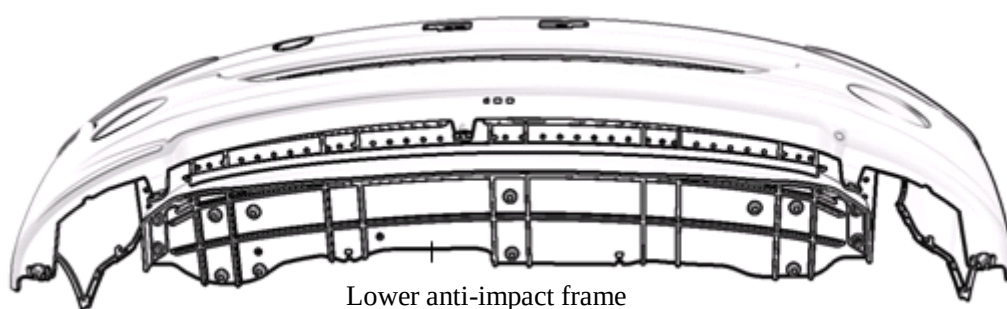
5.2.7 Remove the right bumper left decoration strip



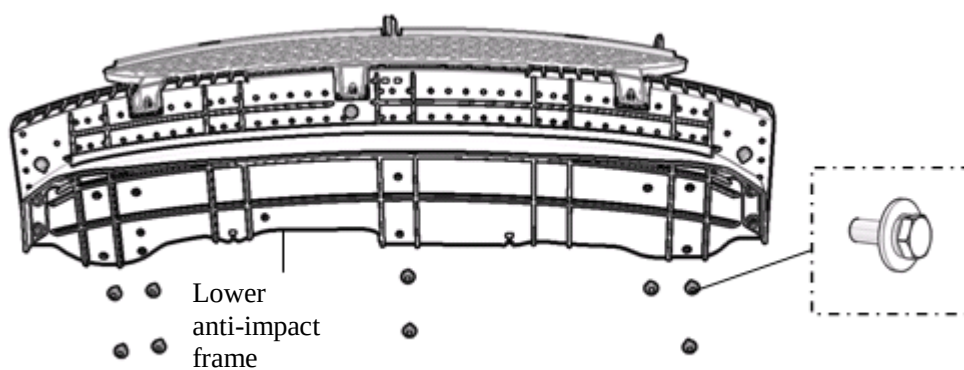
5.2.8 Remove the front bumper lower air inlet grille

Release 24 jaws with screw driver and remove the front bumper lower air inlet grille.

Tip: Wrap the screwdriver edge in tape before using it.

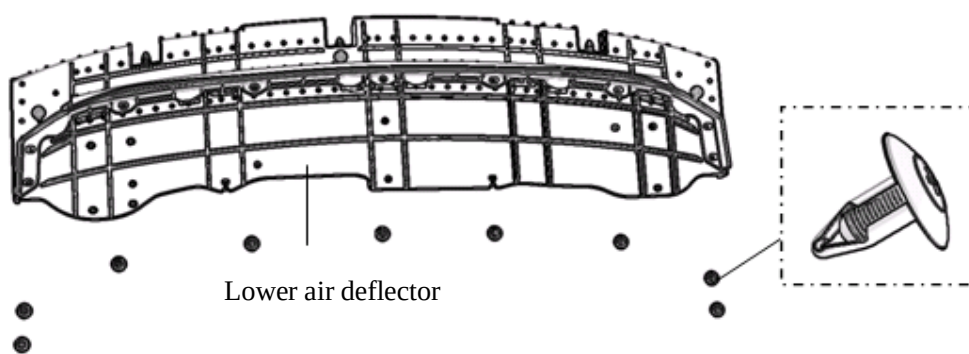


Lower anti-impact frame



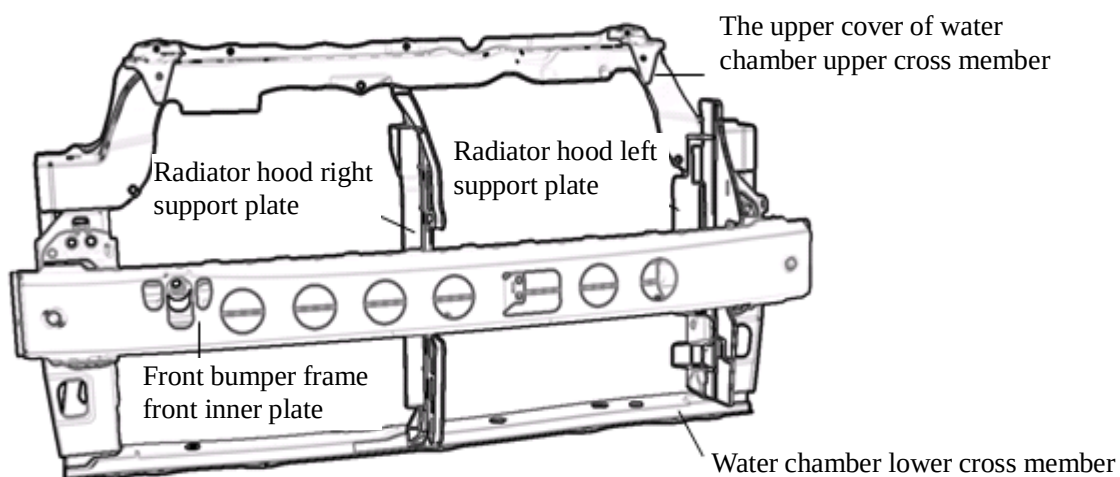
5.2.9 Remove lower anti-impact frame

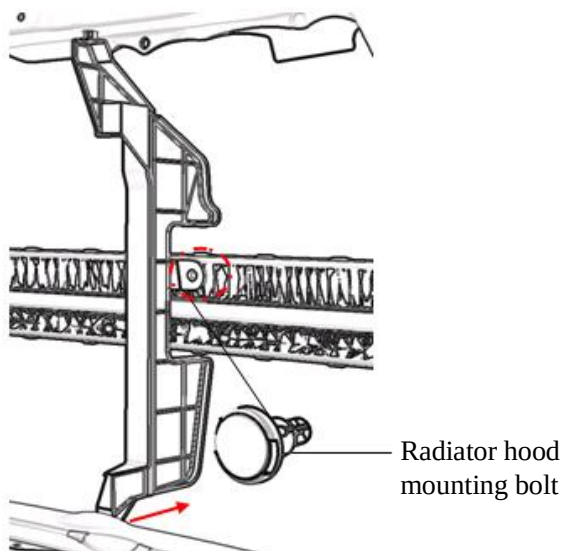
Unbolt 9 mounting combinatory bolts with spanner and remove the lower anti-impact frame.



5.2.10 Remove lower air deflector

Release 9 mounting snap buttons with screw driver and remove the lower air deflector.

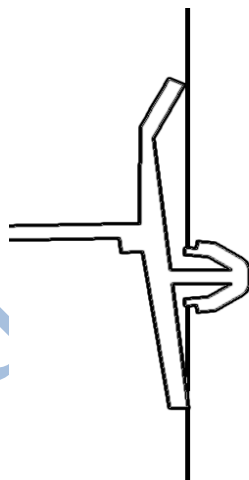




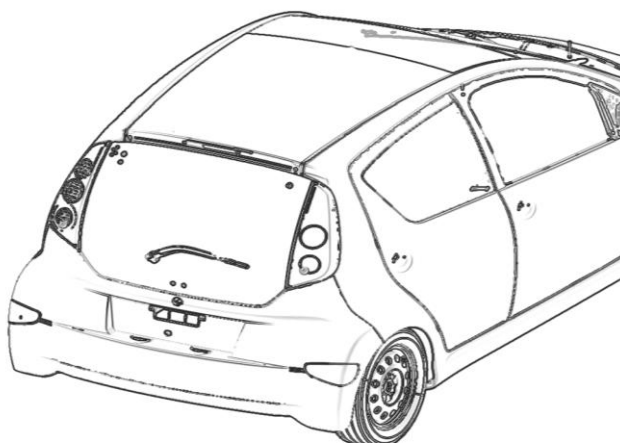
5.2.11 Remove radiator hood right support plate

5.2.11.1 Unbolt the radiator hood mounting bolt with screw driver;

5.2.11.2 Remove it slowly with evenly, along the direction of arrow.

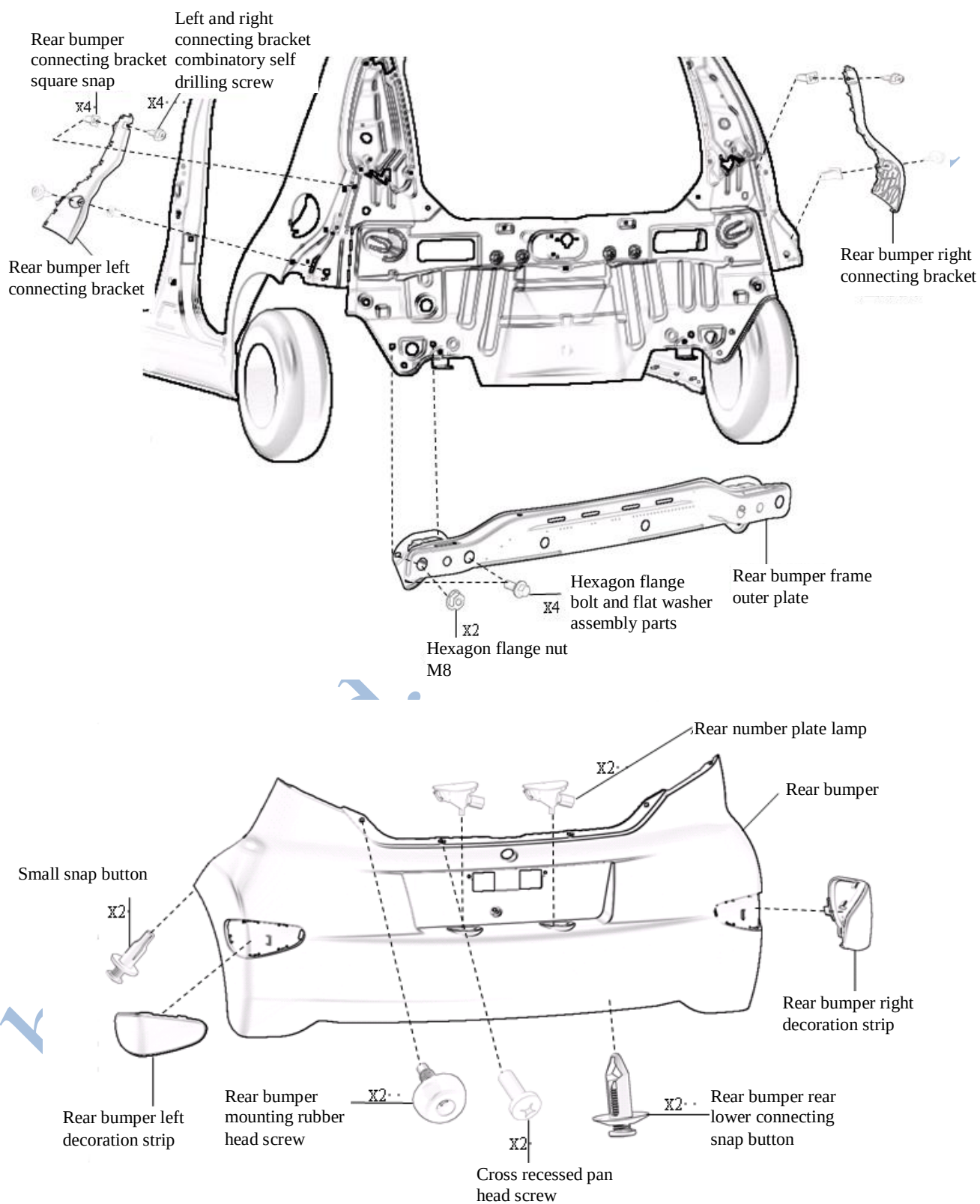


5.2.12 Remove radiator hood left support plate



Section 6 Rear Bumper Assembly

6.1 Rear Bumper Component Drawing

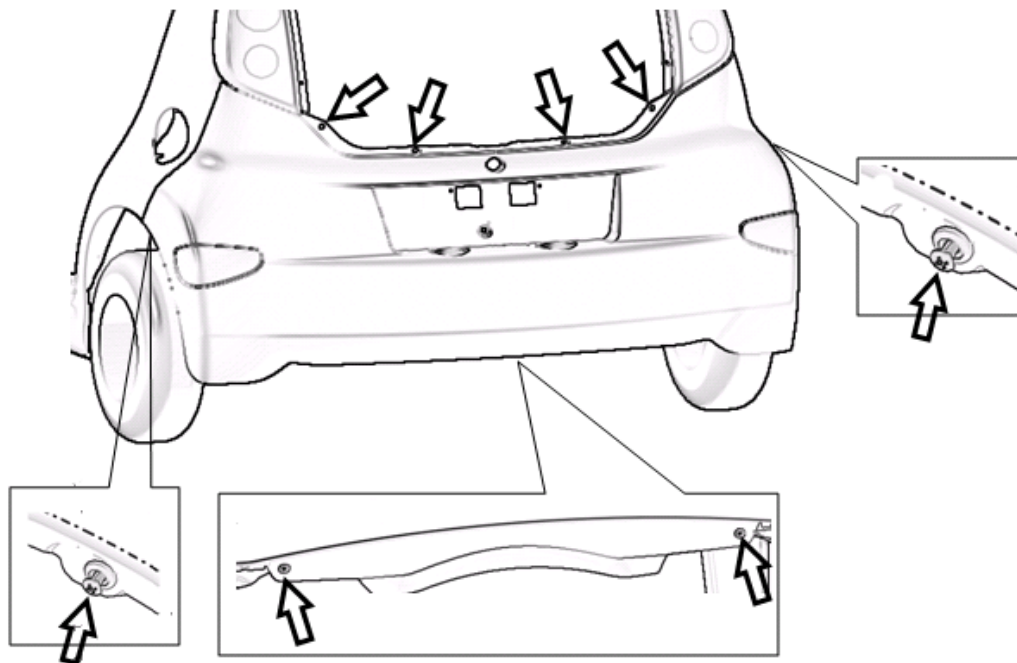


6.2 Replacement

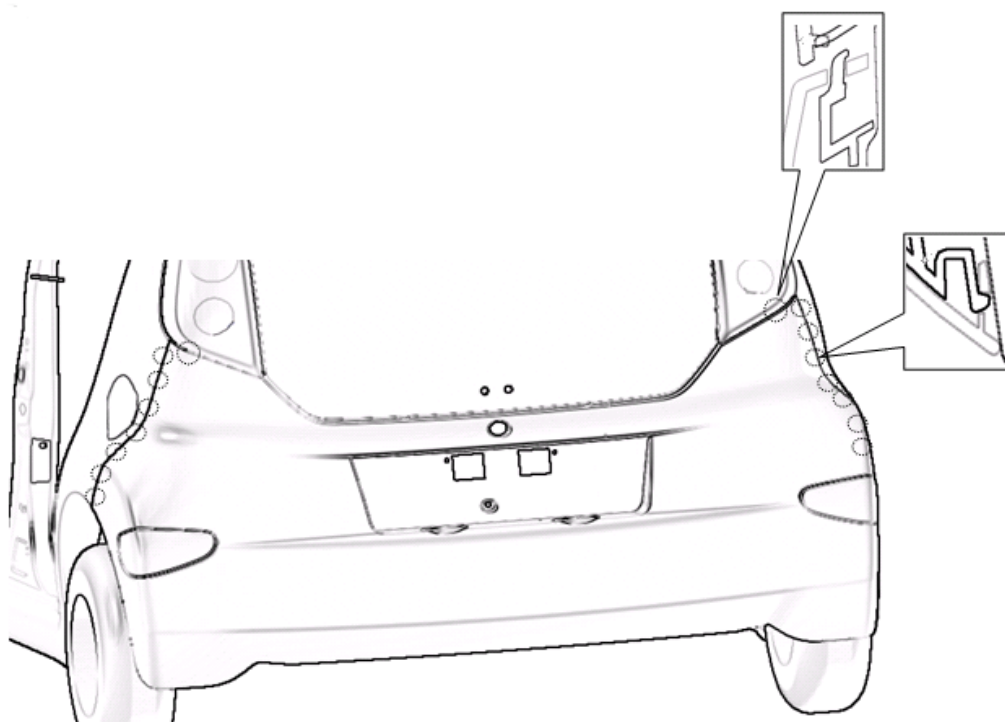
Tip: Fitting procedure is opposite to removing procedure. So, only the removing procedure is described below.

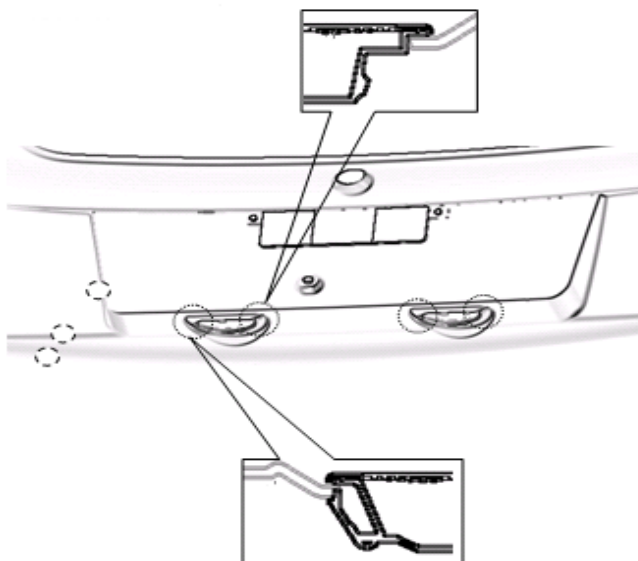
6.2.1 Remove rear bumper

6.2.1.1 Release 4 snaps and 2 rubber head bolts and 2 screws on the rear bumper with screw driver;



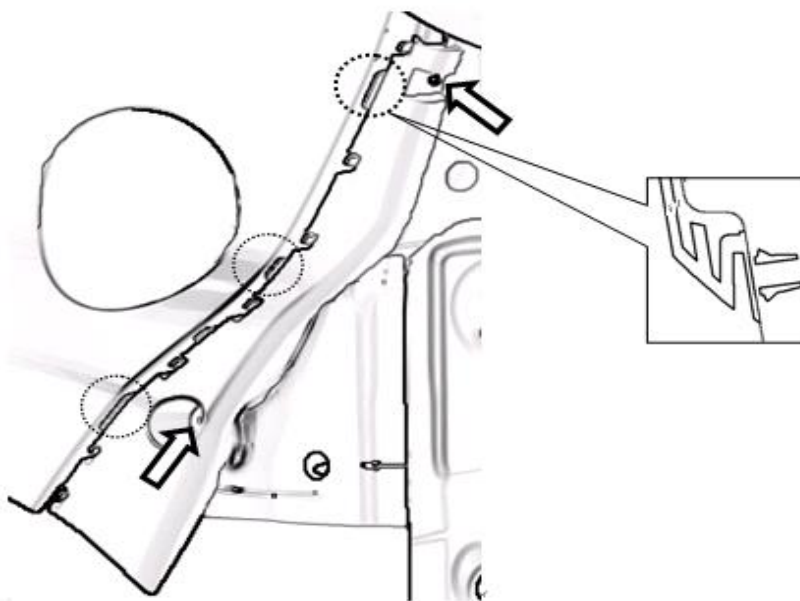
6.2.1.2 Release 16 jaws of the left and right connecting brackets from the rear bumper;



6.2.1.3 Remove rear number plate lamp;**6.2.1.4 Remove rear bumper.****6.2.2 Remove rear bumper left connecting bracket:**

6.2.2.1 Unscrew 2 tapping screws as shown in place of arrows in the figure the with screw driver;

6.2.2.2 Release 3 jaws of the left connecting bracket from sheet metal, and remove the left connecting bracket;



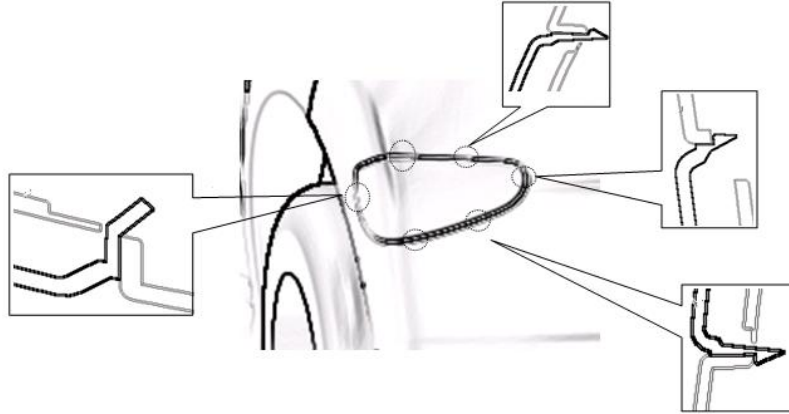
6.2.2.3 Remove 2 square snaps of the connecting bracket from sheet metal;

6.2.3 Remove rear bumper right connecting bracket:

Tip: The steps are the same as in 6.2.2.

6.2.4 Remove the rear bumper left decoration strip:

Release 6 jaws of the rear bumper left decoration strip from rear bumper, and remove the left decoration strip;

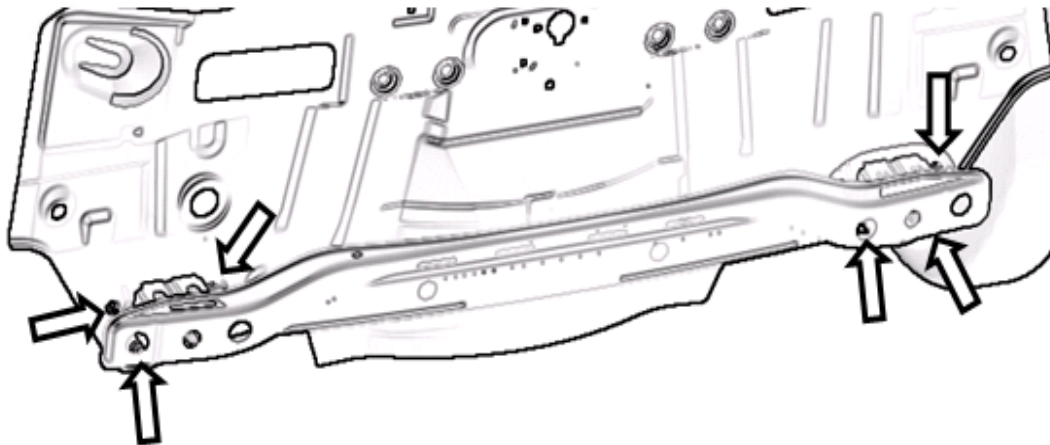


6.2.5 Remove the rear bumper right decoration strip:

Tip: The steps are the same as in 6.2.4.

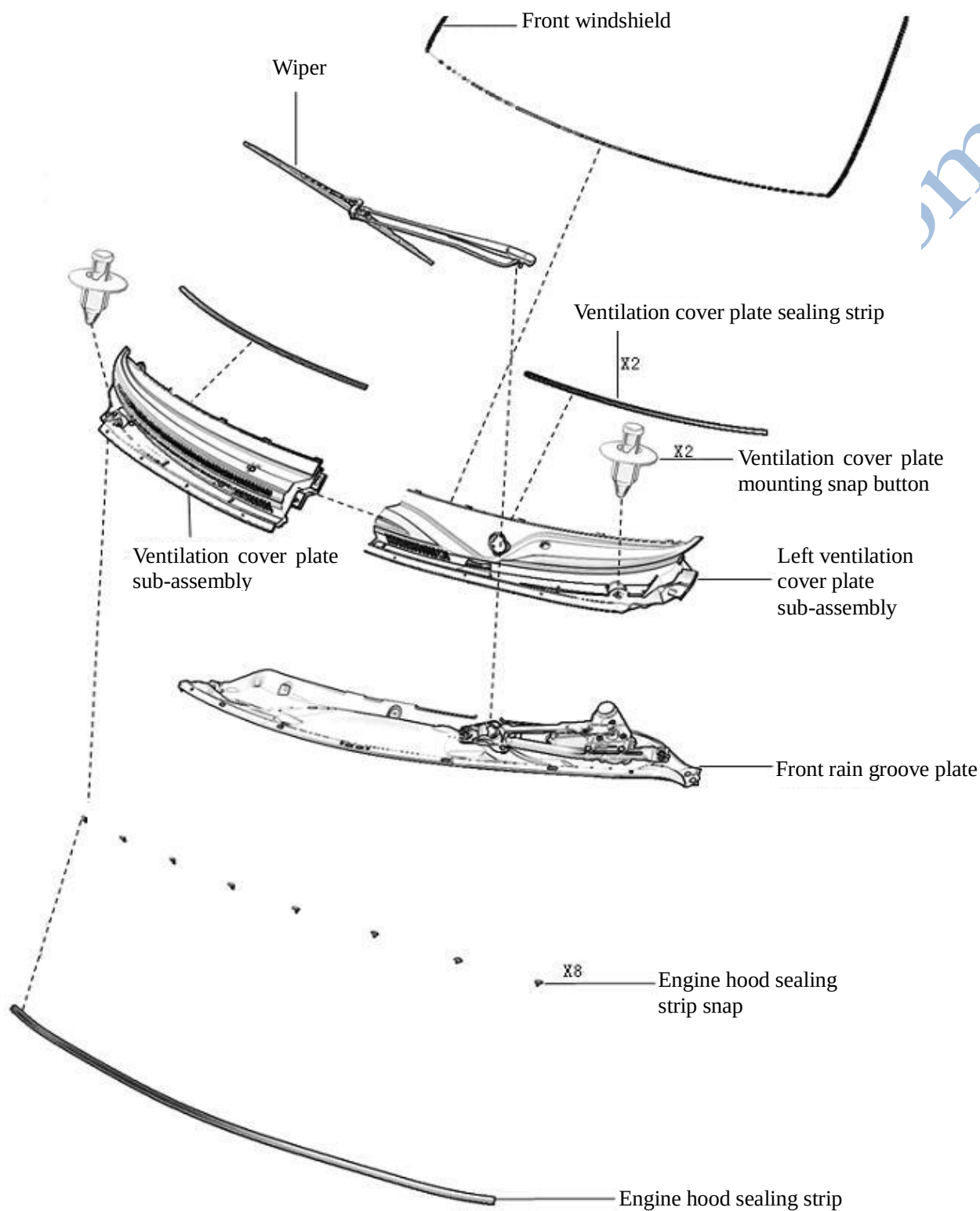
6.2.6 Remove rear bumper anti-impact frame:

Unscrew 4 bolts of M8 and 2 nuts of M8 with hexagon socket wrench;



Section 7 Ventilation Cover Plate Assembly

7.1 Ventilation Cover Plate Component Drawing



7.2 Replacement

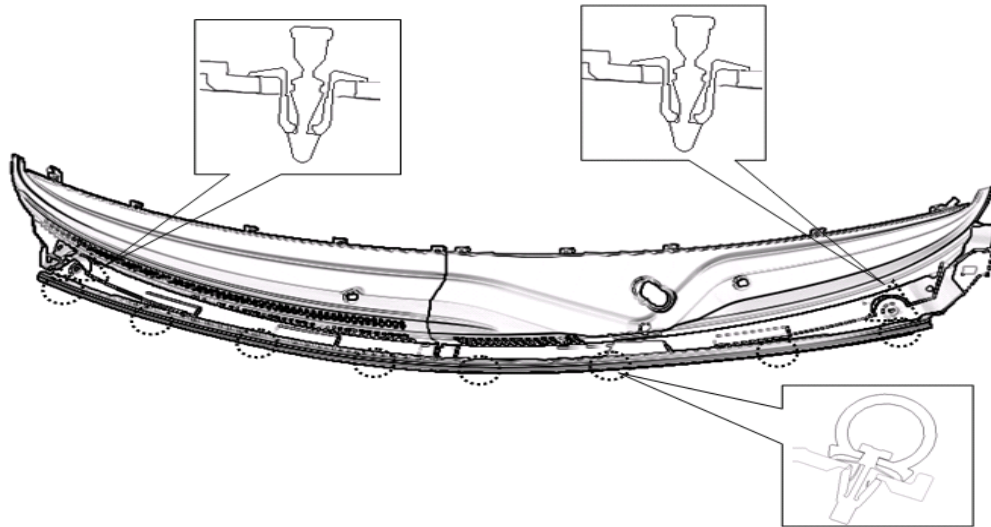
Tip: Fitting procedure is opposite to removing procedure. So, only the removing procedure is described below.

7.2.1 Remove ventilation cover plate

7.2.1.1 Remove wiper;

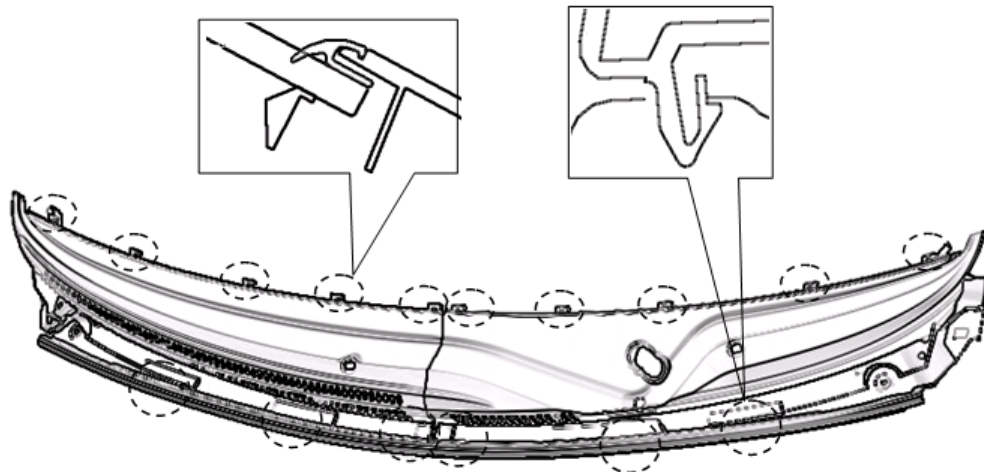
7.2.1.2 Remove engine hood sealing strip, and there are snaps in 8 places;

7.2.1.3 Release 2 mounting snap buttons of the ventilation cover plate;



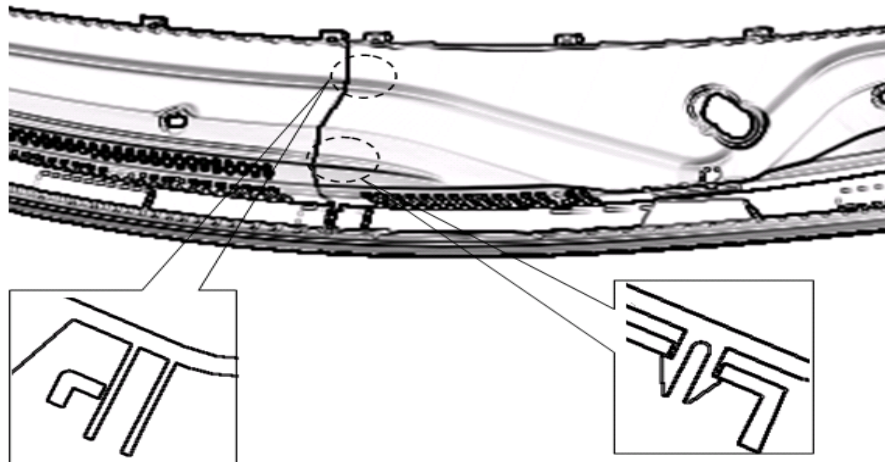
7.2.1.4 Remove 6 matching locations of the ventilation cover plate and sheet metal front rain groove plate;

7.2.1.5 Separate the ventilation cover plate from front windshield and sheet metal front rain groove plate;



7.2.1.6 Unstop washer tube connector and unplug 2 washer nozzles;

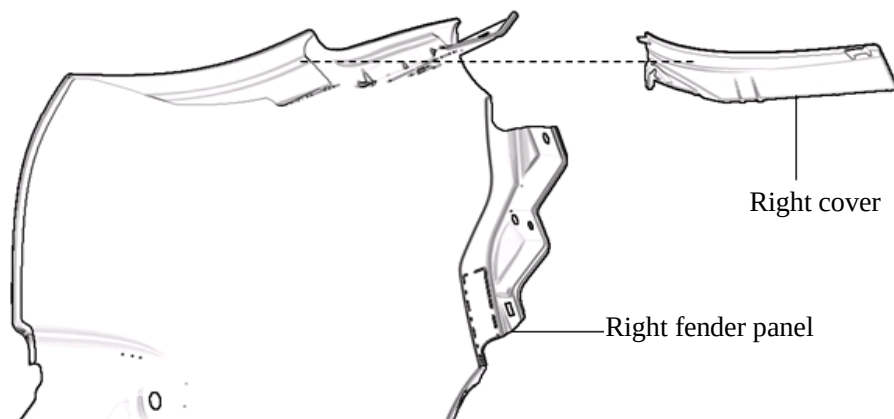
7.2.1.7 Remove the ventilation cover plate sealing strip;



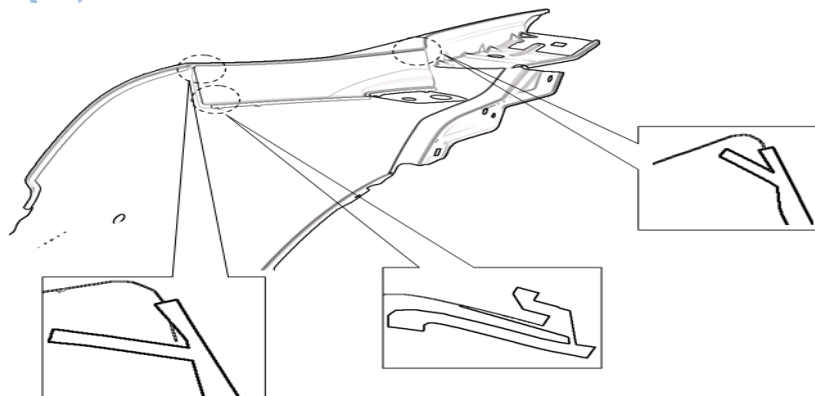
7.2.1.8 Remove left and right ventilation cover plates;

7.2.1.9 Remove left and right caps;

7.2.2 Remove right cover



Remove the right cover from the right fender panel.



7.2.3 Remove left cover

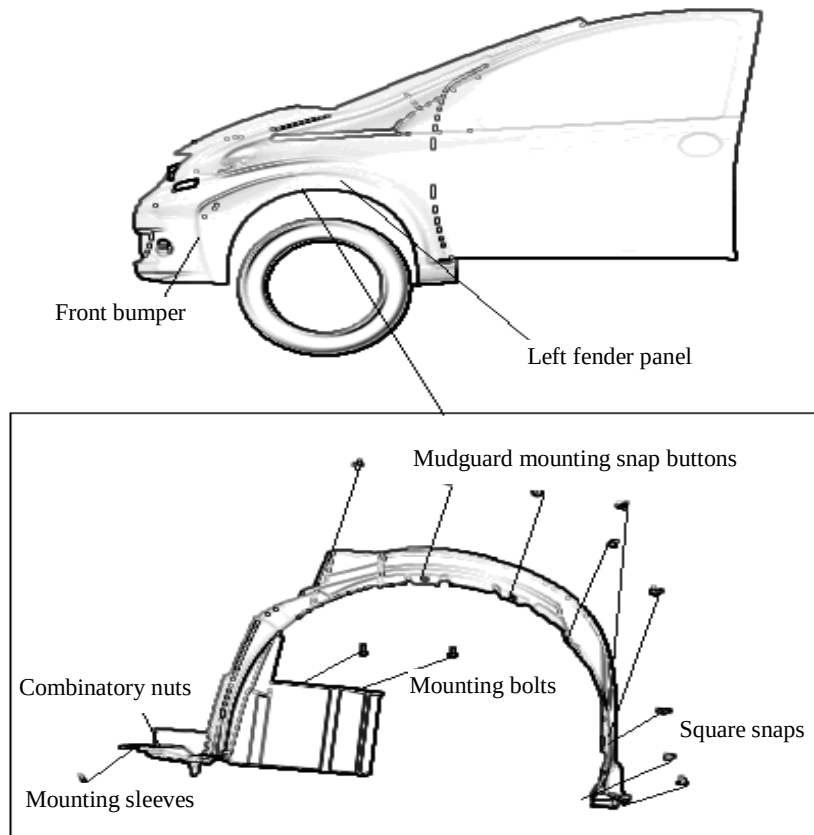
Remove the left cover from the left fender panel.

Tip: The steps are the same as in 7.2.2.

Section 8 Mudguard Assembly

8.1 Wheel Cap Mudguard

8.1.1 Front left wheel cap mudguard



Replacement

Tip: Fitting procedure is opposite to removing procedure. So, only the removing procedure is described below.

8.1.1.1 In order to facilitate the removing, tire and other related components had better been removed before remove the mudguard;

8.1.1.2 Remove front bumper mounting sleeves;

8.1.1.3 Remove the mudguard mounting square snap;

8.1.1.4 Remove the mudguard mounting combinatory nuts with cross screwdriver;

8.1.1.5 Unbolt 2 mudguard mounting bolts with spanner, and the nuts are welded on the sheet metal of the left front side rail;

8.1.1.6 Unscrew the screw with spanner, and the screw fixes the mudguard onto the lower anti-impact frame.

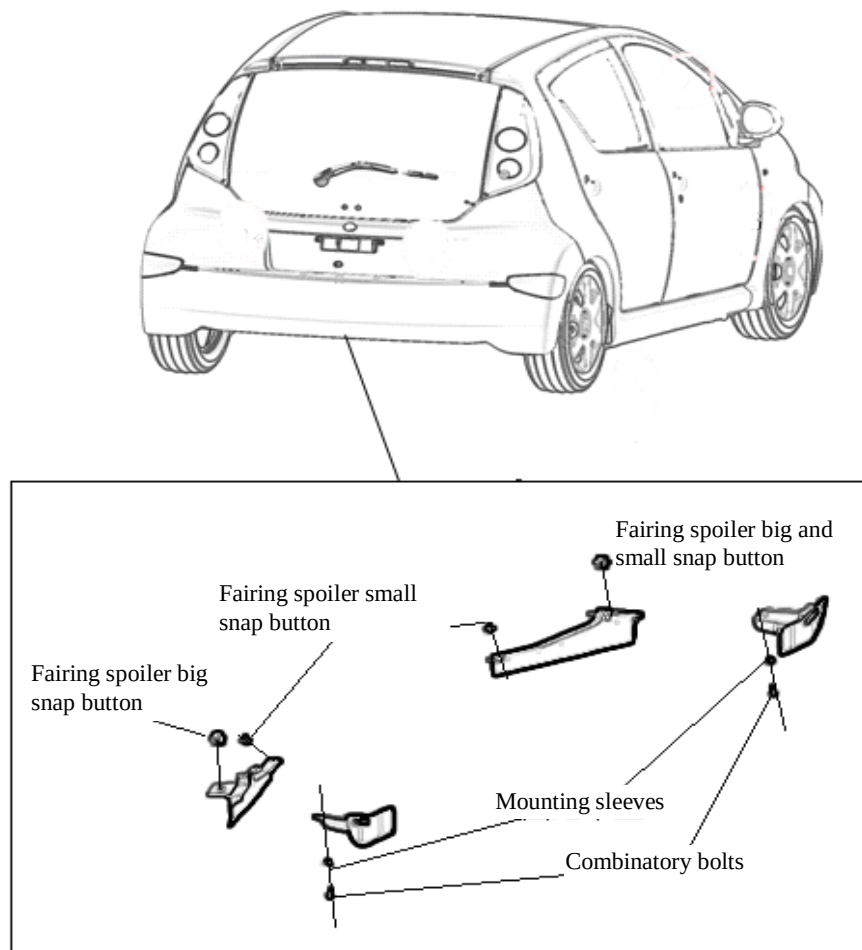
8.1.1.7 Release 6 mudguard mounting snap buttons with screw driver.

8.1.2 Front right wheel cap mudguard

Exactly the same with the front left wheel cap mudguard.

8.2 Small Mudguard and Fairing Spoiler

Tip: Fitting procedure is opposite to removing procedure. So, only the removing procedure is described below.



8.2.1 Small mudguard Replacement

Tip: Fitting procedure is opposite to removing procedure. So, only the removing procedure is described below.

8.2.1.1 Unscrew mounting combinatory tapping screws with cross-head screwdriver;

8.2.1.2 Take off the Small mudguard to the direction of the rear wheel;

8.2.1.3 Take off the square snap stuck on the

8.2.2 Fairing Spoiler

Replacement

Tip: Fitting procedure is opposite to removing procedure. So, only the removing procedure is described below.

8.2.2.1 Release the larger snap button with screw driver;

8.2.2.2 Release the smaller snap button with screw driver.

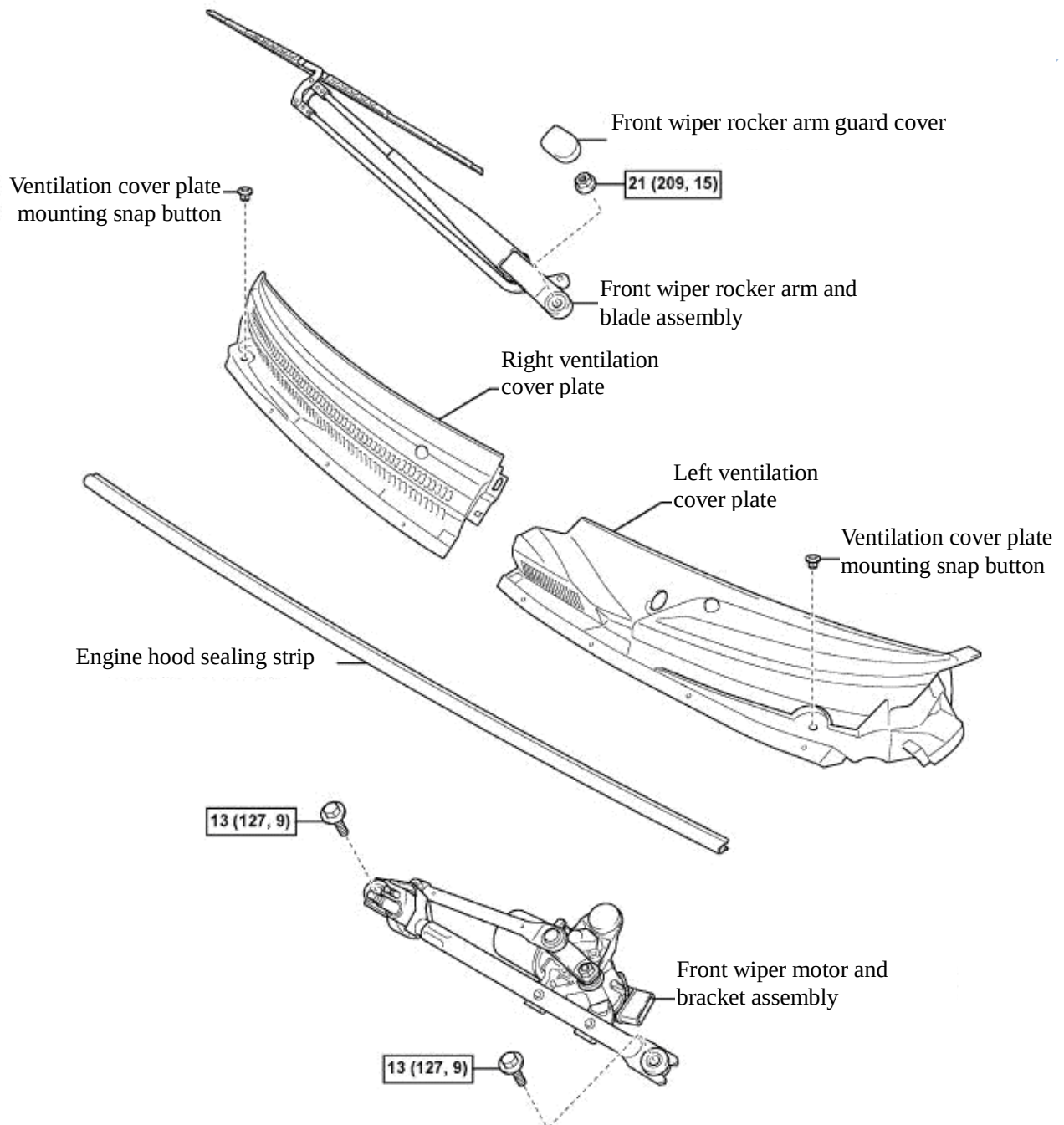
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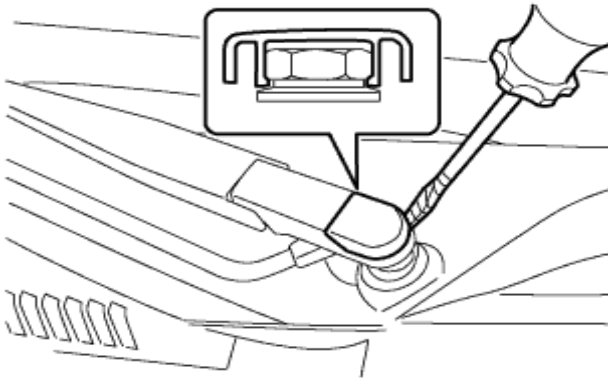
Section 1 Front Windshield Components

1.1 Removal

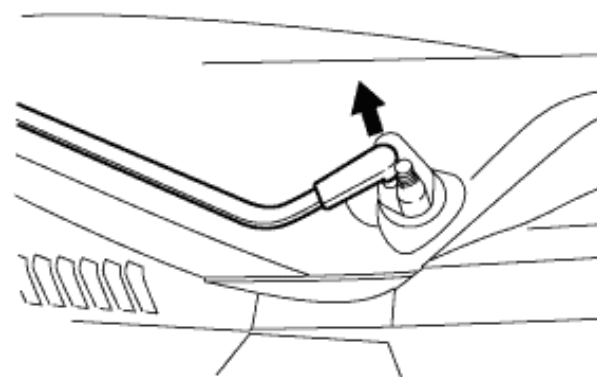
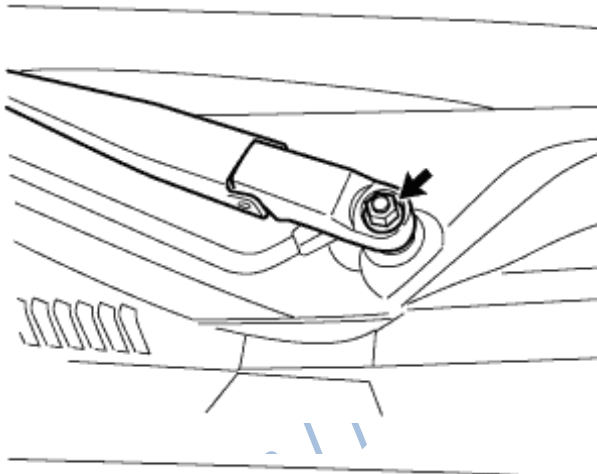
1.1.1 Front wiper assembly drawing as below



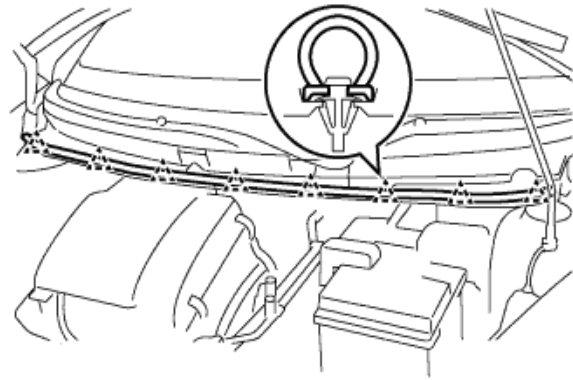
1.1.1.1 Remove the front wiper rocker arm guard cover
With a screwdriver of the edge wrapped in protective tape as shown below, remove the front wiper rocker arm guard cover.



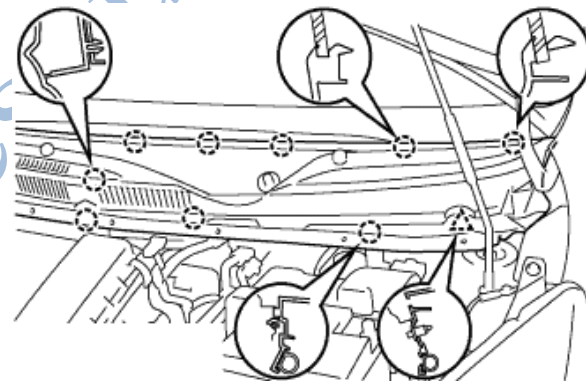
1.1.1.2 Remove the front wiper rocker arm
Operate the front wiper, remain it at the location of wiper motor automatic return. Remove nut and front wiper main arm, release the meshing engagement of the aided rocker arm with the front wiper motor and bracket assembly.
Note: Don't make the aided rocker arm flexural deformation when removing.



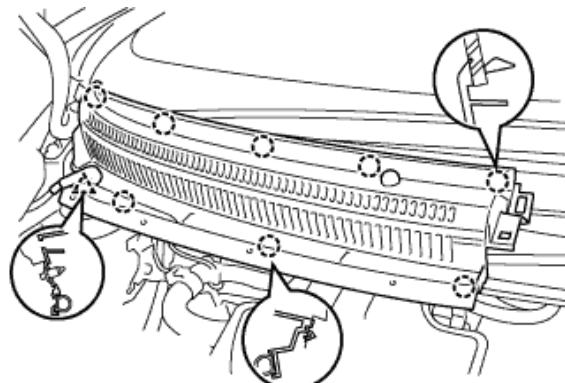
1.1.1.3 Remove the engine hood sealing strip
First release 8 snaps of the engine hood sealing strip, then remove the engine hood sealing strip.



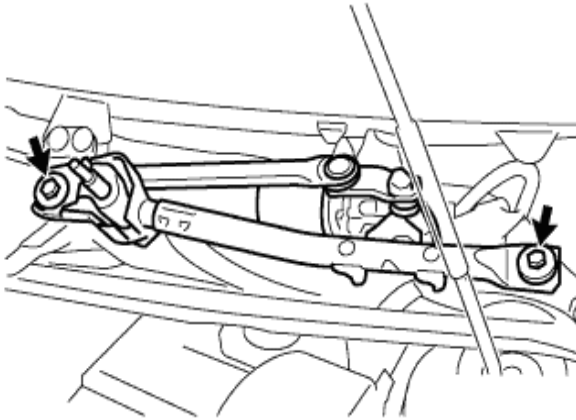
1.1.1.4 Remove the front windshield ventilation cover plate
Remove the mounting snap buttons of ventilation cover plates, release 9 jaws, then remove the front left ventilation cover plate, separate the washer hose from it.



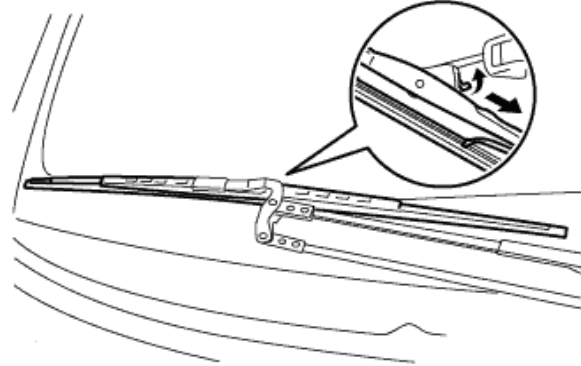
1.1.1.5 Remove the front windshield right ventilation cover plate
Remove the mounting snap buttons of ventilation cover plates, release 8 jaws, then remove the front right ventilation cover plate, separate the washer hose from it.



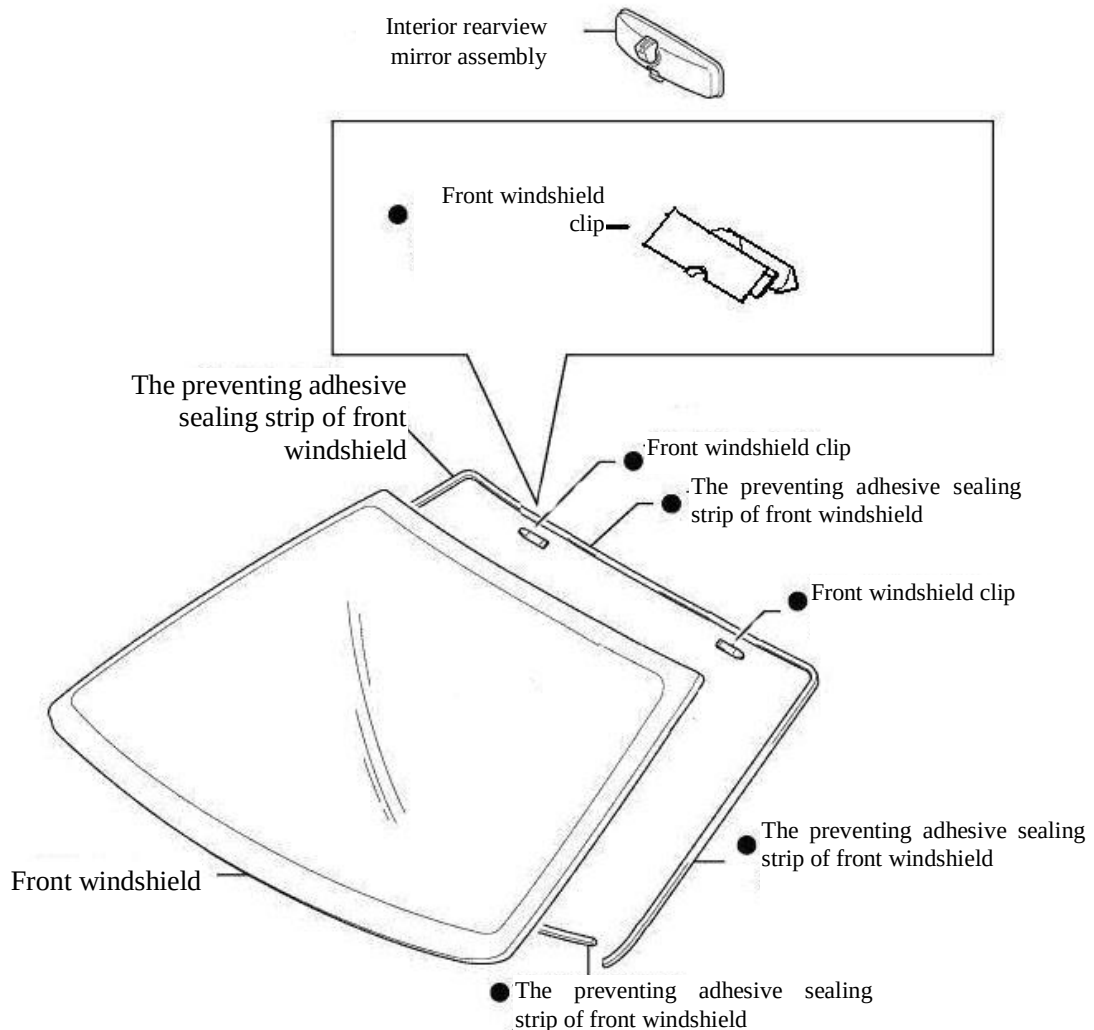
1.1.1.6 Remove the front wiper motor and bracket assembly
Unbolt 2 combinatory bolts. Unplug connectors and remove the front wiper motor and bracket assembly.



1.1.1.7 Remove the front wiper blade
Hold the front wiper arm and blade assembly and raise it a little, press the latch and remove the blade.
Note: Don't damage the surface of windscreen when remove the blade from the front wiper arm and blade assembly.



1.1.2 Remove the front windshield



1.1.2.1 Stick protective tape on the external surface periphery of the front windshield as shown in the figure.

1.1.2.2 Insert steel wire between body and front windshield inside the car as shown in the figure.

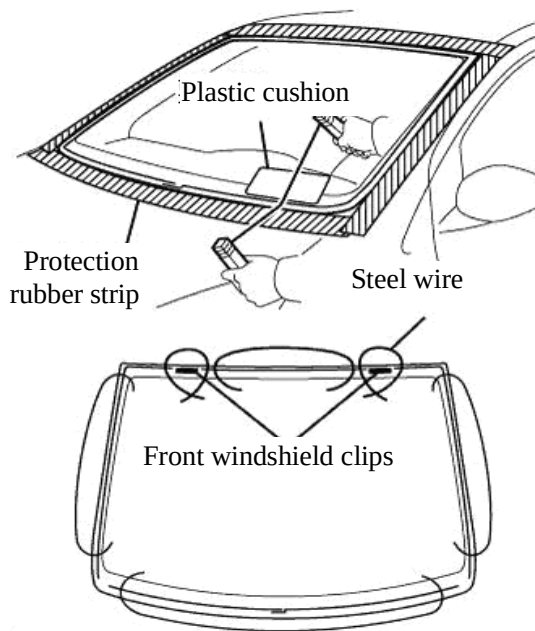
1.1.2.3

Tie the steel wire both ends to something that can be operated manually, such as wood block.

Note:

Don't damage the body surface paint coat and some interior and exterior parts in the windshield removing procedure.

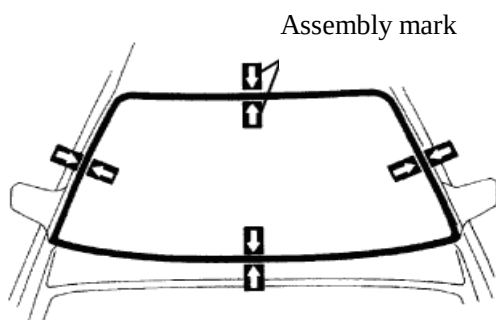
When removing the front windshield, put a plastic cushion between the steel wire and the upside of instrument panel to protect the upside of instrument panel.



1.1.2.4 Make assembly marks on the windshield and body at the marking locations as shown in the figure.

Tip: Just when the windshield needs to be used again, it needs to make assembly marks.

1.1.2.5 Pull the steel wire along the periphery of the front windshield to cut off adhesive.

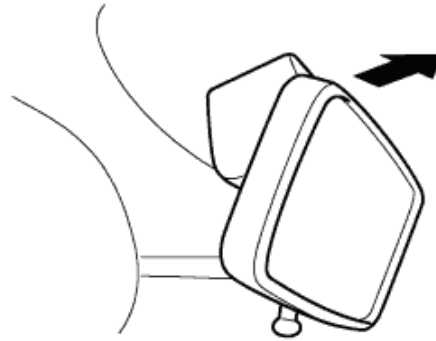


1.1.2.6 Release 2 clips of the front windshield.

1.1.2.7 Remove the front windshield with suction cup.

Note: Remain as much adhesive as possible on body when removing the front windshield.

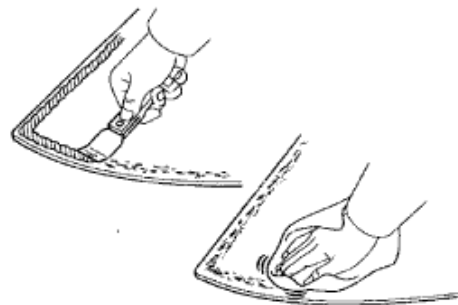
1.1.3 Remove the interior rearview mirror assembly
Remove the interior rearview mirror assembly as shown in the figure



1.2 Installation Adjustment

Fitting sequence is opposite to removing sequence, and need to pay attention to the following questions at the same time:

1.2.1 Clean the front windshield

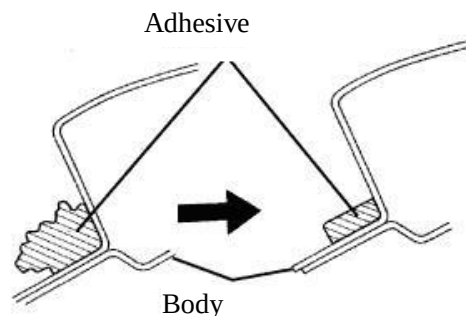


Scrape the broken clip, the preventing adhesive sealing strip and the adhesive on the front windshield with putty scrapper.

Clean the surface all around the windshield with gasoline.

Note: Don't touch the windshield surface after cleaning. Even an entirely new windshield need to be cleaned with gasoline

1.2.2 Clean body



1.2.2.1 Clean and level the contact surface of body and windshield

Clear away the remaining adhesive on the contact surface of body and windshield, to make sure the body surface comes up to the requirements.

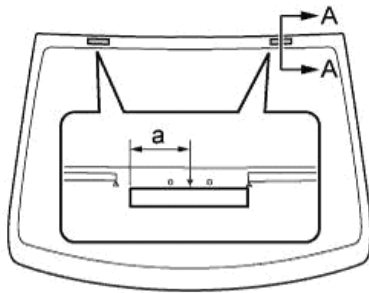
Note: Take care not to damage paint on body and surface.

Tip: Remain as much adhesive as possible on body under the premise of coming up to the requirements.

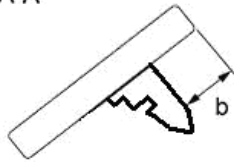
1.2.2.2 Clean the contact surface of body and windshield with duster or strip soaked in cleaner.

Tip: Even all the adhesive is removed, it need to clean body with cleaner.

1.2.3 Fitting the front windshield clip.



A-A



1.2.3.1 Paint prime coat at the fitting position of front windshield clip.

Note: Dry the prime coat for more than 20 minutes, remove extra prime coat, and don't paint too much.

1.2.3.2 Fit 2 new clips onto windshield at the locations as shown in the figure.

Location	dimension
A	40 mm
B	14 mm

1.2.4 Fit the front windshield preventing adhesive sealing strip

Fit clip onto front windshield.

1.2.4.1 Paint prime coat at the fitting position of preventing adhesive sealing strip of front windshield.

Note: Dry the prime coat for more than 20 minutes, remove extra prime coat, and don't paint too much.

1.2.4.2 Fit 3 preventing adhesive sealing strips of front windshield.

Stick on preventing adhesive strips along upside, left, right edges of the front windshield, offsetting upward along a row of small holes on the lower edge, then fit the front windshield clip.

Location	dimension
a	40 mm
b	31.5 mm

1.2.5 Fit the front windshield

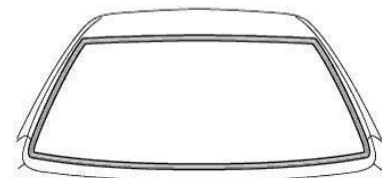
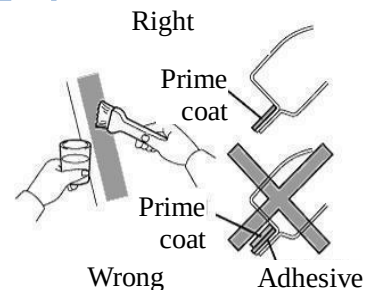
1.2.5.1 Determine the fitting position of front windshield. Stick the windshield with 2 suction cups, and adjust the front windshield to the correct fitting position.

Check if the contact surface of the whole front windshield preventing adhesive sealing strip is full in good contact, and make assembly marks on the windshield and body.

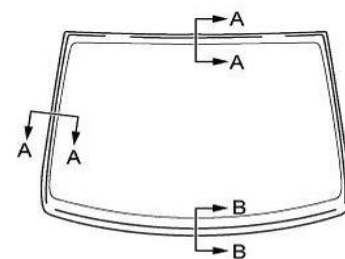
Note: Check if the front windshield clip is snapped to body accurately.

Tip: Check and confirm the fitting position when using used windshield.

Remove the front windshield with suction cup.



■: Prime coat



A-A

B-B

■: Prime coat

1.2.5.2 Paint the prime coat onto body edge directly with new brush.

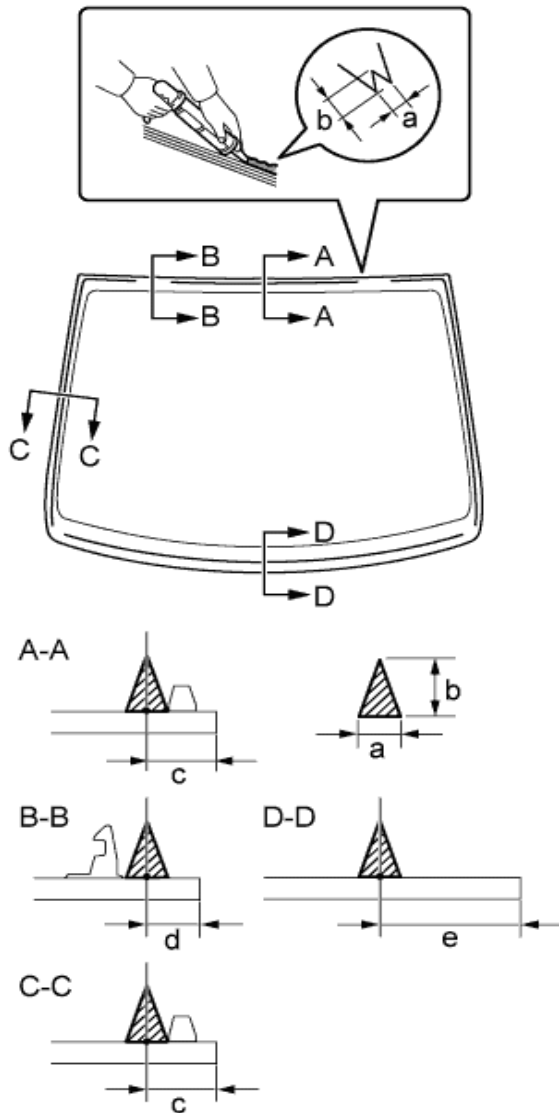
Note: Dry the prime coat for more than 20 minutes, don't paint prime coat onto adhesive, remove extra prime coat, and don't paint too much.

1.2.5.3 Paint prime coat onto front windshield edge and contact surface with a new brush or sponge material.

Note: Dry the prime coat for more than 20 minutes, remove extra prime coat, and don't paint too much.

Tip: If paint prime coat on any area out of regulation, wipe it away with duster or strip purchased before it dry.

1.2.5.4 Paint adhesive



Cut the pipe orifice coming across adhesive to the shapes as shown in the figure.

Tip: After cutting the pipe orifice, use all the adhesives within the stipulated time as shown in the form below.

Temperature	Time
35°C (95°F)	15Minutes
20°C (68°F)	1Hour and 40Minutes
5°C (41°F)	8Hours

Paint adhesive as shown in the figure.

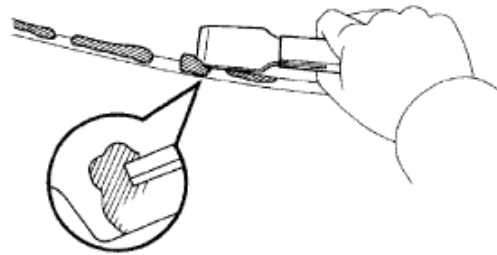
Location	dimension
a	8 mm
b	12 mm
c	13 mm
d	10.3 mm
e	27.5 mm

1.2.5.5 Fit the front windshield onto body.

Adjust the positions with suction cup, to align fitting positions. Press windshield gently along the preventing adhesive sealing strips of front windshield.

Note: Dry the adhesive for more than 20 minutes. Check if the front windshield clip is snapped to body accurately. Check if there is a small gap between body and front windshield.

Press the outside surface of front windshield gently to make sure it's fitted onto body completely.



Scrape extra adhesive squeezed out of windshield with putty scrapper.

Tip: Paint adhesive onto preventing adhesive sealing strip of front windshield.

1.2.6 Inspect leaking and mending

After the adhesive is curing, check leaking by using hose to inject water toward windshield. If leaking, dry the windshield, fill the leaking position with adhesive. If still leak after filling, remove the windshield, and fit it again following the fitting steps above.

Note: Don't use high pressure water.

When drying, don't make pressed air face the position painted with adhesive directly.

For drying, don't use infra-red ray bulb or the like.

1.2.7 After completing the fitting above, note the following matters.

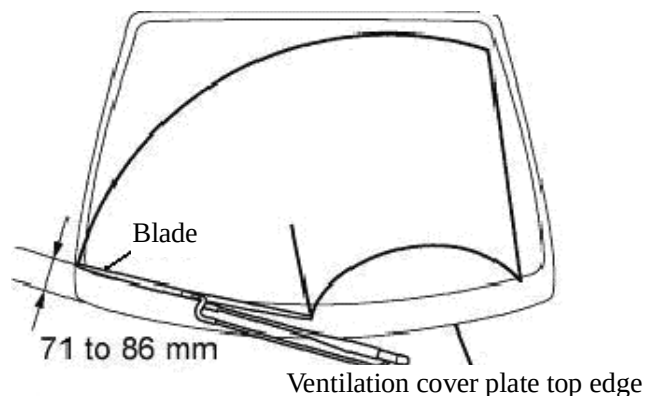
1.2.7.1 Before the position pasted with adhesive is completely pasted, sudden close of door may lead to windshield loose or shedding. So, before the position pasted with adhesive is completely pasted, open or close the door, make sure all the door windows and use correct ways.

1.2.7.2 If the adhesive strip isn't pasted completely, press it with tape until the position pasted with adhesive is complete pasted.

1.2.7.3 Each kind of adhesive has its own cure time. Make sure to refer to the manufacturer's instructions, check the cure time of adhesive used, and observe the actions needed before the position pasted with adhesive is completely pasted.

1.2.7.4 Before the position pasted with adhesive is completely pasted, driving is forbidden, so as to ensure it cures thoroughly and sufficiently.

1.2.8 Screw down the nut collar components at the position as shown in the figure, with a torque of 21 N*m, and hold the wiper arm when screwing.

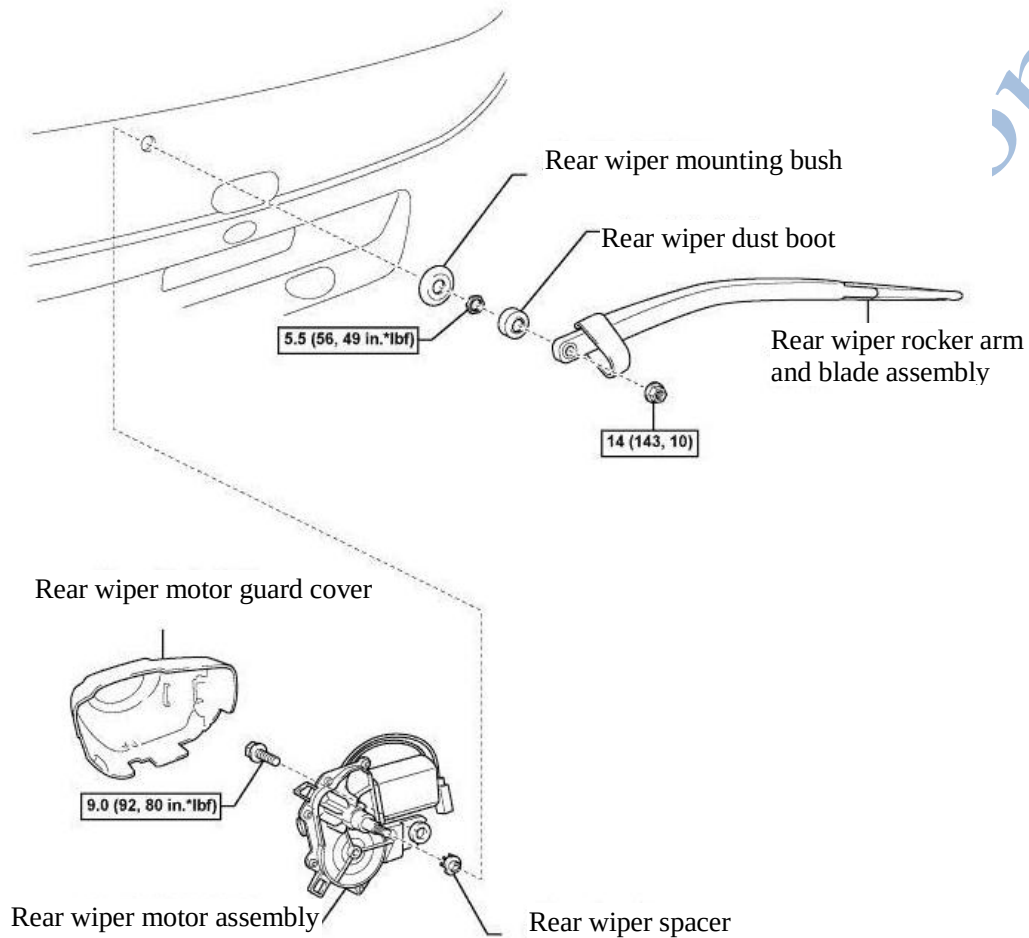


Section 2 Back Door Glass Components

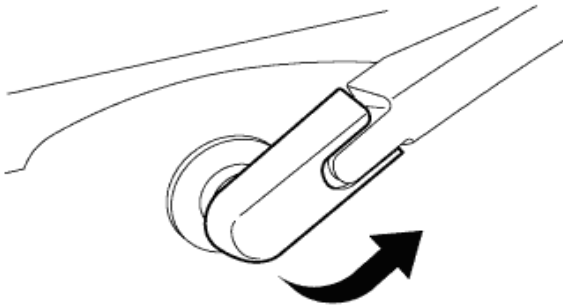
2.1 Removal

2.1.1 Rear wiper assembly

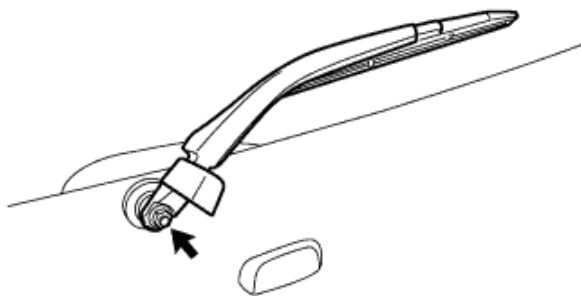
2.1.1.1 Disconnect the battery negative cable.



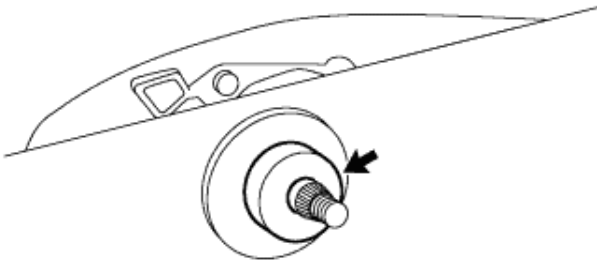
2.1.1.2 Remove the rear wiper arm.
Open the rear wiper rocker arm guard cover as shown in the figure



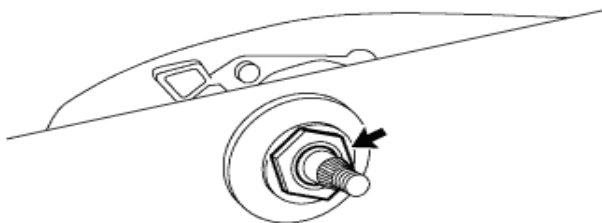
Unscrew the nut and remove the rear wiper arm



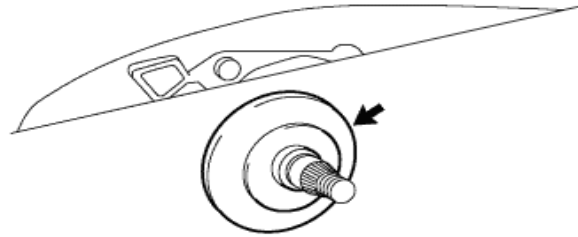
Pull the dust cover of rear wiper



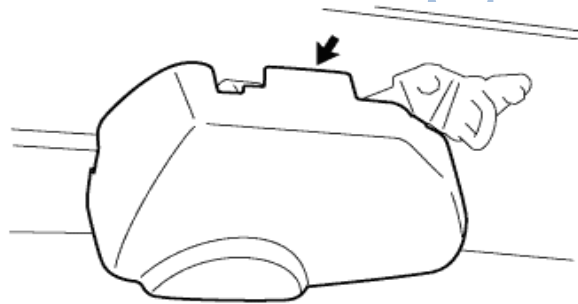
Unscrew the lock nut



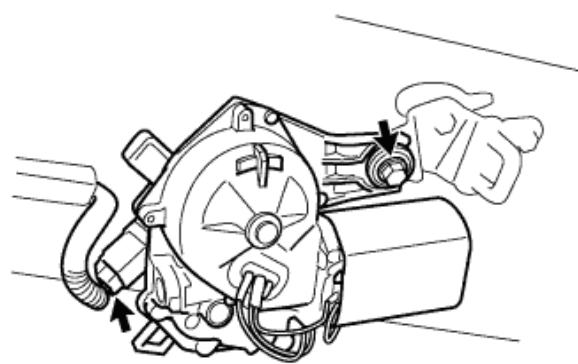
Remove the rear wiper mounting bush.



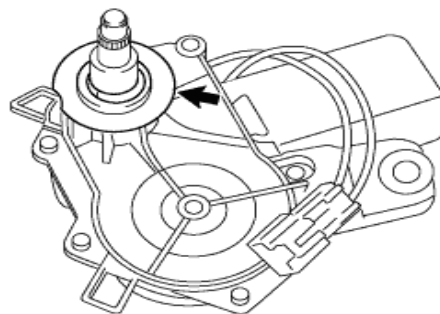
2.1.1.3 Remove the rear wiper motor guard boot
Pull the rear wiper motor guard boot



2.1.1.4 Remove the rear wiper motor assembly
Unplug the connector, and remove the nut and the front wiper motor assembly.
Note: Beware of the motor falling to get damaged, when unscrew the nut.



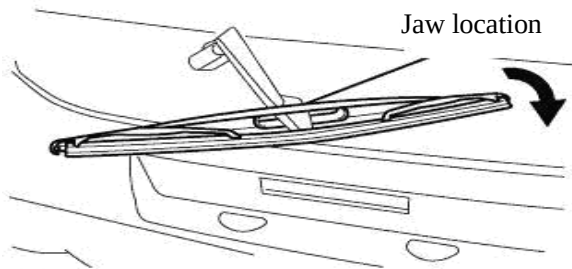
2.1.1.5 Remove the rear wiper spacer
Remove the spacer from the rear wiper motor assembly.



2.1.1.6 Remove the rear wiper blade

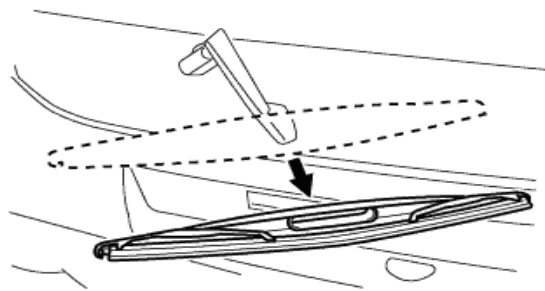
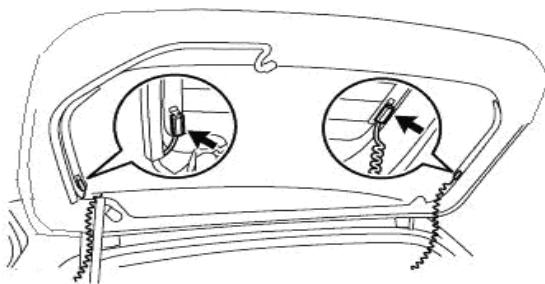
Turn the rear wiper blade assembly to the position as shown in the figure. When releasing the jaw, it sounds.

Note: Take care not to damage the jaw when releasing.

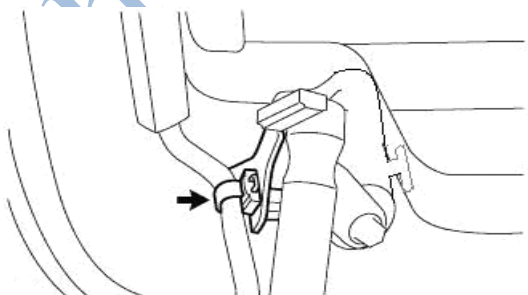
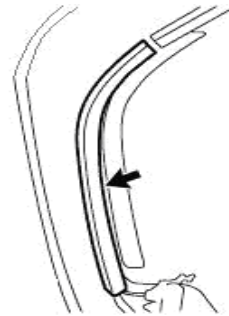
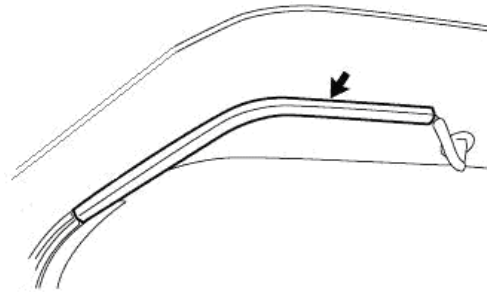
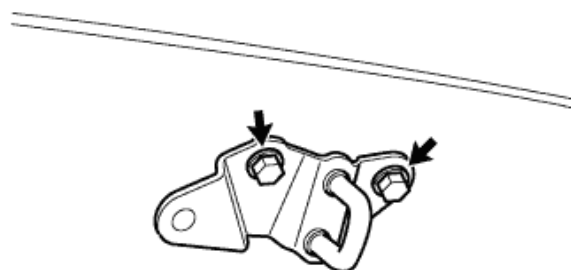
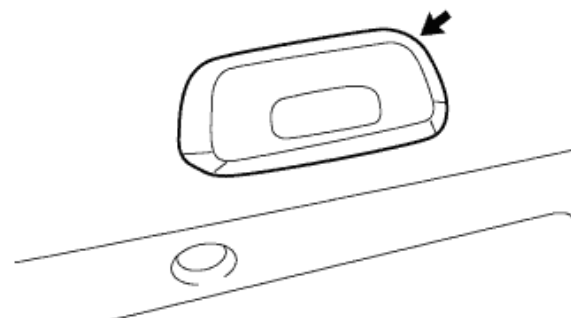


Pull the blade off the rear wiper arm to the direction perpendicular to the vehicle rear side.

Note: After pulling the blade off the rear wiper arm, don't turn the rear wiper to the back door glass.

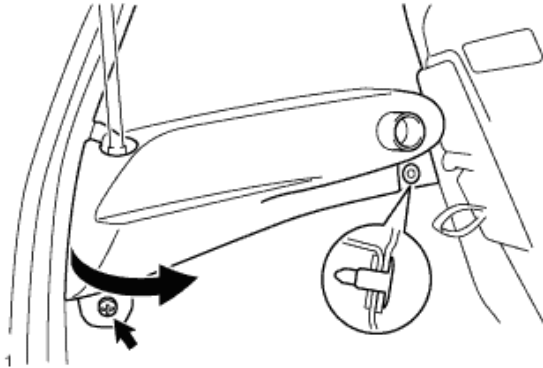
**2.1.2 Remove the harness fastening clamp. Disconnect 2 connectors**

Release the harness fastening clamp.

**2.1.3 Remove the outside strip of back door harness****2.1.3.1 Remove the outside strip 1 of back door glass harness****2.1.3.2 Remove the outside strip 2 of back door harness, release harness fastening clamp****2.1.4 Remove 2 bolts and back door ring lock****2.1.5 Remove the back door open-outward handle assembly from the back door glass**

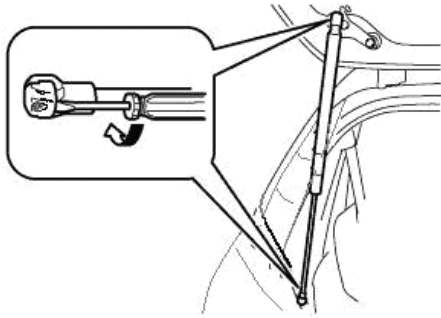
2.1.6 Remove the back door gas spring assembly

2.1.6.1 Remove the screw and jaw and open the interior decoration panel



2.1.6.2 Prize off 2 snap springs with screwdriver and remove the gas spring

Tip: Support the back door glass when removing the gas spring.

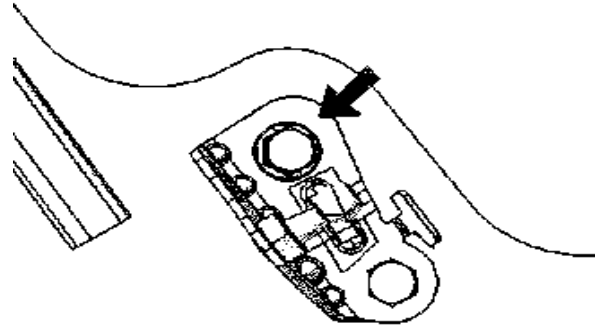


2.1.6.3 Unbolt the ball headed bolt of back door gas spring



2.1.7 Remove the back door glass

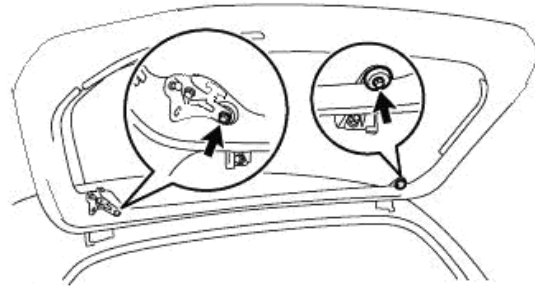
2.1.7.1 Loosen the bolt on the left gas spring bracket



2.1.7.2 Remove 2 bolts and the back door glass

Note: Don't unbolt 2 bolts at the same time, as the glass is easy to fall to get damaged.

2.1.7.3 Remove 2 sub hinge holder blocks

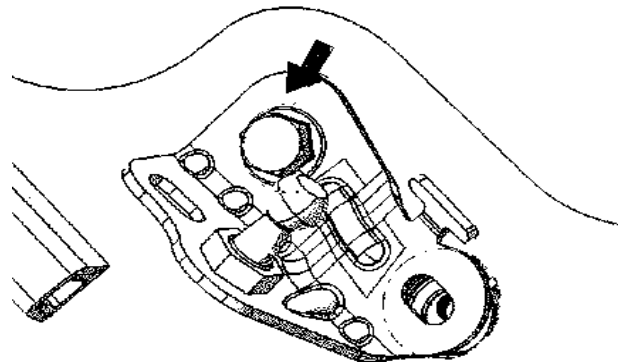


2.1.8 Remove the back door gas spring mounting bracket assembly

2.1.8.1 Remove the nut and back door gas spring mounting bracket.

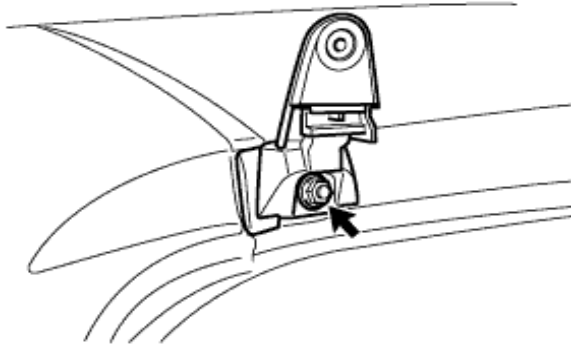
2.1.8.2 Remove the block.

2.1.8.3 Remove the block gasket of back door gas spring mounting bracket.



2.1.9 Remove the left back door primary hinge holder

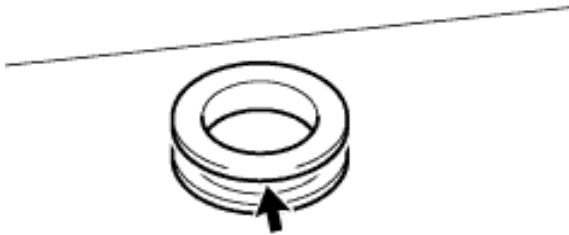
Remove the hexagon flange nut on the left primary hinge holder of back door, and remove the left hinge holder.



2.1.10 Remove the right back door primary hinge holder

Tip: The way of removing right back door hinge holder is the same as the left.

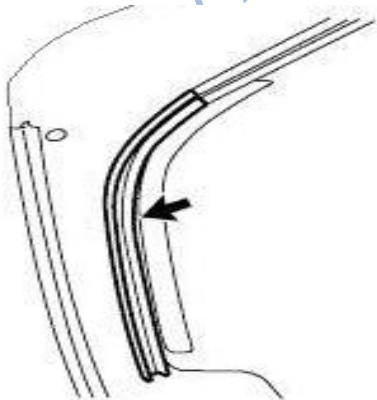
2.1.11 Remove the rear wiper mounting sealing ring



2.1.12 Remove the inside strip of back door harness

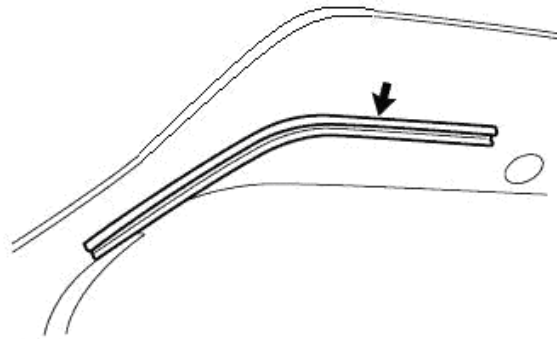
2.1.12.1 Remove the inside strip 1 of glass harness

Note: Clean the remaining tape on the back door glass.



2.1.12.2 Remove the inside strip 2 of glass harness

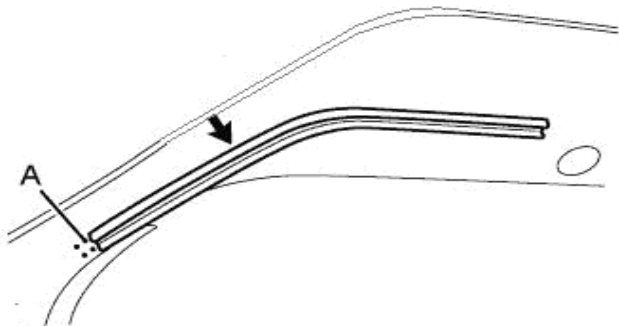
Note: Clean the remaining tape on the back door glass.



2.2 Installation Adjustment

Fitting sequence is opposite to removing sequence, and need to pay attention to the following questions:

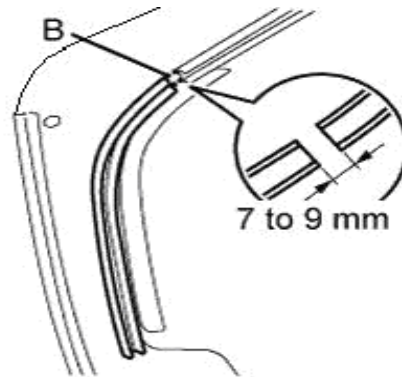
2.2.1 Fit the inside strip 2 of back door harness



2.2.1.1 Uncover the double-faced adhesive tape on the back door harness strip.

2.2.1.2 Align one end of the inside strip 2 of back door harness with mark A and install it, as shown in the figure.

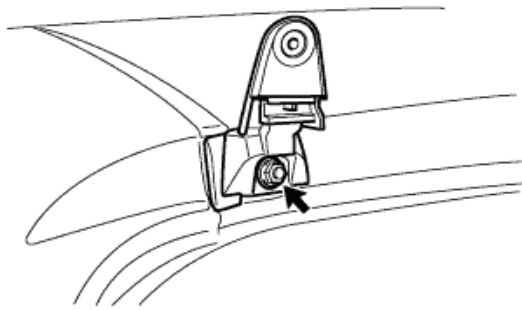
2.2.2 Fit inside the strip 1 of back door harness



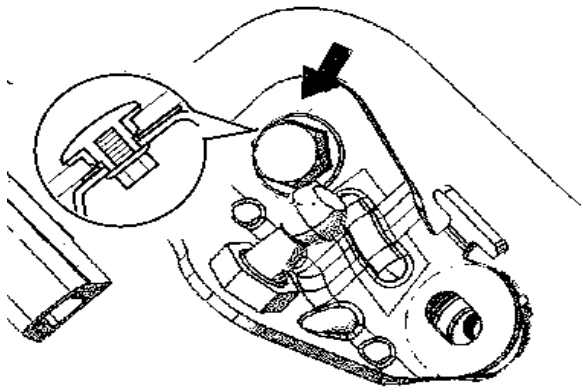
2.2.2.1 Uncover the double-faced adhesive tape on the back door harness strip.

2.2.2.2 Align one end of the inside strip 1 of back door harness with mark B and install it, as shown in the figure.

2.2.2.3 The torque is 27 N*m when fitting the hex nut of left back door primary hinge holder, and the right is the same as left.

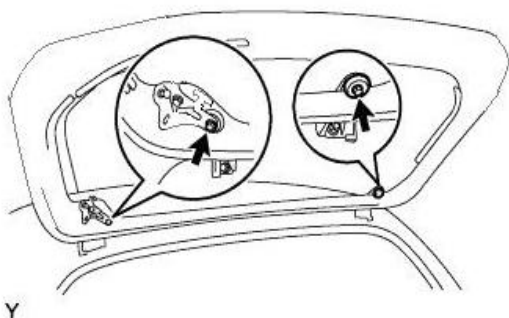


2.2.4 The mounting torque of the bolt of gas spring mounting bracket is 7.5 N*m



2.2.5 The mounting torque of 2 bolts of back door glass is 17 N*m

2.2.6 The mounting torque of the ball headed bolt of back door gas spring is 22 N*m



2.2.7 The mounting torque of 2 bolts of back door open-outward handle is 9.0 N*m

2.2.8 The mounting torque of the bolt of rear wiper motor assembly is 9.0 N*m

2.2.9 The mounting torque of the rear wiper lock nut is 5.5 N*m

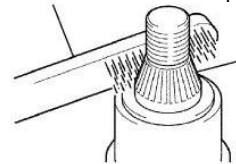
2.2.10 Brush off the metal dust on the motor output shaft, and make the motor reset

Rear wiper rocker arm seat insert

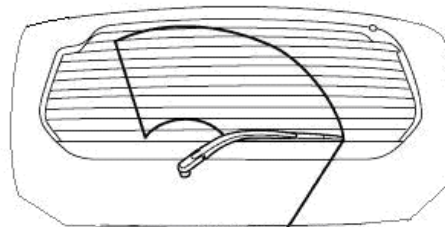


Brush

Rear wiper motor rotating axis straight knurling



2.2.11 Screw down the mounting nut of rear wiper arm at the position as shown in the figure, with a torque of 21 N*m, and hold the wiper arm when screwing, so as not to come about position deflection.



Heating wire at the bottom

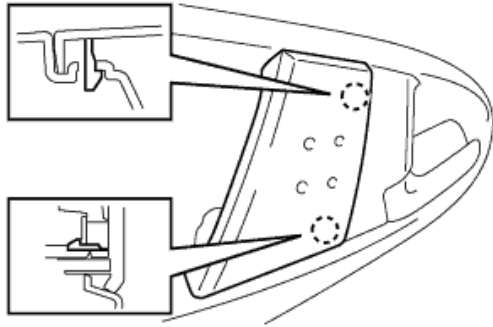
Section 3 Front Door Components

3.1 Removal

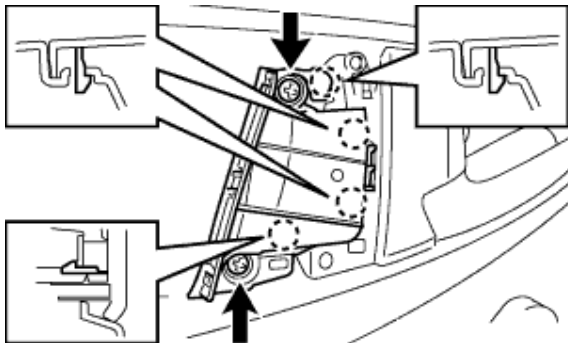
3.1.1 The replacement of front door window regulator and front door glass assembly

3.1.1.1 Disconnect the battery negative cable.

3.1.1.2 Remove the door handrail decoration cover. Release 2 jaws with a screwdriver wrapped in protective tape, and remove the door handle.



3.1.1.3 Remove the interior handle decoration cover. Unscrew 2 mounting screws of front door interior handle decoration cover, and release 4 jaws.



3.1.1.4 Remove the upper body of front door interior guard plate

Unscrew the mounting screw of door upper body, release 15 mounting snaps of door guard plate, and remove the upper body of front door interior guard plate

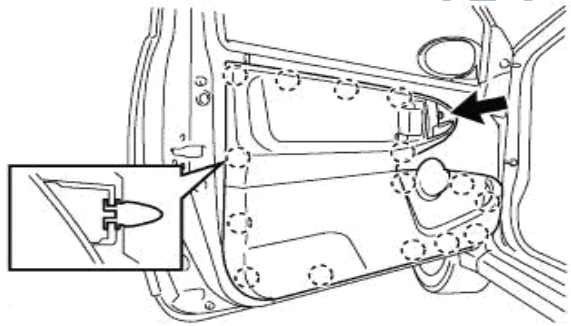
Remove the power window switch assemblies (because of bilateral symmetry, take the left front door power window switch for example)

3.1.1.4.1 Remove 2 jaws and the front door power window switch with a screwdriver wrapped in protective tape.

Note:

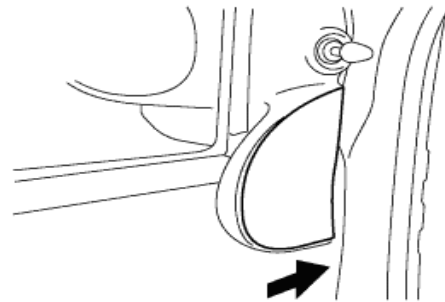
When removing the power window switch, the tip of screwdriver must be wrapped in protective tape, at the same time cover the switch around with protective cloth, so as to avoid the screwdriver damaging the secondary instrument panel.

3.1.1.4.2 Disconnect the connector.



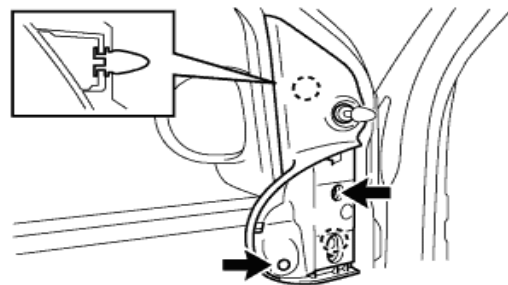
3.1.1.5 Remove the upper decoration cover of the exterior rearview-mirror control

Slid and remove the lower decoration cover of the left exterior rearview-mirror control along the direction of arrow as shown in the figure.



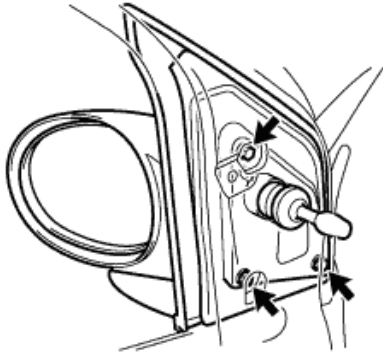
3.1.1.6 Remove the lower decoration cover of exterior rearview-mirror control

Unscrew 2 mounting screws of the decoration cover of exterior rearview-mirror control, and release 2 mounting snaps of the decoration cover of exterior rearview-mirror control.



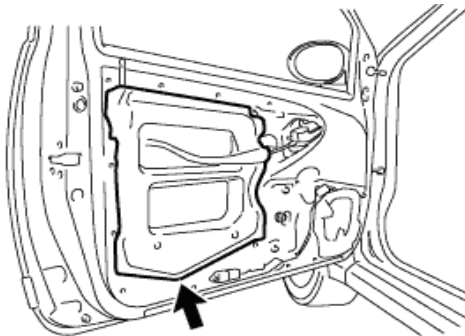
3.1.1.7 Remove the exterior rearview mirror assembly

Unscrew 2 bolts and remove the left exterior rearview mirror



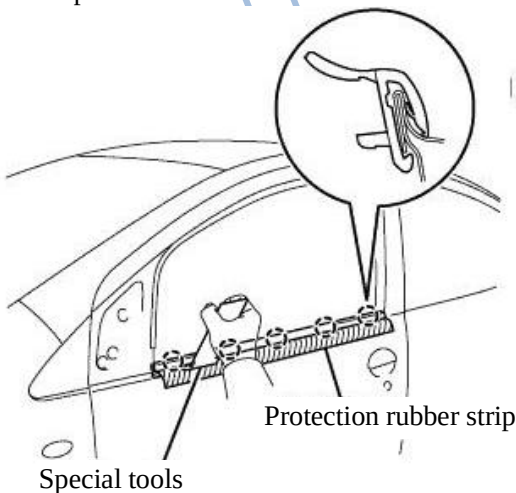
3.1.1.8 Remove the front door sheet metal technological hole cover layer

Note: Clean up the remaining sticker in the door inner panel

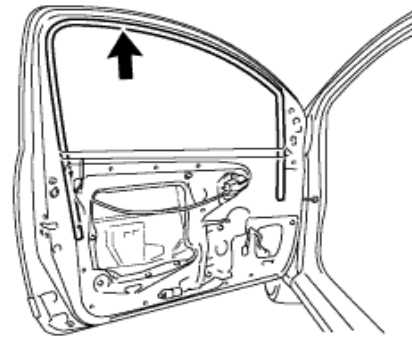


3.1.1.9 Remove the front door exterior strip

As shown in the figure, stick the protective tape on the external surface of the exterior strip, with exterior strip special tools, release 5 snaps and remove the exterior strip.



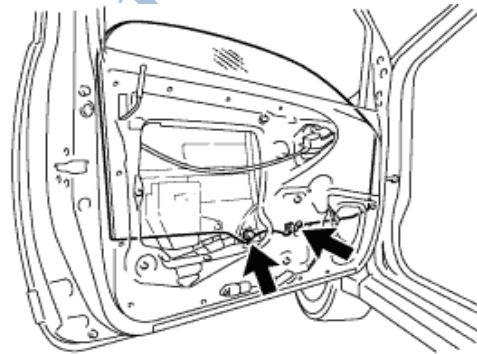
3.1.1.10 Remove the front door glass run



3.1.1.11 Remove the front door glass assemble

Turn on the switch of power window regulator, drop the glass to the 2 mounting holes of inner door panel corresponding to the mounting bolts, unscrew 2 screws and remove the glass.

Note: When removing the screws, don't make the glass fall or damage, turn off the switch of window regulator.

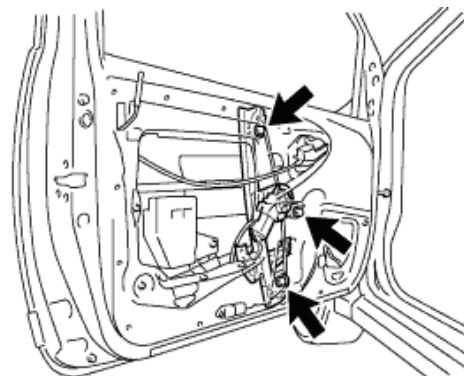


3.1.1.12 Remove the front door power window regulator assembly

Disconnect the electric equipment connectors, unscrew 3 mounting nuts, and remove the power window regulator assembly.

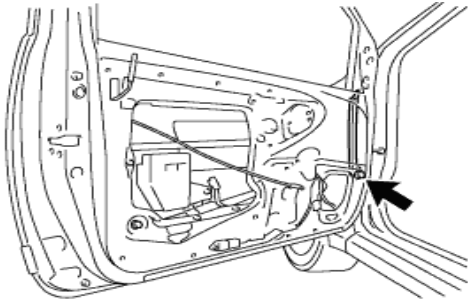
Note: Don't make the power window regulator fall when unscrewing the nuts.

Tip: Take out the power window regulator from the front side door inner panel technological hole.

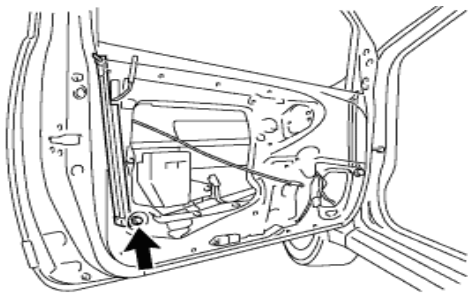


3.1.1.13 Remove the front door lock

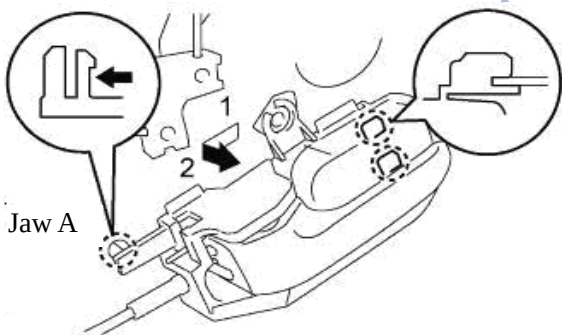
Remove the bolt and glass former rail



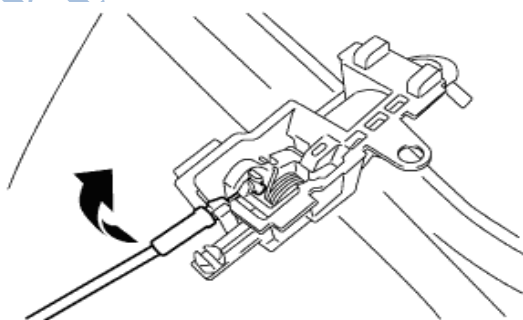
Remove the bolt and glass rear rail



Remove the front door interior handle assembly
Release the jaw A, move the front door interior handle assembly in the direction of arrow as shown in the figure to release the jaw and remove the interior handle assembly smoothly.



Remove the front door lock body cable in the direction of arrow as shown in the figure.



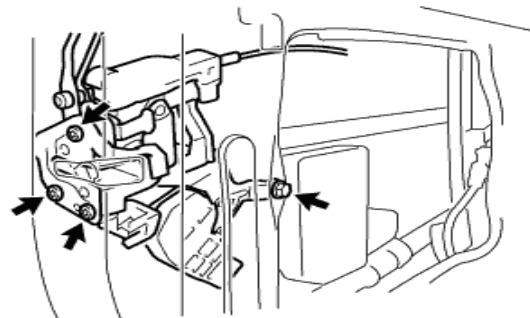
Remove front door body assembly
As shown in the figure, remove the front door open-outward connecting rod.



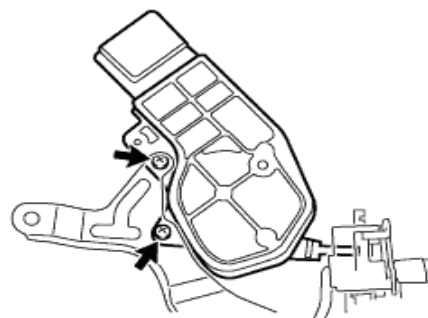
As shown in the figure, remove the front door lock cylinder drag rod.



Unbolt the bolt.



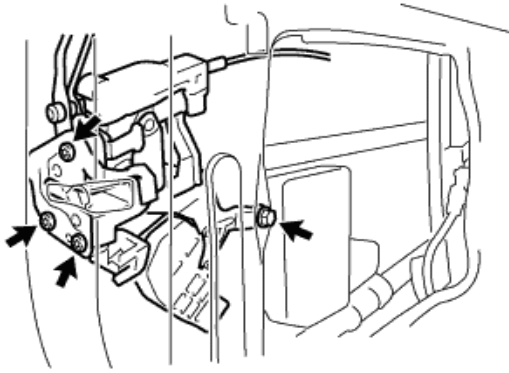
Remove the front door locking device assembly.
Unscrew 2 screws and remove the front door locking device assembly.



3.2 Installation Adjustment

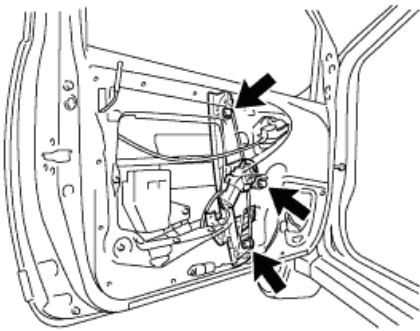
Fitting sequence is opposite to removing sequence, and need to pay attention to the following questions:

3.2.1 Paint adhesive onto the screw thread before fitting 3 inner hexagon raised countersunk head screws, and the tightening torque is 5.0 N*m. The mounting torque of another screw in the figure is 5.0 N*m too.



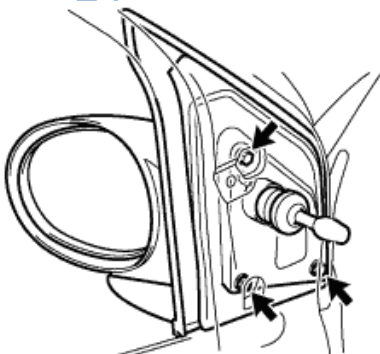
3.2.2 The tightening torque of the screws of glass former and rear rails is 6.1 N*m.

3.2.3 The mounting torque of 3 nuts of window regulator is 7.0 N*m, and avoid the glass falling during installation process.



3.2.4 The mounting torque of 2 screws of front door glass is 2.8 N*m.

3.2.5 The mounting torque of the screw of exterior rearview-mirror assembly is 7.0 N*m, don't exceed this mounting torque and don't repeat the installment more than twice.



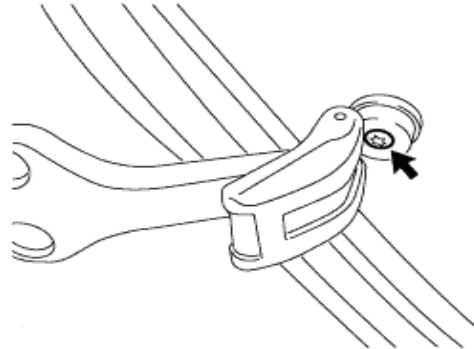
Section 4 Rear Door Components

4.1 Removal

4.1.1 Rear door glass assembly

4.1.1.1 Remove the rear door glass

Unscrew the screw with inner hexagon screwdriver.



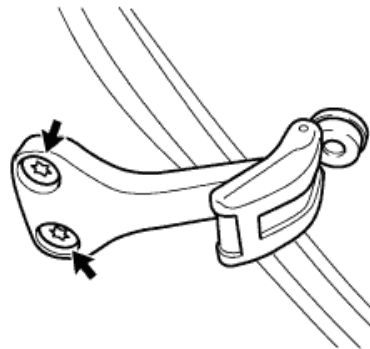
Unscrew 2 nuts and remove the rear door glass.

Note: Beware of the motor falling when unscrewing 2 nuts.



4.1.1.2 Remove the open-side mechanism assembly.

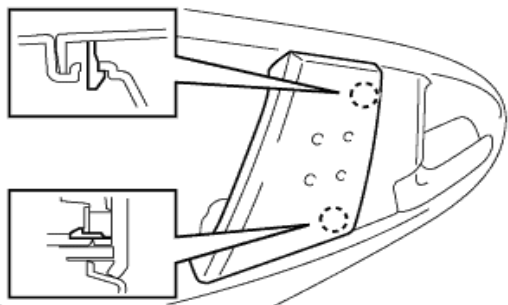
Unscrew 2 screws, and remove the rear door glass open-side mechanism assembly.



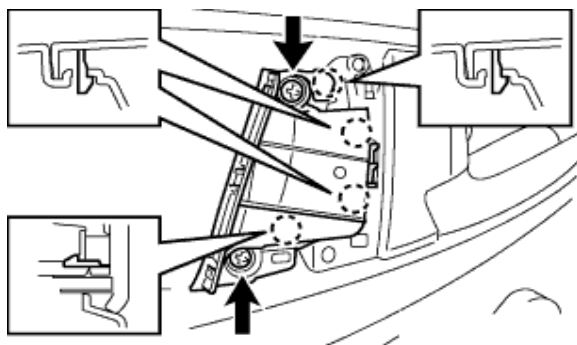
4.1.2 Door locks

4.1.2.1 Remove the door handrail decoration cover.

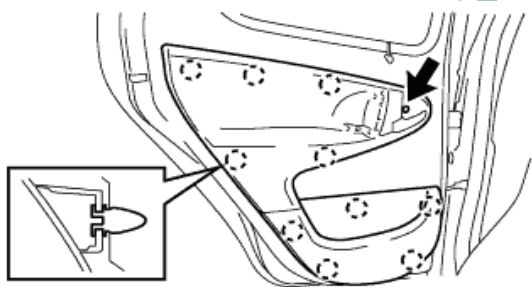
Release 2 jaws with a screwdriver wrapped in protective tape, and remove the door handle.



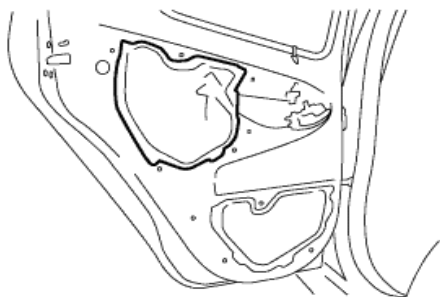
4.1.2.2 Remove the interior handle decoration cover. Unscrew 2 mounting screws of front door interior handle decoration cover, and release 4 jaws.



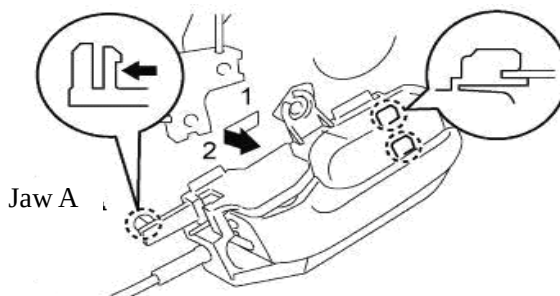
4.1.2.3 Remove the upper body of front door interior guard plate. Unscrew the mounting screw of door interior trim panel, release 10 mounting snaps, and remove the rear interior trim panel assembly



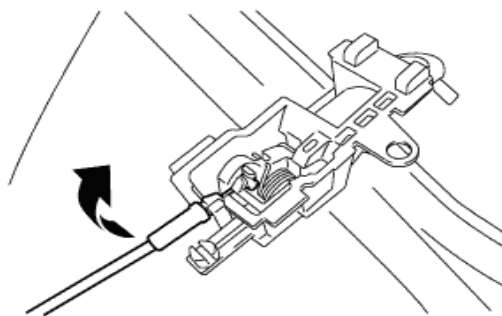
4.1.2.4 Remove the rear door sheet metal technological hole cover layer
Note: Clean up the remaining sticker in the door inner panel



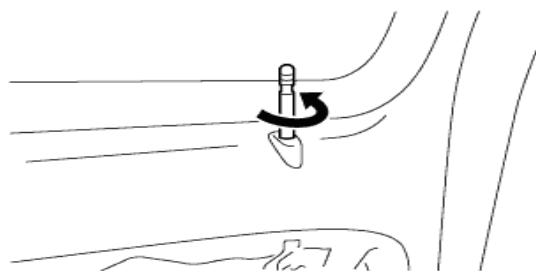
4.1.2.5 Remove the front door interior handle assembly. Release the jaw A, move the front door interior handle assembly in the direction of arrow as shown in the figure to release the claw and remove the interior handle assembly smoothly.



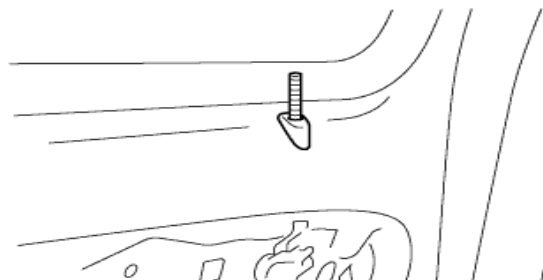
Remove the front door lock body cable in the direction of arrow as shown in the figure.



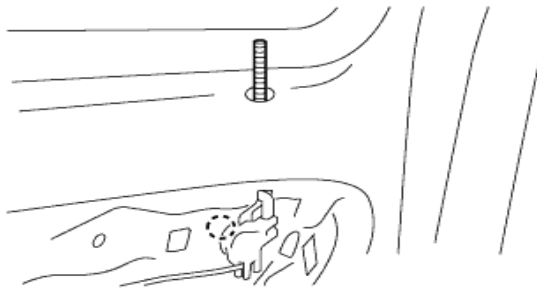
4.1.2.6 Remove the side door lock button connecting rod protective cap. Rotate the side door lock button connecting rod protective cap in the counter clockwise direction and remove it.



4.1.2.7 Remove the rear side door lock button permanent seat.



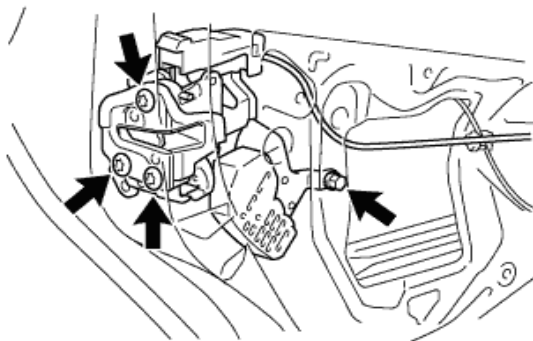
4.1.2.8 Remove the rear side door lock body assembly.
Remove the button snap.



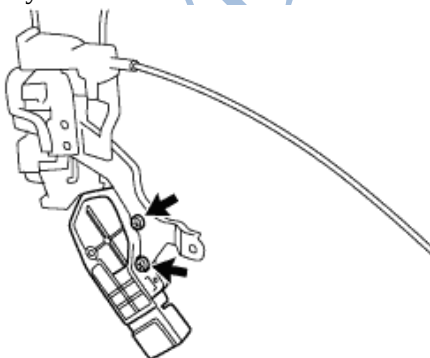
Unscrew 3 inner hexagon raised countersunk head screws.

Note: Beware of the assemblies connected rear door falling to get damaged when unscrewing screws.

Tip: Take off the lock body assembly from technological hole.



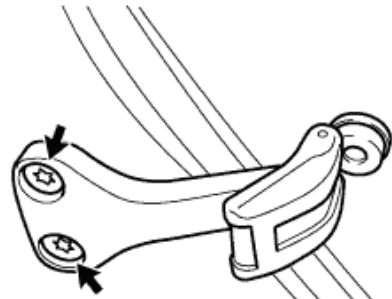
4.1.2.9 Remove the front door locking device assembly.
Unscrew 2 screws and remove the front door locking device assembly.



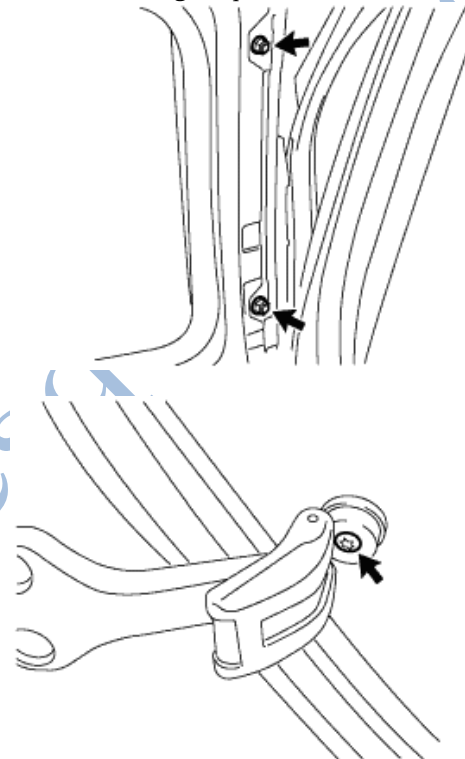
4.2 Installation Adjustment

Fitting sequence is opposite to removing sequence, and need to pay attention to the following questions:

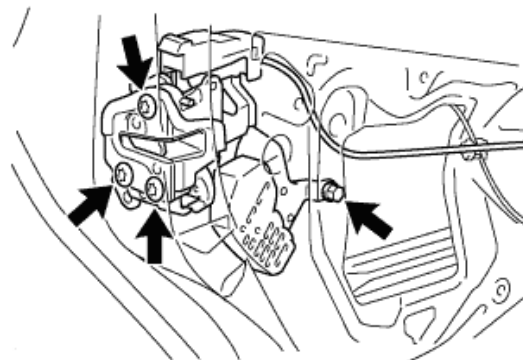
4.2.1 The mounting torque of 2 inner hexagon screws is 5.5 N*m.



4.2.2 The mounting torque of 2 nuts is 5.5 N*m, and the hex screw mounting torque is 2.3 N*m.



4.2.3 Paint adhesive onto the screw thread before fitting 3 inner hexagon raised countersunk head screws, and the tightening torque is 5.0 N*m. The mounting torque of another screw in the figure is 5.0 N*m too.



Section 5 Back Door Lock Components

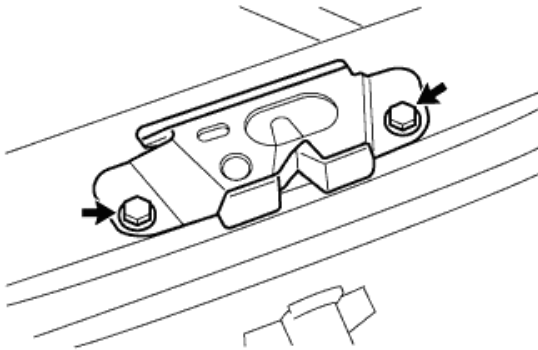
5.1 Removal

5.1.1 Remove the rear bumper

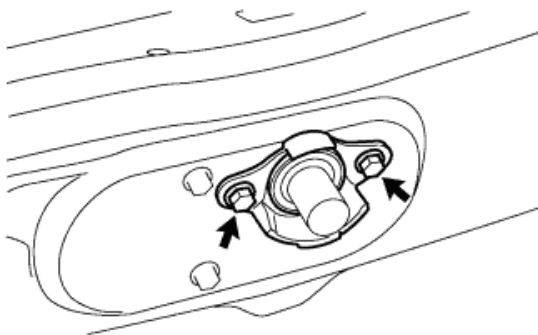
5.1.2 Remove the harness protective cover

5.1.3 Remove the back door body assembly

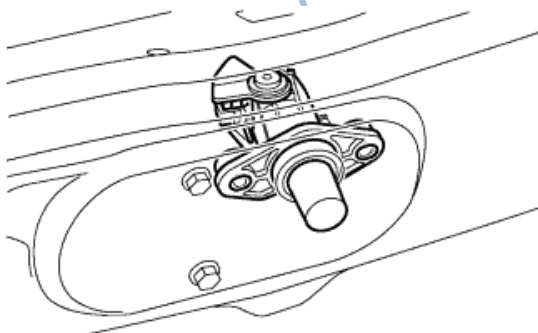
5.1.3.1 Remove 2 bolts and rear lock body assembly.



5.1.3.2 Remove the back door body button assembly
Remove 2 bolts and back door body button seat cover

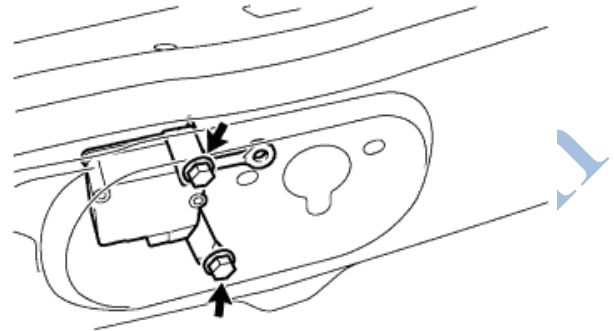


5.1.3.3 Remove the back door body button assembly.



5.1.3.4 Remove the back door body motor assembly.

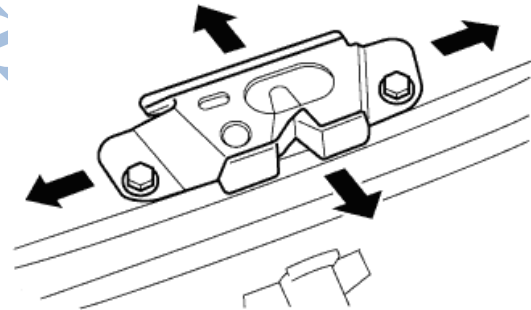
Unscrew 2 bolts, disconnect connectors and remove the back door body motor assembly



5.2 Installation Adjustment

Fitting sequence is opposite to removing sequence, and need to pay attention to the following questions:

5.2.1 Fit back door body motor assembly and back door body button assembly, and the torque of 2 bolts of back door body assembly is 7.5 N*m.



5.2.2 Don't screw screws home first when fitting the back door lock body, beat gently with plastic hammer to adjust the positions alignment, in order to match the back door lock ring, then screw them home.

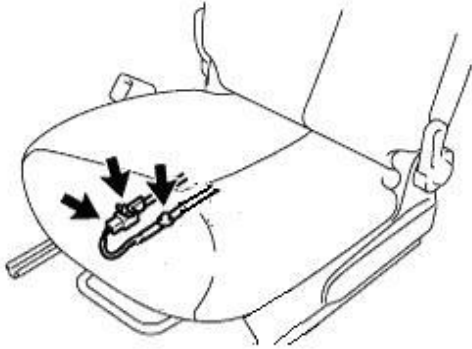
Section 6 Seats and Belts

6.1 The Removal of Front Seats and Front Seat Belt Sleeves

6.1.1 Driver's Seat

6.1.1.1 Disconnect the seat belt buckle switch connectors.

6.1.1.2 Remove driver's seat assembly.
Loosen the clamp;



Disconnect the belt buckle switch connectors;
Unbolt 4 mounting bolts with sleeve, and remove the front seat.

6.1.1.3 Unbolt the mounting bolt of left front belt sleeve and remove the sleeve.



6.1.2 Remove the front seat (right) assembly
Note: The same as the removal of driver's seat assembly. The right front belt sleeve of right seat is without harness.

6.2 The Installation of Front Seats and Front Seat Belt Sleeves

According to the opposite sequence with removal to install them and pay attention to the following items:

6.2.1 Driver's Seat

Confirm the correct connection of the seat belt buckle switch connector.

The tightening torque of mounting bolt of left right belt sleeve is 25 N*m.

The tightening torque of 4 mounting bolt should be 22 N*m.

The torque of fitting the seat belt buckle switch connector is 5.4 N*m.



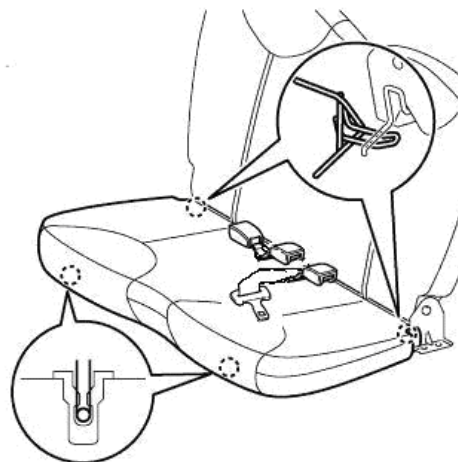
6.2.2 Fit the front seat (right) assembly

Note: The same as the installation of driver's seat assembly.

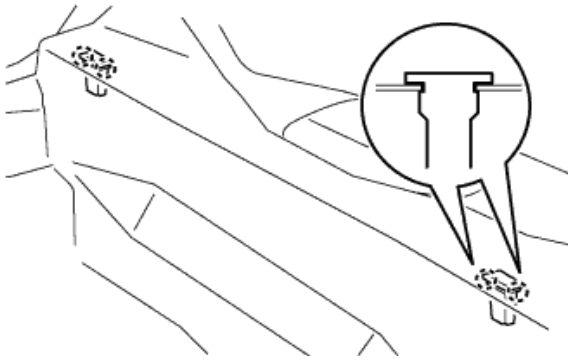
6.3 The Removal of Rear seats

6.3.1 Remove the rear seat cushion

6.3.1.1 Take off 4 hooks and remove the rear seat cushion.

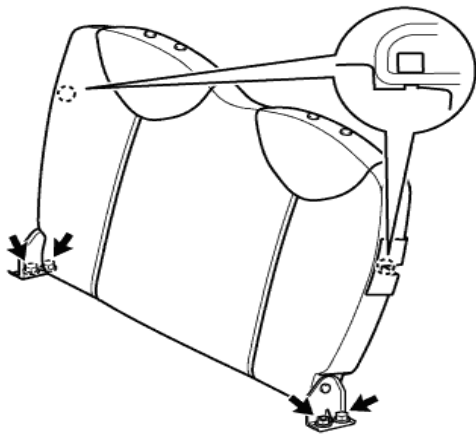


6.3.1.2 Remove the rear seat cushion snap seat.

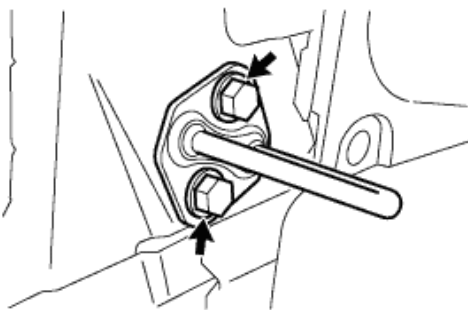


6.3.2 Remove the rear backrest assembly

6.3.2.1 Release 2 clasps, 2 bolts and 2 nuts as shown in the figure.



6.3.2.2 Remove the rear seat lock ring.



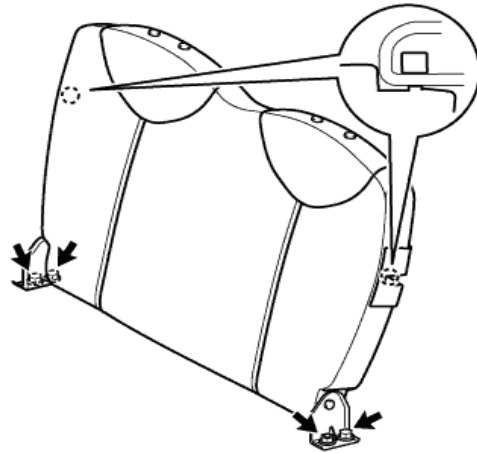
6.4 The Installation of Rear Seats

According to the opposite sequence with removal to install them and pay attention to the following matters:

Confirm the correct connection of the seat belt buckle switch connector.

The tightening torque of the rear seat lock ring mounting bolt is 21 N*m.

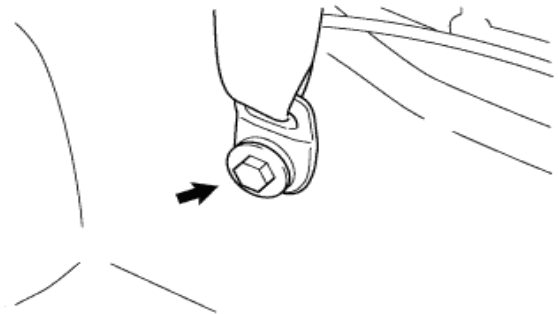
The tightening torque should be 22 N*m when fitting the blot and nut as shown in the figure.



6.5 The Removal of Front Safety-Belt Assemblies (because of bilateral symmetry, take the right for example)

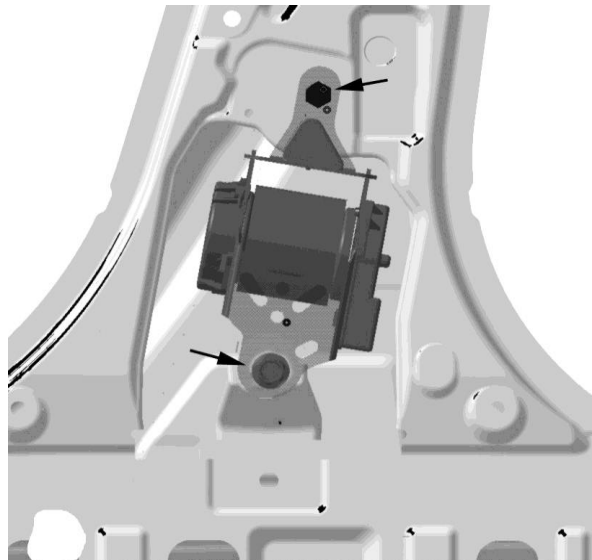
6.5.1 The removal of right front safety-belt assembly

6.5.1.1 Unscrew the bolt on right front safety-belt fitting



6.5.1.2 Remove the right B-pillar guard plate (see Interior section)

6.5.1.3 Unscrew 2 bolts on retractor, as shown in the figure



6.5.1.4 Remove the bolt from the guide part



6.5.2 The removal of left front safety-belt assembly is the same as the right
 Note: Hold the belt aptly when it unreels, to prevent the wedding from unreeling rapidly and too much, lead to difficulty for pulling again.

6.6 The Installation of Front Safety-Belt Assembly

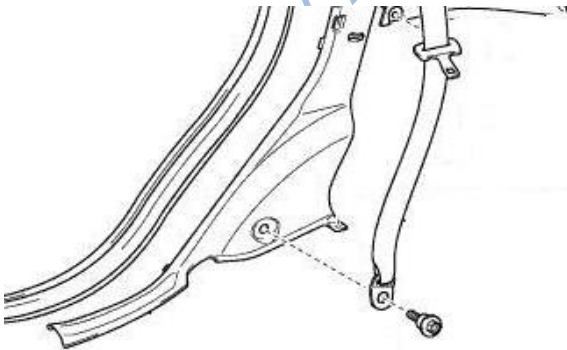
Fitting procedure is opposite to removing procedure, and pay attention to the following matters:
 Need to place the retractor according to fitting position on body to pull out the wedding.
 The tightening torque of mounting bolt is 42 N*m.

6.7 The Removal of Rear Safety-Belt Assemblies

(because of bilateral symmetry, take the right for example)

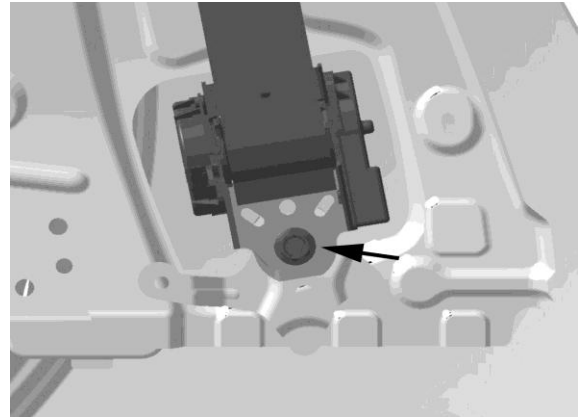
6.7.1 The removal of right rear right safety-belt assembly

6.7.1.1 Remove bolt on connecting parts

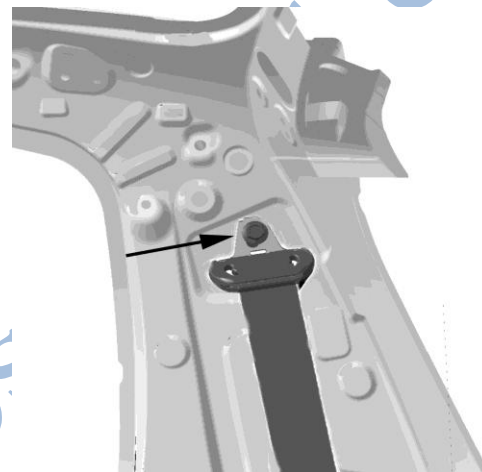


6.7.1.2 Remove the right C-pillar guard plate (see Interior section)

6.7.1.3 Unscrew the mounting bolt on retractor, as shown in the figure



6.7.1.4 Remove the mounting bolt on guide parts



6.7.2 The removal method of left rear safety-belt is the same as the right

Note: Hold the belt aptly when it unreels, to prevent the wedding from unreeling rapidly and too much, lead to difficulty for pulling again.

6.8 The Installation of Rear Row Safety-Belt Assembly

Fitting procedure is opposite to removing procedure, and pay attention to the following matters:
 Need to place the retractor according to fitting position on body to pull out the wedding.
 The tightening torque of mounting bolt is 42 N*m.

6.9 The Removal of Rear Row Mid Safety-Belt Assembly

Remove rear seat cushion assembly, see Seats section
 Remove 2 mounting bolts only

6.10 The Installation of Rear Row Mid Safety-Belt Assembly

Fitting procedure is opposite to removing procedure, and pay attention to the following matter:
 The tightening torque of mounting bolt is 42 N*m.

Section 7 Washer

7.1.1.3 Remove the washer pot motor

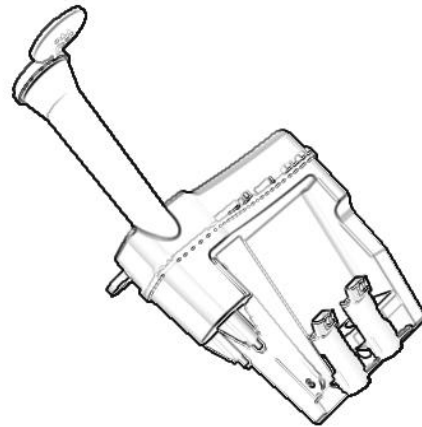
7.1 The Removal of Washer

7.1.1 Remove the washer pot and motor

7.1.1.1 Unscrew the bolt



7.1.1.2 Remove the washer pot



7.2 The Installation of Washer

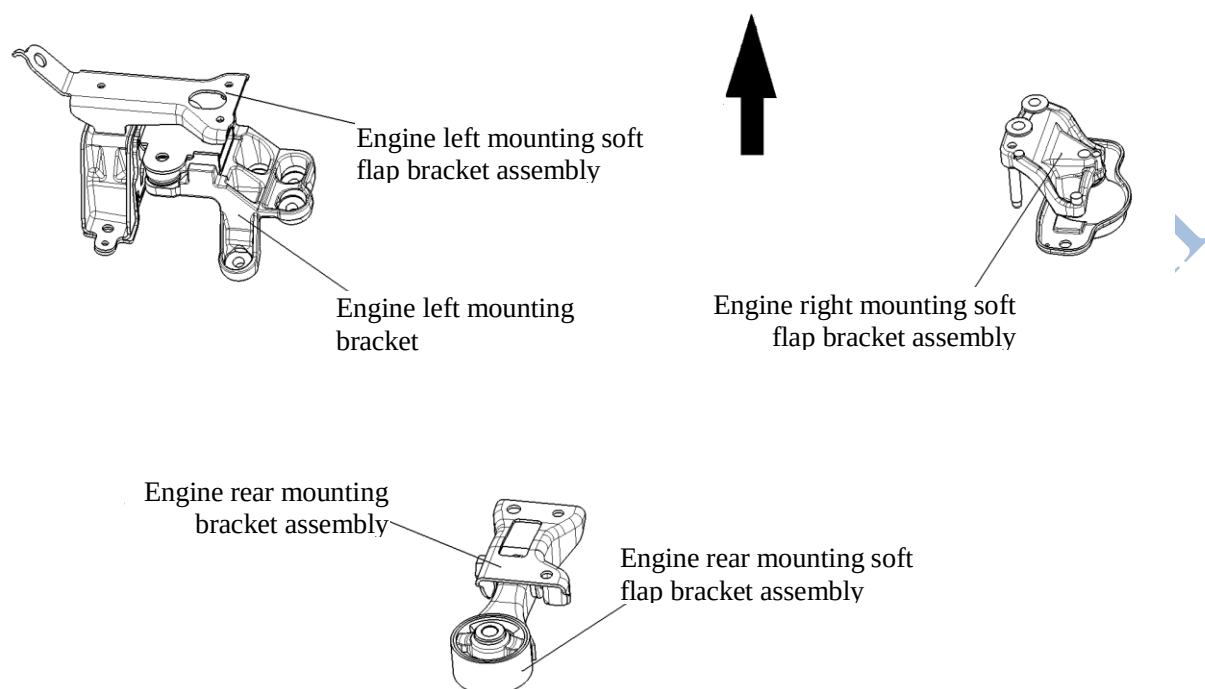
Install it according to the opposite sequence with removal.
The tightening torque of mounting bolt is 5.5 N*m.

Chapter 4 Mounting System

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Section 1 Parts and Components Location Distribution View and Description

1.1 Parts and Components Location Distribution View



1.2 Distribution Description

Engine left mounting soft flap bracket assembly: fitted on engine room left front side rail by 3 bolts of Q1841025.
Engine left mounting bracket: fitted on gear box housing by 4 bolts of Q1841035.
The two of them are connected by 3 bolts of Q1841045.

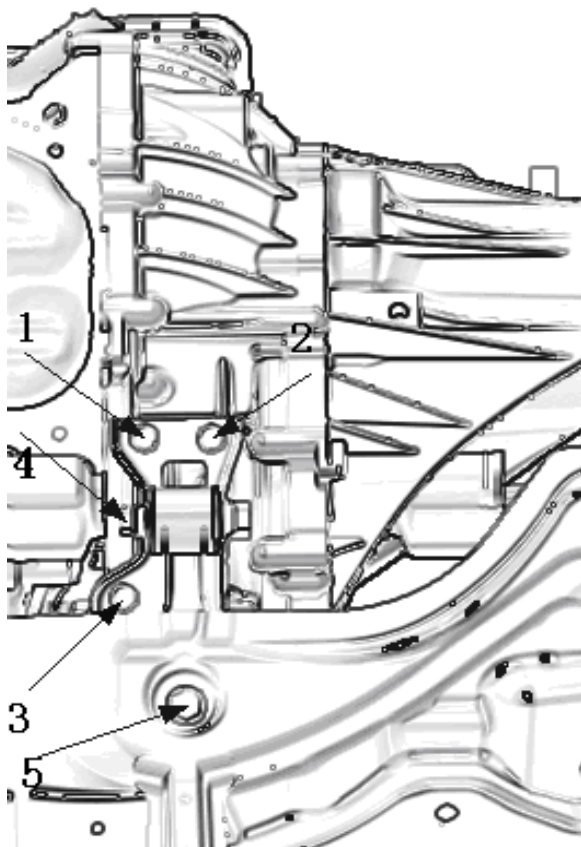
Engine right mounting soft flap bracket assembly: fitted on engine room right front side rail by 2 bolts of Q1841025.
The bracket is fitted on the engine by 2 bolts of Q1841045 and 1 nut.

Engine rear mounting soft flap bracket assembly: fitted on front auxiliary frame by 1 bolts of Q1841485.
Engine rear mounting bracket assembly: fitted on the bottom of gear box by 3 bolts of Q1841022.
The two of them are connected by 1 bolt of Q1841473.

Section 2 The Removal of Mounting System

2.1 The Removal of Rear Mounting Assembly

2.1.1 Unscrew 5 bolts of engine rear mounting.



2.1.2 Remove the engine rear mounting bracket and rear mounting soft flap bracket assembly.

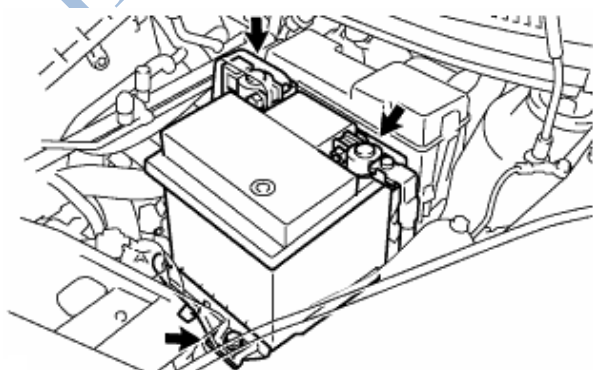
2.1.3 Support the engine assembly.

2.2 The Removal of Battery Assembly

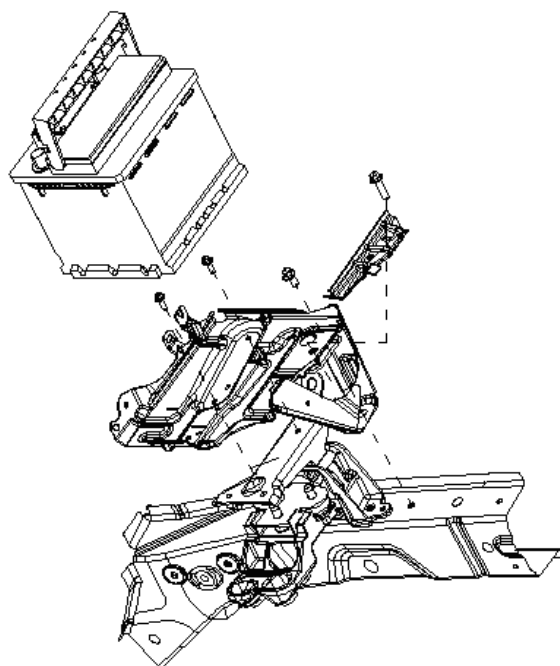
2.2.1 Disconnect the battery negative.

2.2.2 Disconnect the battery positive.

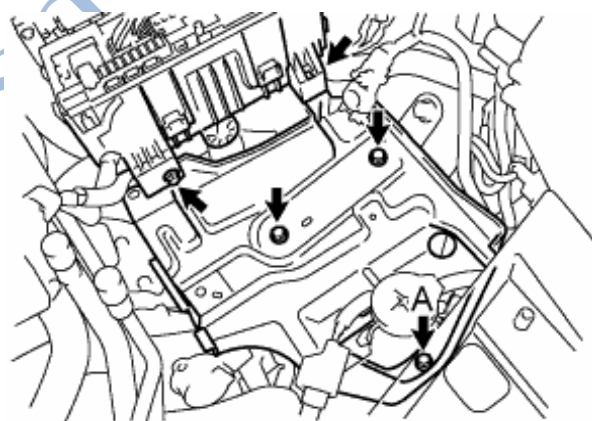
2.2.3 Unscrew 1 bolt on battery press plate and take off the battery.



2.2.4 Unscrew 3 bolts on battery bracket and take off the battery bracket.

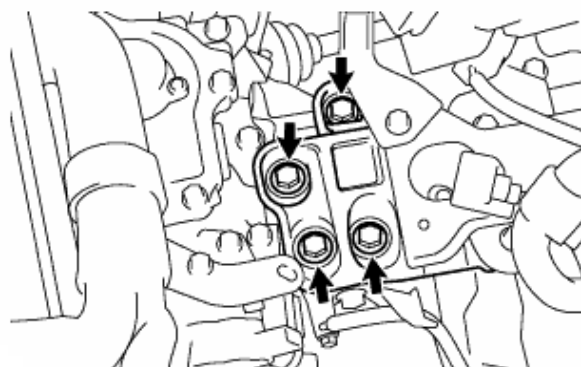


Tip: Unscrew the bolt A from the service hole of battery bracket.

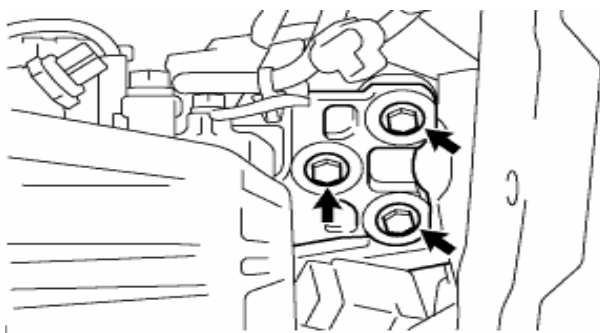


2.3 The Removal of Left Mounting Assembly

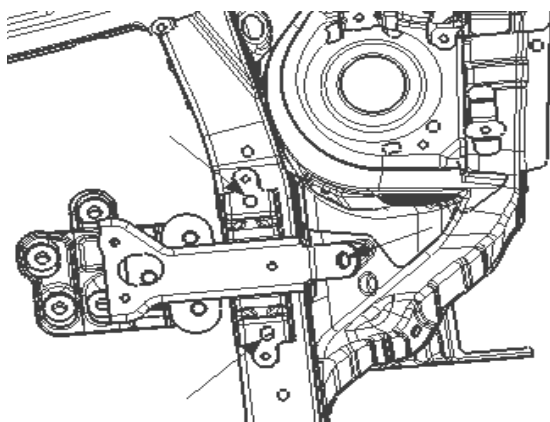
2.3.1 Unscrew 4 bolts on engine left mounting bracket.



2.3.2 Unscrew 3 bolts between the engine left mounting bracket and the engine left mounting soft flap bracket assembly.

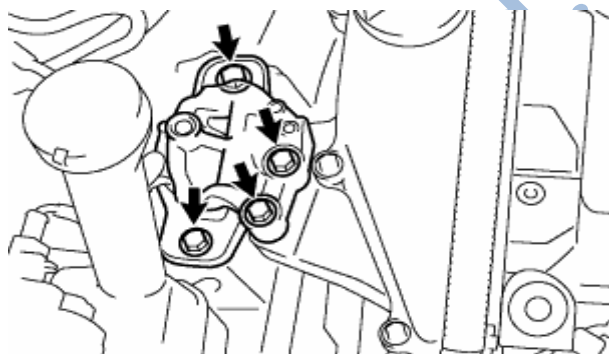


2.3.3 Unscrew 3 bolts on the engine left mounting soft flap bracket assembly and the left front side rail.



2.4 The Removal of Right Mounting Assembly

2.4.1 Unscrew 4 bolts on the engine right mounting soft flap bracket assembly.



2.4.2 Unscrew 1 nut on the engine right mounting soft flap bracket assembly.

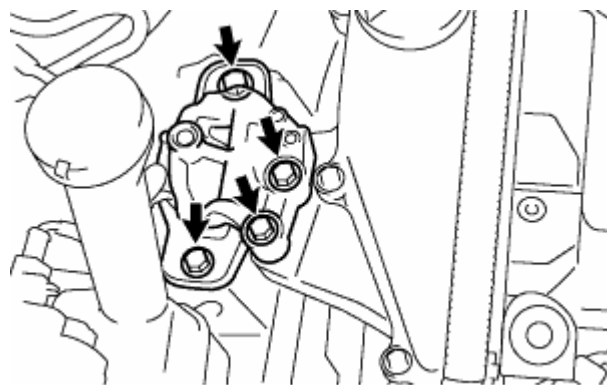


Section 3 The Installation of Mounting System

3.1 The Installation of Right Mounting Assembly

3.1.1 Support the engine assembly.

3.1.2 Screw 4 bolts into the engine right mounting soft flap bracket assembly, and the torque is 52 N·m.

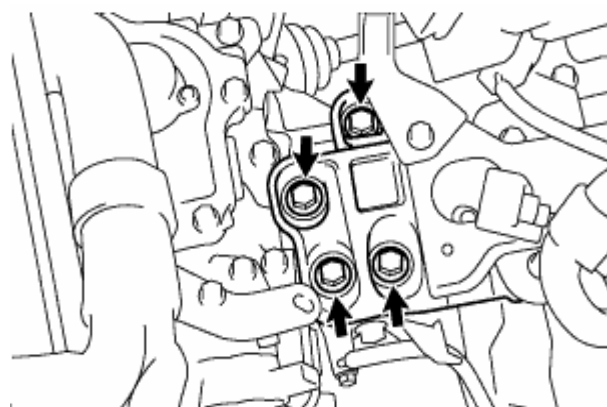


3.1.3 Screw 1 nut on the engine right mounting soft flap bracket assembly, and the torque is 52 N·m.

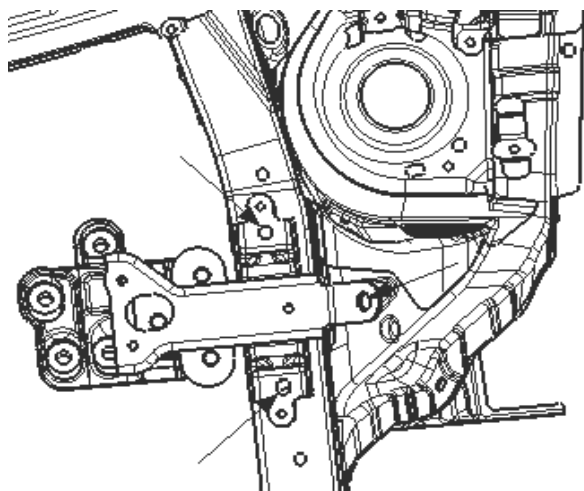


3.2 The Installation of Left Mounting Assembly

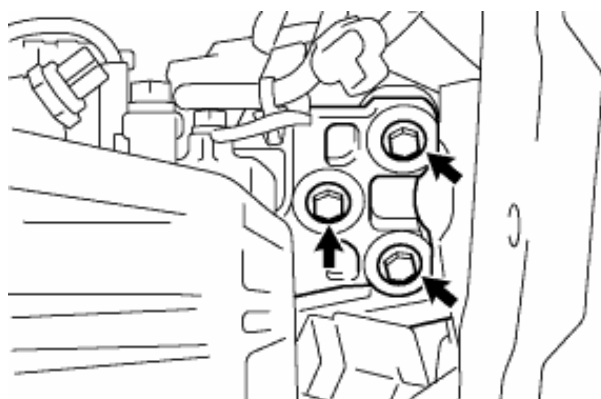
3.2.1 Screw 4 bolts into the left mounting bracket assembly, and the torque is 52 N·m.



3.2.2 Screw 3 bolts into the left mounting soft flap bracket assembly, and the torque is 52 N·m.



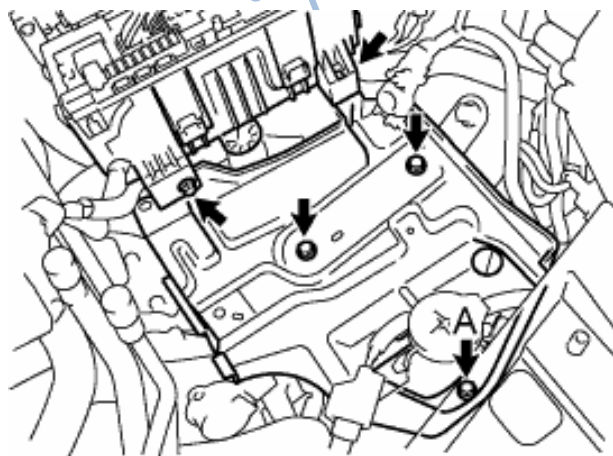
3.2.3 Screw in 3 connecting bolts between the left mounting bracket assembly and the left mounting soft flap bracket assembly, and the torque is 52 N·m.



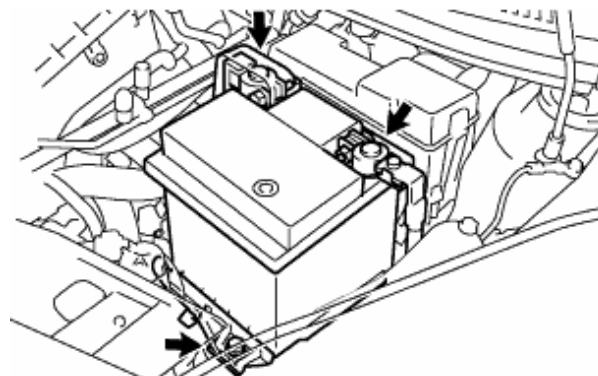
3.3 The Installation of Battery Assembly

3.3.1 Install the battery bracket, and tighten 3 bolts on it.

Tip: Install the bolt A from the service hole of battery bracket.



3.3.2 Put the battery away, install the battery press plate and tighten 1 bolt on it.



3.3.3 Connect the battery positive.

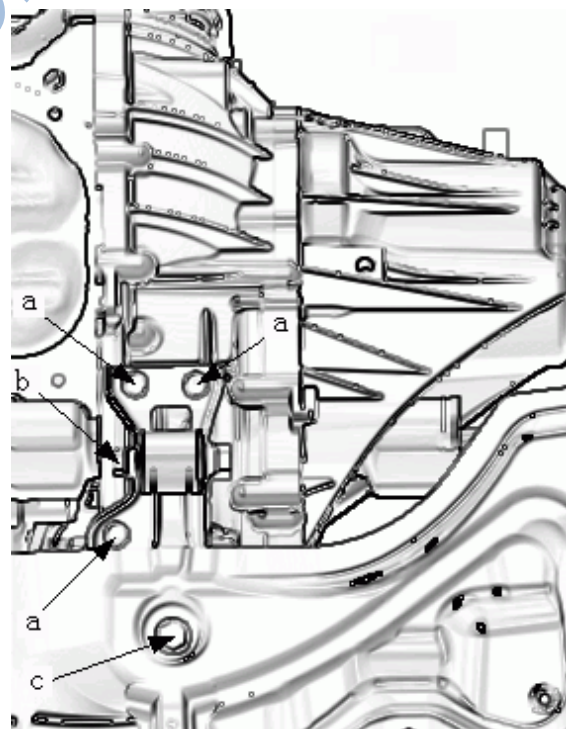
3.3.4 Connect the battery negative.

3.4 The Installation of Rear Mounting

3.4.1 Screw 3 bolts into the rear mounting bracket assembly, as shown in Figure a, and the torque is 52 N·m.

3.4.2 Screw 1 connecting bolt between the engine mounting soft flap bracket assembly and the bracket assembly, as shown in Figure b, and the torque is 128 N·m.

3.4.3 Screw 1 connecting bolt between the engine mounting soft flap bracket assembly and the auxiliary frame, as shown in Figure c, and the torque is 128 N·m.

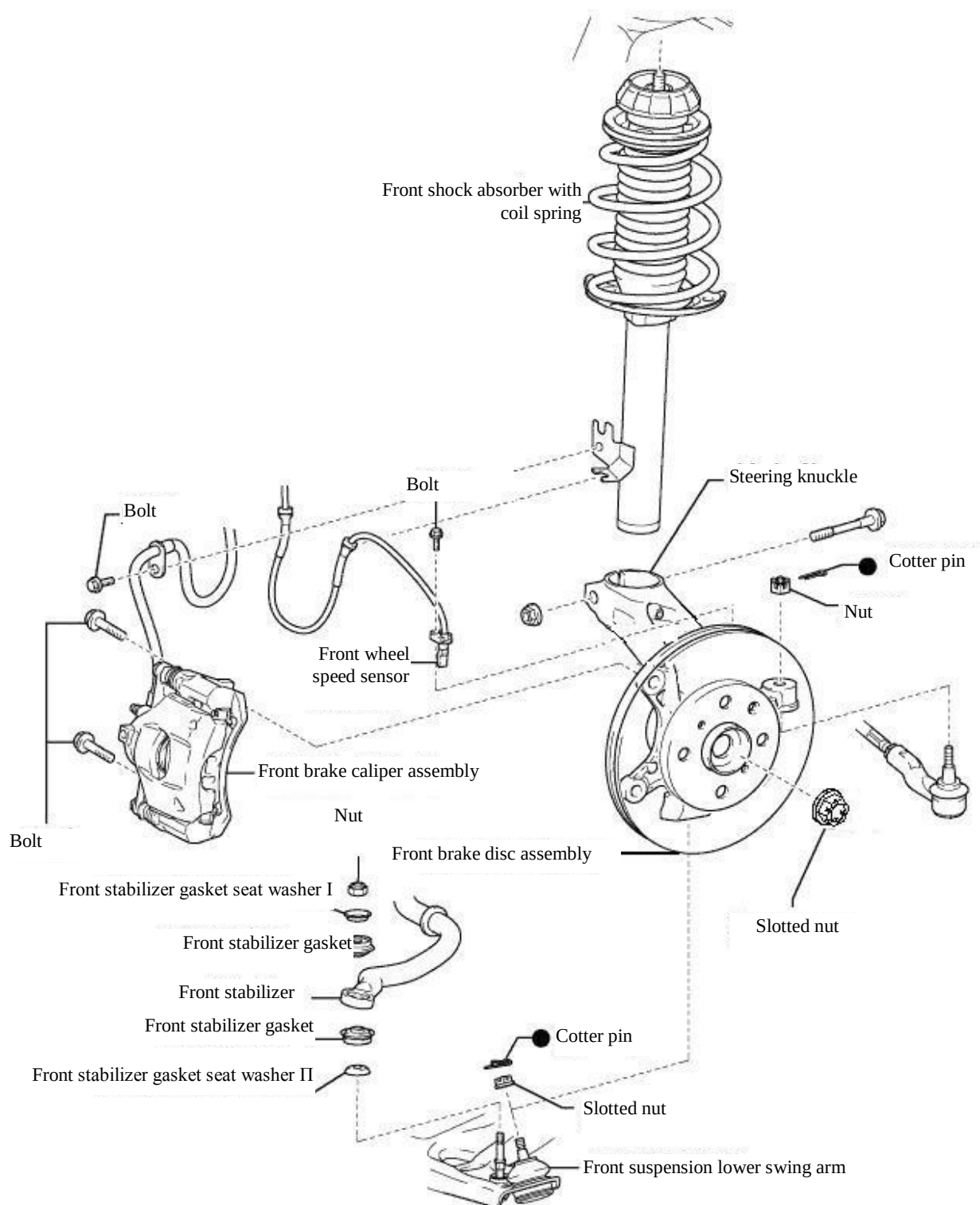


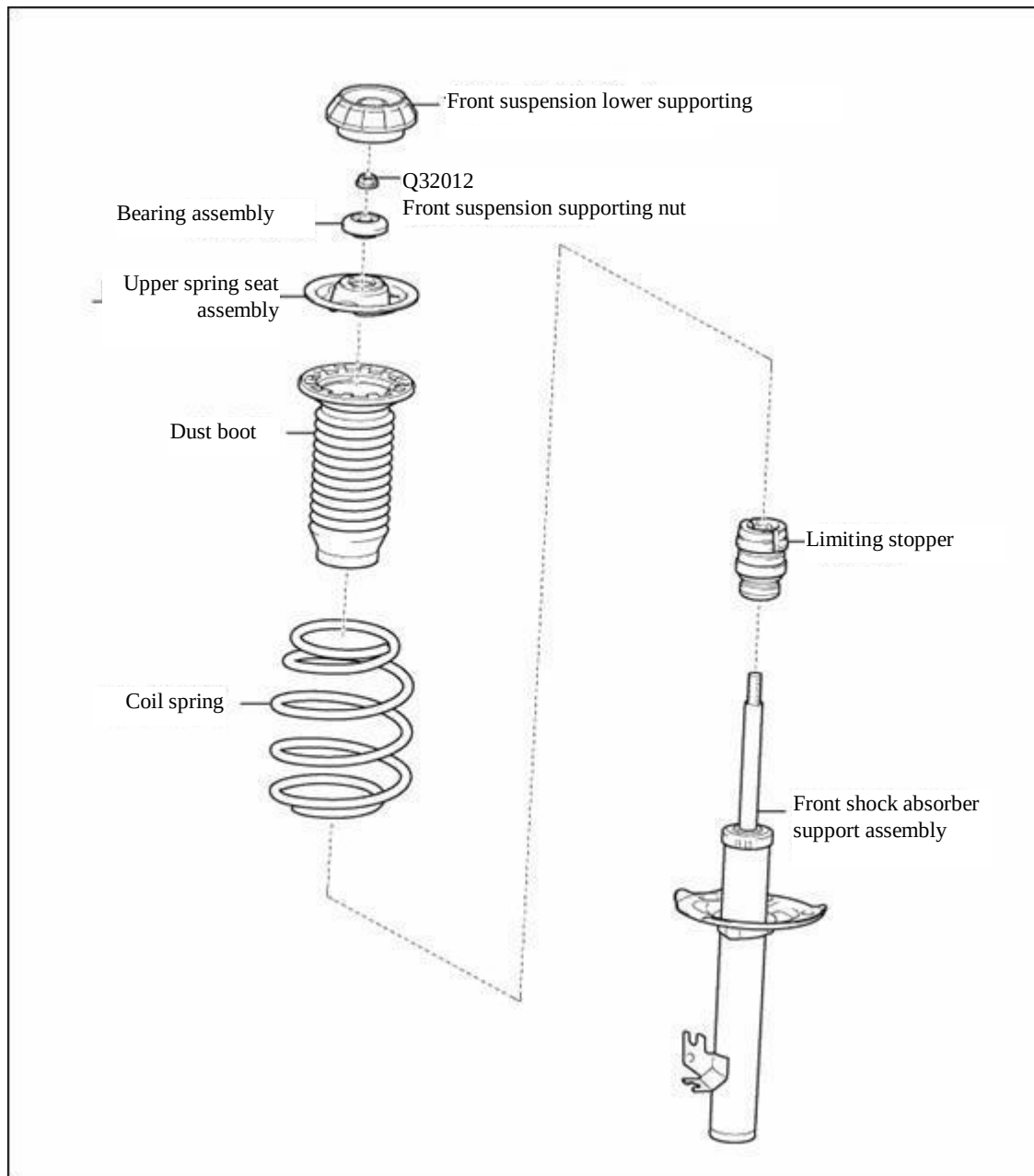
Chapter 5 Suspension System

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Section 1 Front Shock Absorber Assembly

1.1 Front Shock Absorber Assembly Components



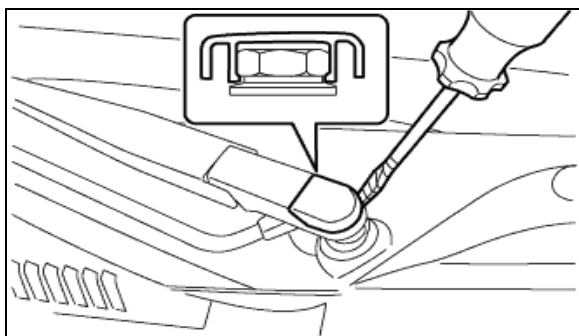


1.2 Removal

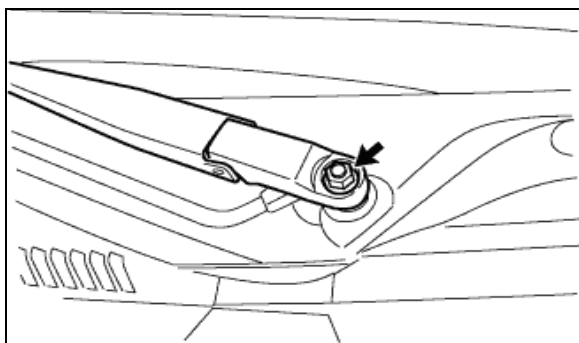
1.2.1 Disconnect the battery negative cable

1.2.2 Remove the front wiper arm head cap.

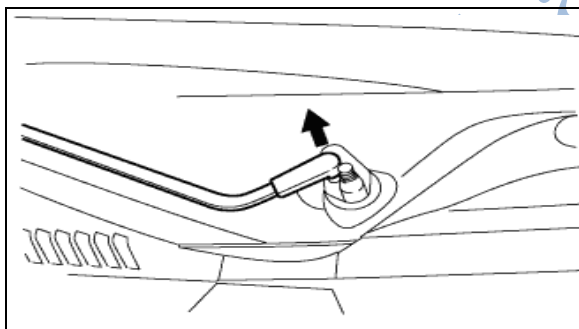
1.2.2.1 Remove the front wiper arm head cap with a screwdriver wrapped in protective tape.



1.2.2.2 Remove the nut and the front wiper main arm.



1.2.2.3 Separate the second arm from the splice joint of the front wiper motor and splice assembly.

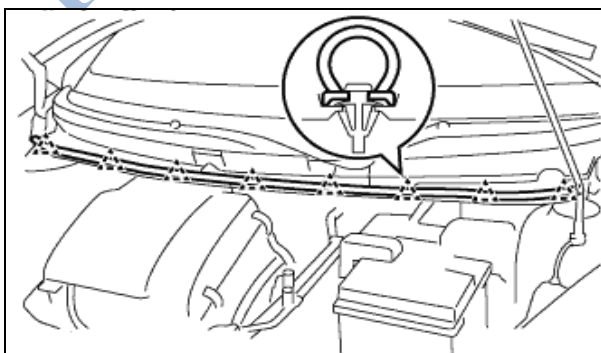


Note:

Don't make the second arm flexural when removing.

1.2.3 Remove the engine hood sealing strip

Release 8 snaps and remove the engine hood sealing strip.

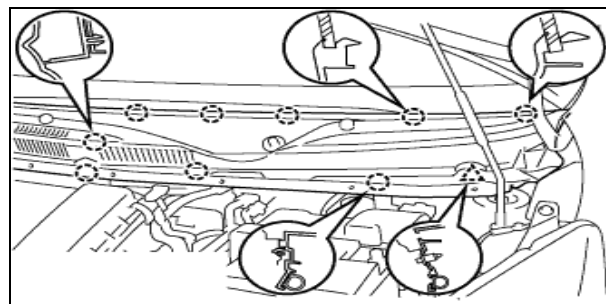


1.2.4 Remove the left ventilation cover plate

1.2.4.1 Remove the snaps.

1.2.4.2 Separate 9 snaps and remove the left ventilation cover plate

1.2.4.3 Take apart the hose washer.

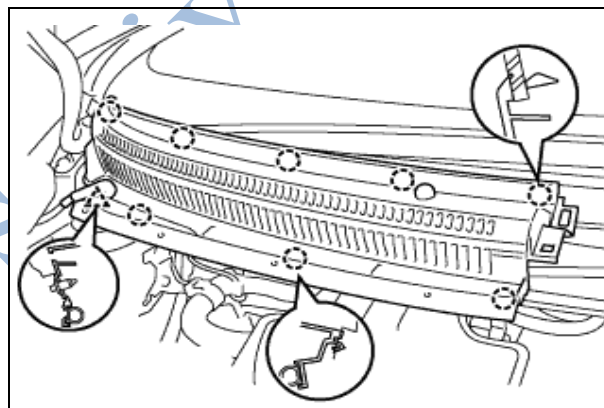


1.2.5 Remove the right ventilation cover plate

1.2.5.1 Remove the clamp.

1.2.5.2 Separate 9 snaps and remove the right ventilation cover plate

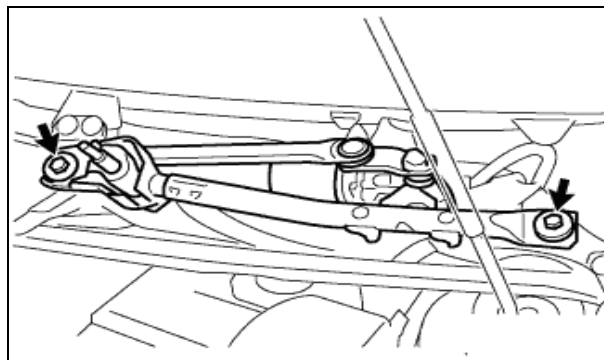
1.2.5.3 Take apart the hose washer.



1.2.6 Remove the front wiper motor and splice assembly.

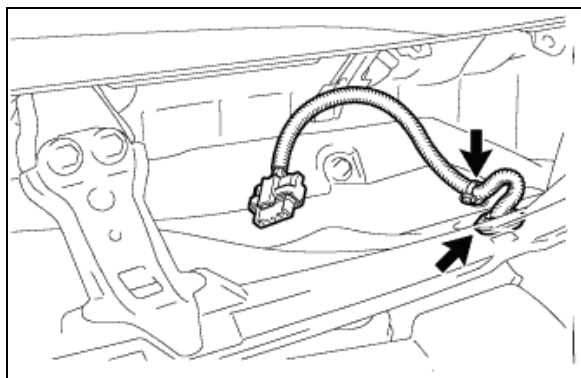
1.2.6.1 Unscrew 2 bolts.

1.2.6.2 Disconnect the connector and remove the front wiper motor and splice assembly.



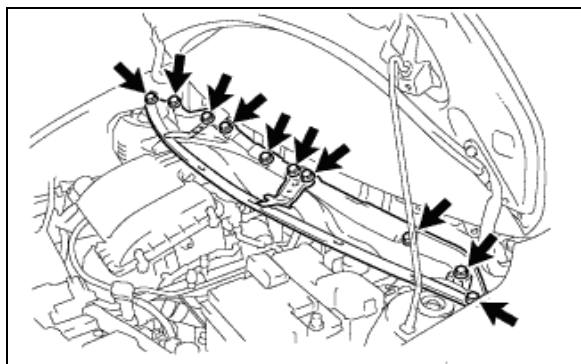
1.2.7 Remove the rain groove

1.2.7.1 Remove the harness clamp.



1.2.7.2 Remove harness snap.

1.2.7.3 Unscrew 10 screws and remove the rain groove.

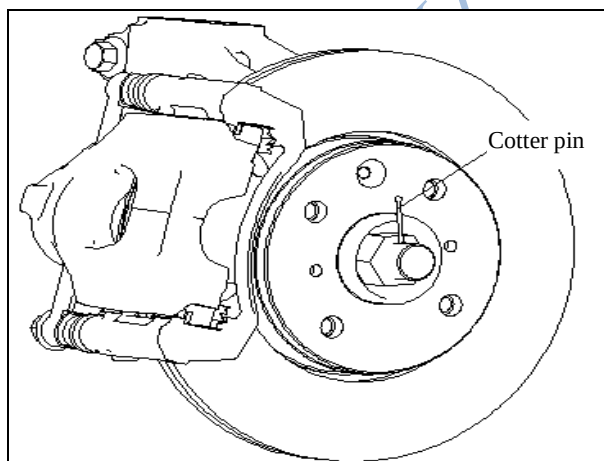


1.2.8 Remove the front wheels

1.2.9 Remove the lower front propeller shaft lock nut

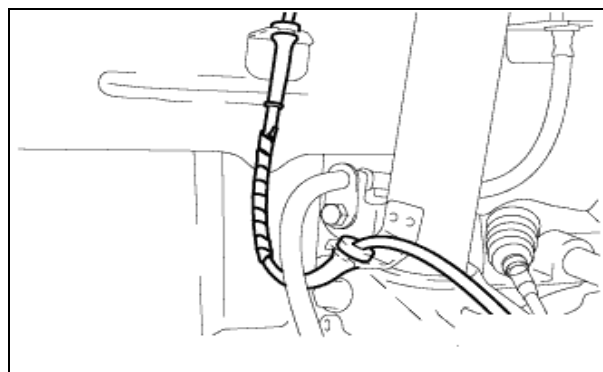
1.2.9.1 Take off the cotter pin with special tools.

1.2.9.2 Push down the brake paddle to brake the front wheels, and remove the lock nut.

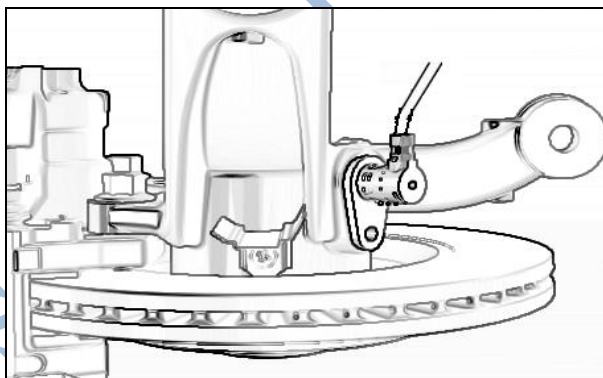


1.2.10 Separate the front wheel speed sensor

1.2.10.1 Separate the wheel speed sensor wire from the shock-absorber bracket.



1.2.10.2 Unscrew the nut and separate the wheel speed sensor from the steering knuckle.

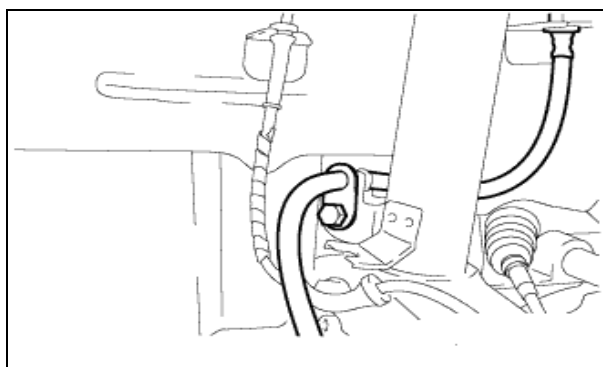


Note:

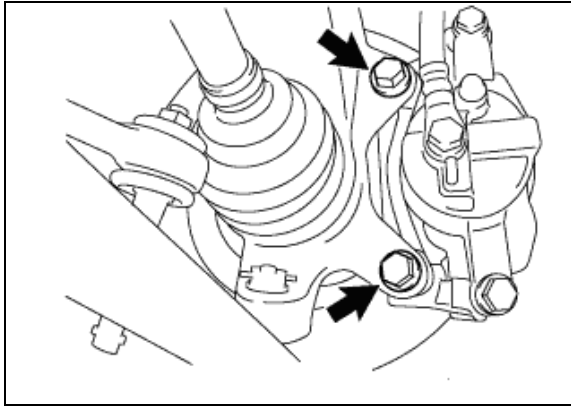
Don't rotate the sensor when separating the wheel speed sensor from the steering knuckle.

1.2.11 Separate the front disc brake calipers assembly

1.2.11.1 Unscrew the nut and separate the brake hose from the front shock absorber assembly.



1.2.11.2 Unscrew 2 nuts and separate the disc brake calipers from the steering knuckle.



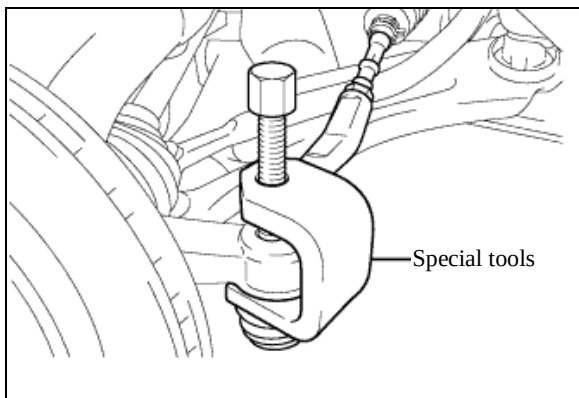
Note:

Hang the calipers with wire or respective device.

1.2.12 Separate the steering end drag bar

1.2.12.1 Remove the cotter pin and the slotted nut.

1.2.12.2 Separate the connecting rod end from the steering knuckle with special tools.



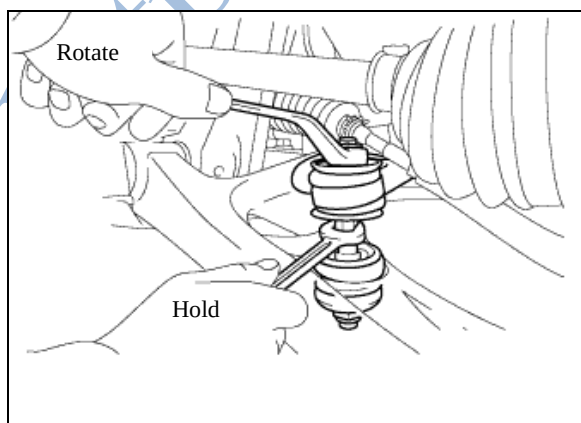
Note:

Don't damage the ball head dust boot.

1.2.13 Separate the front stabilizer

1.2.13.1 Stop the bolt with spanner (10mm) and unscrew the nut.

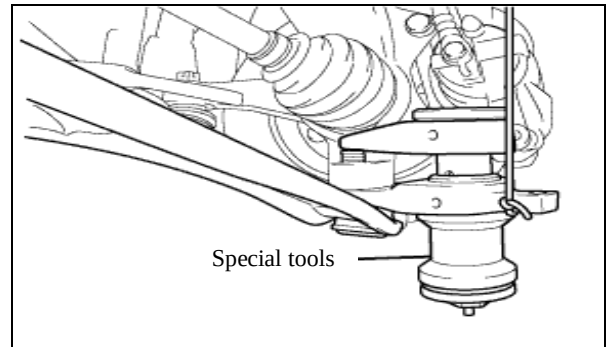
1.2.13.2 Remove 2 supporting pads and 2 gaskets, and separate the front stabilizer.



1.2.14 Separate the front suspension lower swing arm

1.2.14.1 Remove the cotter pin and the slotted nut.

1.2.14.2 Separate the front suspension arm assembly from the steering knuckle with special tools.



1.2.15 Separate the propeller shaft ball cage assembly end

1.2.15.1 Beat at the end of propeller shaft components gently with rubber hammer, to make the propeller shaft components separate from the propeller shaft wheel hub assembly.

Tip:

If it's difficult to remove, use brass bar and hammer to beat at the end of propeller shaft components gently.

1.2.15.2 Push the propeller shaft wheel hub assembly a little out of the car, to separate the propeller shaft wheel hub from the propeller shaft.

Note:

If unnecessary, never push the front propeller shaft wheel hub assembly far away from the car body.

Don't damage the front wheel shaft outside ball-and-cage universal joint dust boot.

Don't damage the wheel speed sensor gear ring.

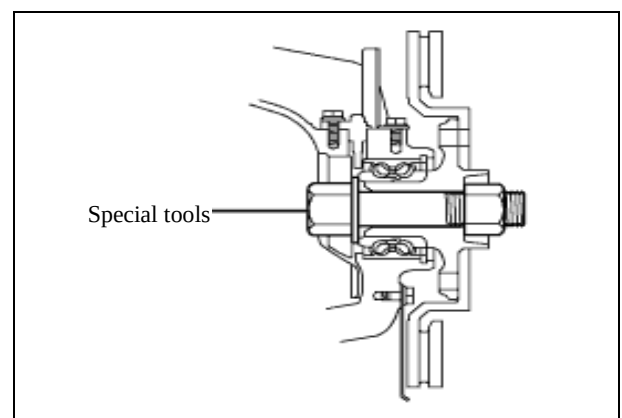
Hang the propeller shaft with string or other things.

When removing the propeller shaft, don't let it hit the wheel speed sensor.

1.2.16 Fix the front hub assembly

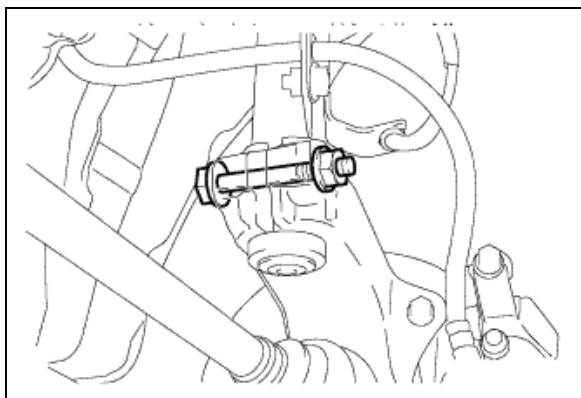
Note:

If the hub bearing bears the whole weight of the vehicle, it's easy to get damaged, like moving the vehicle without drive shaft. If it has to add the whole weight to the hub bearing, must support it with special tools.

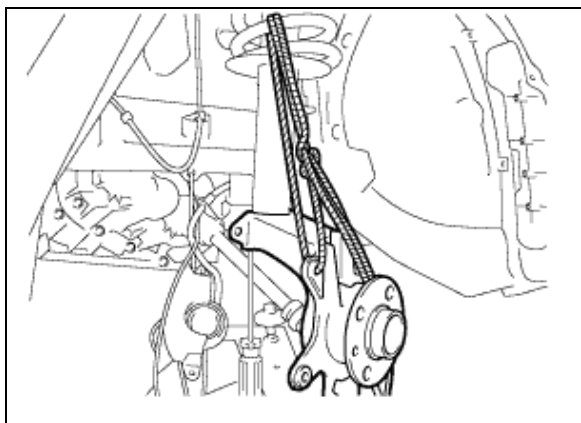


1.2.17 Remove the steering knuckle

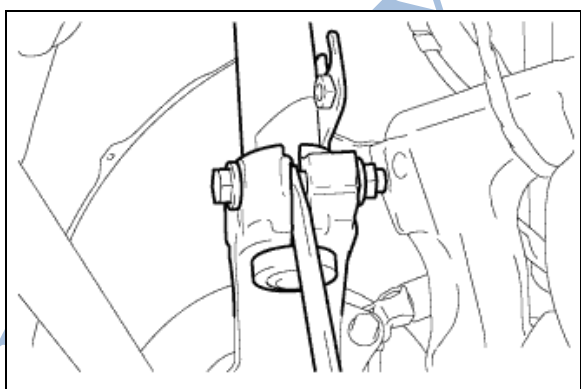
1.2.17.1 Loosen the nut.



1.2.17.2 Hang the steering knuckle with wire or appropriate device, so as not to let it fall.



1.2.17.3 Widen the guide groove with screwdriver, and separate the steering knuckle from the front shock absorber.



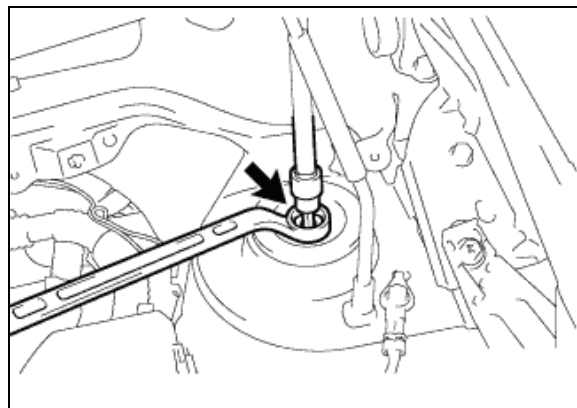
Note:

Don't make the added width of the guide groove over 10mm.

1.2.18 Remove the front shock absorber with coil spring

1.2.18.1 Fix the shock-absorber rod with inner hexagon spanner, remove the nut and the front shock absorber with coil spring.

1.2.18.2 Remove the upper stay bearing assembly.

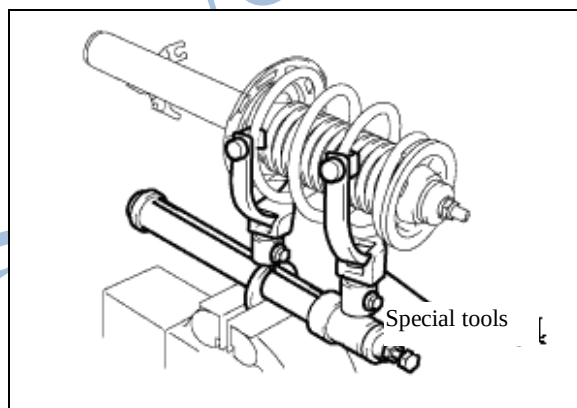


1.3 Disassembly

1.3.1 Remove the front stay bearing assembly.

1.3.2 Remove the front shock absorber nut of front stay bearing

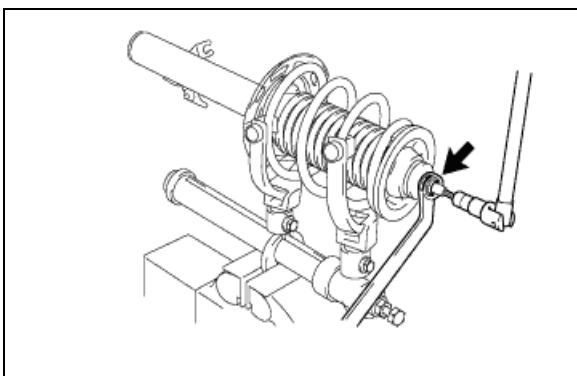
1.3.2.1 Compress the coil spring with special tools.



Note:

Don't force to screw with socket spanner, as it will damage special tools.

1.3.2.2 Fix the shock absorber support stay with inner hexagon spanner, and unscrew the nut.



1.3.3 remove the bearing

1.3.4 remove the front coil spring upper support abutment

1.3.5 remove the dust boot

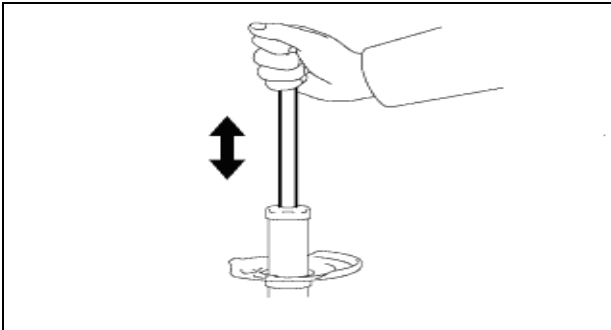
1.3.6 remove the limiting stopper

1.3.7 remove the coil spring

1.4 Inspection and Treatment

1.4.1 Inspect the front shock absorber assembly

Compress and stretch the shock-absorber rod, inspect if there is abnormal resistance force or sound. If anything is abnormal, it needs to replace the front shock absorber by a new one.

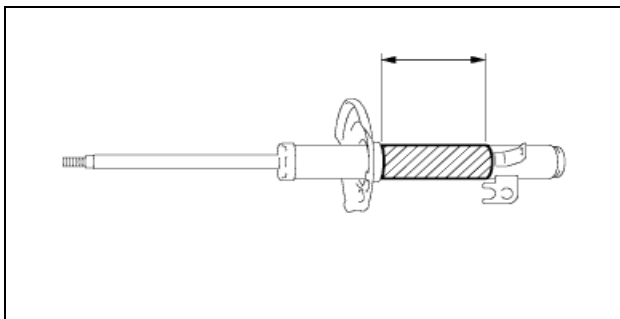


Note:

When treating with the front shock absorber:

1.4.1.1 Stretch the shock-absorber piston bar completely, and fix it to some angle with vice or appropriate tools.

1.4.1.2 Use piercing machine or appropriate tools, to cut a hole slowly in the black area as shown in the figure, to discharge the gas inside.



Caution:

The gas is colorless, odorless, and harmless. As the discharged gas may cause disperse of scrap, cover the piercing machine with workshop duster or a piece of cloth.

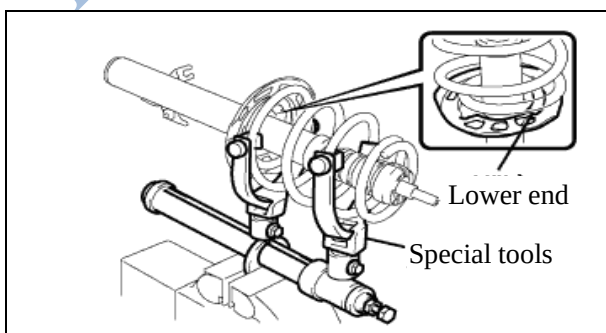
1.5 Reassembly

1.5.1 Install the front coil spring

1.5.1.1 Compress the front coil spring with special tools.

Note:

Don't force to screw with socket spanner, as it will damage special tools.



1.5.1.2 Assemble the coil spring onto front shock absorber.

Note: Fit the spring of larger diameter in the upward direction.

Tip: Match the lower section end of the coil spring to the notch of the shock absorber lower support abutment.

1.5.2 Fit the limiting stopper

1.5.3 Fit the dust boot

1.5.4 Fit the front coil spring upper support abutment

1.5.5 Fit the bearing

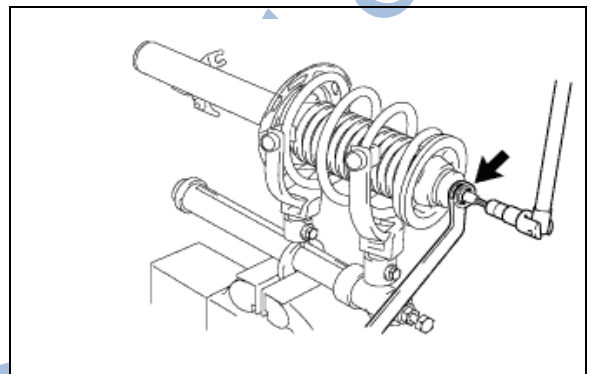
1.5.6 Fit the shock absorber nut onto shock absorber.

1.5.6.1 Compress the nut temporarily.

1.5.6.2 Fix the shock absorber bar with inner hexagon spanner, and tighten the nut.

Tightening torque: 33.3 N*m

1.5.6.3 Remove the special tools from front coil spring.



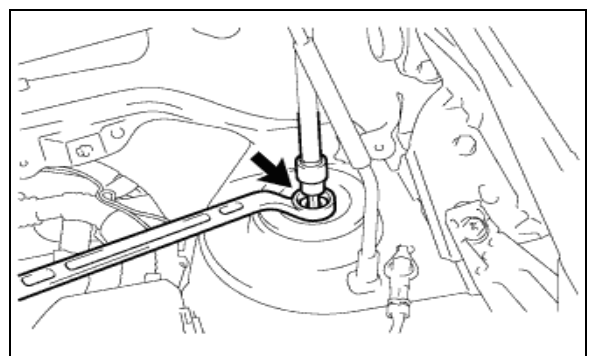
1.5.7 Install the front suspension support stay assembly

1.6 Installation

1.6.1 Install the front shock absorber with coil spring

1.6.1.1 Fit the front shock absorber upper stay bearing assembly.

1.6.1.2 Fix the shock absorber bar with inner hexagon spanner, and tighten the nut.



Tightening torque: 55 N*m

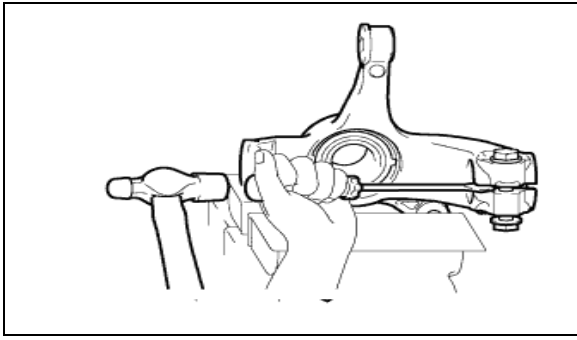
1.6.2 Install the steering knuckle

1.6.2.1 Fix the steering knuckle with vice, fit the bolt and nut temporarily, then widen the steering knuckle gap with screwdriver and hammer.

Note:

Don't make the added width of the guide groove over 10mm.

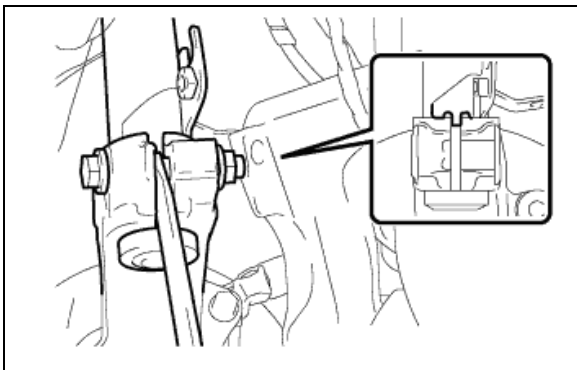
Don't damage the steering knuckle gap section.



1.6.2.2 Insert the shock absorber extruded section into the steering knuckle gap, in addition, make the bracket edge touch the gap section.

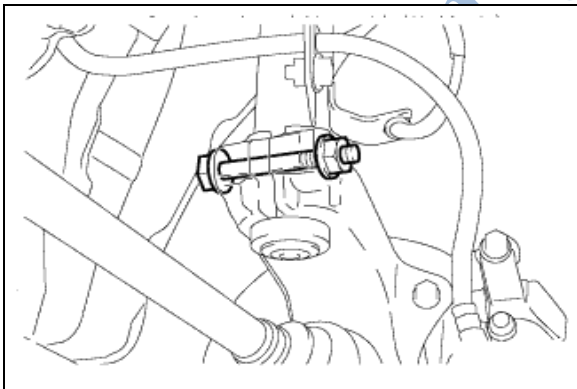
Note:

Make the nut at the front of the vehicle.



1.6.2.3 Loosen the screwdriver, tighten the nut so as to tighten the shock absorber steering knuckle.

Tightening torque: 52 N*m



1.6.3 Install propeller shaft ball cage components end

1.6.3.1 Push out the tri-ball stud end to vehicle outboard side to align the multiple spline of ball cage end with the multiple spline of tri-ball stud end, and fit the propeller shaft tri-ball stud end.

Note:

If unnecessary, never push the front propeller shaft wheel hub assembly far away from the car body.
Don't damage the oil seal.
Don't damage the propeller shaft ball cage end dust boot.
Don't damage the wheel speed sensor.

Inspect if there are foreign substance between the wheel speed sensor and the gear ring.

1.6.4 Install the front suspension lower swing arm

1.6.4.1 Lower the front suspension lower swing arm, fit the ball head assembly and tighten it with slotted nut and new cotter pin.

Tightening torque: 98 N*m

Note:

After aligning the slot of slotted nut with the cotter pin hole, tighten the nut for 60°.

1.6.5 Install front stabilizer

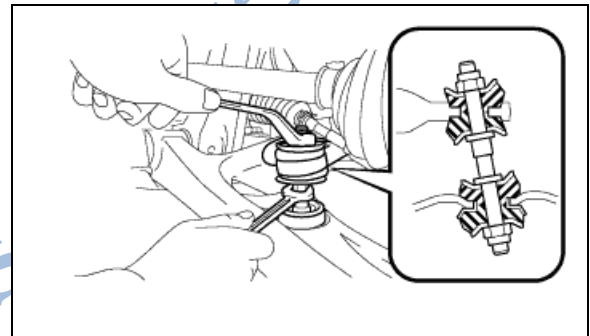
1.6.5.1 Fit the front stabilizer with 2 gaskets, 2 gasket seat washers and 1 nut, as shown in the figure.

Note:

Make sure to fit the gaskets and seat washers in correct position.

1.6.5.2 Tighten the nut (10mm) with torque spanner.

Tightening torque: 18 N*m



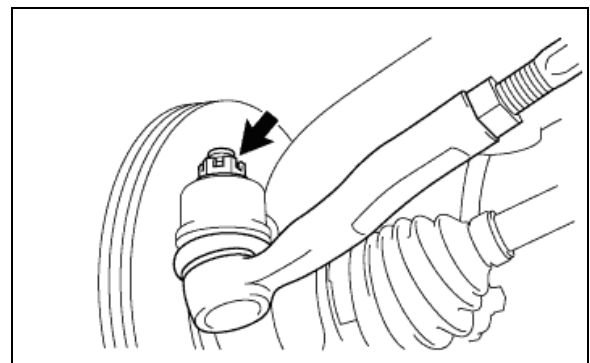
1.6.6 Install the tie rod end assembly

1.6.6.1 Connect the tie rod end to the steering knuckle, and fit it with slotted nut and new cotter pin.

Tightening torque: 33 N*m

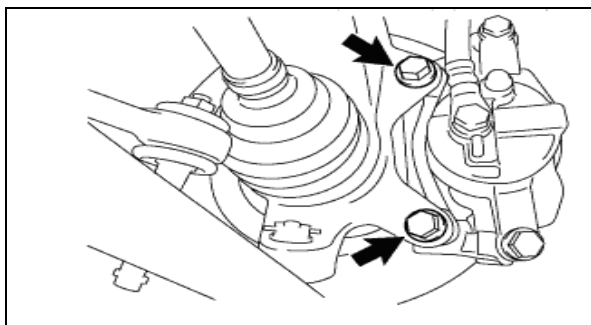
Note:

Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.



1.6.7 Install the front disc brake calipers assembly

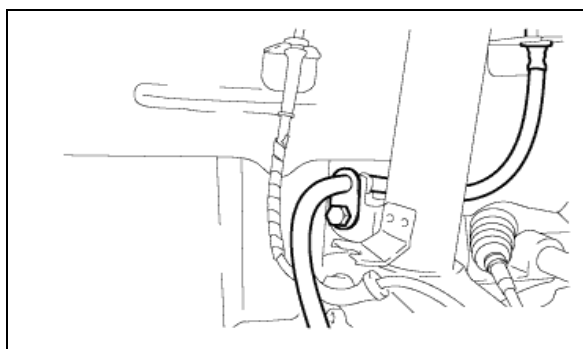
1.6.7.1 Fit the front disc brake calipers to the steering knuckle with 2 bolts.



Tightening torque: 88 N*m

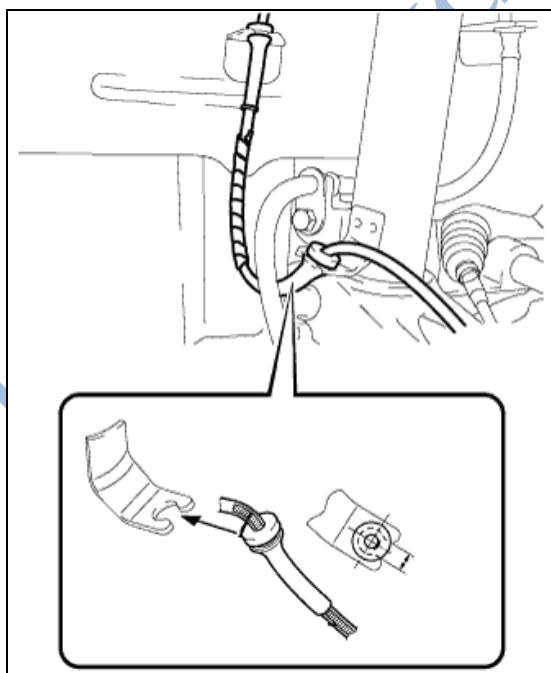
1.6.7.2 Fit the brake hose to the front shock absorber assembly with bolt.

Tightening torque: 29 N*m



1.6.8 Install the front speed sensor

1.6.8.1 Connect the wire of the speed sensor to the front shock absorber.



1.6.8.2 Fit the bolt and the speed sensor to the steering knuckle.

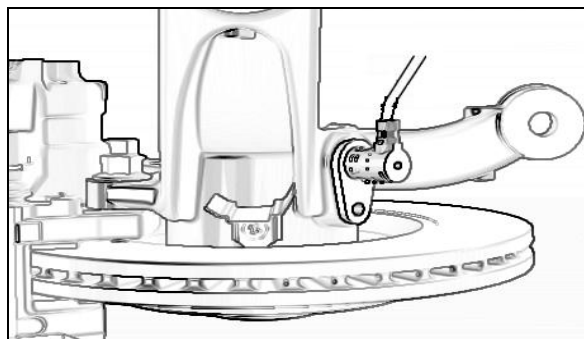
Tightening torque: 8.0 N*m

Note:

Don't damage the speed sensor.

Keep the speed sensor from the interference of foreign substances.

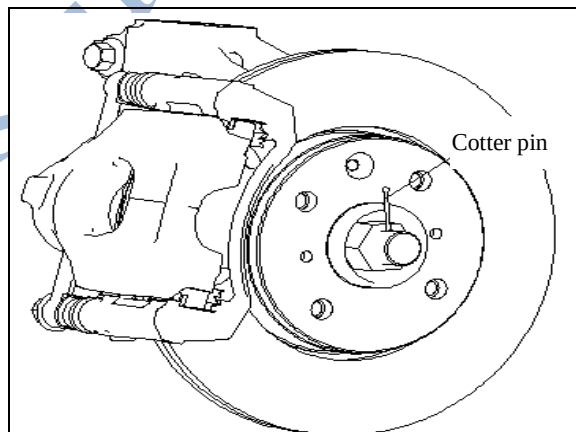
Don't twist the wire of speed sensor in the fitting.



1.6.9 Install the propeller shaft ball cage end

1.6.9.1 Fit a new lock nut and cotter pin of the propeller shaft.

Tightening torque: 216 N*m



Note:

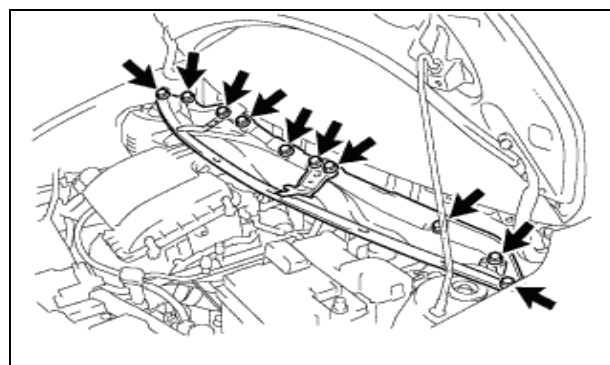
Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.

1.6.10 Install the front wheels

Tightening torque: 103 N*m

1.6.11 Install the rain groove

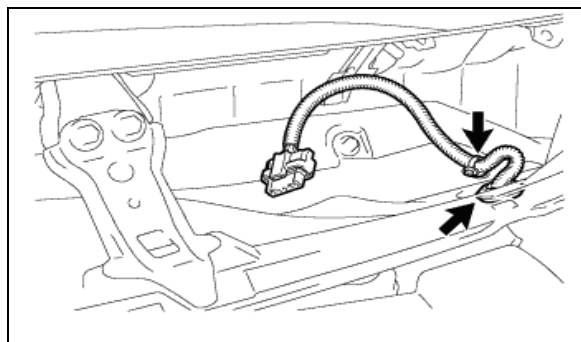
1.6.11.1 Fit 10 screws and the rain groove.



Tightening torque: 9.2 N*m

1.6.11.2 Fit the harness snap.

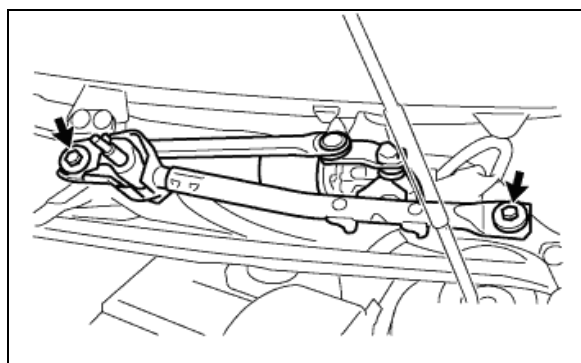
1.6.11.3 Fit the harness clamp.



1.6.12 Install the front wiper motor and splice assembly.

1.6.12.1 Connect the connector.

1.6.12.2 Install the front wiper motor and splice assembly with 2 nuts.



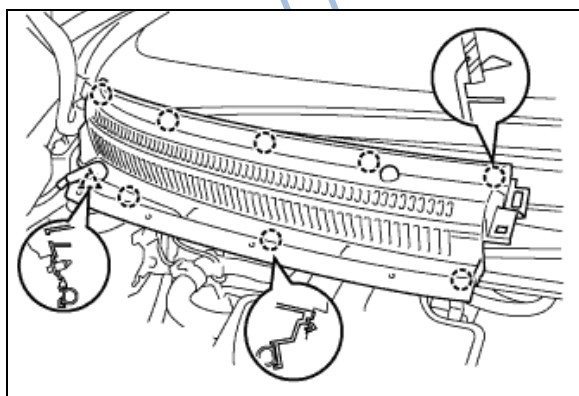
Tightening torque: 13 N*m

1.6.13 Install the right ventilation cover plate

1.6.13.1 Connect the hose washer.

1.6.13.2 Mesh 9 snaps and fit the right ventilation cover plate.

1.6.13.3 Fit the clamp.

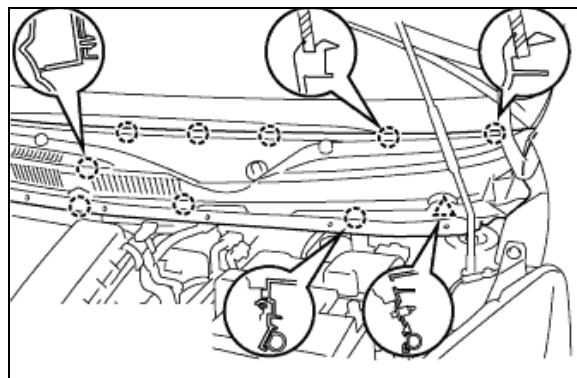


1.6.14 Install the left ventilation cover plate

1.6.14.1 Connect the hose washer.

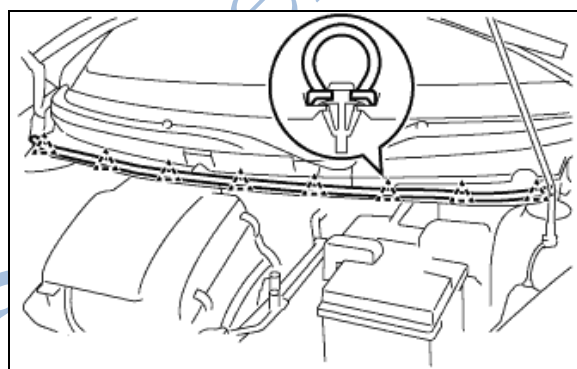
1.6.14.2 Mesh 9 snaps and fit the left ventilation cover plate.

1.6.14.3 Fit the clamp.



1.6.15 Install the engine hood sealing strip

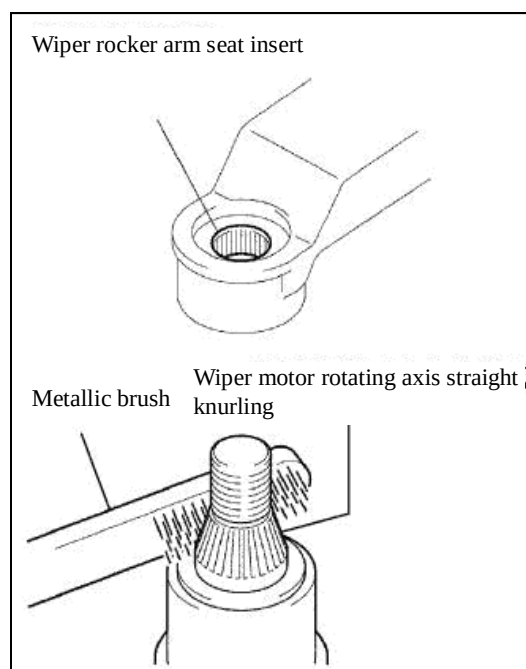
1.6.15.1 Mesh 8 snaps and fit the engine hood sealing strip.



1.6.16 Install the front wiper arm

1.6.16.1 Scrape off metal-powder from the wiper arm with file or other substitutes.

1.6.16.2 Clean the wiper supporting point with metallic brush.



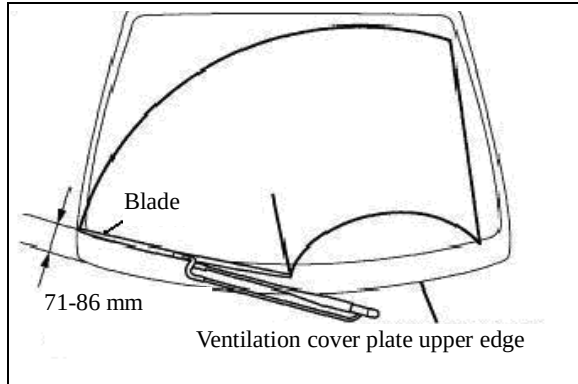
1.6.16.3 Start the wiper motor, and let the wiper stop at its auto stop position.

1.6.16.4 Pre-tighten the wiper main arm with nut.

1.6.16.5 Fit the second wiper arm to the front wiper motor and splice assembly.

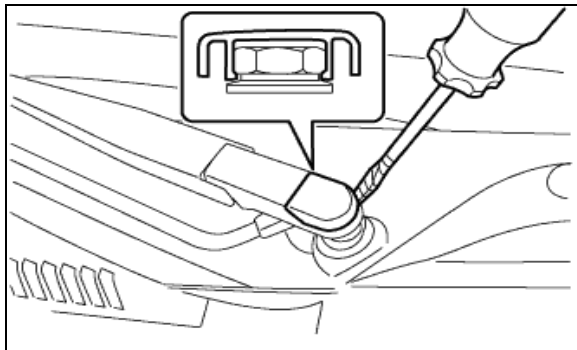
1.6.16.6 Screw down the nut collar assembly at the position as shown in the figure, and hold the wiper arm when screwing.

Tightening torque: 21 N*m



1.6.17 Install the front wiper arm head cap

1.6.17.1 Mesh the caliper and fit the front wiper arm head cap.



1.6.18 Connect the battery negative cable

Tightening torque: 5.4 N*m

1.6.19 Inspect the ABS signals

1.6.20 Inspect the front wheel alignment

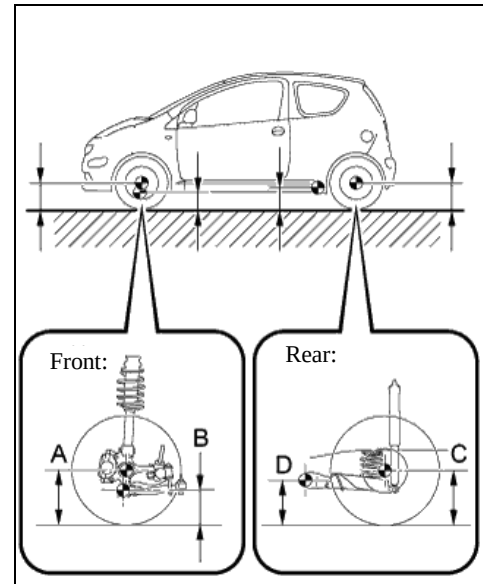
1.6.20.1 Inspect the tires

a. Inspect the tread abrasion and suitable tire pressure

1.6.20.2 Measure the vehicle height

Vehicle height:

A—B	C—D
88 mm	22mm



Measurement points:

A: The front wheel center ground clearance

B: The lower swing arm front bolt center ground clearance

C: The rear wheel center ground clearance

D: The rear twist beam mounting bolt center

Note:

Before inspecting front wheel alignment, adjust the vehicle height in accordance with given values.

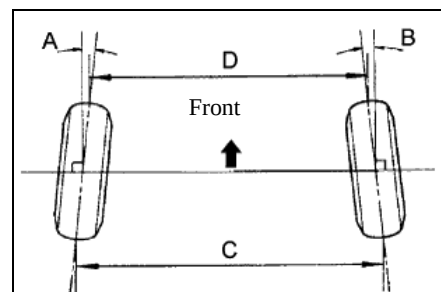
Tip:

To make the suspension stable, please let the vehicle wheels jump up and down within a certain angle range before checking the vehicle height of each point.

1.6.20.3 Check the toe-in

Toe-in:

$$\begin{array}{ccc} A+B & & C-D \\ -0^{\circ} 06' \sim & & -0.9\text{mm} \sim \\ 0^{\circ} 21' & & 3.1\text{mm} \end{array}$$

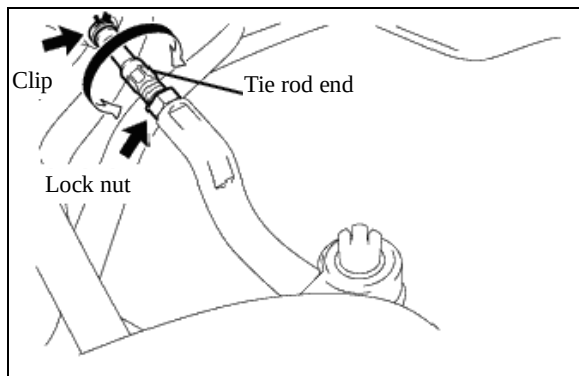


Tip:

Only when A+B isn't congruous, C-D is required to be measured again.

When the toe-in is beyond the designated range, adjust tie rod end.

1.6.20.4 Adjust the toe-in

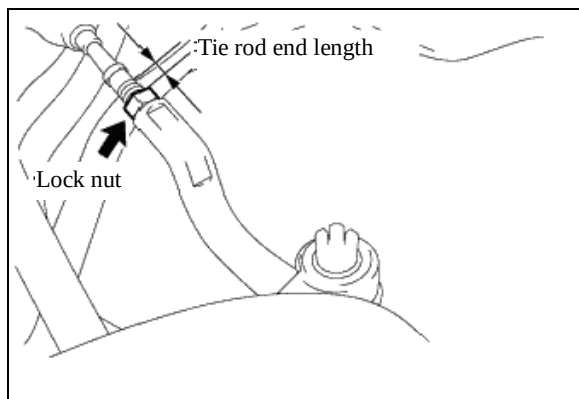


- Loosen the lock nut of tie rod end.
- Rotate the left and right tie rod ends equably to adjust the toe-in.

Toe-in: 0.1~2.1mm

Tip:

Try to adjust the toe-in to the middle position of designated length of travel.

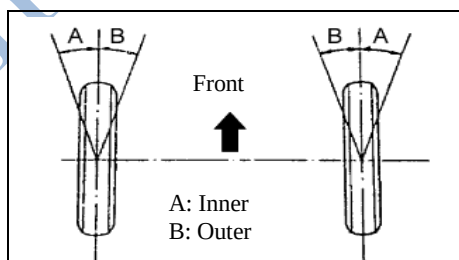


- Make sure that the lengths of the left and right tie rod ends are the same.
The length range of the tie rod end: 1.5mm or less.
- Tighten the steering knuckle tie rod lock nuts.
- Tightening torque:** 47 N*m
- Insert the outside joint into the steering knuckle, and fit the cotter pin.

Tip:

Make sure that the outside joint isn't twisted.

1.6.20.5 Check the angles of wheels rotation



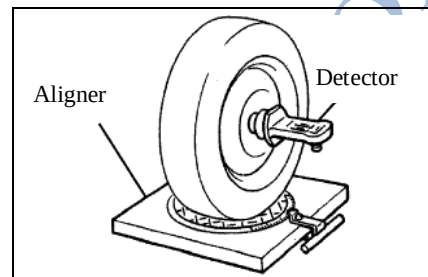
- Turn the wheels to the right and left limiting position completely, to determine the angles of rotation of wheels

The angles of rotation of wheels:

Inner wheels	Outer wheels
36° 55' ~ 40° 55'	32° 23'

If the inner angle of left and right wheels is beyond the designated range, check the lengths of left and right tie rod ends.

- Check the camber angle, caster angle and kingpin inclination angle.



- Fit a camber-caster-kingpin inclination angles play detector on the center position of the wheel hub or the propeller shaft, and move the front wheels onto the aligner.
 - Check the camber angle, caster angle and kingpin inclination angle.
- The camber angle, caster angle and kingpin inclination angle:

Camber angle	Caster angle	Kingpin inclination angle
-1° 32' ~ -0° 02'	2° 02' ~ 3° 32'	9° 33'

Note:

Keep the vehicle in unloaded state when checking (spare tire and driver's tool on board).
The detecting accuracy error rate of the camber angle, caster angle of left and right wheels is 30' or less.

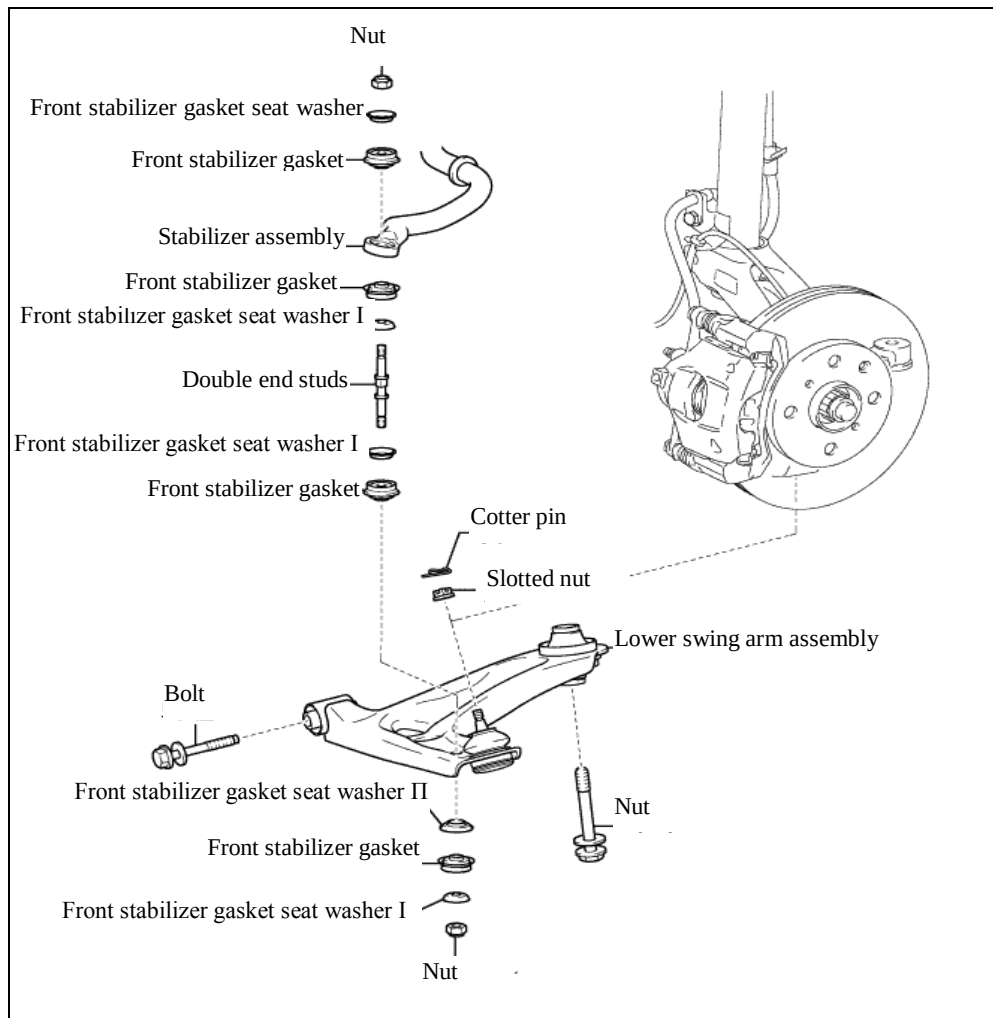
Tip:

No adjustment system for camber angle, caster angle and kingpin inclination angle.

If the detected values are beyond the designated range, it needs to check each suspension member, and replace them if necessary.

Section 2 Front Suspension Lower Swing Arm

2.1 Components



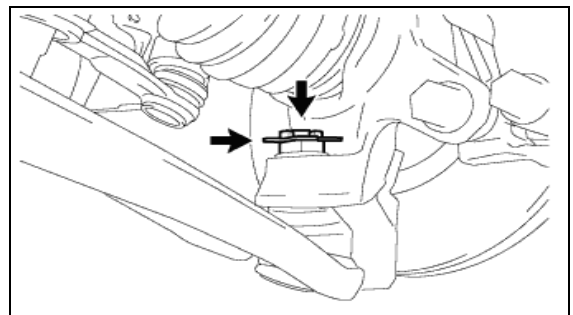
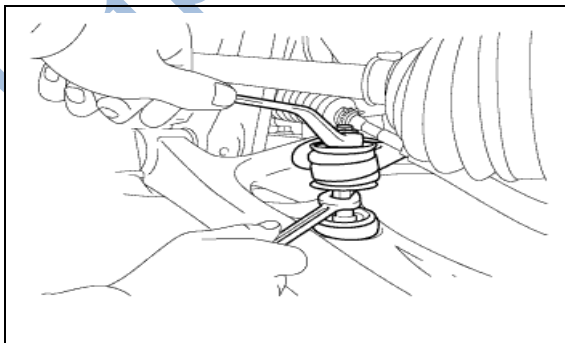
2.2 Removal

2.2.1 Remove the front wheels

2.2.2 Unscrew the front stabilizer bolt

2.2.2.1 Fix the front stabilizer bolt with spanner, and remove 2 nuts.

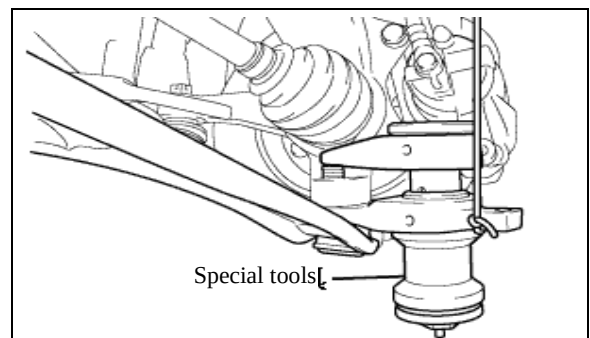
2.2.2.2 Remove 4 gaskets, 4 gasket seat washers I, 2 gasket seat washers II and the stabilizer bolt.



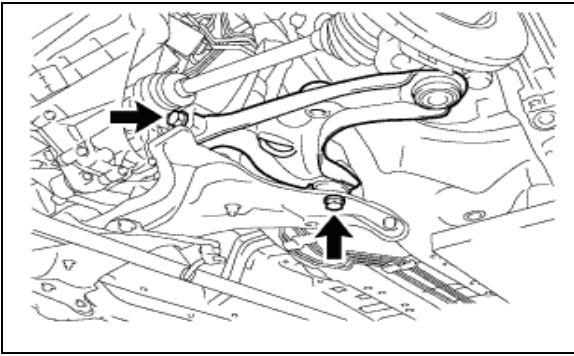
2.2.3.2 Separate the front suspension lower swing arm with special tools.

2.2.3 Remove the front suspension lower swing arm

2.2.3.1 Remove the cotter pin and slotted nut.



2.2.3.3 Remove 2 bolts and the lower swing arm.



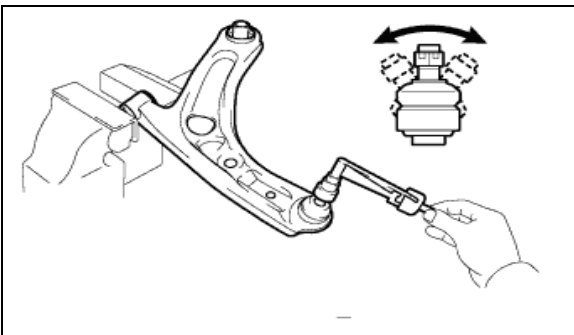
2.3 Inspection

2.3.1 Check the front suspension lower swing arm

2.3.1.1 As shown in the figure, rotate the ball stud back and forth 5 times before fitting nut.

2.3.1.2 With torque spanner, rotate the nut at the speed of 2 to 4 revolutions per second and read out the torque of the fifth revolution.

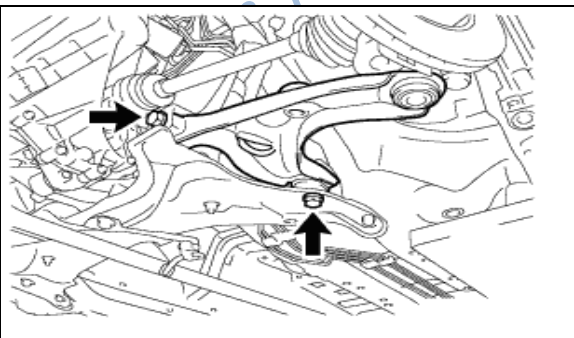
Torque: 0.78~3.43 N*m



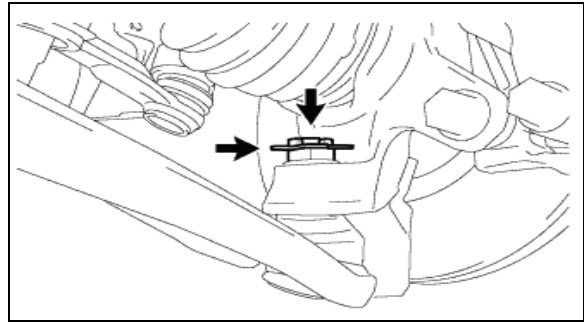
2.4 Installation

2.4.1 Pre-tighten the front suspension lower swing arm

2.4.1.1 Pre-tighten 2 bolts of the front suspension lower swing arm.



2.4.1.2 Fit the front suspension lower swing arm to the steering knuckle with slotted nut.



Tightening torque: 98 N*m

Note:

Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.

2.4.1.3 Fit a new cotter pin.

2.4.2 Install the front stabilizer bolts

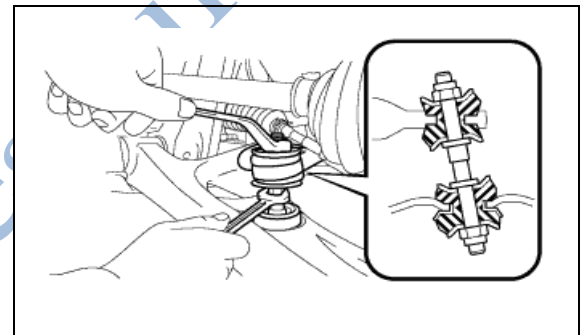
2.4.2.1 Fit 4 gaskets, 4 gasket seat washers I, 2 gasket seat washers II and the stabilizer bolt.

2.4.2.2 Fix the front stabilizer bolt with spanner, and screw 2 nuts.

Tightening torque: 18 N*m

Tip:

Support the front suspension lower swing arm with lifter.



2.4.3 Install the front wheels

Tightening torque: 103 N*m

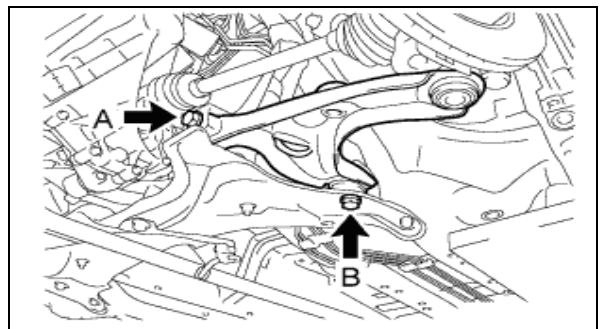
2.4.4 Stabilize the suspension

2.4.4.1 Lower the vehicle.

2.4.4.2 Raise and lower the vehicle repeatedly for several times again, stabilize the suspension.

2.4.5 Fit the front suspension lower swing arm complete firmly.

2.4.5.1 Tighten 2 bolts completely.



Tightening torque:

Bolt A: 110 N*m

Bolt B: 128 N*m

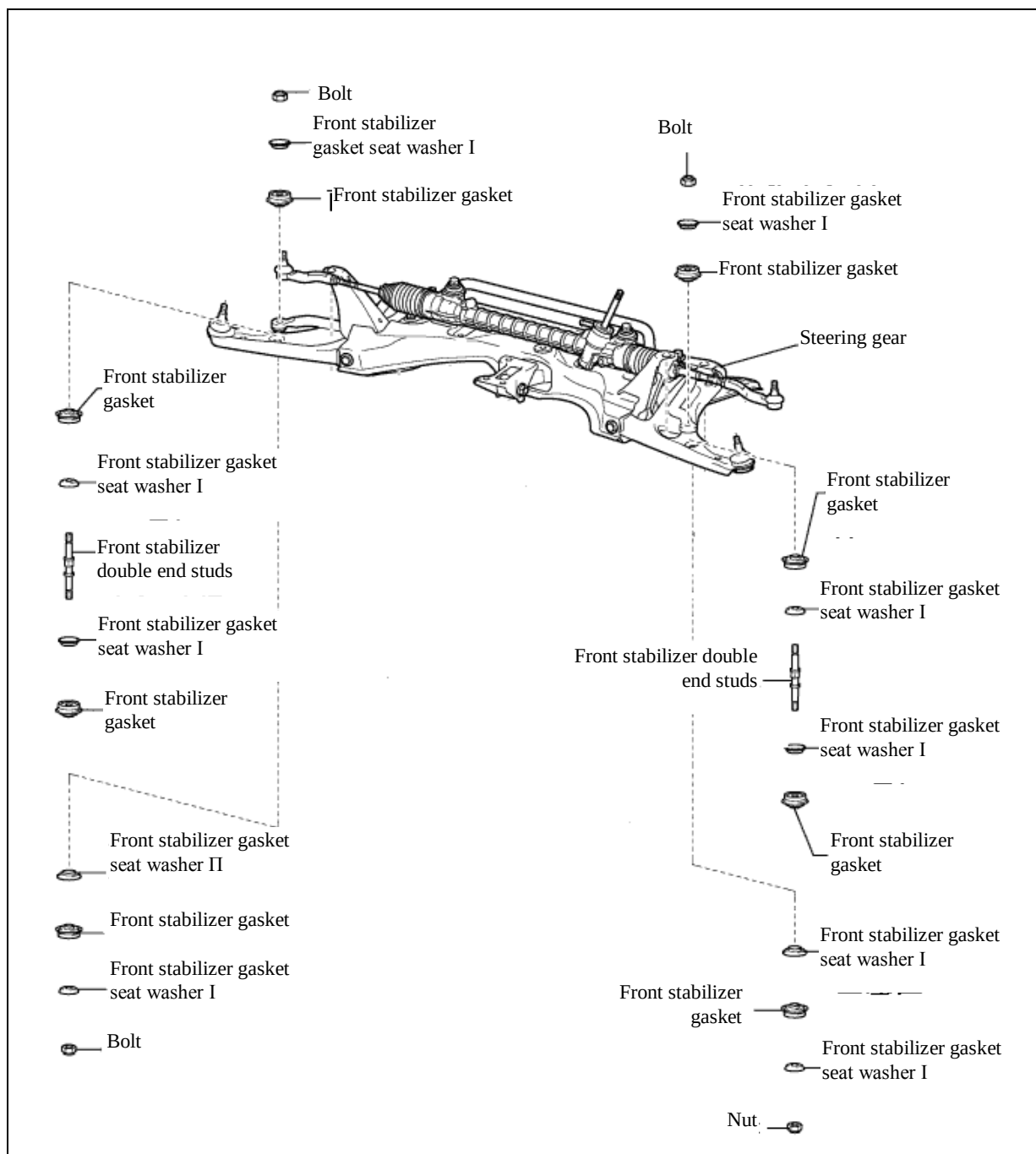
2.4.6 Inspect front wheel alignment

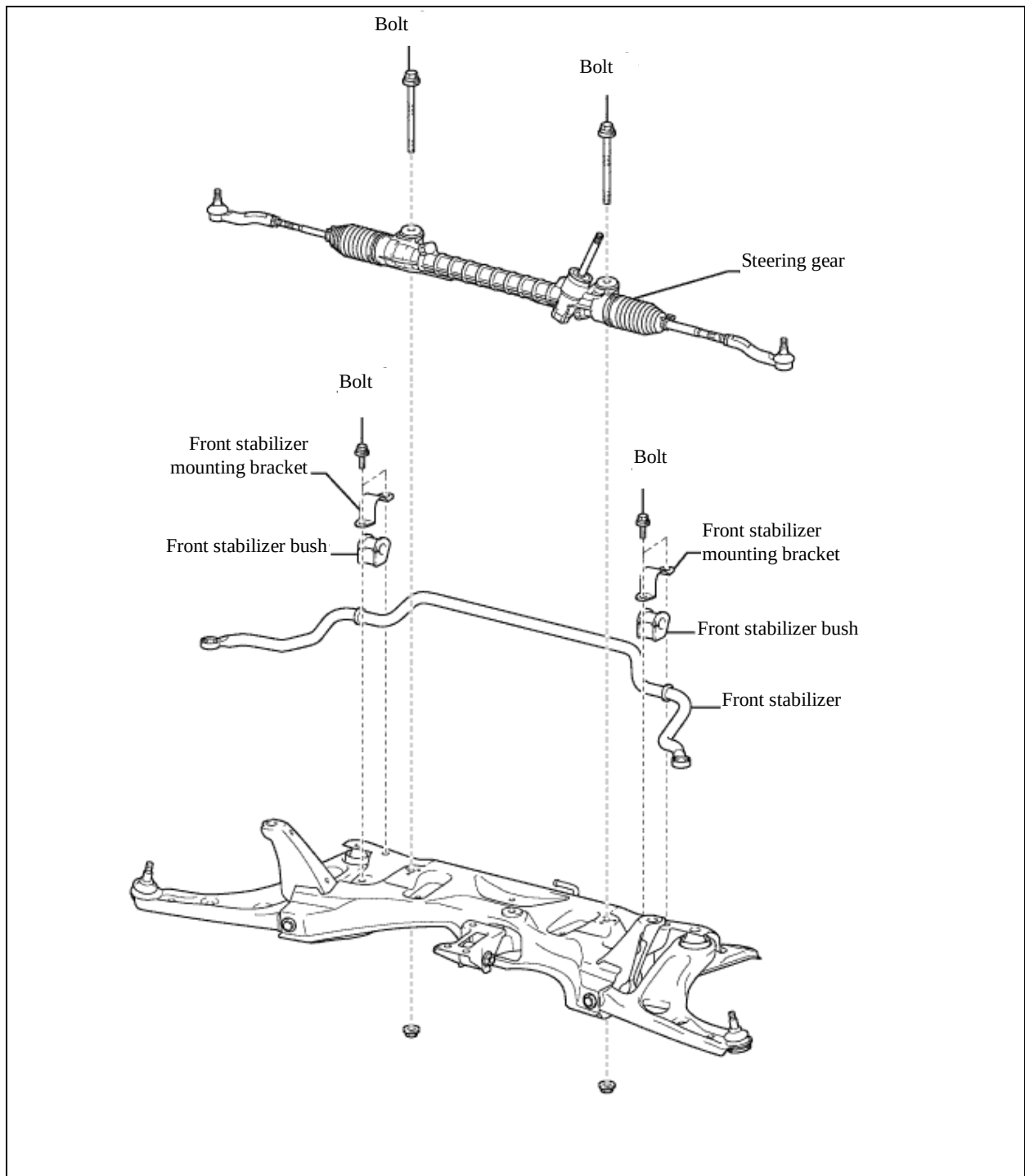
See Section 1 Part6.

Section 3 Front Stabilizer

3.1 Components

1





3.2 Removal

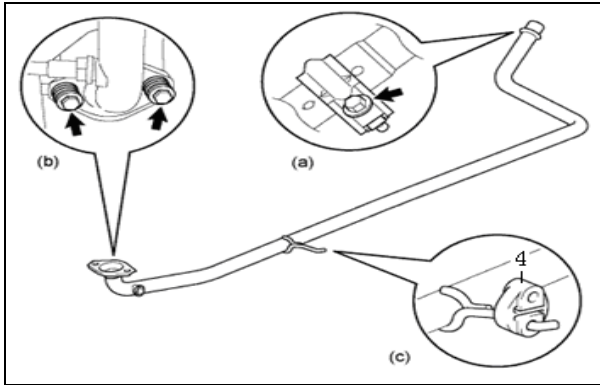
3.2.1 Remove the front wheels

3.2.2 Remove the exhaust pipe forepart assembly

3.2.2.1 Loosen the bolt and open the metal cassette.

3.2.2.2 Remove 2 bolts, 2 springs and the cup grommet.

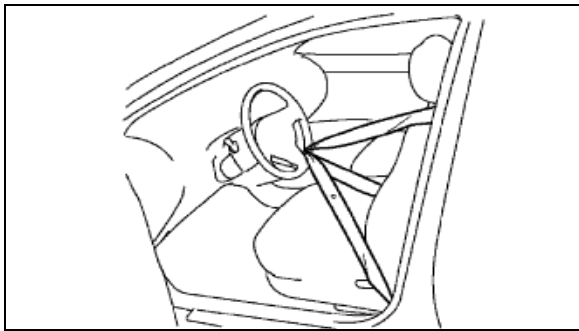
3.2.2.3 Remove the lifting yoke marked 4, and take off the exhaust pipe forepart assembly.



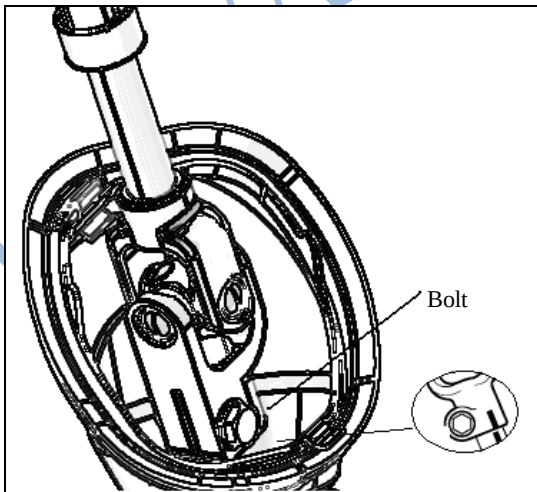
3.2.3 Remove the steering shaft hole cap

3.2.4 Remove the lower steering shaft assembly

3.2.4.1 Control the steering wheel with safety-belt, to prevent its rotation from damaging the clock spring.



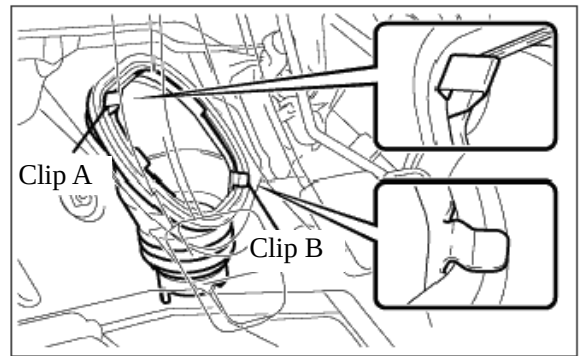
3.2.4.2 Separate the cardan universal joint of lower steering shaft.



3.2.4.2.1 As shown in the figure, make marks on universal joint and pinion shaft.

3.2.4.2.2 Unscrew bolt, and separate the lower steering shaft assembly from the pinion shaft.

3.2.5 Remove the universal joint lower dust boot assembly



3.2.5.1 Press the clip A, and separate the lower dust cover from the steering column mounting hole.

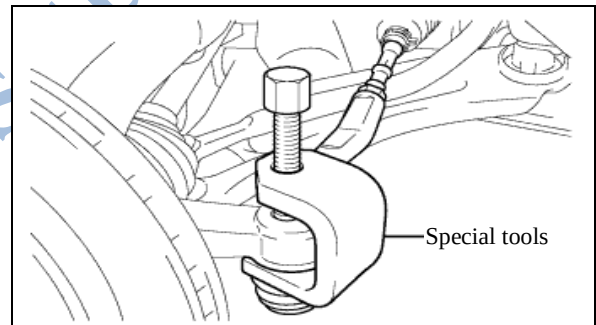
Note:

Don't damage the clip B.

3.2.6 Separate the tie rod assembly left end

3.2.6.1 Remove the cotter pin and slotted nut.

3.2.6.2 Separate the steering link end from steering knuckle with special tools.



Note:

Don't damage the ball head dust boot.

3.2.7 Separate tie rod assembly right end

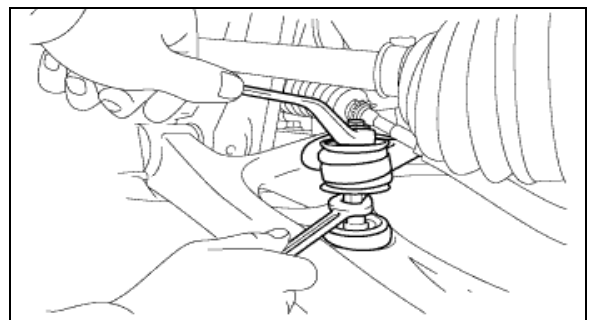
Tip: The separating steps of right are the same as the left.

3.2.8 Separate the front stabilizer bolts

3.2.8.1 Fix the front stabilizer bolts with spanner, and remove 2 nuts.

3.2.8.2 Remove 4 gaskets, 4 gasket seat washers I, 2 gasket seat washers II and the stabilizer bolt.

3.2.8.3 Remove the other side according to the steps above.

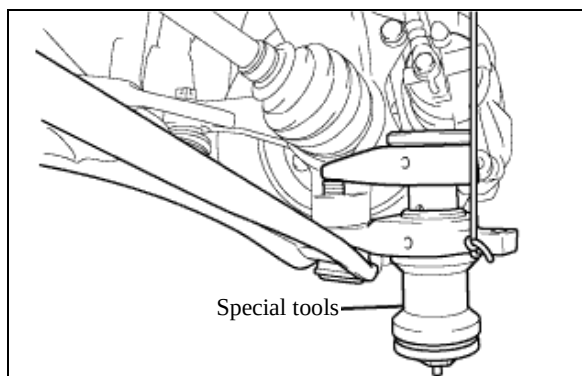


3.2.9 Separate the left end front suspension lower swing arm

3.2.9.1 Remove the cotter pin and the slotted nut.

3.2.9.2 Separate the front suspension arm from the steering knuckle with special tools.

3.2.10 Separate the right end front suspension lower swing arm

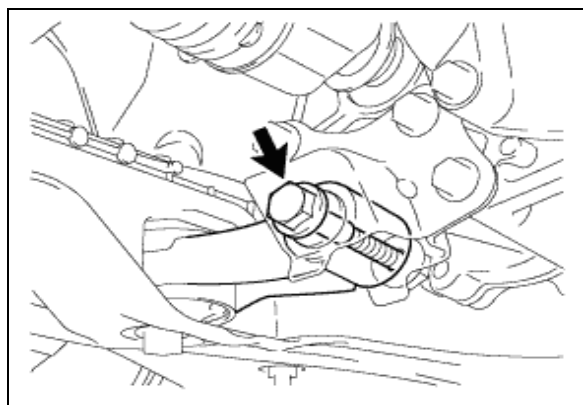


Tip:

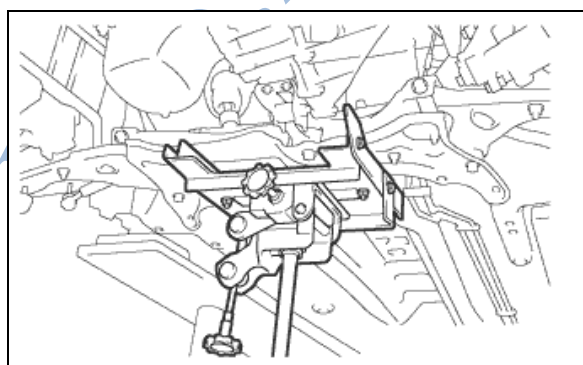
The separating steps of right are the same as the left.

3.2.11 Separate the rear mounting assembly

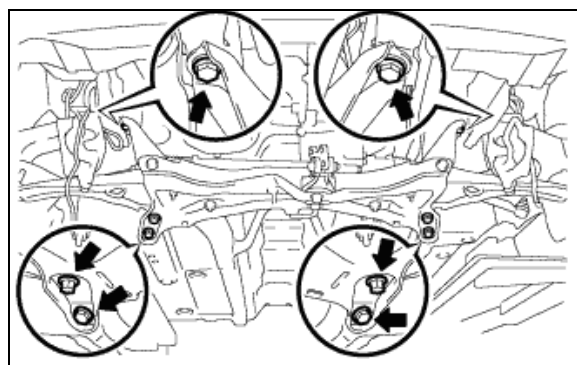
3.2.11.1 Unscrew the bolt, separate the front auxiliary frame from the engine.



3.2.11.2 Support the front auxiliary frame assembly with lifter.



3.2.11.3 Remove 6 bolts and the front auxiliary frame assembly.

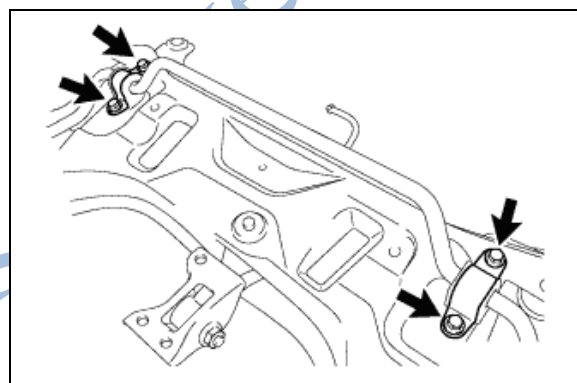


3.2.12 Remove steering gear assembly

Refer to the methods in the section of steering gear in steering system.

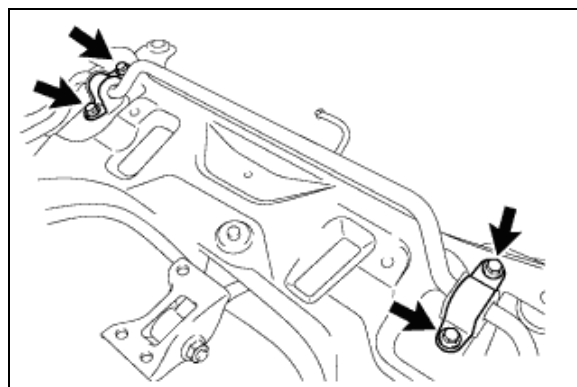
3.2.13 Remove the front stabilizer left end bracket

3.2.13.1 Remove 2 bolts and the bracket.



3.2.14 Remove the front stabilizer right end bracket

3.2.14.1 Remove 2 bolts and the bracket.



3.2.15 Remove the front stabilizer bushings

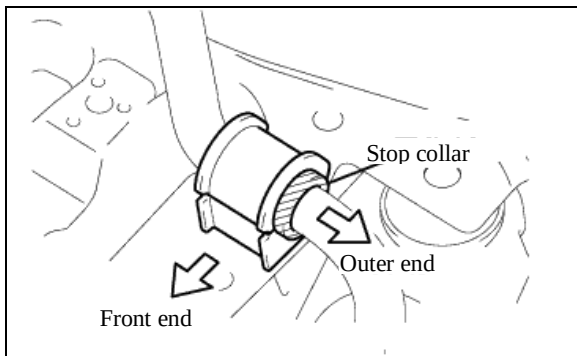
3.2.16 Remove the front stabilizer

3.3 Installation

3.3.1 Install the front stabilizer

3.3.2 Install the front stabilizer bushings

3.3.2.1 Fit 2 bushings to the stabilizer.



Tip:

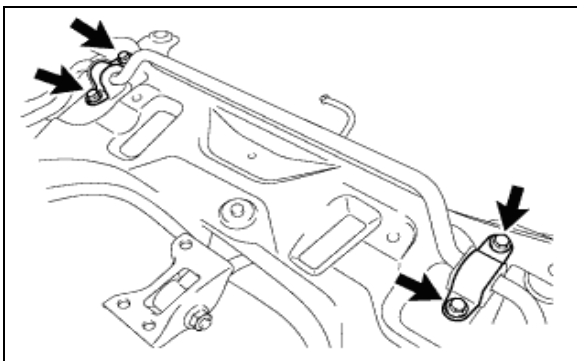
Fit the bushings to the inside of the stabilizer stop collar.

The dissected opening is toward the front when fitting the bushing.

3.3.3 Install the front stabilizer left bracket

3.3.3.1 Fit the bracket with 2 bolts.

Tightening torque: 35 N*m



3.3.4 Install the front stabilizer right bracket

3.3.4.1 Fit the bracket with 2 bolts.

Tightening torque: 35 N*m

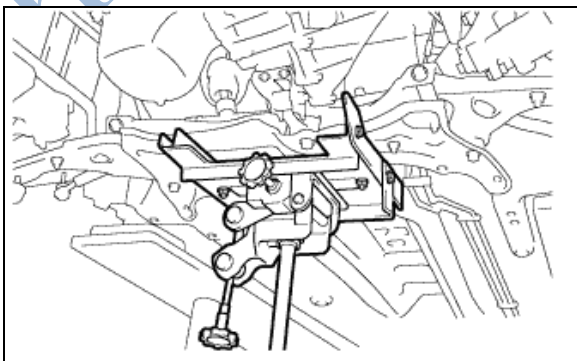
3.3.5 Install the steering gear assembly

Refer to the methods in the section of the installation of steering gear in steering system.

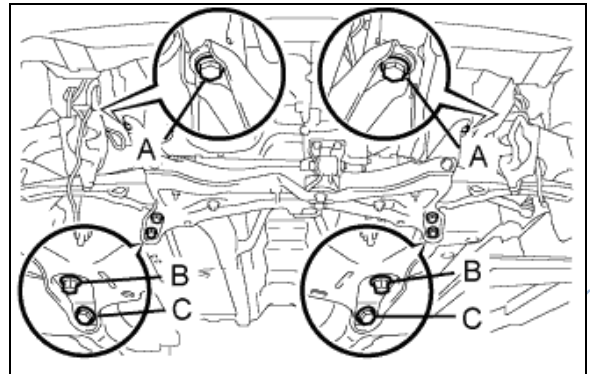
3.3.6

Install the auxiliary frame assembly

3.3.6.1 Support the auxiliary frame with lifting jack.



3.3.6.2 Remove 6 bolts and the auxiliary frame assembly.



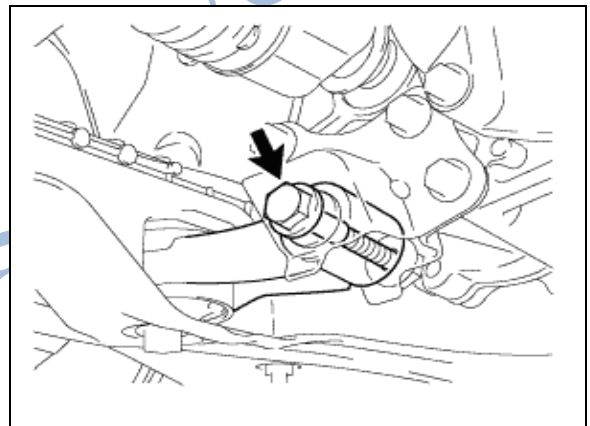
Tightening torque:

Bolt A: 85 N*m

Bolt B: 128 N*m

Bolt C: 48 N*m

3.3.6.3 Fit the mounting to the bracket with bolt.



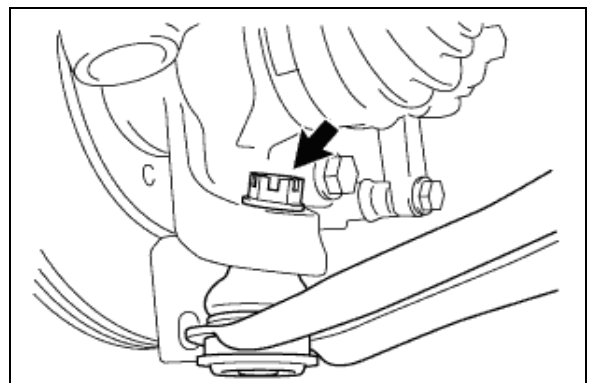
3.3.7 Install the front suspension left lower swing arm

3.3.7.1 Push in the front suspension lower swing arm from below, fit the ball head and tighten the slotted nut and the new cotter pin.

Tightening torque: 98 N*m

Note:

Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.



3.3.8 Install the front suspension right lower swing arm

Tip:

The fitting steps of right are the same as the left.

3.3.9 Install the front swing arm bolt

3.3.9.1 Fit 4 gaskets, 4 gasket seat washers I, 2 gasket seat washers II and the stabilizer bolt.

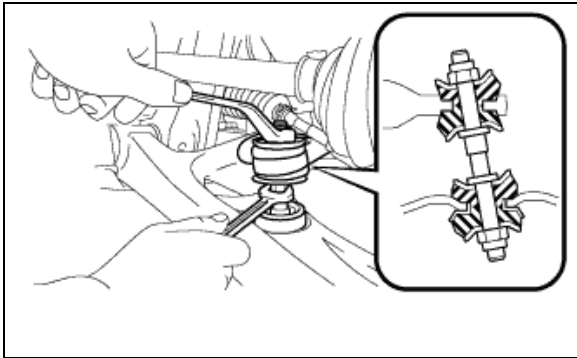
3.3.9.2 Fix the front stabilizer bolt with spanner, and screw 2 nuts meanwhile.

Tightening torque: 18 N*m

Tip:

Support the front suspension lower swing arm with lifting jack.

3.3.9.3 Install another side according to the steps above.



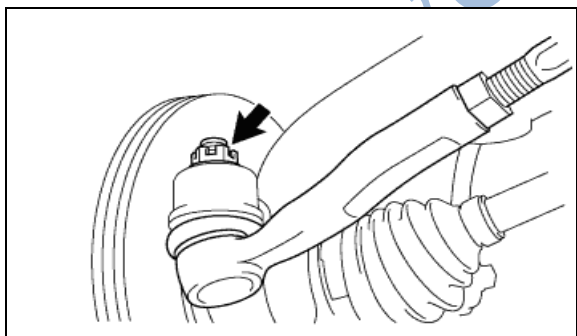
3.3.10 Install the left tie rod assembly end

3.3.10.1 Connect the tie rod end to the steering knuckle, and fit it with slotted nut and new cotter pin.

Tightening torque: 33 N*m

Note:

Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.



3.3.11 Install the right tie rod assembly end

Tip:

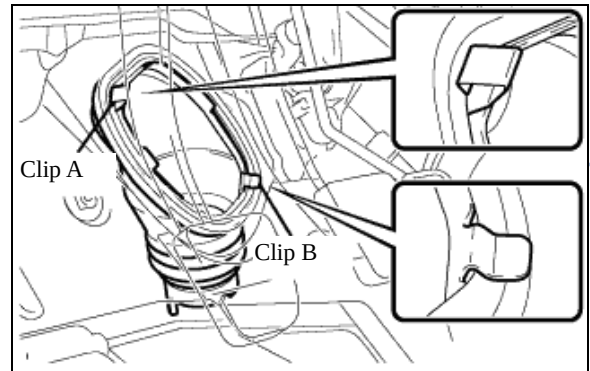
The fitting steps of right are the same as the left.

3.3.12 Install the steering lower dust boot assembly

3.3.12.1 Fit clip B to body, and fit the steering column hole cover to body with clip.

Note:

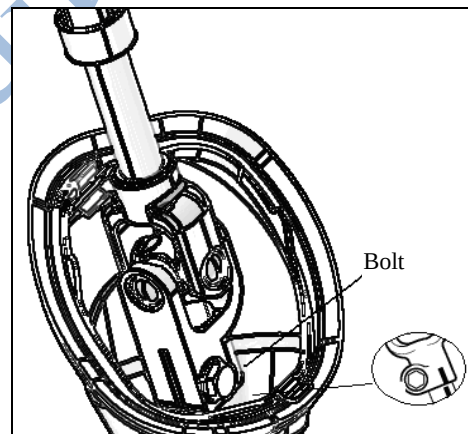
The steering column hole cover edge needs to be well connected with impingement plate.



3.3.13 Connect the pinion shaft and the lower steering shaft

3.3.13.1 Nest another end of universal joint in gear shaft, and align marks.

Tightening torque: 35 N*m



3.3.13.2 Release the safety belt on steering wheel.

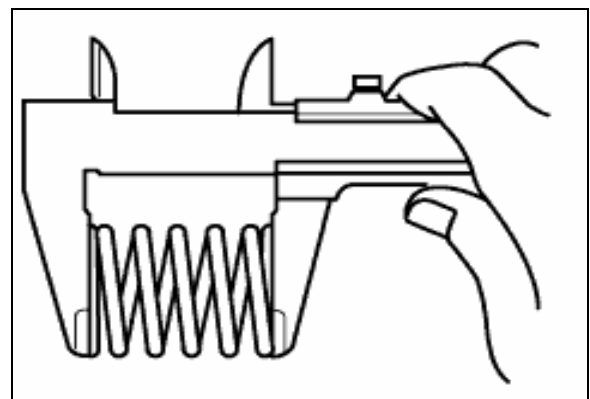
3.3.14 Install the steering hole cap panel

3.3.15 Install the forepart exhaust pipe assembly

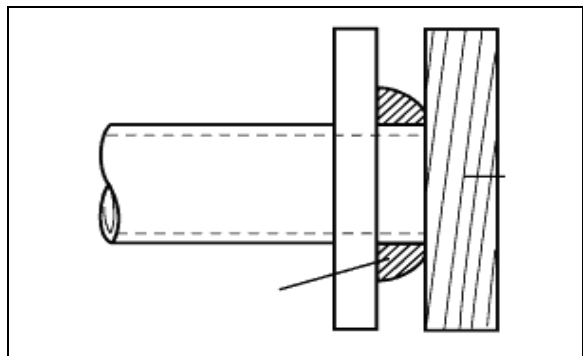
3.3.15.1 Measure the spring free length with caliper gage.

The minimum free length: 40.5 mm.

If the length is not enough, replace the spring.



3.3.15.2 Replace by a brand new cup grommet, beat and nest it gently into three-way catalyst exit tube with plastic hammer and small wood block.



Note:

Make sure the correct installation direction of the cup grommet.

Don't damage the external surface of cup grommet.

The cup grommet can't be reused.

Don't use the forepart exhaust pipe to push the cup grommet into three-way catalyst exit tube.

3.3.15.3 Fit the forepart exhaust pipe assembly with 2 bolts and 2 springs.

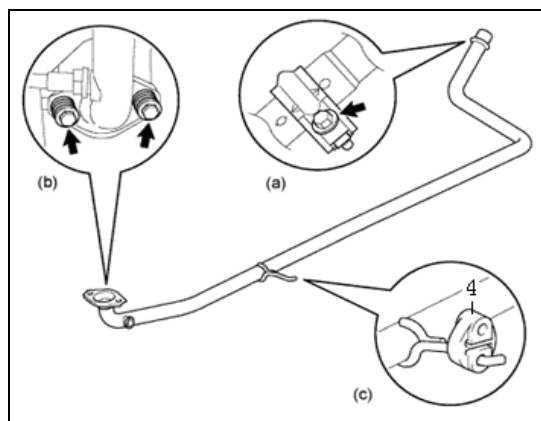
Tightening torque: 45 N*m

3.3.15.4 Fit the lifting yoke marked 4.

3.3.15.5 Screw the bolt and fit the cassette.

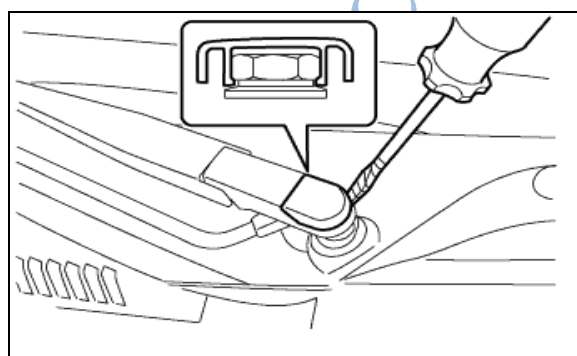
Tightening torque: 32 N*m

Note: The marking points on cassette are in line with the stamped grooves on pipe.



3.3.16 Install the front wheels

Tightening torque: 103 N*m



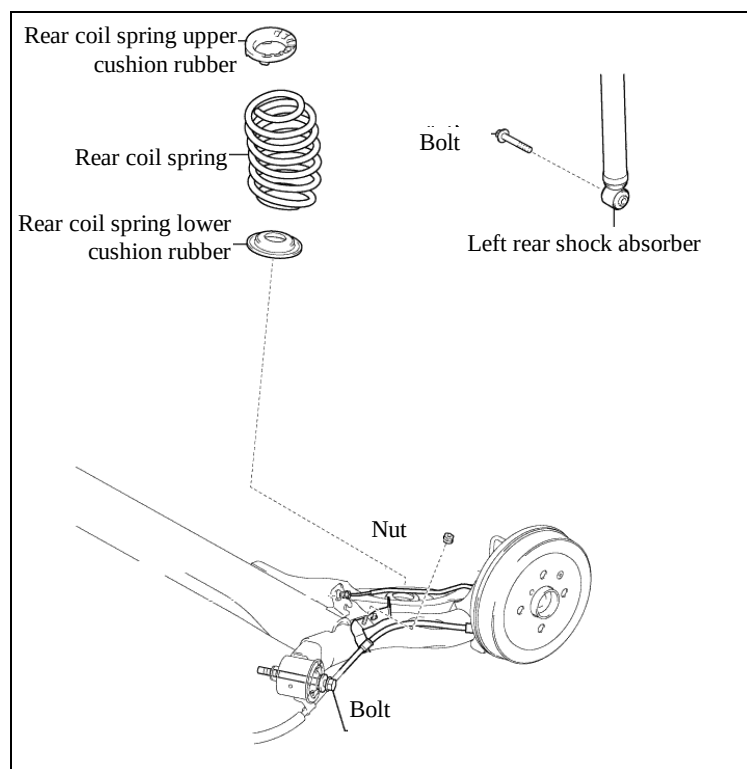
3.3.17 Check if the exhaust gas leaks.

3.3.18 Inspect the front wheel alignment

See Section 1 Part 6.

Section 4 Rear Coil Spring

4.1 Components

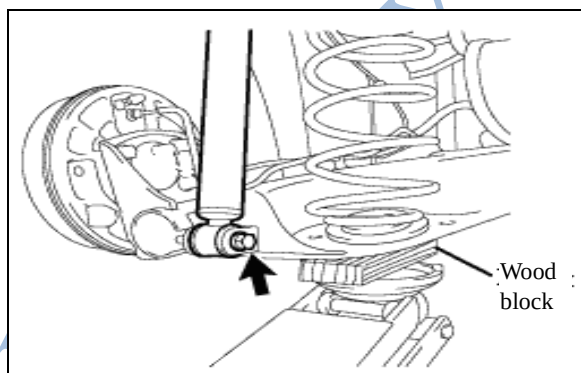


4.2 Removal

4.2.1 Separate the left rear shock absorber assembly

4.2.1.1 Support the both ends of rear twist beam with lifting jacks, and insert a wood block between the lifting jack and the twist beam spring seat to prevent it from being damaged.

4.2.1.2 Unscrew the bolt and separate the rear shock absorber.



4.2.2 Separate the left rear shock absorber assembly

Tip:

The removing steps of left are the same as the right.

4.2.3 Remove the left rear coil spring

4.2.3.1 Lower the lifting jack slowly.

4.2.3.2 Take off the coil spring and the coil spring upper and lower cushion rubbers.

4.2.4 Remove the right rear coil spring

Tip:

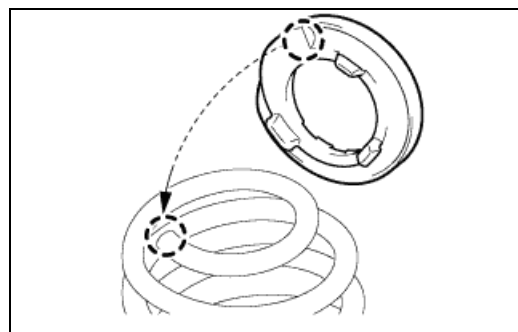
The removing steps of right are the same as the left.

4.3 Installation

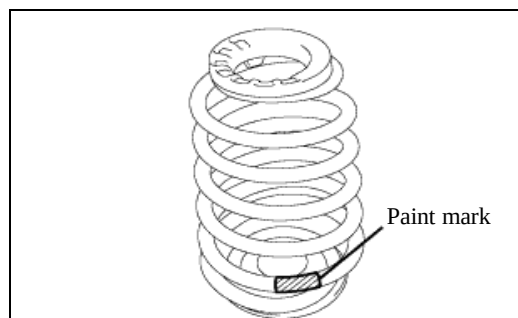
4.3.1 Install the left rear coil spring

4.3.1.1 Fit the coil spring lower cushion rubber to the rear twist beam.

4.3.1.2 Fit the coil spring upper cushion rubber and match its notch with the spring end.



4.3.1.3 Fit the coil spring to the rear twist beam.



Note:

Be sure to fit the paint marking section of coil spring to the vehicle bottom and front.

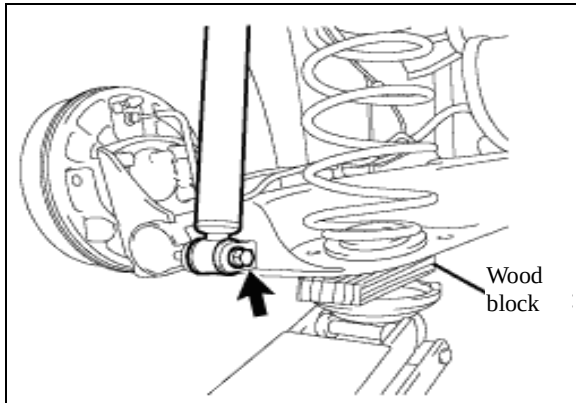
4.3.2 Install the right rear coil spring**Tip:**

The fitting steps of right are the same as the left.

4.3.3 Pre-tighten the left rear shock absorber assembly

4.3.3.1 Lift up the rear twist beam slowly, and fit the lower end of the shock absorber to the twist beam.

4.3.3.2 Pre-tighten the bolt

**4.3.4 Pre-tighten the right rear shock absorber assembly****Tip:**

The fitting steps of right are the same as the left.

4.3.5 Tighten the rear twist beam assembly completely

4.3.5.1 Fix the rear shock absorber.

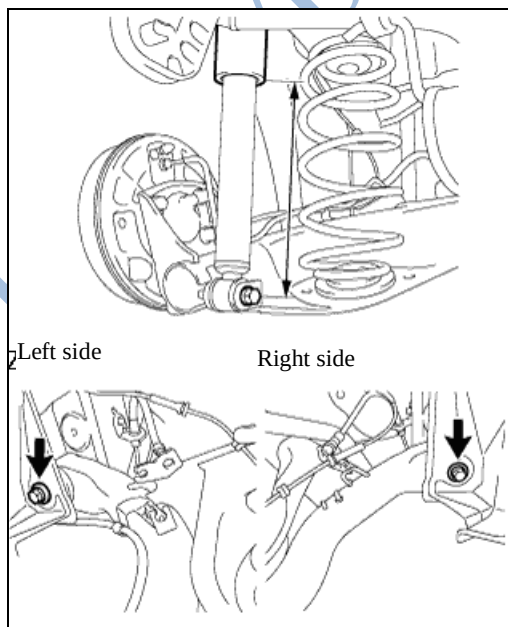
Tip:

If can't tighten the bolt in this position, support the rear twist beam coil spring seat with lifting jack.

The length of shock absorber: 230 mm.

4.3.5.2 Tighten 2 bolts completely.

Tightening torque: 123 N*m

**4.3.6 Tighten the left and right rear shock absorber assembly completely**

4.3.6.1 Tighten 2 bolts completely.

Tightening torque: 48 N*m

4.3.7 Tighten the right rear shock absorber assembly completely**Tip:**

The fitting steps of right are the same as the left.

4.3.8 Install the rear wheels

Tightening torque: 103 N*m

4.3.9 Inspect the rear wheel alignment

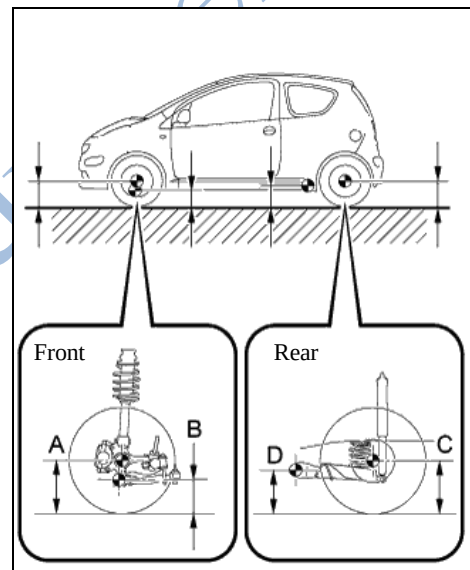
4.3.9.1 Inspect the tires

a. Inspect the tread abrasion and the suitable tire pressure

4.3.9.2 Measure the vehicle height

Vehicle height:

A—B C—D
88 mm 22mm



Measurement points:

A: The front wheel center ground clearance

B: The lower swing arm front bolt center ground clearance

C: The rear wheel center ground clearance

D: The rear twist beam mounting bolt center

Note:

Before inspecting the wheel alignment, adjust the vehicle height in accordance with given values.

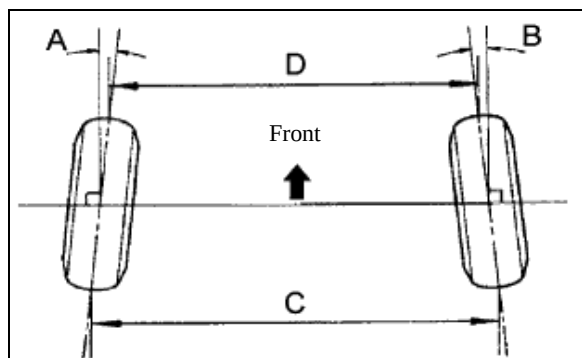
Tip:

Before checking the vehicle height, raise and lower the vehicle completely to stabilize the suspension in remote place.

4.3.9.3 Check the toe-in

Toe-in:

A+B C—D
-0° 06' ~ -0.9mm ~
0° 21' 3.1mm



If the toe-in values are beyond the designated range, check the suspension parts and do alignment again if necessary.

4.3.9.4 Check the camber angle

a. Fit a camber-caster-kingpin inclination angles play detector and move the rear wheels onto the aligner.

Check the camber angle

Camber angle

$-1^{\circ}26' \sim -0^{\circ}26'$

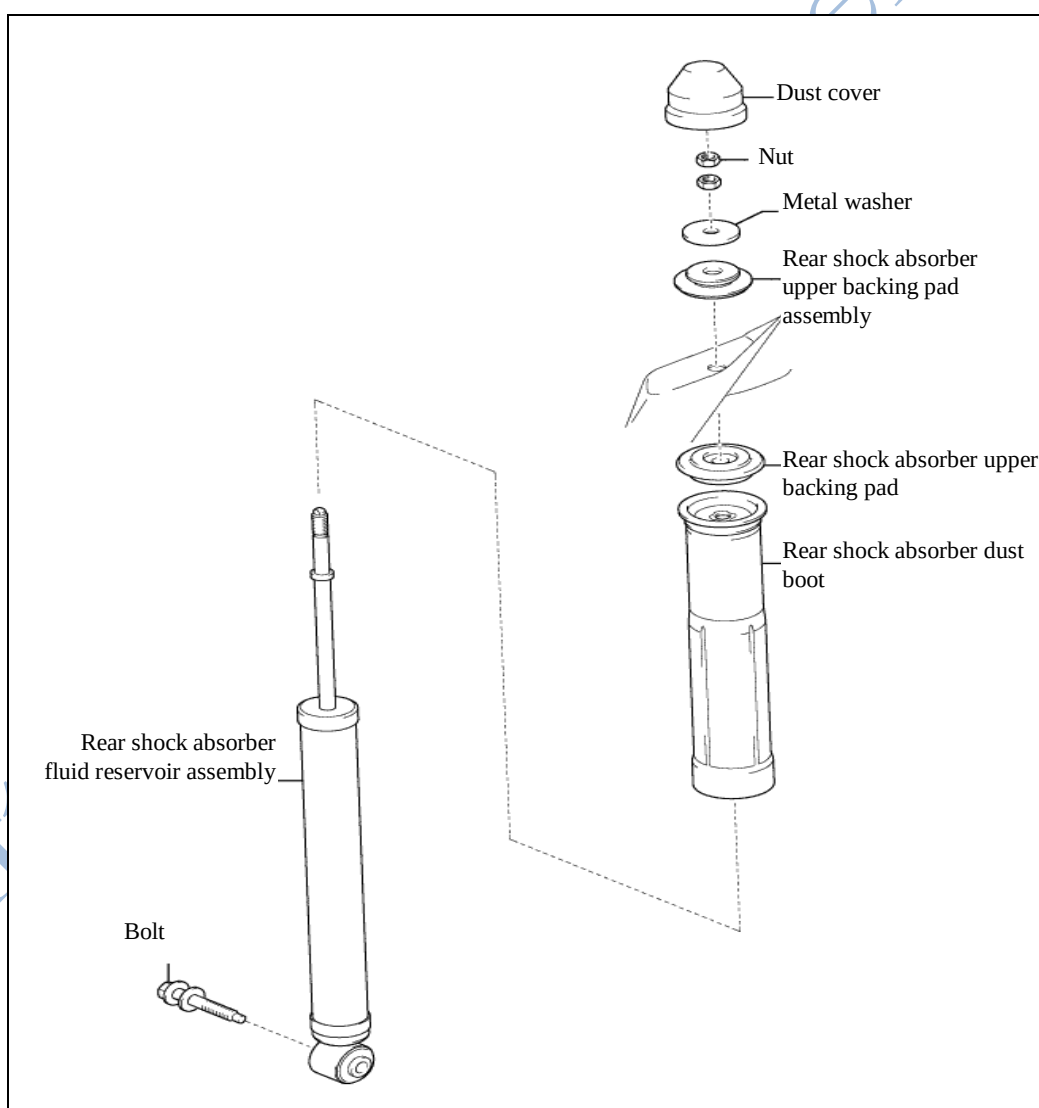
Note:

The detecting accuracy error rate of the camber angle, caster angle of left and right wheels is 30' or less.

If the detected values are beyond the designated range, it needs to check each suspension member, and replace them if necessary.

Section 5 Rear Shock Absorber

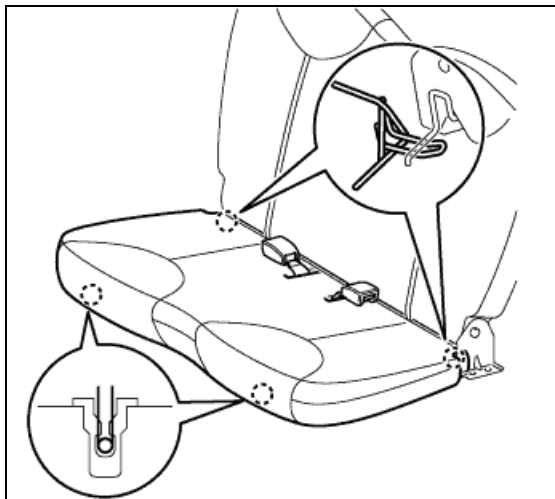
5.1 Components



5.2 Removal

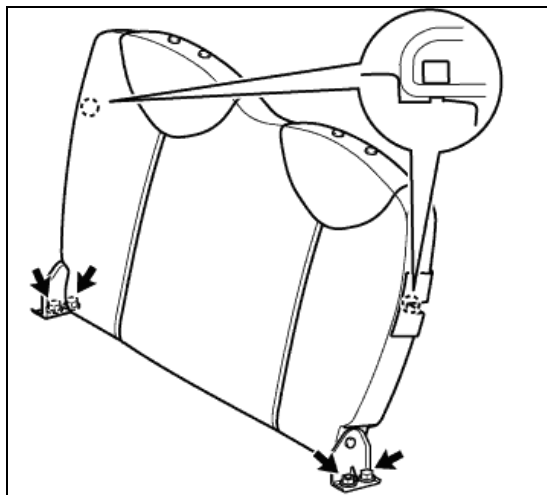
5.2.1 Remove the rear seat cushion assembly

Take off 4 hooks and remove the rear seat cushion.

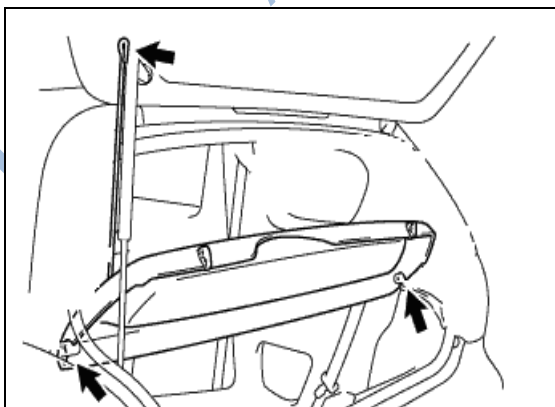


5.2.2 Remove the rear backrest assembly

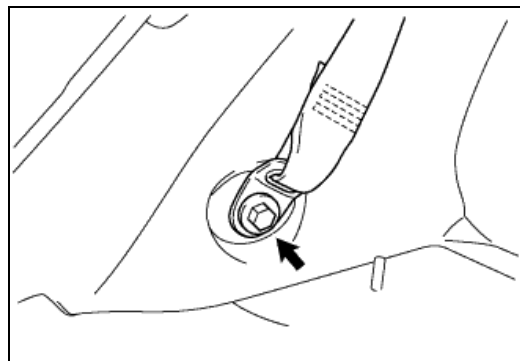
Release 2 clasps, 2 bolts and 2 nuts as shown in the figure.



5.2.3 Remove the trunk lid panel

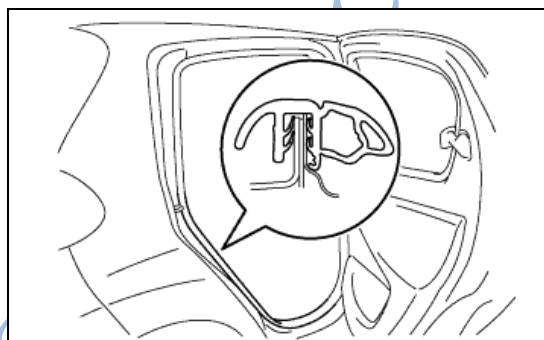


5.2.4 Remove the rear seat safety-belt assembly

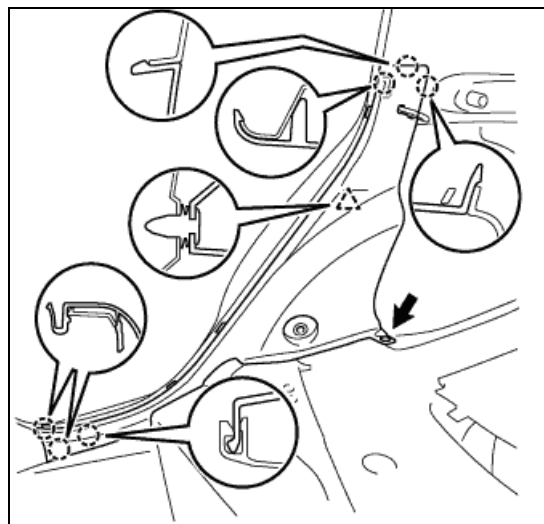


5.2.5 Remove the rear door sealing strip

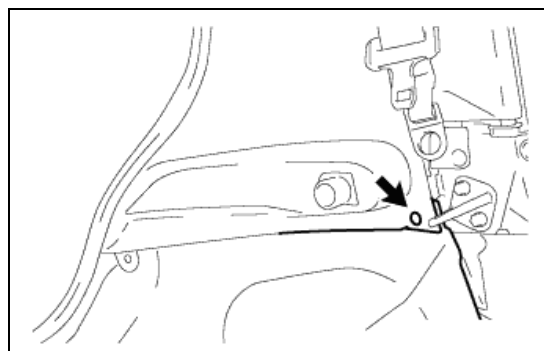
Remove the rear door sealing strip.



5.2.6 Remove the rear seat edge subassembly



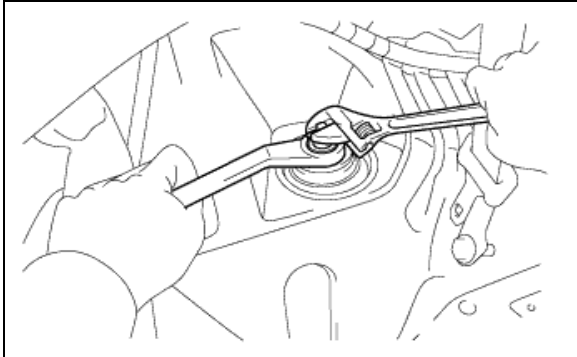
5.2.7 Remove the floor plate edge decoration panel



5.2.8 Remove the rear wheels**5.2.9 Remove the rear shock absorber cover****5.2.10 Remove the rear shock absorber assembly**

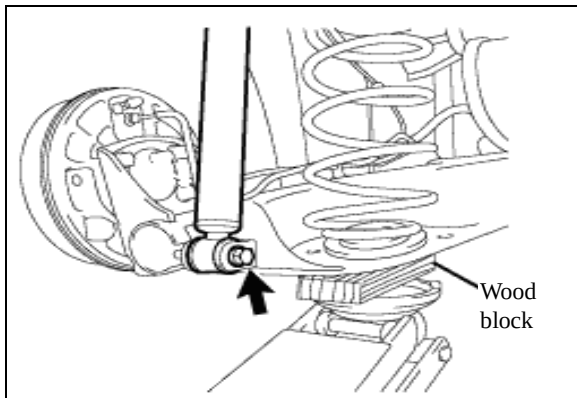
5.2.10.1 Support the rear twist beam with lifting jack, and insert a board block between the rear beam spring seat and the lifting jack to prevent it from being damaged.

5.2.10.2 Fix the piston rod and remove 2 bolts.

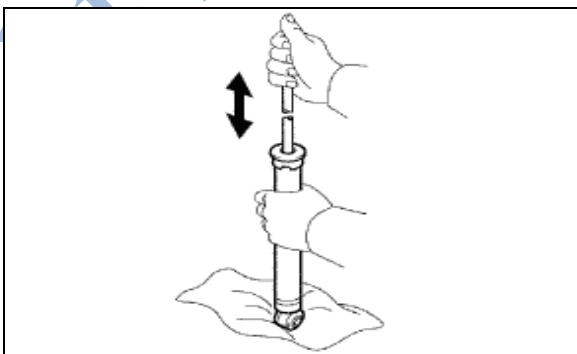


5.2.10.3 Remove the rear shock absorber washer and the upper backing pad assembly.

5.2.10.4 Remove the bolt and the rear shock absorber.

**5.3 Inspection and Treatment****5.3.1 Inspect the rear shock absorber assembly**

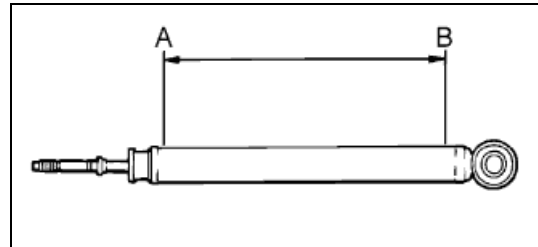
5.3.1.1 Inspect the rear shock absorber assembly. Compress and stretch the shock-absorber rod, inspect if there is abnormal resistance force or sound. If anything is abnormal, it needs to replace the rear shock absorber by a new one.

**Note:**

When treating with the rear shock absorber:

5.3.1.1.1 Stretch the shock-absorber piston bar completely.

5.3.1.1.2 Cut a hole in any place between A and B with piercing machine, as shown in the figure, to discharge the gas inside.

**Note:**

- The gas is colorless, odorless, and harmless.
- As the discharged gas may cause disperse of scrap, cover the piercing machine with workshop duster or a piece of cloth.

5.4 Installation**5.4.1 Install the rear shock absorber assembly**

5.4.1.1 Fit the limiting stopper and the backing pad to the shock absorber.

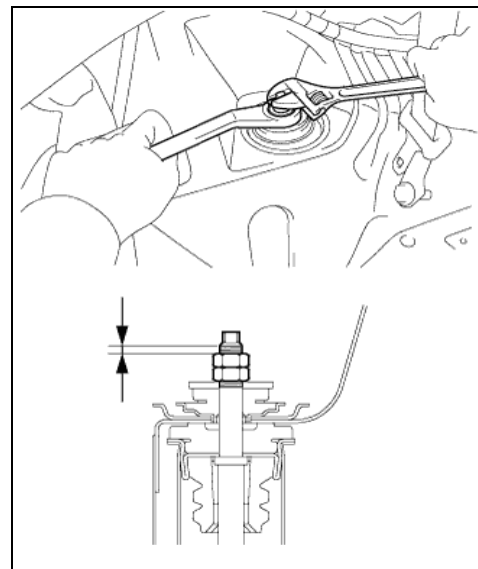
5.4.1.2 Fit the shock absorber, limiting stopper and backing pad to body.

5.4.1.3 Fix the piston rod and screw 2 bolts.

Tightening torque: 24.5 N*m

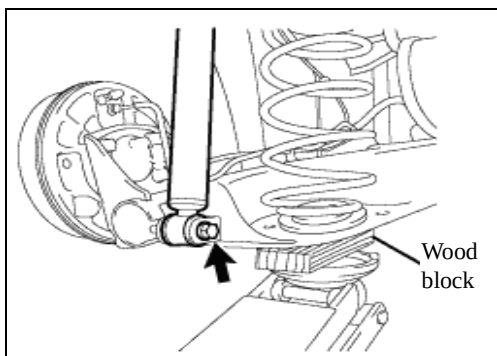
Note:

As shown in the figure, tighten the nuts until 3-5 threads come out.



5.4.1.4 Insert a board block between the rear beam spring seat and the lifting jack.

5.4.1.5 Raise the rear twist beam slowly, and fit the rear shock absorber with bolt.



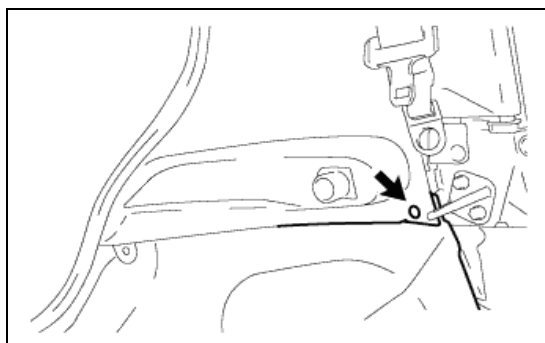
Tightening torque: 48 N*m

5.4.2 Install the rear damper cover

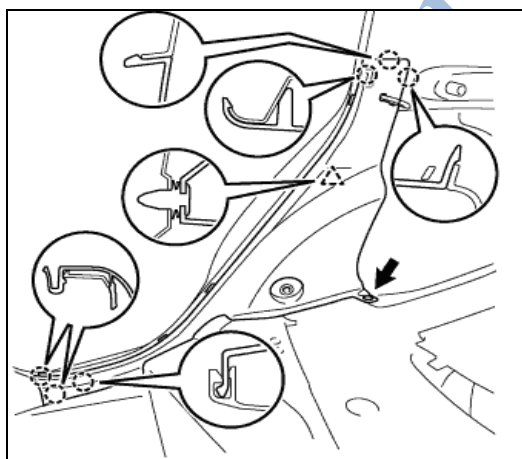
5.4.3 Install the rear wheels

Tightening torque: 103 N*m

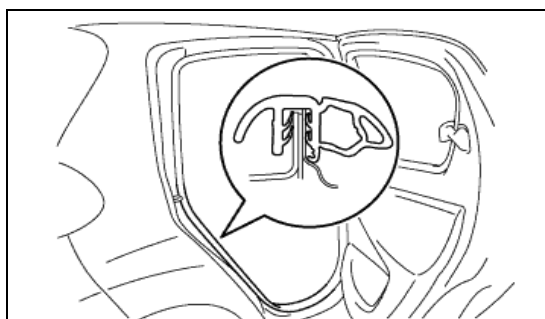
5.4.4 Install the floor plate edge decoration panel



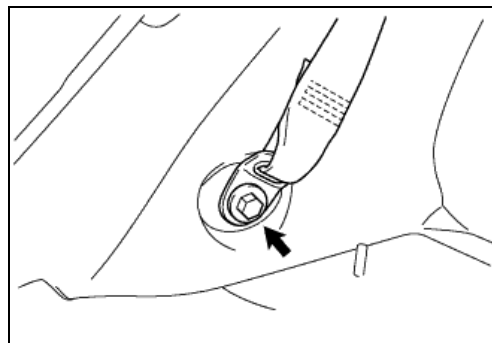
5.4.5 Install the rear seat edge subassembly



5.4.6 Install the rear door sealing strip.

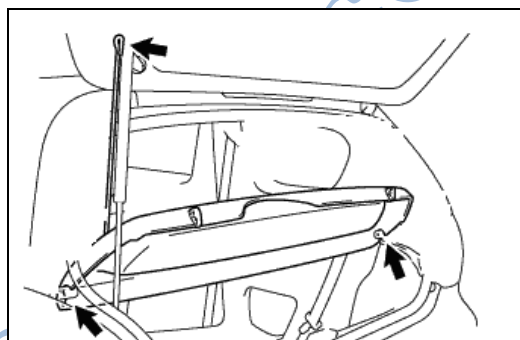


5.4.7 Install the rear seat safety-belt assembly

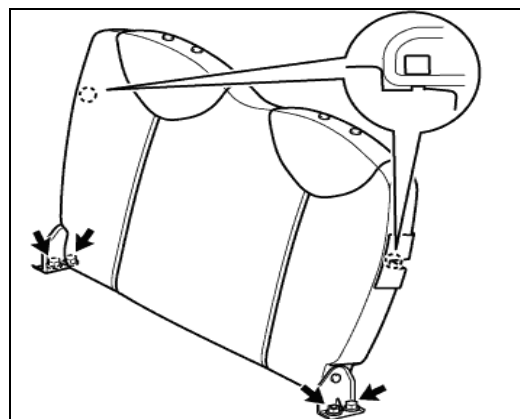


Tightening torque: 42 N*m

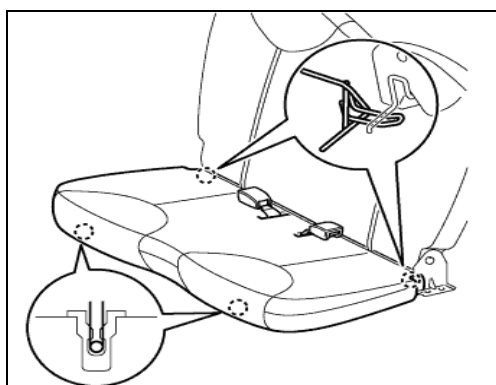
5.4.8 Install the trunk lid panel assembly



5.4.9 Install the rear backrest assembly



5.4.10 Install the rear seat cushion assembly

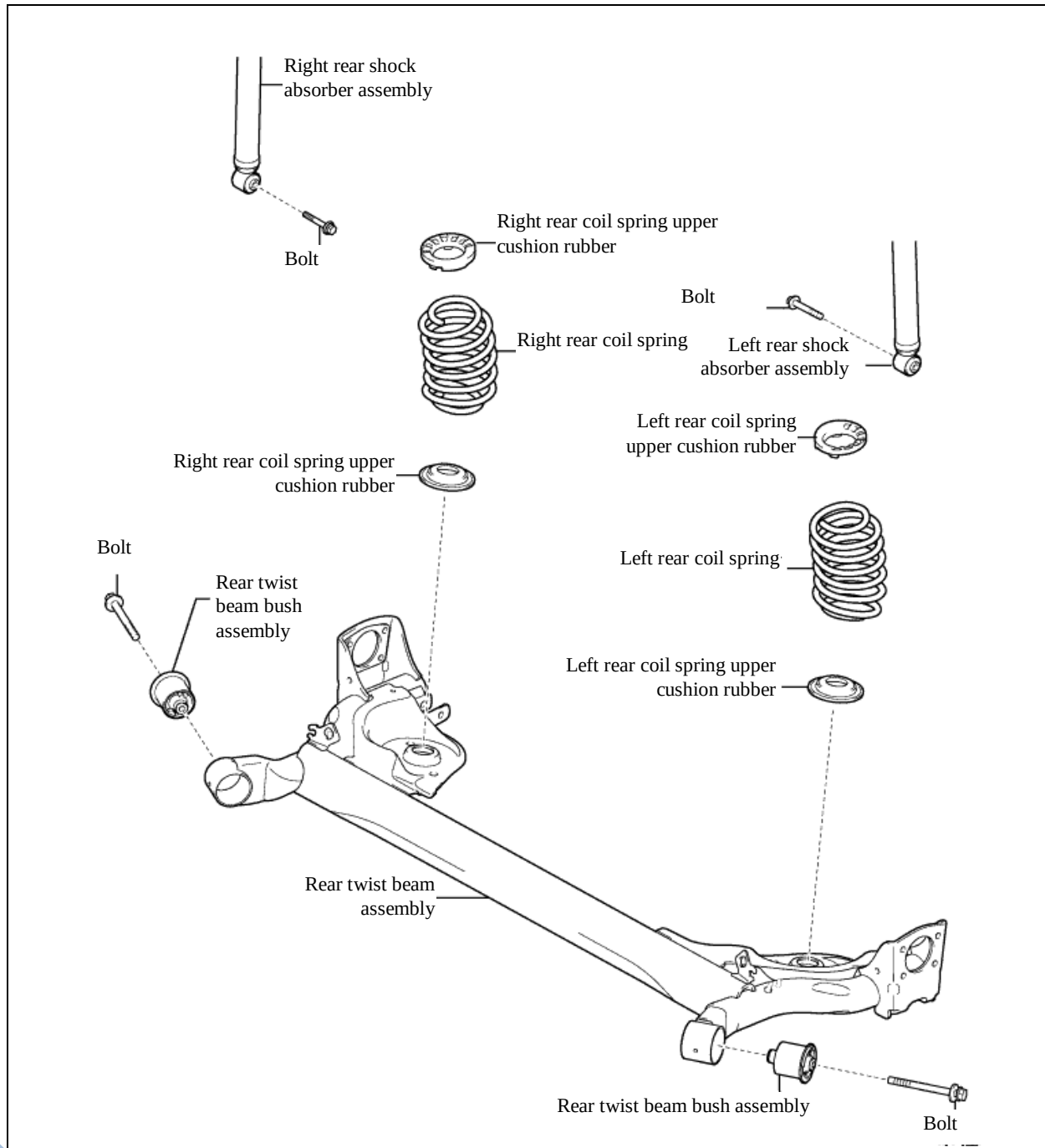


5.4.11 Inspect the rear wheel alignment

See Section 4 Part 3.

Section 6 Rear Twist Beam

6.1 Components



6.2 Removal

6.2.1 Disconnect the battery negative cable

6.2.2 Remove the rear wheels

6.2.3 Discharge the brake fluid

Note:

Wash off all the brake fluid sticking on any coat painting surface quickly.

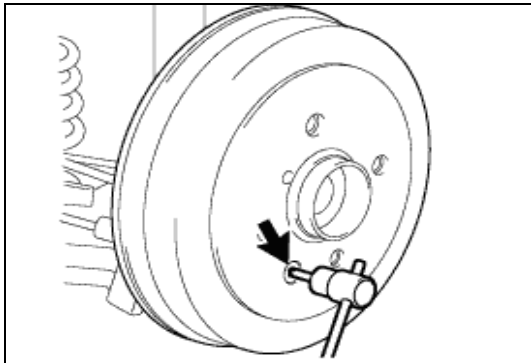
6.2.4 Remove the rear brake drum

6.2.4.1 Loosen the parking control lever.

6.2.4.2 Remove the bolts and the rear brake drum with spanner.

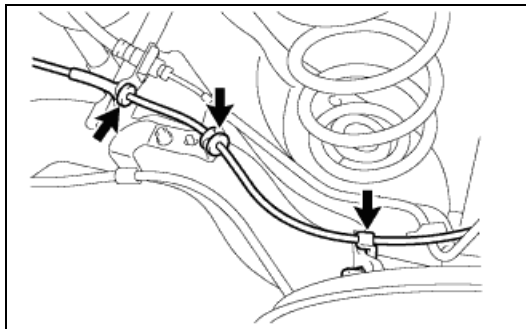
Tip:

The removing steps of right are the same as the left.



6.2.5 Separate the rear wheel speed sensor

6.2.5.1 Remove 3 clamps.



6.2.5.2 Unscrew the bolt with spanner and separate the wheel speed sensor.

6.2.6 Separate the left rear brake hose

6.2.6.1 Remove the brake pipe with special tools.

6.2.6.2 Unscrew bolt and separate flexible hose from rear twist beam.

Note:

Don't damage the brake line and brake hose.

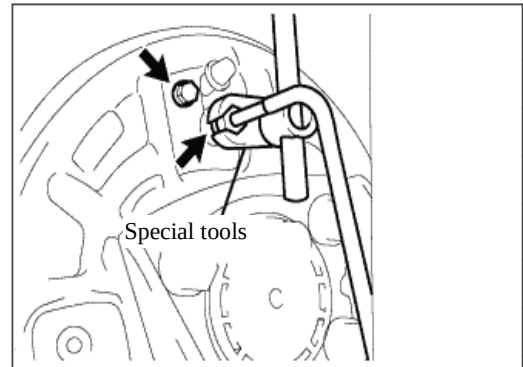
6.2.7 Separate the right rear brake hose

Tip:

The removing steps of right are the same as the left.

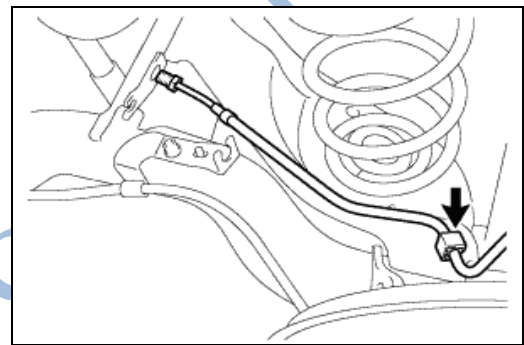
6.2.8 Remove the left rear brake pipe

6.2.8.1 Remove the brake pipe with special tools.



6.2.8.2 Remove the brake pipe off clamp.

6.2.8.3 Remove the brake line clamp off rear twist beam.



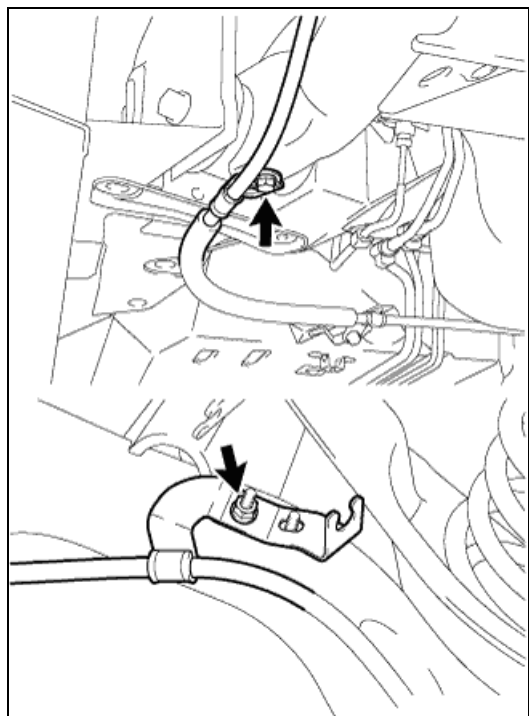
6.2.9 Remove the right rear brake pipe

Tip:

The removing steps of right are the same as the left.

6.2.10 Separate the left parking cable assembly

6.2.10.1 Unscrew the bolt and nut, and separate the parking brake cable.

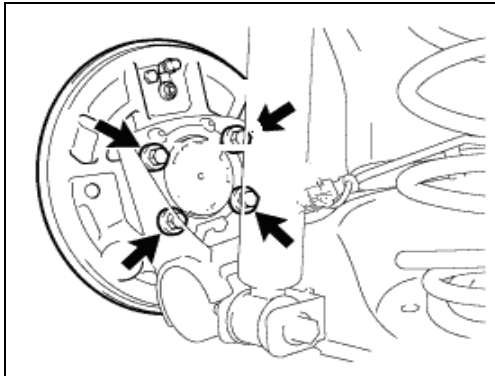


6.2.11 Separate the right parking cable assembly**Tip:**

The removing steps of right are the same as the left.

6.2.12 Remove the left rear wheel hub and bearing combination assembly**6.2.12.1 Unscrew 4 bolts.****6.2.12.2 Remove the rear wheel hub and bearing, and separate the rear supporting plate.****Note:**

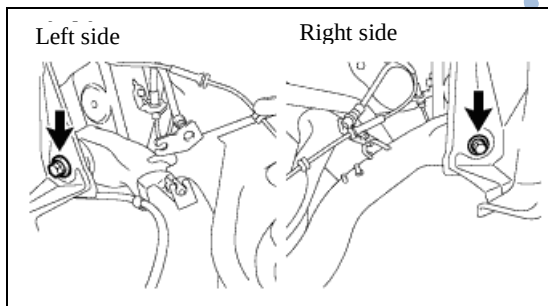
- Don't twist the parking brake cable.
- Hang the rear supporting plate with rope.

**6.2.13 Remove the right rear wheel hub and bearing combination assembly****Tip:**

The removing steps of right are the same as the left.

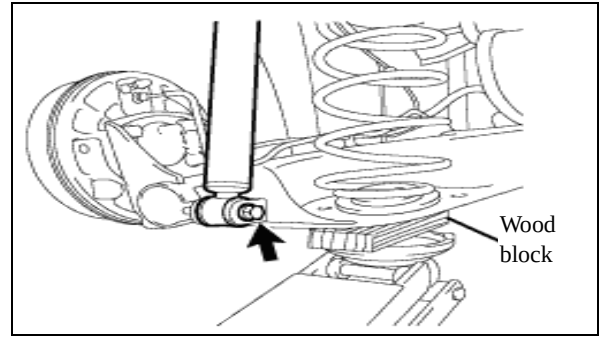
6.2.14 Loosen the rear twist beam assembly**6.2.14.1 Loosen 2 bolts.**

Note: Don't remove them.

**6.2.15 Separate the left rear shock absorber assembly**

6.2.15.1 Support the both ends of rear twist beam with lifting jacks, and insert a wood block between the lifting jack and the twist beam spring seat to prevent it from being damaged.

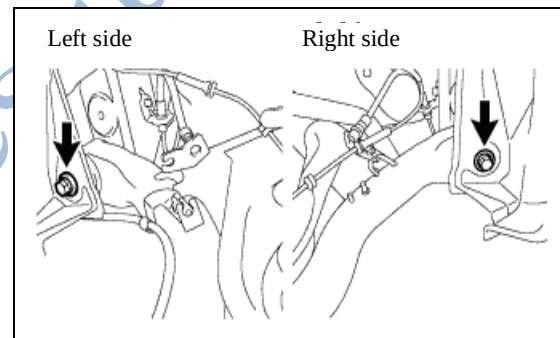
6.2.15.2 Unscrew the bolts and separate the rear shock absorber.

**6.2.16 Separate the right rear shock absorber assembly****Tip:**

The removing steps of right are the same as the left.

6.2.17 Remove the left rear coil spring**6.2.17.1 Lower the lifting jack slowly.****6.2.17.2 Remove the rear coil spring and upper and lower supporting pads.****6.2.18 Remove the right rear coil spring****Tip:**

The removing steps of right are the same as the left.

6.2.19 Remove the rear twist beam assembly**6.2.19.1 Remove 2 bolts and the rear twist beam assembly.****6.3 Reset****6.3.1 Remove the left rear bracket bushing**

6.3.1.1 Make a mark on the rear twist beam to align it with the mark on the bushing.

6.3.1.2 Bend 2 parts on the bushing rib with chisel and hammer.

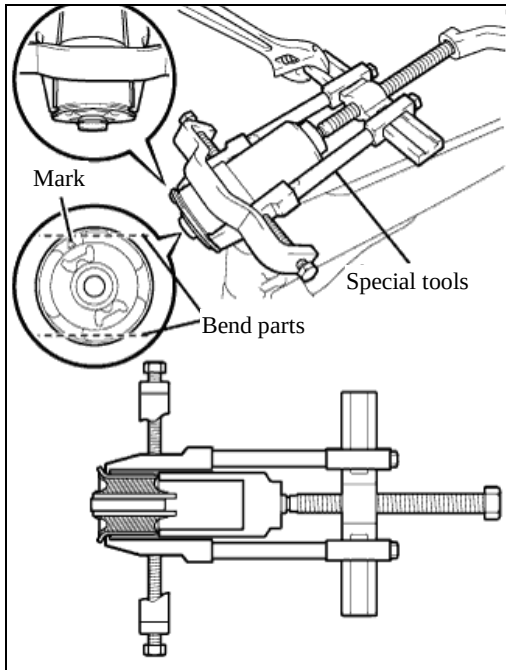
Tip:

Bend the bushing rib until the claw of special tools hangs in the air.

6.3.1.3 Remove the bushing from rear twist beam with special tools.

Note:

Any scrape on rear twist beam is required to be repaired with paint.



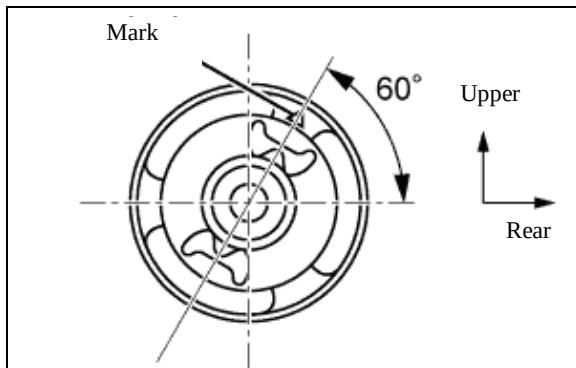
6.3.2 Remove the right rear bracket bushing

Tip:

The removing steps of right are the same as the left.

6.3.3 Install the left rear twist beam bracket bushing

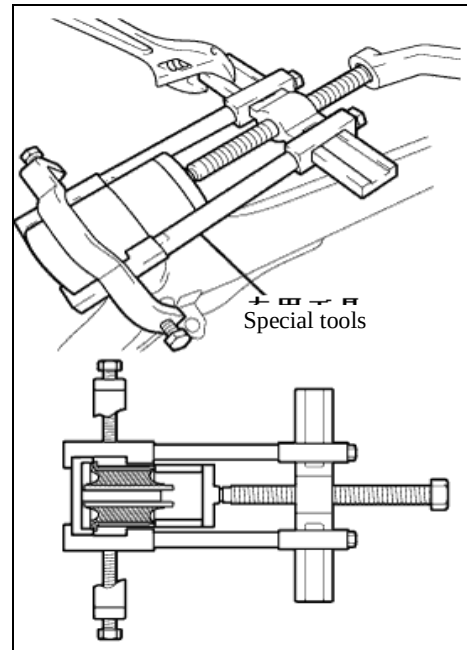
6.3.3.1 Align and fit the bracket bushing according to the mark of new bushing and the rear twist beam, as shown in the figure.



6.3.3.2 Fit the bushing to the rear twist beam with special tools.

Note:

- Don't scuff the rubber section of bushing.
- Don't make the bushing rib distort.



6.3.4 Install the right rear twist beam bracket bushing

Tip:

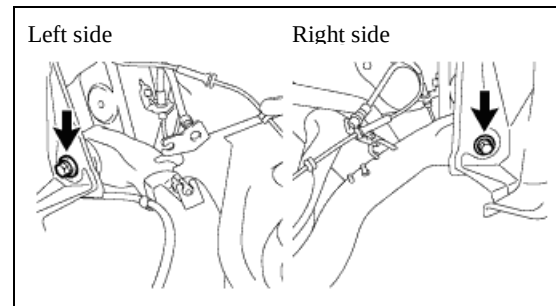
The fitting steps of right are the same as the left.

6.4 Installation

6.4.1 Pre-tighten the rear twist beam assembly temporarily

6.4.1.1 Support the rear twist beam with lifting jack.

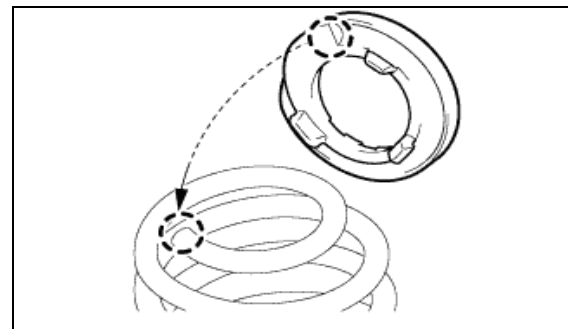
6.4.1.2 Fit the rear twist beam to the vehicle and pre-tighten 2 bolts.



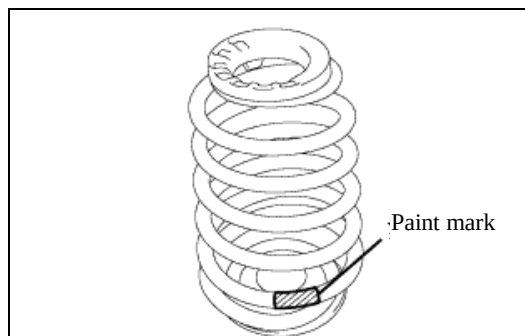
6.4.2 Install the left rear coil spring

6.4.2.1 Fit the coil spring lower cushion rubber to the rear twist beam.

6.4.2.2 Fit the coil spring upper cushion rubber and match its notch with the spring end.



6.4.2.3 Fit the coil spring to the rear twist beam.



Note:

Be sure to fit the paint marking section of the coil spring to the vehicle bottom and front.

6.4.3 Install the right rear coil spring

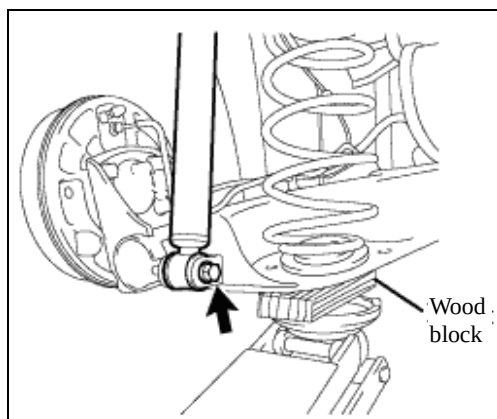
Tip:

The fitting steps of right are the same as the left.

6.4.4 Pre-tighten the left rear shock absorber assembly

6.4.4.1 Lift up the rear twist beam slowly, and fit the lower end of shock absorber to the twist beam.

6.4.4.2 Pre-tighten the bolt



6.4.5 Pre-tighten the right rear shock absorber assembly

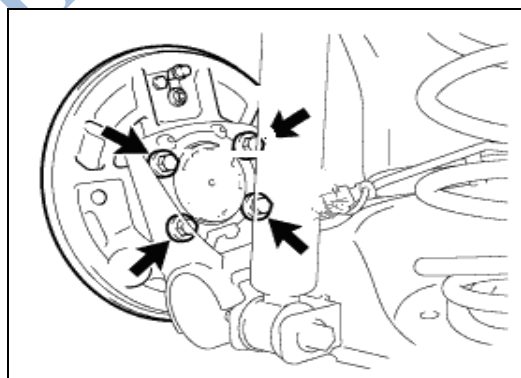
Tip:

The fitting steps of right are the same as the left.

6.4.6 Install the left rear wheel hub and bearing combination assembly

6.4.6.1 Fit rear wheel hub, bearing and rear supporting plate to the rear twist beam with 4 bolts.

Tightening torque: 60 N*m



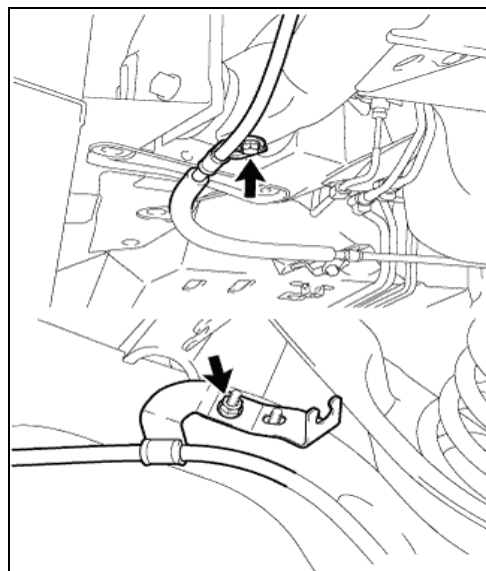
6.4.7 Install the right rear wheel hub and bearing combination assembly

Tip:

The fitting steps of right are the same as the left.

6.4.8 Install the left parking cable assembly

6.4.8.1 Fit the parking cable with bolt and nut.



Tightening torque: 6.0 N*m

6.4.9 Install the right parking cable assembly

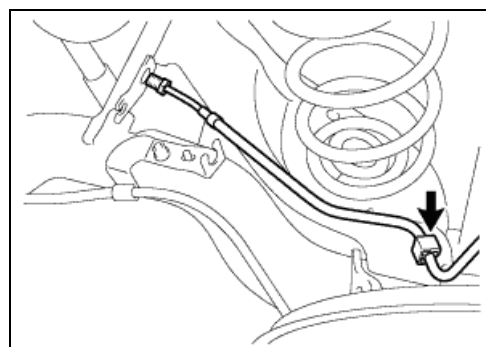
Tip:

The fitting steps of right are the same as the left.

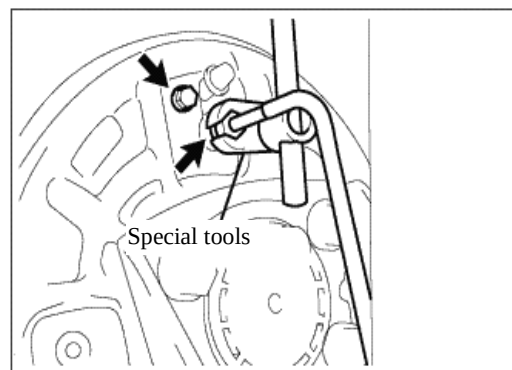
6.4.10 Install the left rear brake pipe

6.4.10.1 Fit a new brake line clamp to the rear twist beam.

6.4.10.2 Fit the brake line to the clamp.



6.4.10.3 Install the brake pipe with special tools.



Tightening torque: 5.2 N*m

6.4.11 Install the right rear brake pipe

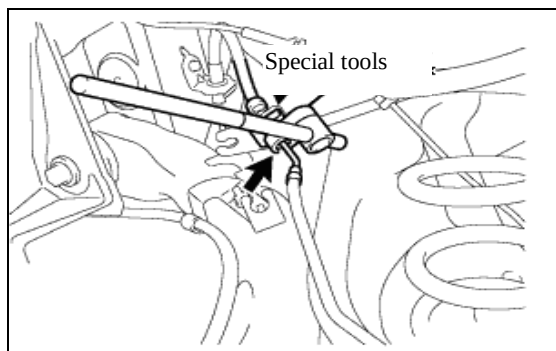
Tip:

The fitting steps of right are the same as the left.

6.4.12 Connect the left rear brake hose

6.4.12.1 Fit the hose to the rear twist beam with a new clamp.

6.4.12.2 Install the brake pipe with special tools.



Tightening torque: 15.2 N*m

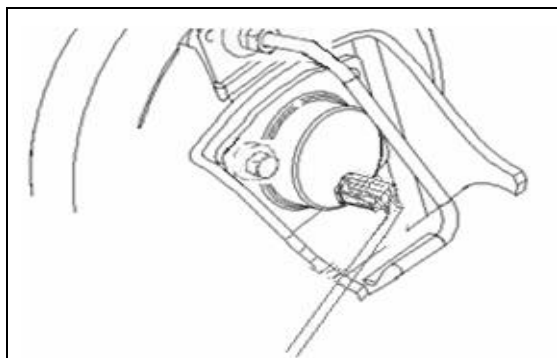
6.4.13 Connect the right rear brake hose

Tip:

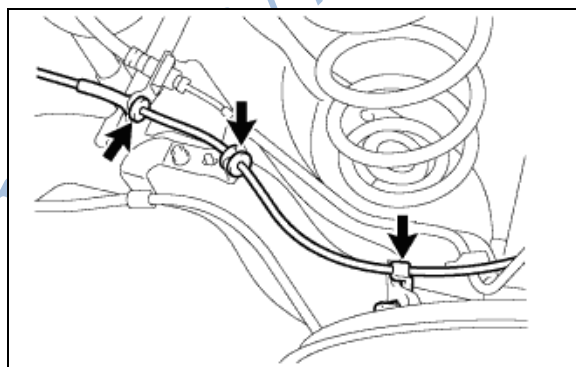
The fitting steps of right are the same as the left.

6.4.14 Install the rear wheel speed sensor

6.4.14.1 Fit the wheel speed sensor with bolt by spanner.



6.4.14.2 Fit 3 clamps.



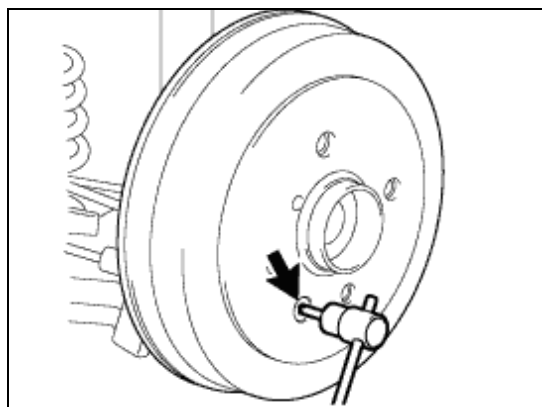
Tip:

The fitting steps of right are the same as the left.

6.4.15 Install the rear brake drum

6.4.15.1 Fit the rear brake drum with bolt by spanner.

Tightening torque: 5.0 N*m



6.4.16 Tighten the rear twist beam assembly completely

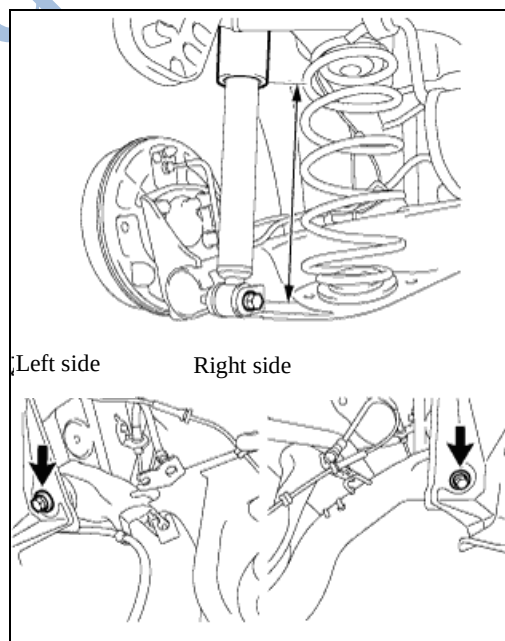
6.4.16.1 Fix the rear shock absorber.

Tip:

If can't tighten the bolt in this position, support the rear twist beam coil spring seat with lifting jack. The length of shock absorber: 230 mm.

6.4.16.2 Tighten 2 bolts completely.

Tightening torque: 123 N*m



6.4.17 Tighten the left and right rear shock absorber assembly completely

Tighten 2 bolts completely.

Tightening torque: 48 N*m

6.4.18 Tighten the right rear shock absorber assembly completely

Tip:

The fitting steps of right are the same as the left.

6.4.19 Fill up the brake fluid reservoir**Brake fluid specification:**

SAE J1703 or FMVSS NO.116 DOT3

6.4.20 Evacuate the brake master cylinder

Tip: If the brake master cylinder was disassembled before or the reservoir is empty, exhaust the gas from the master cylinder.

6.4.20.1 Remove the brake line from the brake master cylinder with special tools.

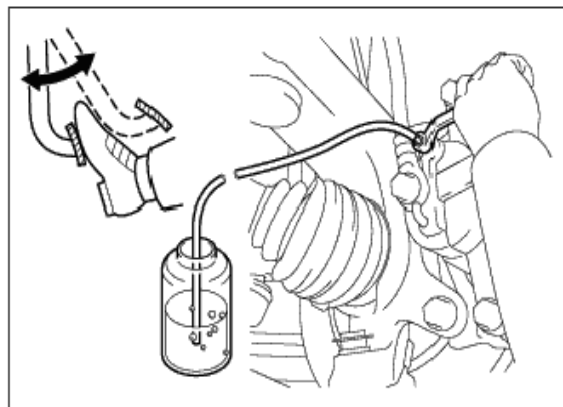
6.4.20.2 Press down the brake pedal slowly, and keep the position (Step A).

6.4.20.3 Block up the hole of master cylinder, and loosen the pedal (Step B).

6.4.20.4 Repeat steps A and B for 3-4 times.

6.4.20.5 Fit the brake line with special tools.

Tightening torque: 15.2 N*m

**6.4.21 Check the liquid level in reservoir**

6.4.21.1 Check the liquid level and add brake fluid if necessary.

Brake fluid specification:

SAE J1703 or FMVSS NO.116 DOT3

6.4.22 Install the rear wheels

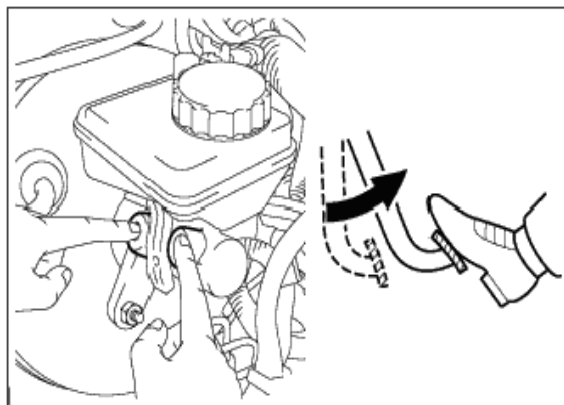
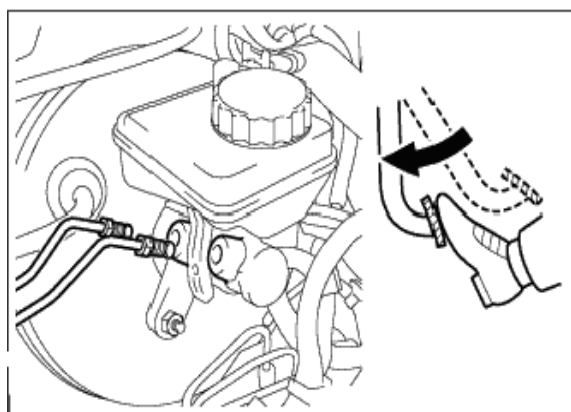
Tightening torque: 103 N*m

6.4.23 Connect the wire to the battery negative

Tightening torque: 5.4 N*m

6.4.24 Check if brake liquid leaks**6.4.25 Inspect the rear wheel parameters**

See Section 4 Part 3.



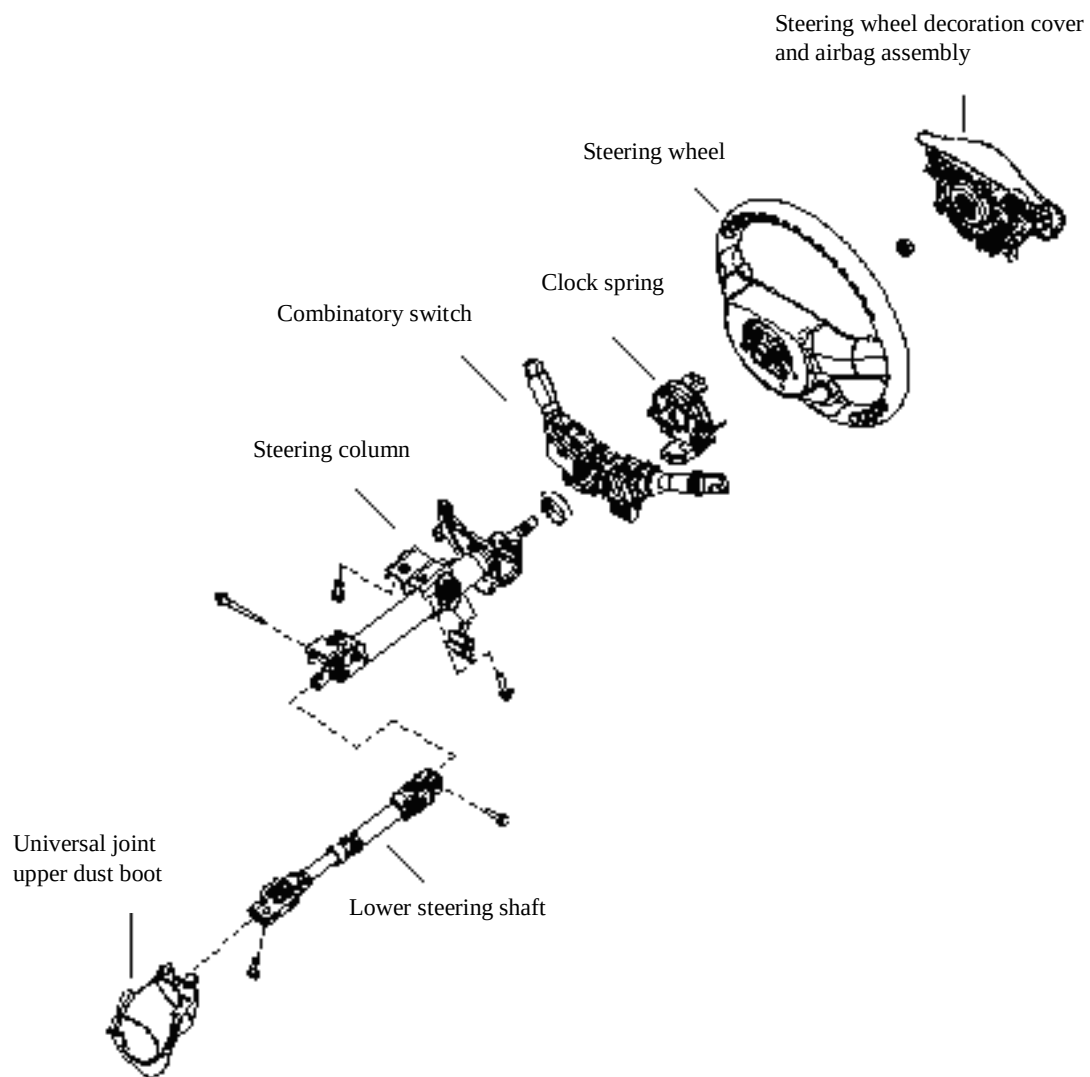
Chapter 6 Steering System

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Section 1 Steering Column and Steering Wheel

1.1 Components

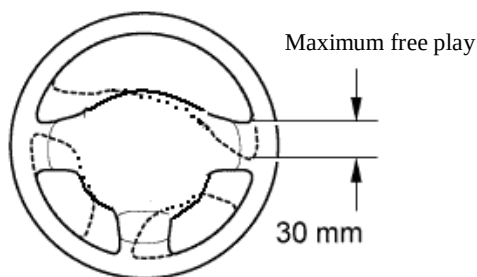
Manual steering column



The manual steering column structure drawing

1.2 Inspection

1.2.1 Check the free play of steering wheel



The free play of steering wheel

1.2.1.1 Park the car and keep the wheels in straight-line driving position.

1.2.1.2 Turn the steering wheel to the left and right, measure the free play of steering wheel.

The maximum free play: 30 mm.

If the measured free play is beyond the maximum free play, replace steering shaft or steering gear.

1.2.2 Check the steering moment

Note:

This maintenance operation may influence the SRS air bag. Be sure to read the Dos and Don'ts about SRS.

1.2.2.1 Park the car on even running road surface, keep the wheels in straight-line driving position.

1.2.2.2 Disconnect the battery negative cable.

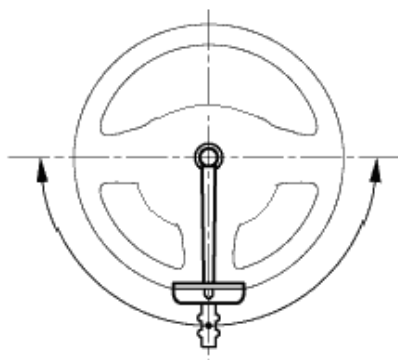
1.2.2.3 Remove the airbag assembly (standard mode) or the steering wheel decoration cover (base model) electric horn connector.

1.2.2.4 Connect the battery negative cable

1.2.2.5 Check the torque of the steering wheel mounting nut with torque spanner.

Torque: 50 N*m

1.2.2.6 Start the engine, and make the steering pump work (HPS system inspection).



Measure the rotating torque of the steering wheel

1.2.2.7 Rotate the steering wheel to the right for 90 degrees, check the steer moment when rotating. Check the opposite direction steer moment with the same method.

Torque: 5.5 N*m

1.2.2.8 Keep the front wheels in straight-line driving position.

1.2.2.9 Disconnect the battery negative cable.

1.2.2.10 Install the airbag assembly (standard mode) or the steering wheel decoration cover (base model) electric horn connector.

1.2.2.11 Connect the battery negative cable

1.2.2.12 Remove the DTCS.

1.2.2.13 Check the air bag warning switch.

1.3 Prevention

1.3.1 Note the matters below when using the steering column:

1.3.1.1 Avoid hitting the steering column assembly. If the steering column assembly falls or violent collision happens, replace the steering column by a new one.

1.3.1.2 When moving the steering column assembly, don't pull the harness.

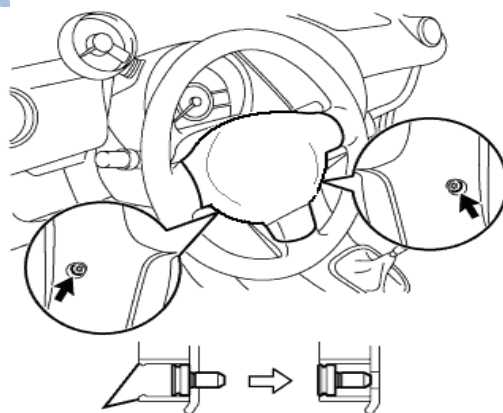
1.4 Removal

1.4.1 Keep the front wheels in straight-line driving position.

1.4.2 Disconnect the complete vehicle electric source from the battery negative.

Wait for 90 seconds after turn off the electric source, make sure the air bag is out of work.

1.4.3 Remove the airbag assembly (standard mode) or the steering wheel decoration cover (base model).



Bolt mounting support

Remove the air bag and decoration cover assembly

1.4.3.1 Keep the front wheel in straight-line driving position.

1.4.3.2 Unscrew the bolts of both sides with screwdriver.

1.4.3.3 As shown in the figure, pull the airbag assembly (standard mode) or the steering wheel decoration cover (base model) off the steering wheel, and support it with hand.

Note: When moving the airbag assembly (standard mode), don't pull the airbag harness protective devices.

1.4.3.4 Disconnect the horn harness connector.

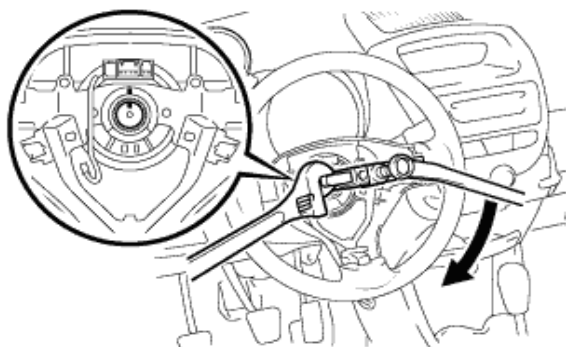
1.4.3.5 As shown in the figure, disconnect the airbag harness connector.

Disconnect the airbag harness connector

Note: When disconnecting the airbag harness connector, don't damage the airbag harness protective devices.

1.4.3.6 Remove the airbag assembly (standard mode) or the steering wheel decoration cover (base model).

1.4.4 Remove the steering wheel body assembly

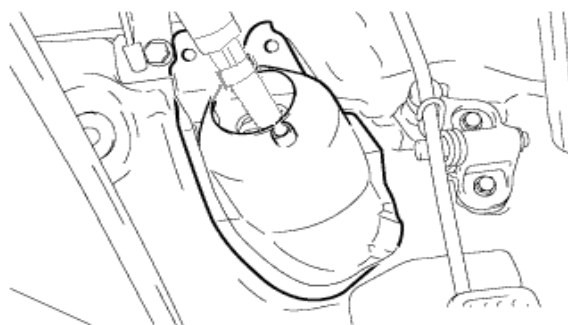


Remove the steering wheel body assembly

1.4.4.1 Unscrew the steering wheel mounting nut, and make marks on the steering wheel and the steering shaft.

1.4.4.2 Remove the steering wheel.

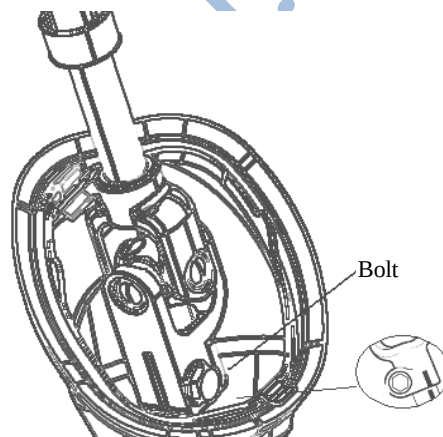
1.4.5 Remove the universal joint upper dust boot.



Remove the universal joint upper dust boot.

Lift the carpeting, take off the universal joint upper dust cover from 2 mounting bolts.

1.4.6 Separate the cardan universal joint of the lower steering shaft

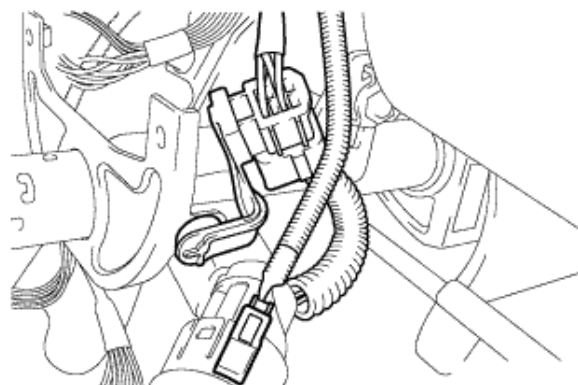


Remove the cardan universal joint

1.4.6.1 As shown in the figure, make marks on the lower steering shaft, the universal joint and the pinion shaft.

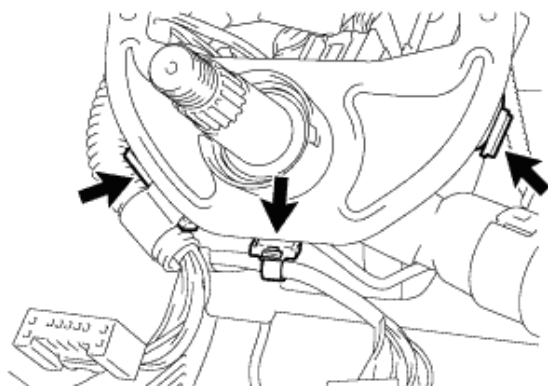
1.4.6.2 Unscrew the bolt, and separate the lower steering shaft assembly from the pinion shaft.

1.4.7 Remove the steering column assembly



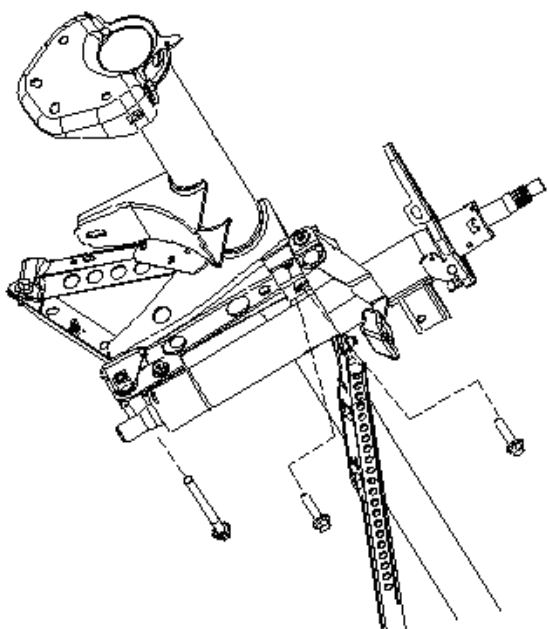
Disconnect the connectors.

1.4.7.1 Separate 2 connectors.



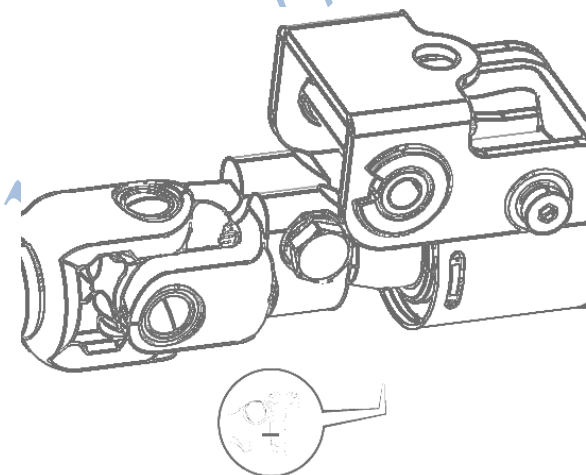
Remove the harness

1.4.7.2 Remove 3 bolts and the steering column.



Remove the manual steering column

1.4.8 Separate the lower steering shaft



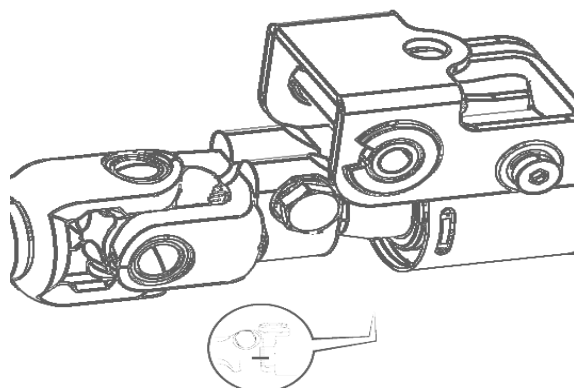
Separate the lower steering shaft

1.4.8.1 Make marks as shown in the figure.

1.4.8.2 Unscrew the bolt, and separate the lower steering shaft from the steering column assembly.

1.5 Installation

1.5.1 Install the lower steering shaft



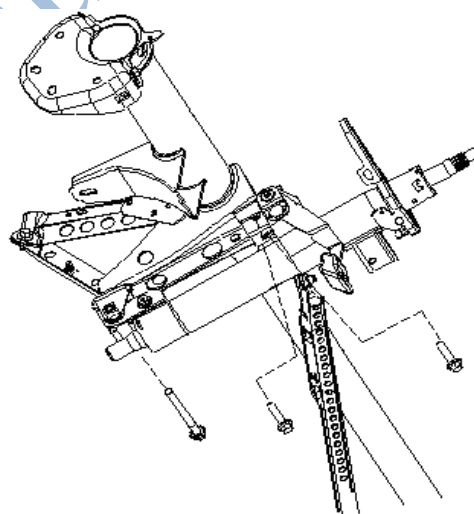
Install the lower steering shaft

1.5.1.1 Align the marks made on the lower steering column with the marks made on the upper steering column.

1.5.1.2 Fit the lower steering column and the upper steering column with bolt.

Torque: 28 N*m

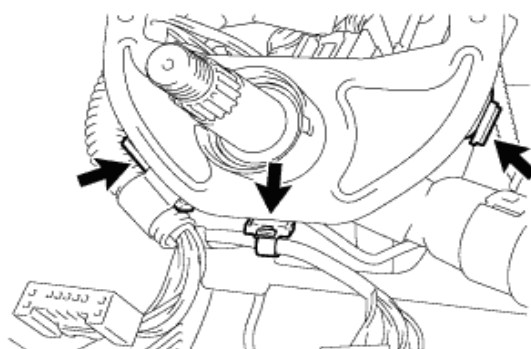
1.5.2 Install the steering column assembly



Install the manual steering column

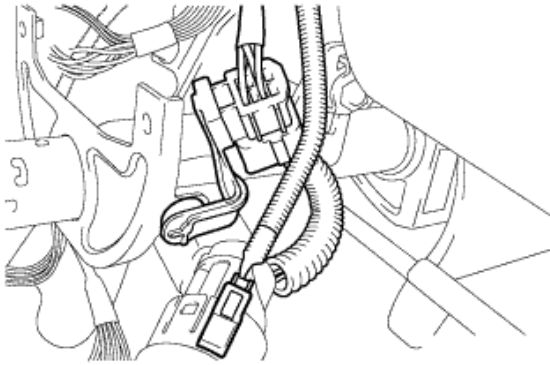
1.5.2.1 Fit the steering column assembly to the tubular beam with 3 bolts.

Torque: 25 N*m



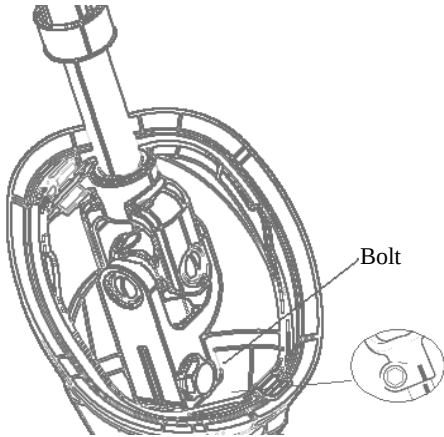
Fit the harness

1.5.2.2 Fix the harness with 3 clamps.



Connect the connectors.

1.5.2.3 Connect 2 connectors.



Install the cardan universal joint

1.5.2.4 Nest another end of the universal joint in the gear shaft, and align the marks.

1.5.2.5 Tighten the bolt.

Torque: 35 N*m

1.5.3 Install the universal joint dust boot



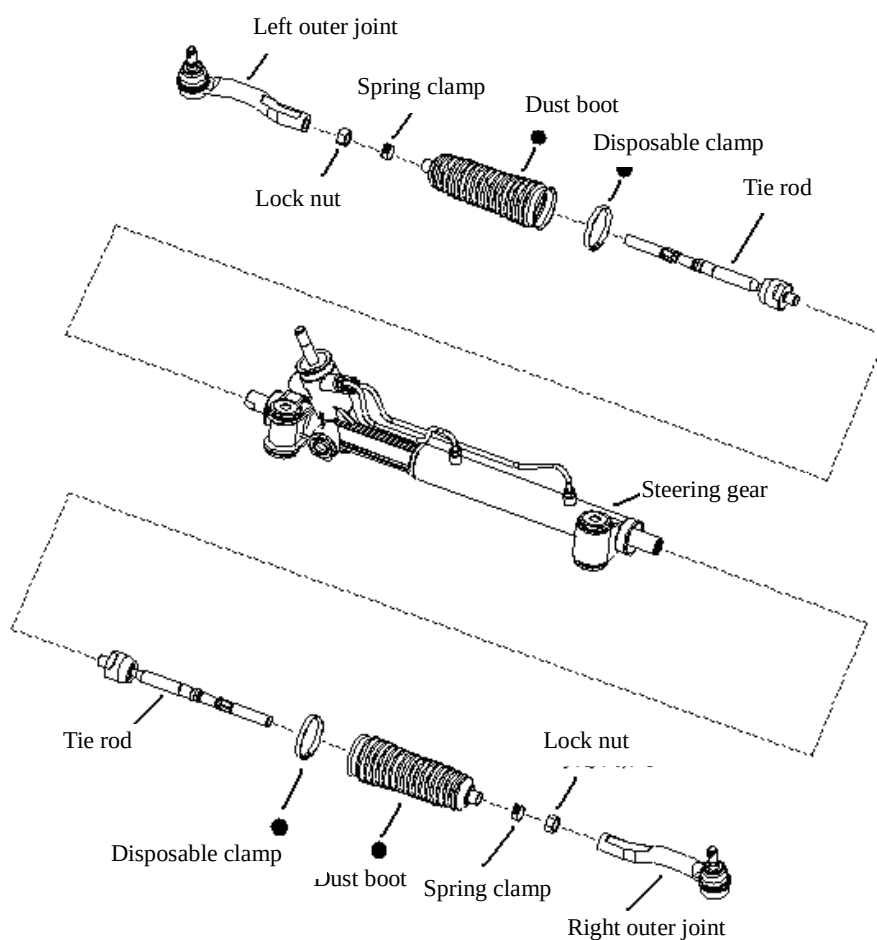
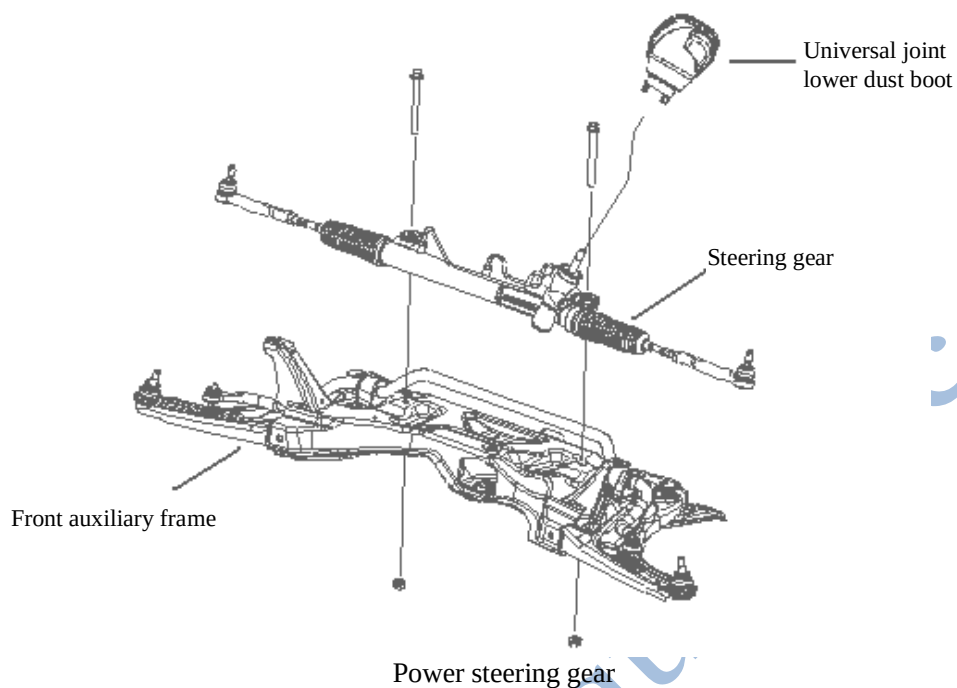
Install the universal joint upper dust boot

Fix the universal joint upper dust cover to 2 bolts of the body.

Section 2 Manual Steering Gear and Power Steering Gear

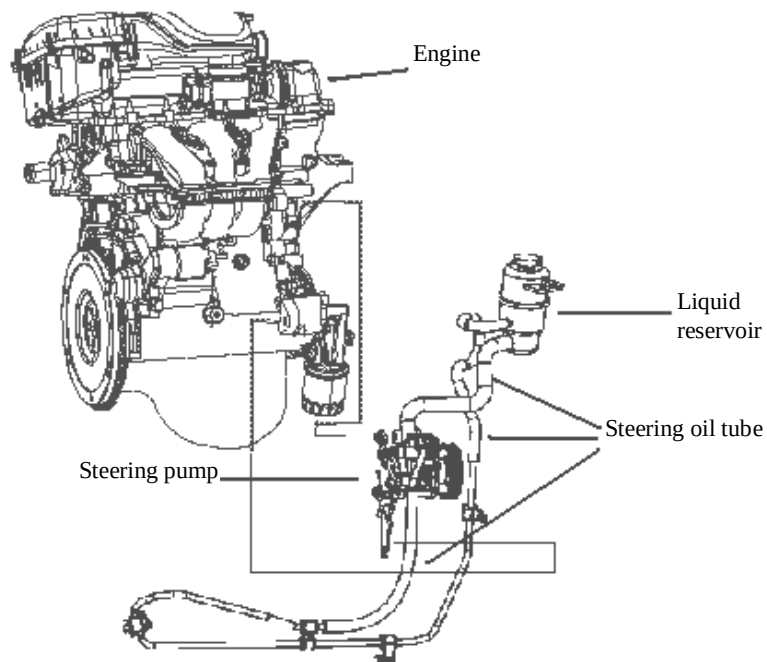
2.1 Components

2.1.1 Power steering gear



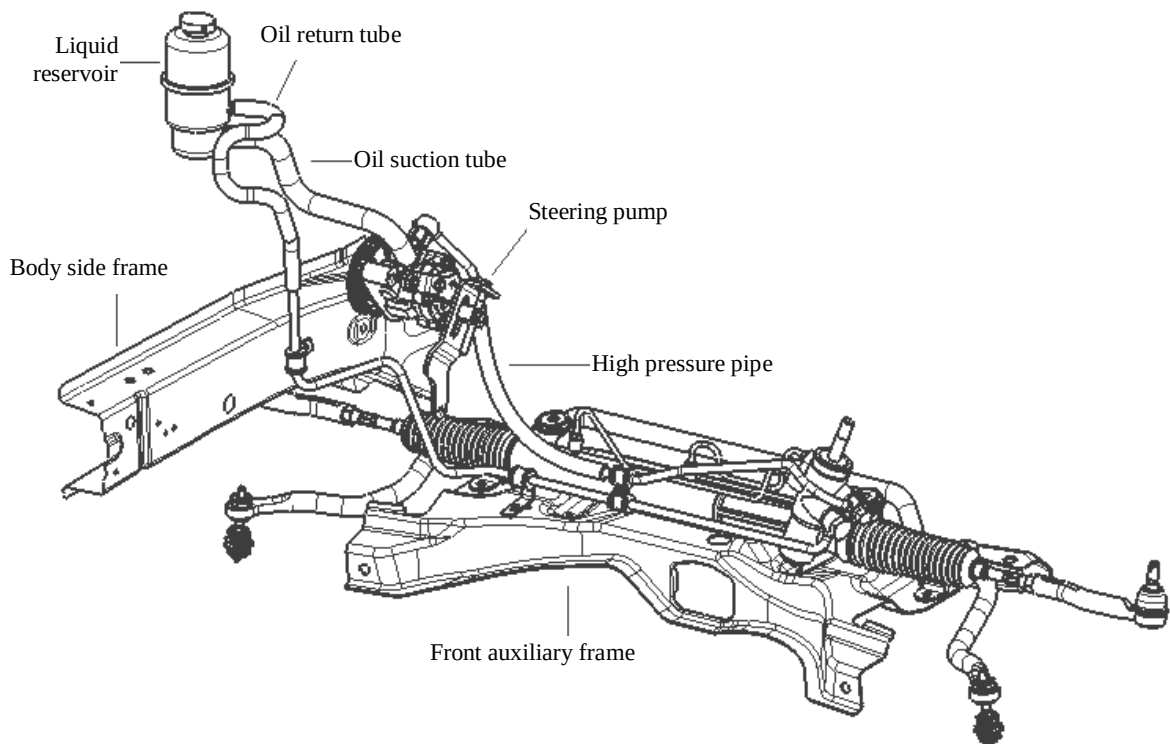
Power steering gear components

2.1.2 Steering pump and other hydraulic steering apparatus



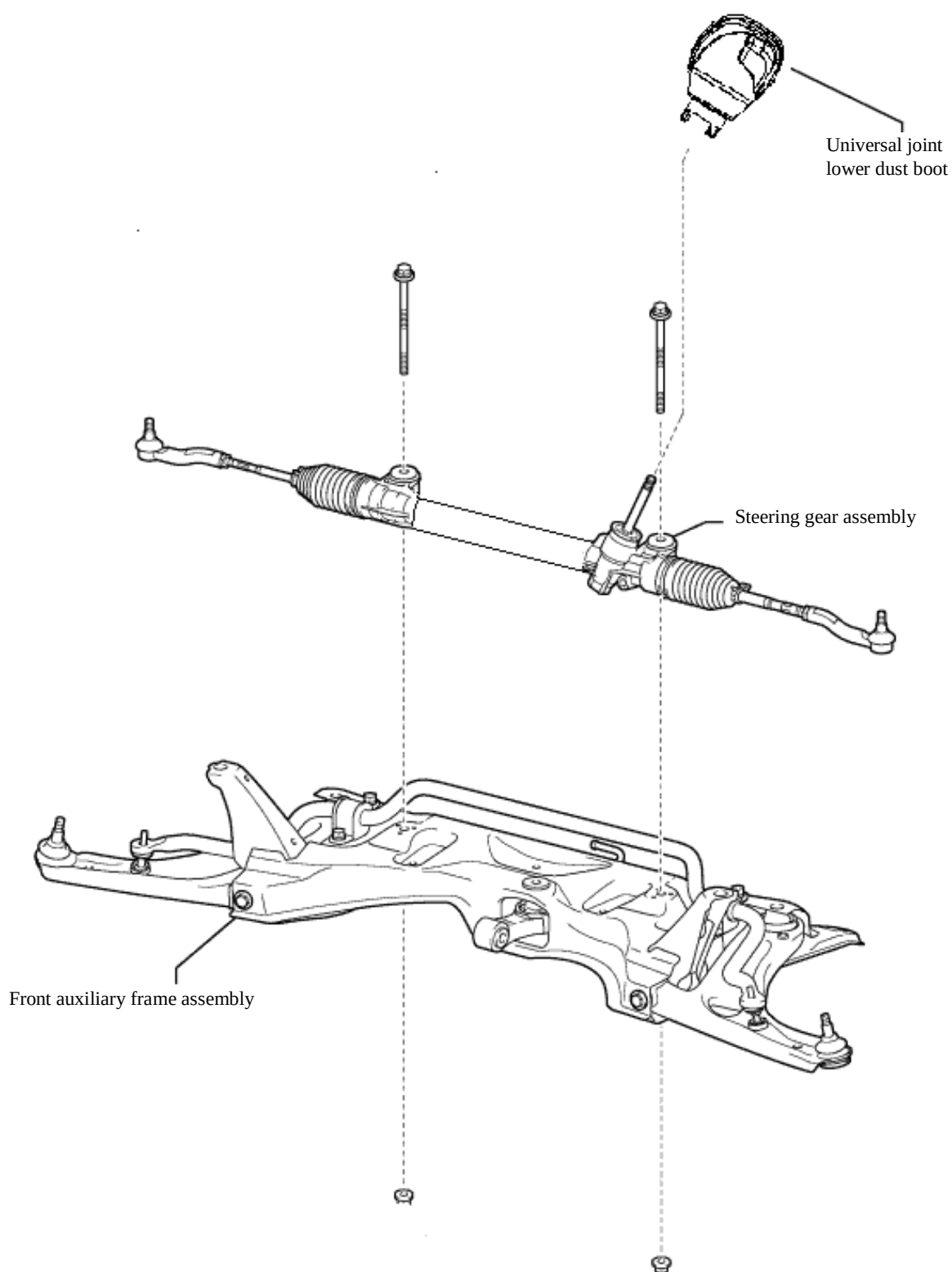
Steering pump and other hydraulic devices

2.1.3 Steering oil tube and fluid reservoir (hydraulically assisted steering system)

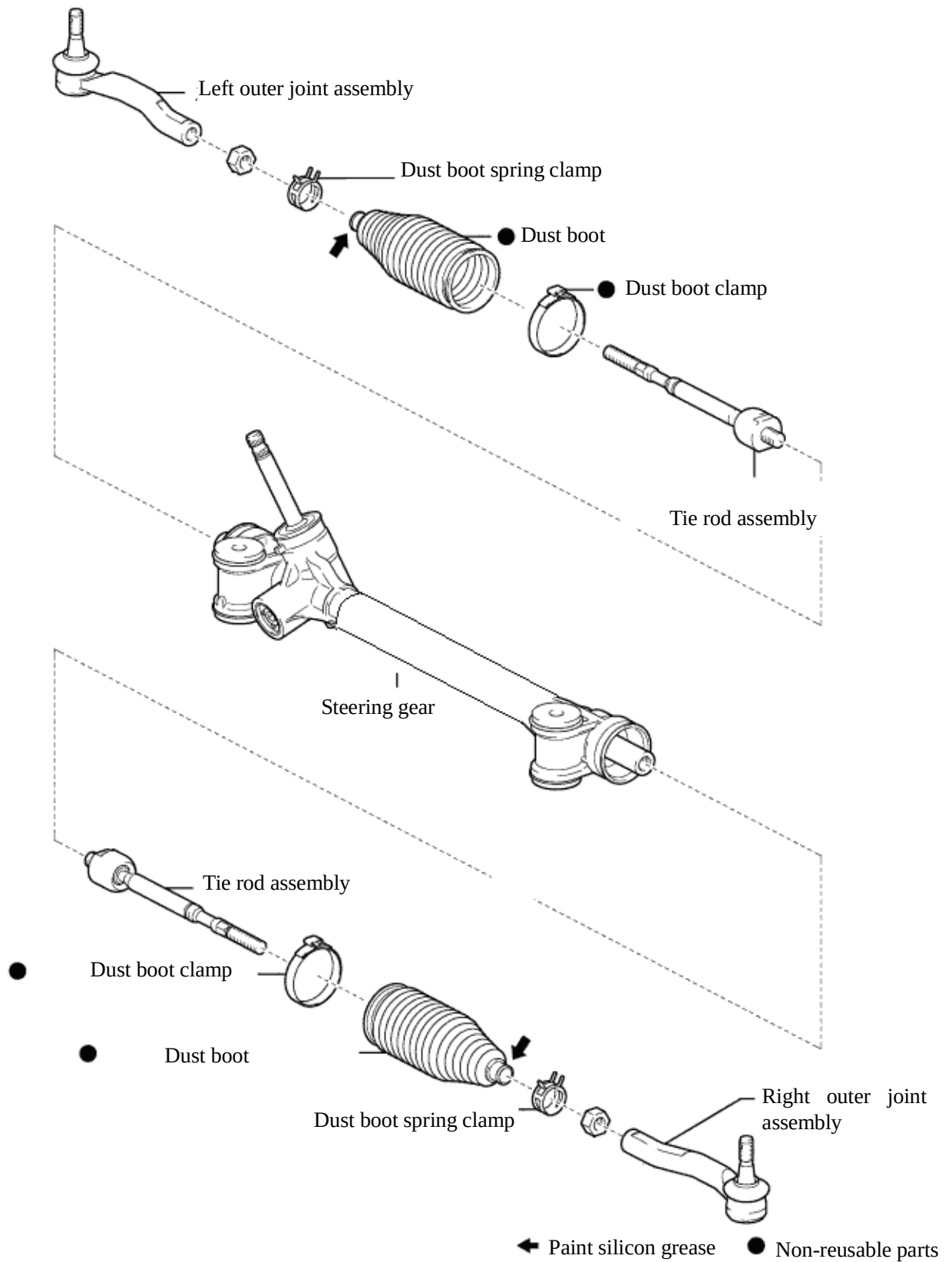


Steering oil tube and fluid reservoir

2.1.4 Manual steering gear



Manual steering gear



Manual steering gear components

2.2 Inspection

2.2.1 The inspection of the power steering gear oil level

2.2.1.1 Stop the car on level ground, start the engine, repeat pivot steering several times, raise the oil temperature to 50~60°C.

2.2.1.2 In engine running condition, rotate the steering wheel to left and right full rudder several times.

2.2.1.3 Not allow blisters, flocky precipitates and so on to exist in the liquid in the fluid reservoir.

2.2.1.4 In engine shutoff condition, check if the liquid level is the same as in engine running condition. Exhaust gas if the liquid level changes over 5mm.

2.2.2 Power-steering oil change

If the power steering apparatus break down and need to be removed and checked, change the power-steering fluid; if the fluid deteriorates, it also need to change the power-steering fluid in time. The steps are as follows:

2.2.2.1 Jack up the front wheels with lifting jack or lift up the complete vehicle with lifter.

2.2.2.2 Disconnect the oil return tube from the steering liquid reservoir. Connect the oil return tube with a plastic pipe, receive the oil with suitable receiver element. Don't splash the oil onto the body or the components, if it happened carelessly, clean it up immediately.

2.2.2.3 Idling the engine, meanwhile, rotate the steering wheel to full rudder, drain off the oil; start the engine off and on several times, be sure the oil has drained away.

2.2.2.4 Connect the oil return tube, fix it with clamp.

2.2.2.5 Fill the power steering gear liquid reservoir with designated oil to the scale mark between the maximum and the minimum.

Oil: ATF DEXRON III

2.2.2.6 In idling speed mode, rotate the steering wheel to left and right full rudder several times, to discharge the air in steering system.

2.2.2.7 Check the oil level again, fill up with stipulated steering oil if necessary, and raise the oil level to the liquid reservoir upper limit.

2.2.3 Power steering system exhaust

2.2.3.1 Jack up the front wheels with lifting jack

2.2.3.2 Start the engine off and on several times, meanwhile, rotate the steering wheel to left and right full rudder 5~8 times to arise the oil temperature, then keep the steering wheel in straight-line driving position, record the liquid level in the fluid reservoir.

2.2.3.3 Stop for 3~5 minutes after the engine cut-out, record the liquid level in fluid reservoir again and compare it with the liquid level in (2), if the difference value is less than 5mm and there is no gas bubble or emulsion, it shows that the air has been exhausted from the system. If not, still need to repeat the steps in 2.2.3.2 until the air is exhausted.

2.2.3.4 Check the liquid level, fill the fluid reservoir with oil to stipulated level if necessary.

2.2.3.5 Dos and Don'ts

2.2.3.5.1 In the exhaust procedure, the liquid must be above the liquid reservoir minimum level, if not, supply with liquid.

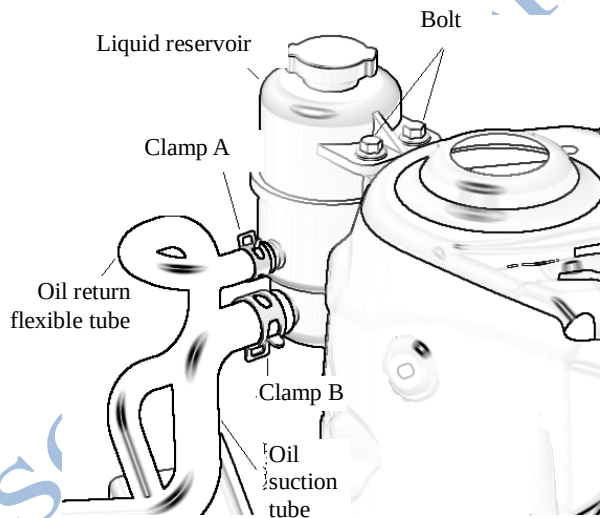
2.2.3.5.2 If exhaust in engine running procedure, the air will be micronized and dissolved in the liquid, so it has to start the engine as exhaust.

2.2.3.5.3 If the liquid level rises sharply after the engine shutoff, it's because the exhaust is incompletely.

2.2.3.5.4 If the system exhaust is incompletely, it will generates oscillating sounds from the pump and abnormal sounds from the flow control valve, and influence the service life of the oil pump and other subassemblies.

2.3 Removing Steering Oil tube and Liquid Reservoir

2.3.1 Remove the steering liquid reservoir

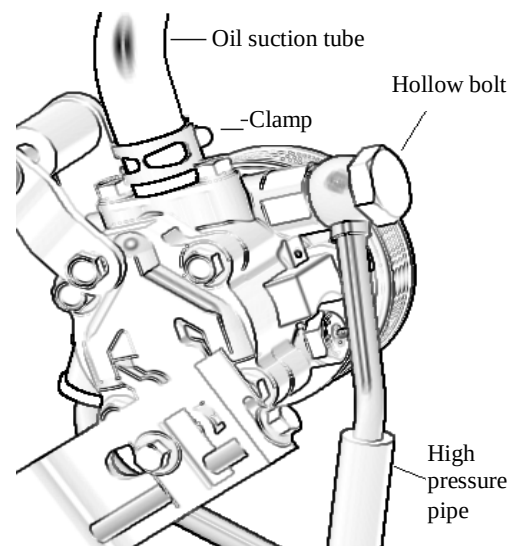


Remove the steering liquid reservoir

2.3.1.1 Release clamp A and clamp B connecting the oil return tube and the oil suction tube with the liquid reservoir, pull out the oil tube from the liquid reservoir inlet and outlet, drain away the steering oil from the liquid reservoir and the oil tube.

2.3.1.2 Unscrew the liquid reservoir mounting bolt and remove the liquid reservoir.

2.3.2 Remove the oil suction tube, separate the high pressure pipe from the steering pump.

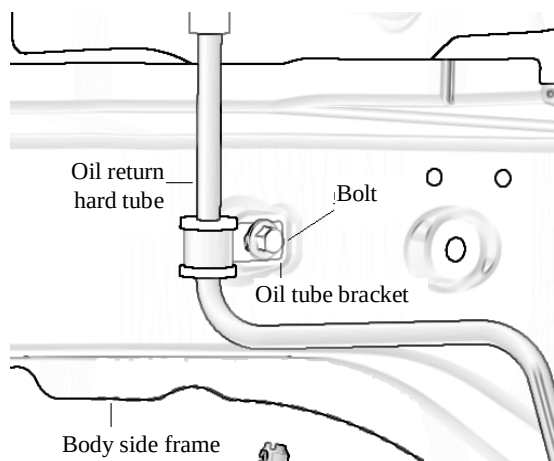


Remove the oil suction tube

2.3.2.1 Release the connecting clamp between the oil suction tube and the steering pump, pull out the oil suction tube.

2.3.2.2 Unscrew the connecting hollow bolt between the high pressure pipe assembly and the steering pump, separate the high pressure pipe.

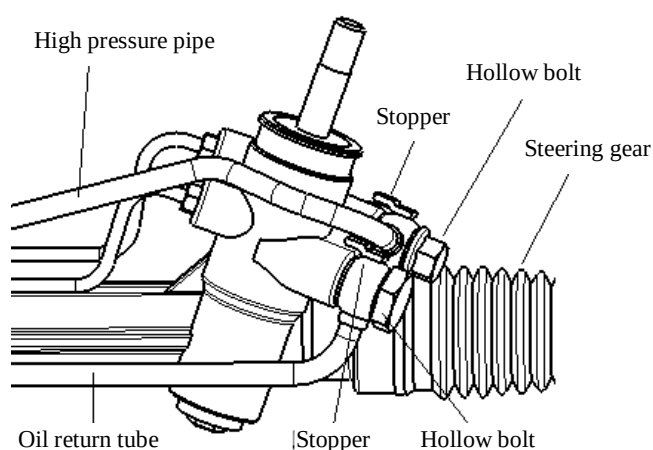
2.3.3 Remove the oil return hard tube fixing bracket on the body side rail



Remove the oil return hard tube bracket

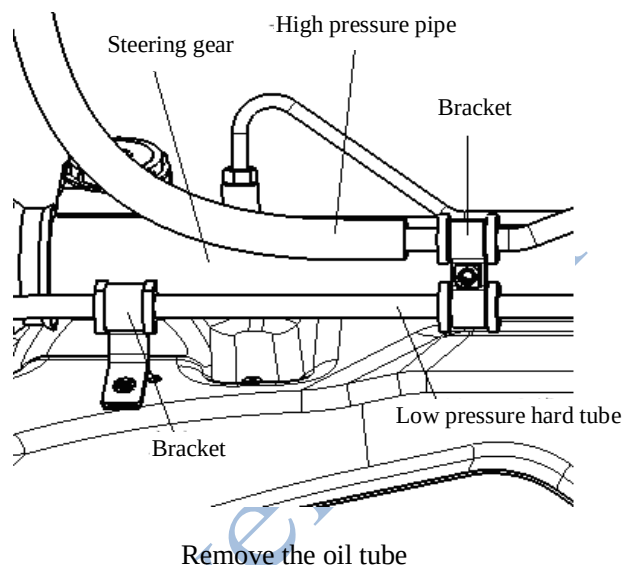
2.3.3.1 Unscrew the connecting bolt between the oil tube bracket and the body side rail, and separate the oil return hard tube from the body side rail.

2.3.3.2 After removing the front auxiliary frame (refer to the methods in “Removing auxiliary frame”), remove the steering high pressure pipe assembly and the oil return hard tube.



Separate the oil tube

2.3.3.2.1 Unscrew the hollow bolts A and B, separate the oil tube from the steering gear.



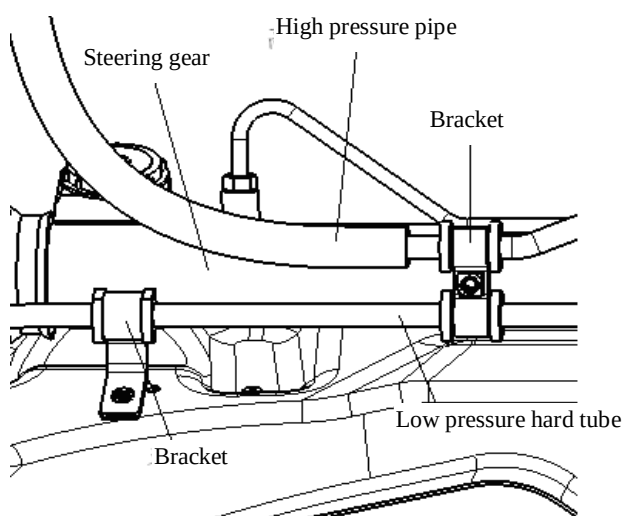
Remove the oil tube

2.3.3.2.2 Unscrew the oil tube bracket mounting bolts on the auxiliary frame, and remove the high pressure pipe assembly and the oil return hard tube.

Note: In the whole oil tube removing procedures, receive the steering oil with receiver element, wipe the other parts in the engine room with cotton cloth after draining away the oil.

2.4 Installing Steering Oil tube and Liquid Reservoir

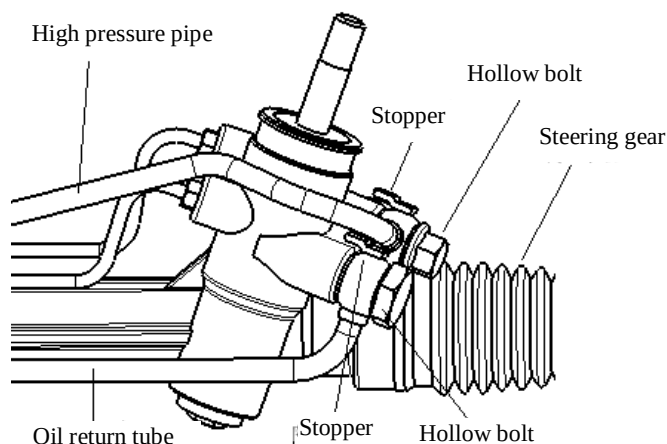
2.4.1 After fitting the steering gear to the auxiliary frame (refer to “Fitting auxiliary frame”), fit the steering high pressure pipe assembly and the oil return hard tube to the auxiliary frame, and connect it to the steering gear.



Fix the oil tube

2.4.1.1 Fix the high pressure pipe assembly and the oil return hard tube to the auxiliary frame with bolt first.

Torque: 25 N*m



Connect the oil tube.

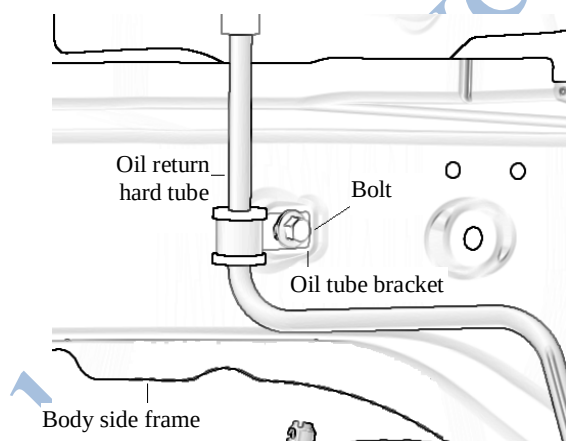
2.4.1.2 With the hollow bolt A and a copper sheet, connect the high pressure pipe assembly with the steering gear inlet.

2.4.1.3 With the hollow bolt B and a copper sheet, connect the high pressure pipe assembly with the steering gear inlet.

Torque: 70 N*m

Note: Use new copper sheets.

2.4.2 After fitting the auxiliary frame (refer to “Fitting auxiliary frame”), fix the oil return hard tube on the body side rail.

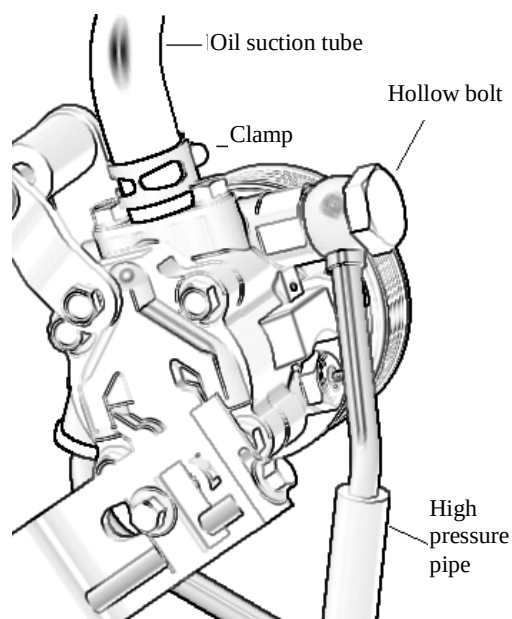


Fix the oil return hard tube

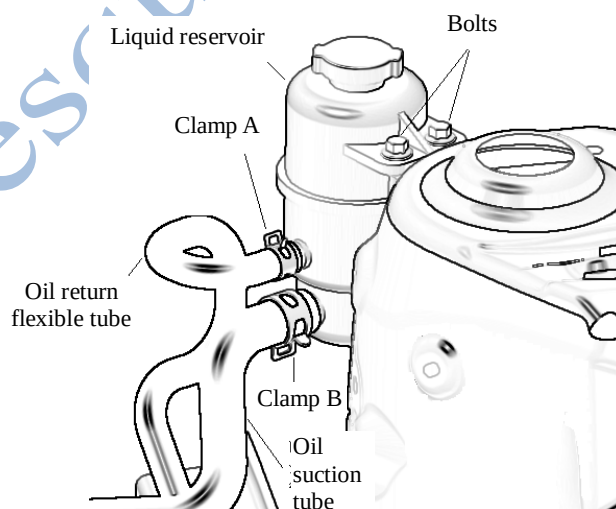
Fix the oil return hard tube on the body side rail with bolt.

Torque: 25 N*m

2.4.3 Connect the oil suction tube and the high pressure pipe assembly



2.4.4 Install the steering liquid reservoir



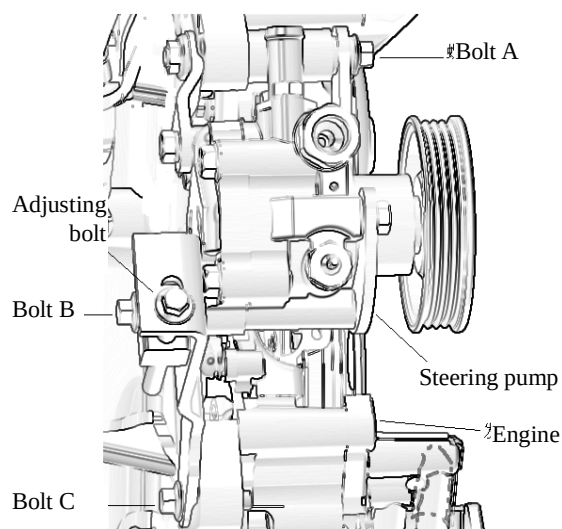
Remove the steering liquid reservoir

2.4.4.1 Fit the liquid reservoir to the body with bolt.
Torque: 25 N*m

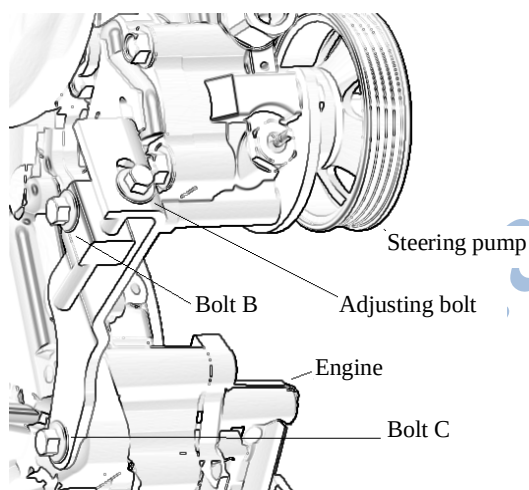
2.4.4.2 Connect the oil return flexible tube and the oil suction tube with the liquid reservoir inlet and outlet separately, grip the clamps A and B.

2.5 Removing Steering Pump

After separating the steering oil tube (refer to the methods in “Removing the steering oil tube”), remove the steering pump



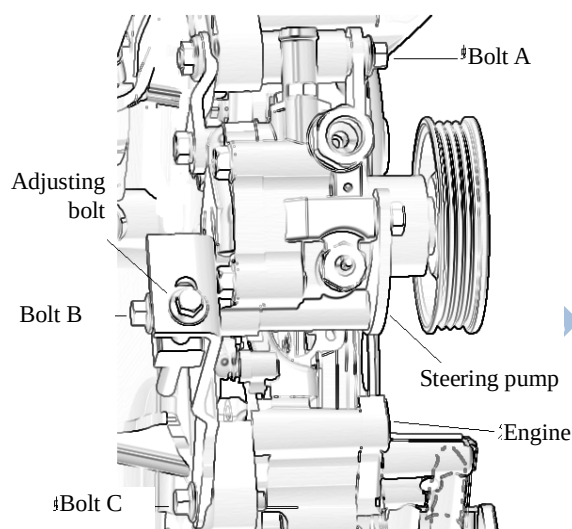
Removing the steering pump (1)



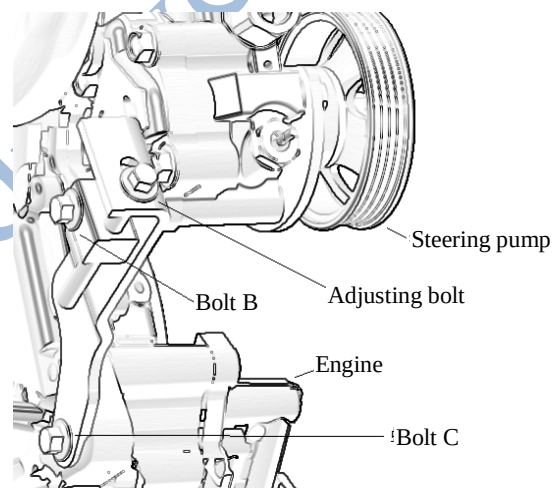
Removing the steering pump (2)

- 2.5.1 Loosen the bolts A and B, but don't remove them
- 2.5.2 Unscrew the adjuster bolt slowly until the leather belt becomes loose, and take off the leather belt.
- 2.5.3 Unscrew the bolt C.
- 2.5.4 Unscrew the bolt A, and remove the steering pump from the engine.

2.6 Installing Steering Pump



Installing the steering pump (1)



Installing the steering pump (2)

- 2.6.1 Stick the steering pump belt bracket at the engine mounting convex plate, align the hole locations, and screw on the bolt A but not tighten.
- 2.6.2 Align the adjusting bracket mounting hole with the screwed hole on the engine upper convex plate, screw on the bolt C but not tighten.
- 2.6.3 Screw on the bolt B through the adjusting block and the steering pump mounting hole, but do not tighten it.
- 2.6.4 After hitching up the leather belt, tighten the adjuster bolt slowly, until the adjuster bolt is in suitable degree of tightness.
- The leather belt tension: 450 ± 50 N
- 2.6.5 Tighten the bolts A, B and C.
- Torque: $35 \text{ N} \cdot \text{m}$
- 2.6.6 Connect the high pressure pipe and the oil suction tube with the steering pump (refer to the methods in “Installing the steering oil tube”).

2.7 Removing Steering Gear

2.7.1 Keep the front wheels in straight-line driving position

2.7.2 Disconnect the complete vehicle electric source from battery negative.

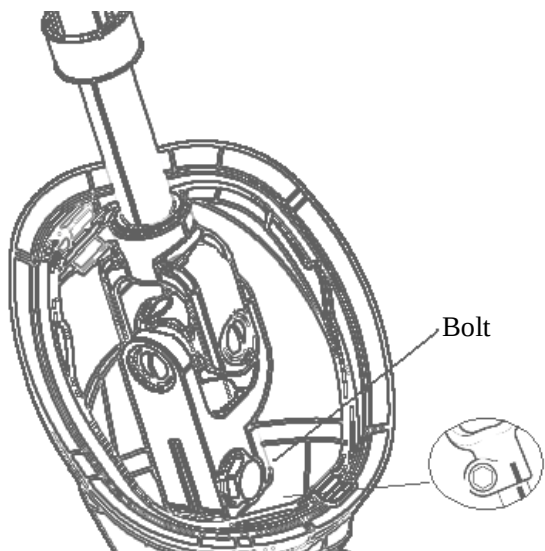
2.7.3 Remove the universal joint upper dust boot.



Remove the universal joint upper dust boot.

Lift the carpeting, take off the universal joint upper dust cover from 2 mounting bolts.

2.7.4 Separate the cardan universal joint of lower steering shaft

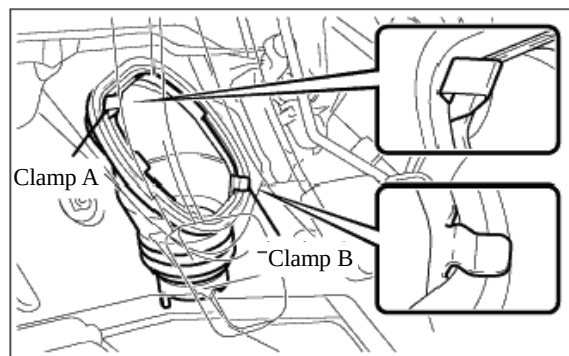


Remove the cardan universal joint

2.7.4.1 As shown in the figure, make marks on the universal joint and the pinion shaft.

2.7.4.2 Unscrew the bolt, and separate the lower steering shaft assembly from the pinion shaft.

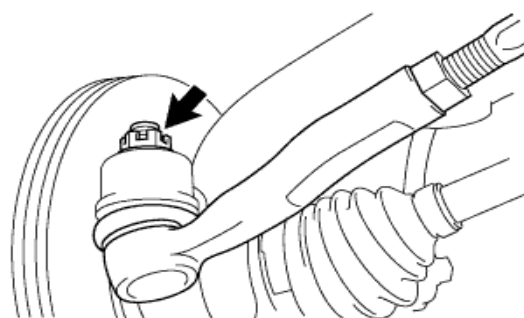
2.7.5 Remove the universal joint lower dust boot assembly



Remove the universal joint upper dust boot.

Press the clip A, separate the lower dust cover from the steering column mounting hole. Don't damage the clip B.

2.7.6 Separate the external joint ball stud assembly of steering knuckle tie rod



Disconnect the tie rod external joint

2.7.6.1 Remove the cotter pin and the slotted nut.

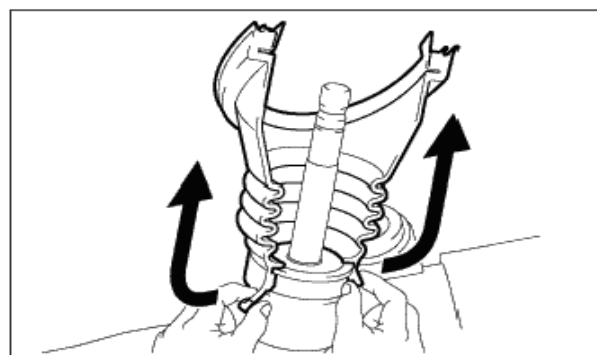
2.7.6.2 Separate the external joint ball stud of steering knuckle tie rod from the steering knuckle.

Note:

Don't damage the steering knuckle.

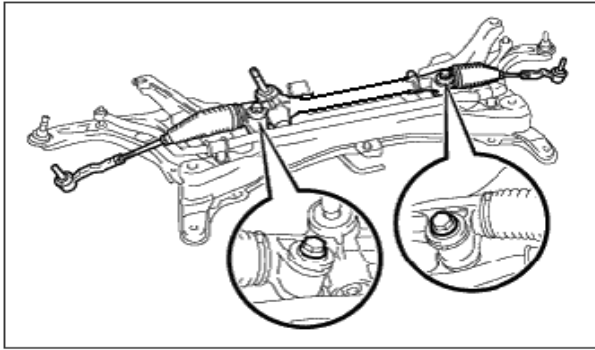
Don't damage the ball stud dust boot.

2.7.7 After removing the front auxiliary frame (refer to the methods in "Removing auxiliary frame"), and removing the steering oil tube (hydraulically assisted steering system, refer to the methods in "Removing the steering oil tube"), remove the steering gear assembly.



Separate the universal joint lower dust cover from the steering gear housing

2.7.7.1 Remove the universal joint lower dust cover assembly from the steering gear housing.

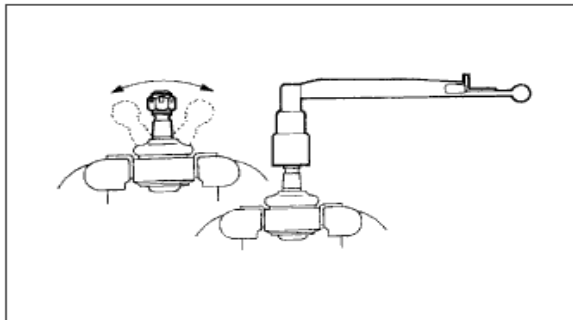


Remove the steering gear

2.7.7.2 Unscrew 2 mounting bolts and nuts, remove the steering gear assembly from the front auxiliary frame.

2.8 Inspection

2.8.1 Check the left external joint ball stud



Check the left external joint ball stud

2.8.1.1 Put the side external joint ball stud in a vice, each side clamps an aluminum sheet.

Note:

Don't clamp excessively.

2.8.1.2 Fit the nut sleeve to the full thread bolt.

2.8.1.3 Shake the ball pin back and forth over 5 times.

2.8.1.4 Fit a torque spanner to the nut, rotate the ball pin with an frequency of 3-5 seconds per revolution, record the torque value of the fifth revolution.

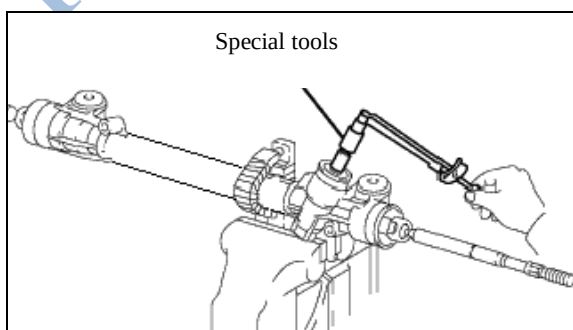
Torque: 2.0 N*m

If the rotating torque is beyond the designated range, replace the tie rod end assembly for reinstall.

2.8.2 Check the right external joint ball stud

Tip: Take the same removing steps as the left.

2.8.3 Check the preload



Check the preload

Check the preload with special tools.

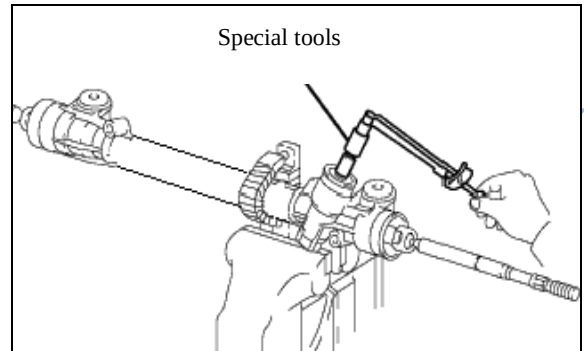
The standard preload (torsion): 0.6~1.2 N*m

Note:

Check the torque nearby the toothed rack middle position.

If the preload is beyond the designated range, replace the steering gear assembly for reinstall.

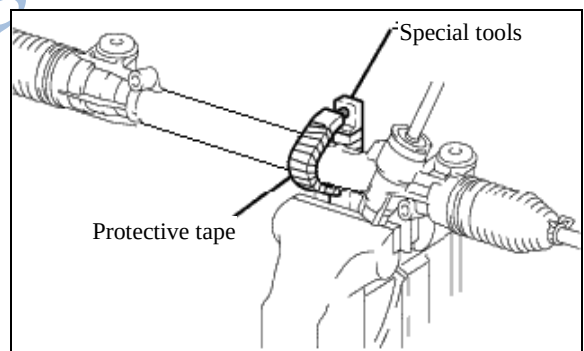
2.8.4 Check the steering gear assembly



Check the steering gear assembly

With special tools, rotate the small gear, check the steady expansions and contractions of the left and right dust boots. If the toothed rack dust cover doesn't expand and contract, replace the toothed rack dust cover clamp with a new one.

2.9 The Disassembly of Steering Gear

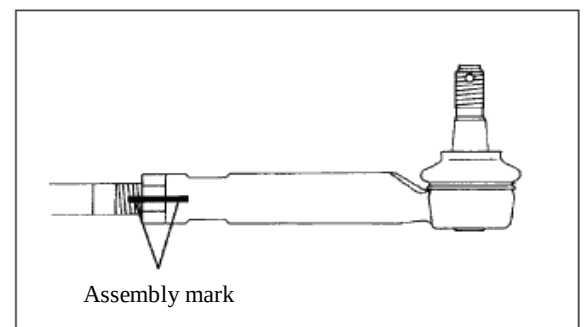


Fix the steering gear

2.9.1 Fix the steering gear assembly

Protect the steering gear in the vice with special tools wrapped in protective tape.

Tip: If necessary, remove and reinstall the special tools several times.



Remove the steering knuckle tie rod external joint

2.9.2 Remove the left steering knuckle tie rod external joint assembly

2.9.2.1 Make marks on the steering knuckle tie rod external joint and the steering knuckle tie rod.

2.9.2.2 Remove the steering knuckle tie rod external joint and lock nut.

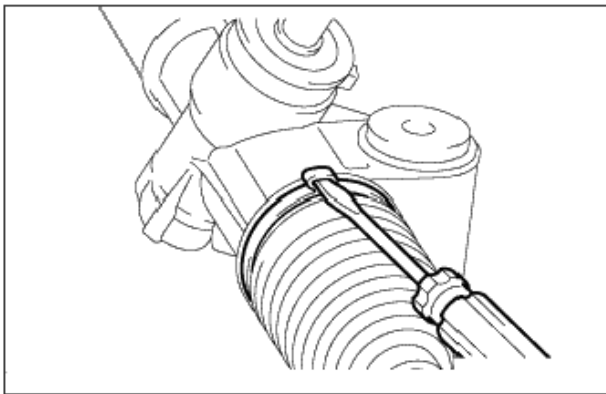
2.9.3 Remove the right steering knuckle tie rod external joint assembly

Tip: Take the same removing steps as the left.

2.9.4 Remove the dust boot

2.9.4.1 Remove the single-ear infinitude clamps on both sides of the tie rod with vice.

2.9.4.2 Remove the steel band type elastic clamps on both ends of the steering gear housing.

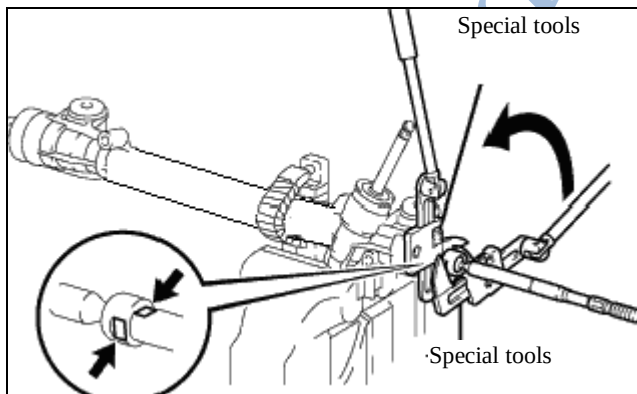


Remove the dust cover clamp

Note: Don't damage the left toothed rack dust boot.

2.9.4.3 Remove the dust boots on both ends of the toothed rack.

2.9.5 Steering tie rod



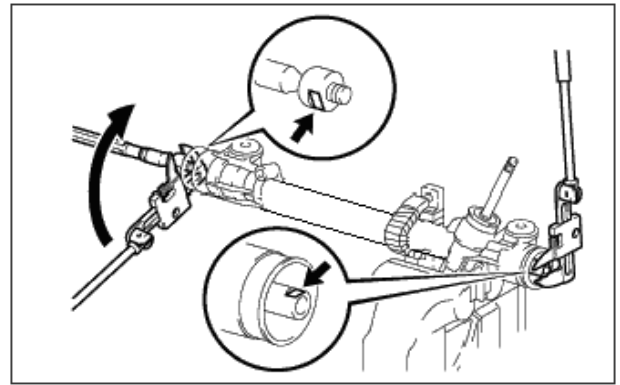
Remove the left tie rod

2.9.5.1 Remove the left tie rod assembly with special tools.

Note:

The direction should be correct when using special tools, as shown in the figure.

The steering rack should be maintained in good.



Remove the right tie rod

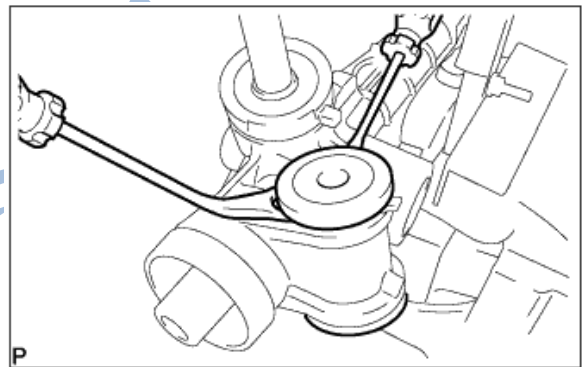
2.9.5.2 With special tools, grip the left of the steering rack, remove the right tie rod assembly.

Note:

The direction should be correct when using special tools, as shown in the figure.

The steering rack should be maintained in good.

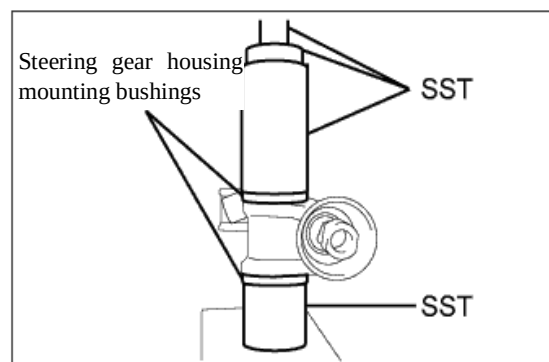
2.9.6 Remove the mounting bushings of the steering gear housing.



Remove the housing mounting bushing

With clamp removing tools and screwdriver, remove 4 housing mounting bushings.

2.10 The Assembly of Steering Gear

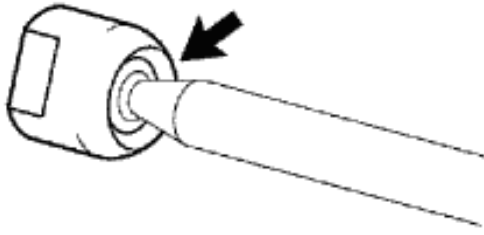


Install the housing mounting bushings

2.10.1 Install the mounting bushings of the steering gear housing

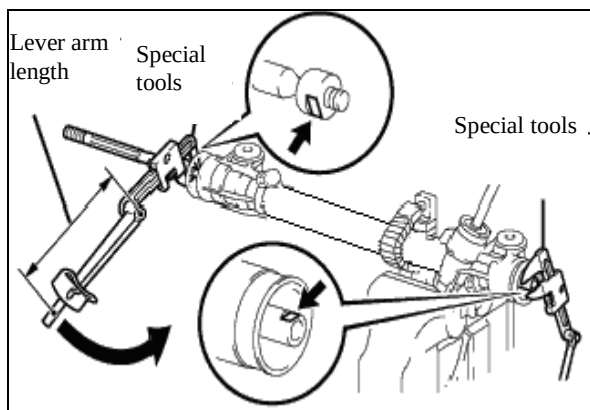
With special tools, install 4 housing mounting bushings.

2.10.2 Install the tie rod assembly



Paint lithium base grease

2.10.2.1 Paint the left and right tie rod ball stud with lithium base grease.



Install the right tie rod

2.10.2.2 With special tools, grip the left steering rack, install the right tie rod.

Torque:

Not with special tools, 60 N*m
With special tools, 43 N*m

Note:

With torque spanner, the length of the lever arm of force is 345mm
The direction should be correct when using special tools, as shown in the figure.
The steering rack should be maintained in safety.

2.10.2.3 Install the left tie rod assembly with special tools.

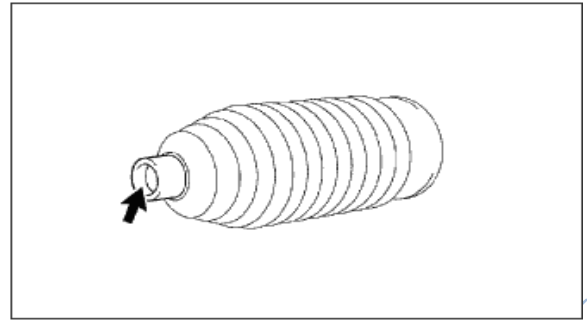
Torque:

Not with special tools, 60 N*m
With special tools, 43 N*m

Note:

With torque spanner, the length of the lever arm of force is 345mm
The direction should be correct when using special tools, as shown in the figure.
The steering rack should be maintained in safety.

2.10.3 Install the dust boots on both sides of the toothed rack



Paint silicon grease

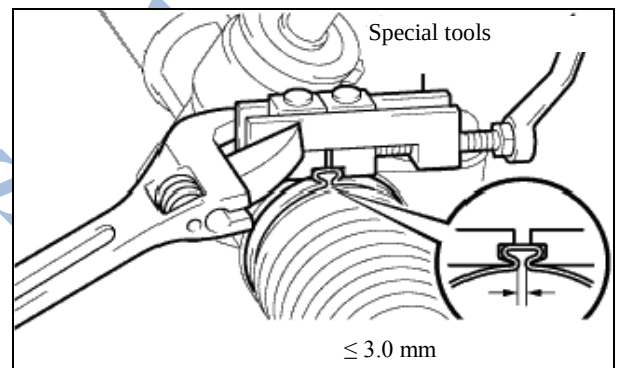
2.10.3.1 Paint the inside of toothed rack dust cover small opening with silicon grease.

2.10.3.2 Fit the toothed rack dust cover into the groove of the steering gear housing.

Note:

Don't rotate the toothed rack dust boot.

2.10.3.3 Fit a new steel band type elastic clamp to the dust cover of each side.



Install the toothed rack dust cover clamp

Note:

Don't damage the dust boots.

With special tools, grip the dust cover clamps to make the clearance in the designated range.

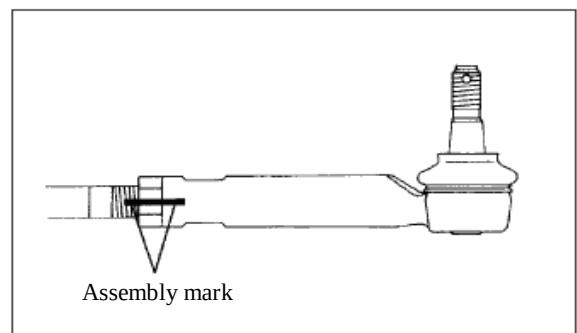
Clearance: $\leq 3.0\text{mm}$

Note:

Don't damage the dust boots.

2.10.3.4 Fit 2 single-ear infinitude clamps on the left and right toothed rack dust cover with vice.

2.10.4 Install the left steering knuckle tie rod external joint assembly



Install the tie rod external joint

Rotate the lock nut and steering knuckle tie rod external joint assembly, superpose the marked lines and pre-tighten the lock nut.

Tip:

Only after adjusting the marked lines to coincidence, tighten the lock nut completely.

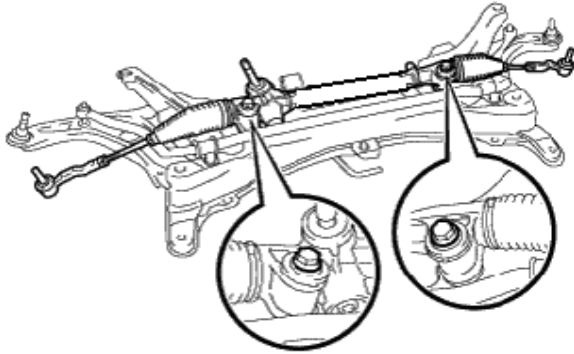
2.10.5 Install the right tie rod end assembly

Tip:

Take the same removing steps as the left.

2.11 Installation

2.11.1 Install the steering gear assembly



Install the steering gear

2.11.1.1 Fit the steering gear to the front auxiliary frame with 2 bolts and 2 nuts.

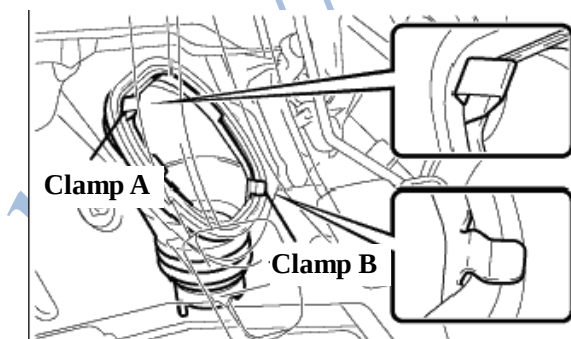
Torque: 89 N*m

2.11.1.2 Fit the universal joint upper dust cover to the steering gear.

Note:

Fit the universal joint upper dust cover in safety.

2.11.2 After fitting the steering oil tube to the auxiliary frame (refer to the methods in “Installing the steering oil tube”), and fitting the auxiliary frame to body (refer to the methods in “Installing the auxiliary frame”), fix the universal joint upper dust boot.



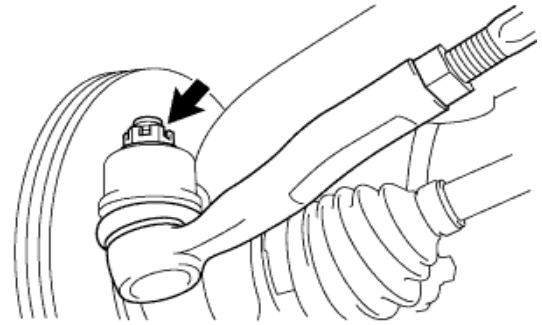
Fix the universal joint upper dust boot.

Stick the clip B to the body, and fit the dust cover to the body with the clip A.

Note:

The metal support of the dust cover should be well fitted with the front guard plate.

2.11.3 Connect the tie rod external joint

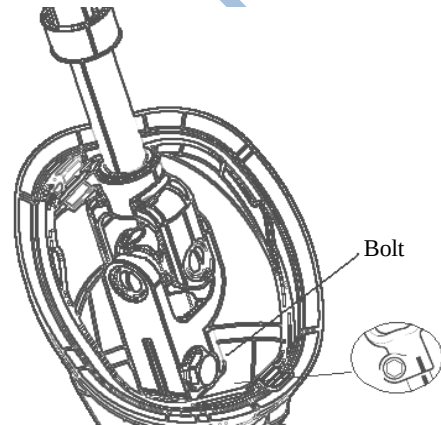


Connect the tie rod external joint

Insert the external joint into the steering knuckle, screw the slotted nut and the cotter pin.

Torque: 33 N*m

2.11.4 Connect the pinion shaft and the lower steering shaft



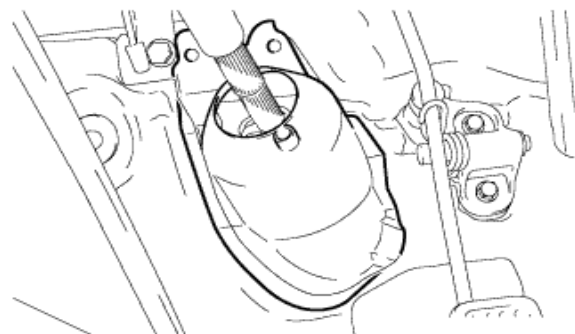
Connect the pinion shaft and the lower steering shaft

2.11.4.1 Nest another end of the universal joint in the gear shaft, and align the marks.

2.11.4.2 Tighten the bolt.

Torque: 35 N*m

2.11.5 Install the universal joint dust boot



Install the universal joint upper dust boot

Fix the universal joint upper dust cover to 2 bolts of the body.

2.11.6 Add steering oil

After assembling and connecting the hydrostatic steering system, fill the liquid reservoir with ATF DEXRON III steering oil, rotate the steering wheel to left and right full rudder, to discharge the air in the system.

Chapter 7 Propeller Shaft

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Section 1 Propeller Shaft System

Frequently Asked Questions are as follows:

Pull to one side	Fault	Possible cause	See page
		Tire(improper inflation or uneven wear)	See A1
		Front wheel alignment	See A2
		Rear wheel alignment	See A3
		Wheel-hub bearing	See A4
		Front shock absorber	See A5
		Rear shock absorber	See A6
Shimmy of front wheels		Rear shock absorber spring	See A7
		Wheels (unbalance)	See A1
		Wheel-hub bearing	See A4
		Front shock absorber	See A5
Noise (front)		Front shock absorber	See A4
		Front suspension lower swing arm	See A6
		Wheel-hub bearing	See A7

A1

1 Inspect tires

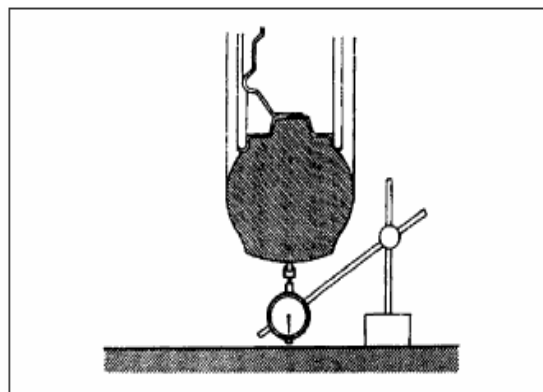
1.1 Inspect the tire wear and the tire inflation pressure.

Cold tire inflation pressure:

Tire size	Condition	Front wheels Kpa	Rear wheel Kpa
165/60 R14	Running speed is less than 155km/h	220	220

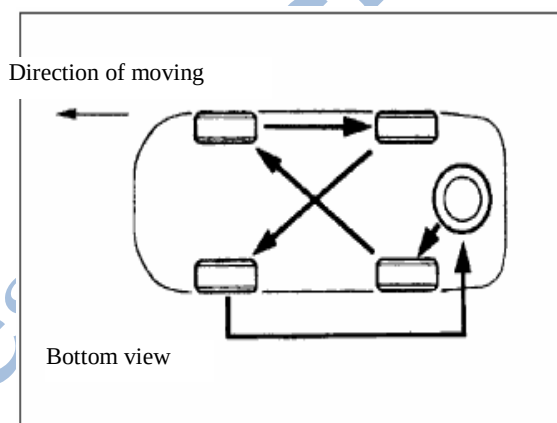
1.2 With dial indicator, check the amount of radial tire run-out.

The amount of radial tire run-out : ≤ 1.4 mm



2 Change of Tires Crosswise

As shown in the figure, change the tires crosswise.

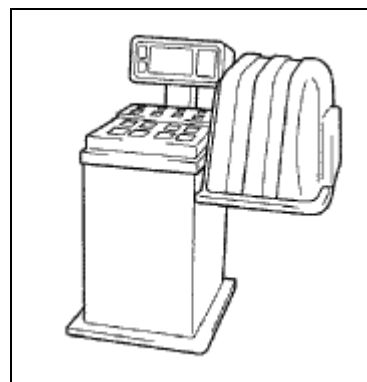


3 Test and Measure Tire Dynamic Balance

3.1 Check and adjust the removed tire dynamic balance.

3.2 If necessary, check and adjust the dynamic balance of tire in fitted condition.

The amount of unbalance after adjusting: ≤ 8 g



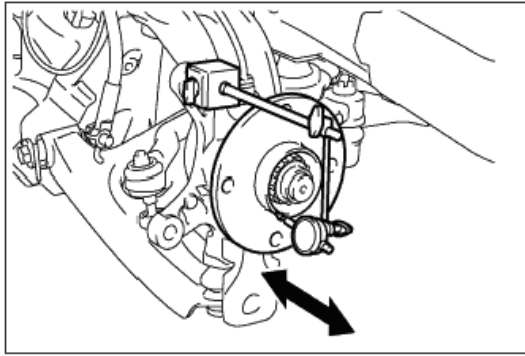
4 Inspect Front Propeller Shaft Hub Bearing

4.1 Remove the front wheels

4.2 Remove the brake caliper assembly of the front disk brake.

4.3 Remove the front disk brake.

4.4 Check lateral run-out of the propeller shaft wheel hub



Check the amount of lateral run-out nearby the hub bearing center with dial indicator.

Upper limit: 0.05mm

Note: If the amount of lateral run-out is over the upper limit, replace the wheel hub.

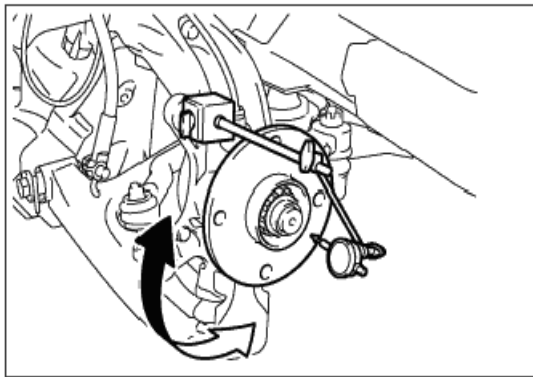
4.5 Check the amount of radial run-out of the wheel hub bearing.

Check the amount of wheel hub surface deformation with dial indicator.

Upper limit: 0.05mm

Note:

If the amount of radial run-out is over the upper limit, replace the wheel hub.



4.6 Install the front disk brake.

4.7 Install the brake caliper assembly of the front disk brake.

4.8 Install the front wheels.

5 Inspect the Rear Hub Bearing

5.1 Remove the rear wheels.

5.2 Remove the rear brake drum.

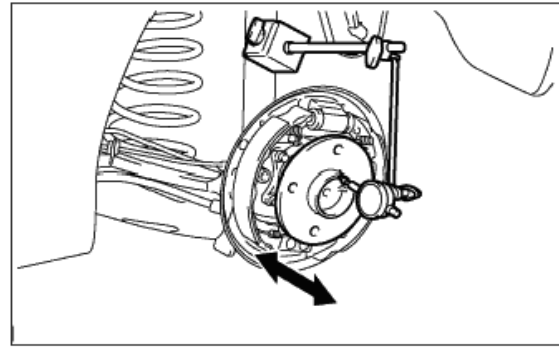
5.3 Check the amount of lateral run-out of the rear wheel hub and bearing.

Check the amount of lateral run-out nearby the rear hub bearing center with dial indicator.

Upper limit: 0.05 mm

Note:

Note: If the amount of lateral run-out is over the upper limit, replace the rear wheel hub.



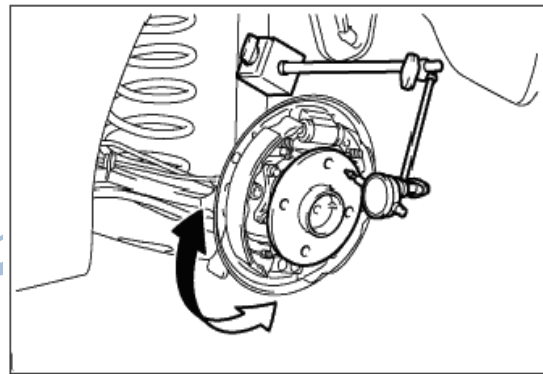
5.4 Check the amount of radial run-out of the rear wheel hub bearing.

Check the amount of rear wheel hub surface deformation with dial indicator.

Upper limit: 0.07 mm

Note:

If the amount of radial run-out is over the upper limit, replace the rear wheel hub.



Install the rear brake drum

5.6 Install the rear wheels.

A2

1 Inspect tires

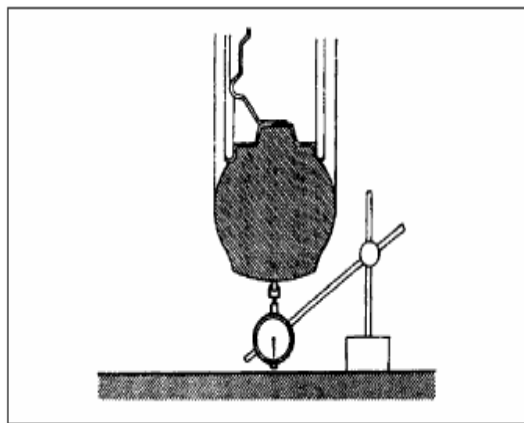
1.1 Inspect the tire wear and the tire inflation pressure.

Cold tire inflation pressure:

Tire size	Condition	Front wheels Kpa	Rear wheel Kpa
165/60 R14	Running speed is less than 155km/h	220	220

1.2 With dial indicator, check the amount of radial tire run-out.

The amount of radial tire run-out: ≤ 1.4 mm



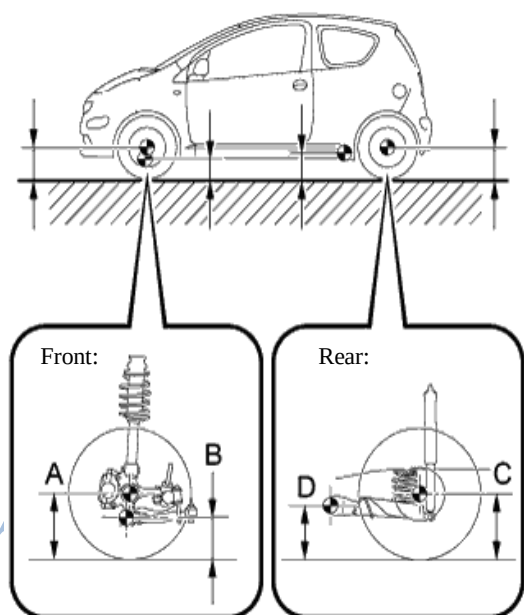
2 Measure the Vehicle Height of Each Point

Vehicle height:

A-B	C-D
88mm	22mm

Measurement points:

- A: The front wheel center ground clearance
- B: The lower swing arm front bolt center ground clearance
- C: The rear wheel center ground clearance
- D: The rear twist beam mounting bolt center ground clearance



Note:

Before inspecting the wheel alignment, adjust the vehicle height in accordance with given values.

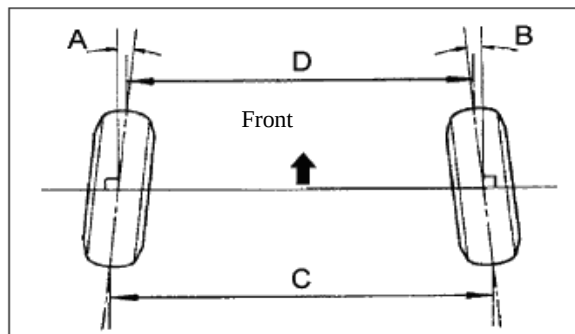
Tip:

To make the suspension stable, please let the vehicle wheels jump up and down within a certain angle range before checking the vehicle height of each point.

3 Inspect Toe-In of Front Wheel

Toe-in:

$$\begin{array}{cc} A+B & C-D \\ -0^{\circ} 06' \sim +0^{\circ} 21' & -0.9\text{mm} \sim +3.1\text{mm} \end{array}$$



Tip:

Measure C-D while A+B is difficult to measure, and if the toe-in value is beyond the designated range, adjust the steering knuckle tie rod end.

4 Adjust Toe-in of Front Wheel

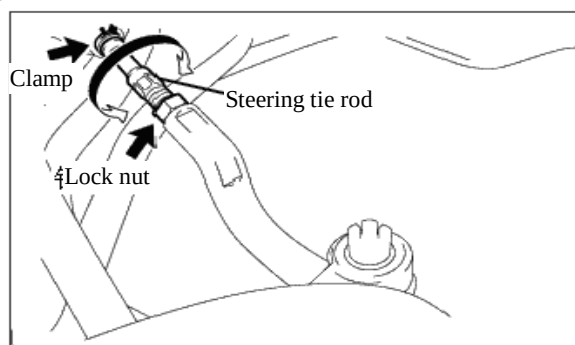
4.1 Loosen the tie rod lock nuts.

4.2 Adjust the toe-in value by rotating and adjusting left and right tie rods at the same time.

Toe-in value: 0.1mm-2.1mm

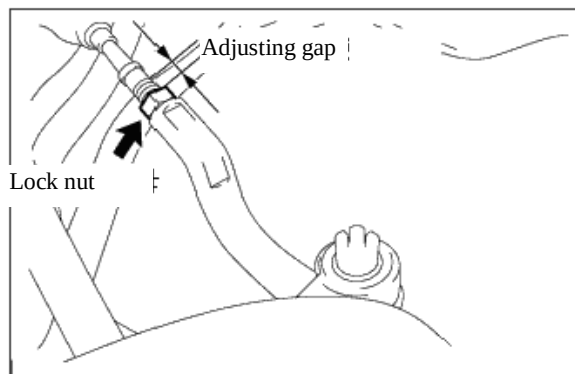
Tip:

Try to adjust the toe-in value to the middle position of designated range.



4.3 Make sure that the lengths of left and right tie rods are equal.

4.4 Tighten the steering knuckle tie rod lock nuts.
Torque: 47 N*m

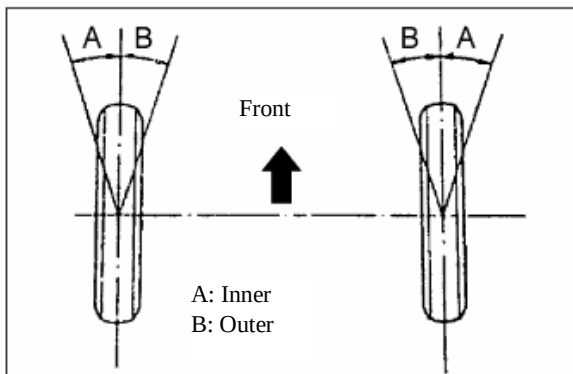


5 Inspect Swing Angle of Wheel

5.1 Turn the steering wheel to left and right full rudder, and measure the swing angles of wheels.
The swing angles of wheels:

Inner wheels	Outer wheels
$36^{\circ} 55' \sim 40^{\circ} 55'$	$32^{\circ} 23'$
$(36.92^{\circ} \sim 40.92^{\circ})$	(32.38°)

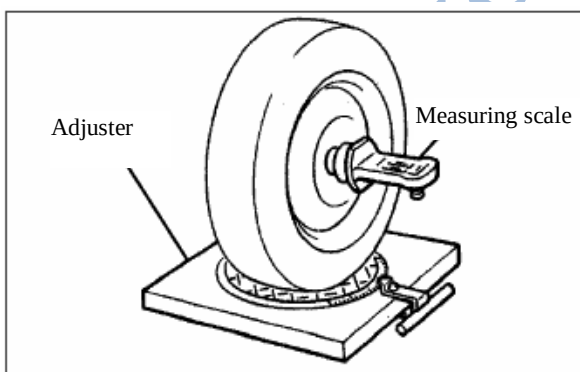
If the swing angles of left and right inner wheels are beyond the designated range, check the lengths of left and right steering knuckle tie rods.



6 Inspect Camber Angle, Caster Angle and Kingpin Inclination Angle

6.1 Fit a four-wheel aligner to the wheel hub center or the propeller shaft center, and move the front wheels onto the adjusting device.

6.2 Inspect the camber angle, caster angle and kingpin inclination angle.



The camber angle, caster angle and kingpin inclination angle:

Camber angle	Caster angle	Kingpin inclination angle
$-1^{\circ} 32'$	$+2^{\circ} 02'$	
$\sim$	$\sim$	
$-0^{\circ} 02'$	$+3^{\circ} 32'$	$+9^{\circ} 33'$

Note:

Test in vehicle unloaded condition (with spare tire and driver's tool on board).

The difference value between the left and right wheel camber angles and kingpin inclination angles should be $\leq 30'$.

Tip:

No adjustment system to adjust camber angle, caster angle and kingpin inclination angle.

If the detected values are beyond the designated range, check each suspension member, and replace them if necessary.

A3

1 Inspect tires

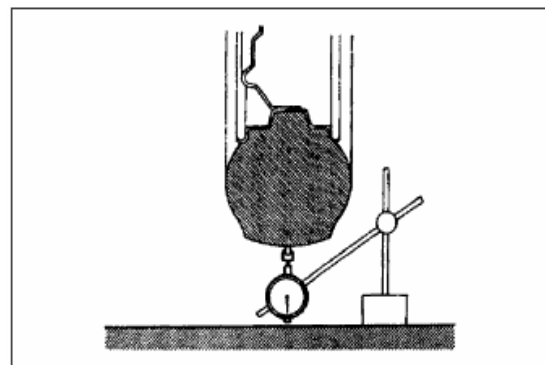
1.1 Inspect the tire wear and the tire inflation pressure.

Cold tire inflation pressure:

Tire size	Condition	Front wheels Kpa	Rear wheel Kpa
165/60 R14	Running speed is less than 155km/h	220	220

1.2 With dial indicator, check the amount of radial tire run-out.

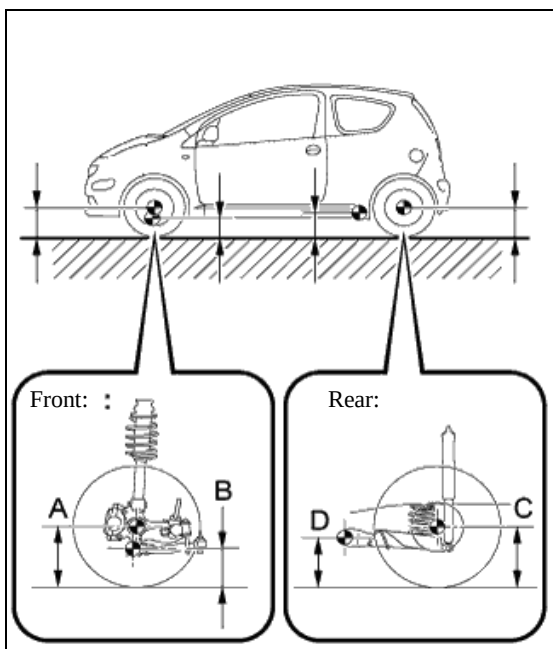
The amount of radial tire run-out: ≤ 1.4 mm



2 Measure the vehicle height of each point

Vehicle height:

A-B	C-D
88 mm	22 mm



Measurement points:

A: The front wheel center ground clearance

B: The lower swing arm front bolt center ground clearance

C: The rear wheel center ground clearance

D: The rear twist beam mounting bolt center ground clearance

Note:

Before inspecting the wheel alignment, adjust the vehicle height in accordance with given values.

Tip:

To make the suspension stable, please let the vehicle wheels jump up and down within a certain angle range before checking the vehicle height of each point.

3 Inspect toe-in of front wheel

Toe-in:

$$\begin{array}{cc} A+B & C-D \\ -0^{\circ} 06' \sim & -0.9\text{mm} \sim +3.1\text{mm} \\ +0^{\circ} 21' & \end{array}$$

Tip:

Measure C-D while it's difficult to measure A+B. If the toe-in value is beyond the designated range, adjust the steering knuckle tie rod end.

4 Inspect wheel camber angle

4.1 Fit a four-wheel aligner and move the rear wheels onto the adjusting device.

4.2 Inspect the wheel camber angle.

Camber angle: $-1^{\circ}26'$ to $-0^{\circ}26'$

Note:

The tolerance value between left and right wheels should be $\leq 0.5^{\circ}$. If the detected values are beyond the designated range, check each suspension member, and replace them if necessary.

A4

1 Inspect front propeller shaft hub bearing

1.1 Remove the front wheels

1.2 Remove the brake caliper assembly of the front disk brake.

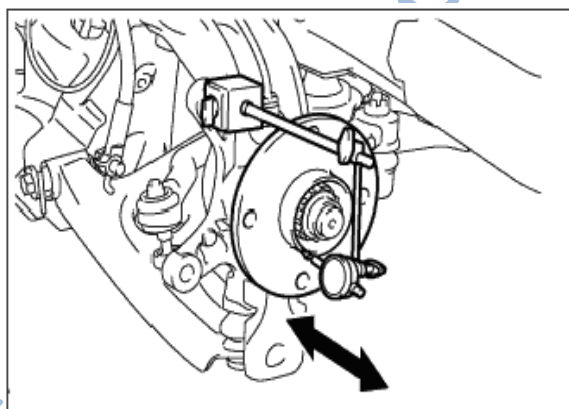
1.3 Remove the front brake disc.

1.4 Check lateral run-out of the propeller shaft wheel hub
Check the amount of lateral run-out nearby the hub bearing center with dial indicator.

Upper limit: 0.05 mm

Note:

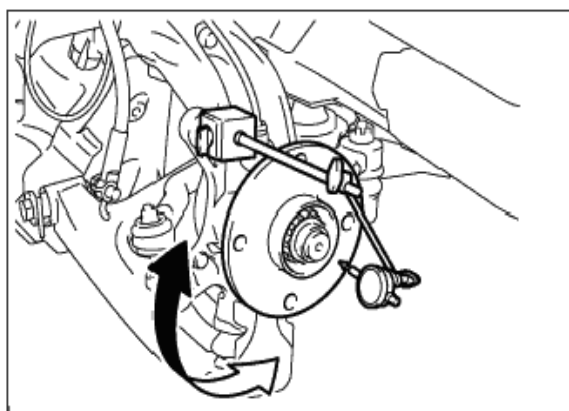
If the amount of lateral run-out is over the upper limit, replace the wheel hub.



1.5 Check the amount of radial run-out of the wheel hub bearing.

Check the amount of wheel hub surface deformation with dial indicator.

Upper limit: 0.05mm



Note:

If the amount of radial run-out is over the upper limit, replace the wheel hub.

1.6 Install the front disk brake.

1.7 Install the brake caliper assembly of the front disk brake.

1.8 Install the front wheels.

2 Inspect the rear hub bearing

2.1 Remove the rear wheels.

2.2 Remove the rear brake drum.

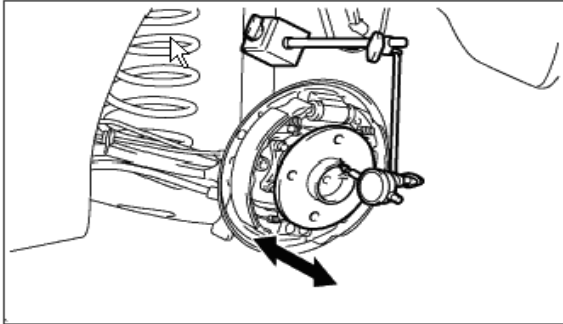
2.3 Check the amount of lateral run-out of the rear wheel hub and bearing.

Check the amount of lateral run-out nearby the rear hub bearing center with dial indicator.

Upper limit: 0.05 mm

Note:

If the amount of lateral run-out is over the upper limit, replace the rear wheel hub.



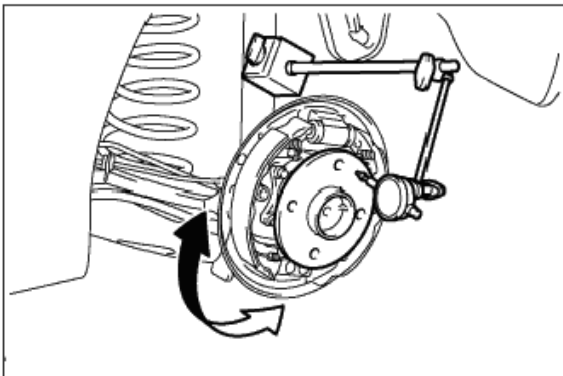
2.4 Check the amount of radial run-out of the rear wheel hub bearing.

Check the amount of rear wheel hub surface deformation with dial indicator.

Upper limit: 0.07 mm

Note:

If the amount of radial run-out is over the upper limit, replace the rear wheel hub.



Install the rear brake drum

2.6 Install the front wheels.

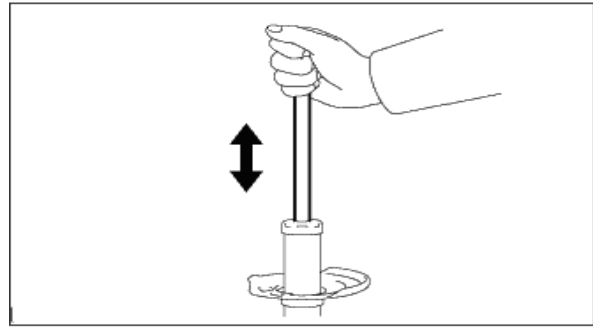
A5

Inspect front shock absorber assembly

Compress and stretch the shock-absorber rod repeatedly, meanwhile inspect if there is abnormal resistance force or sound, if anything is abnormal, replace the front shock absorber by a new one.

Note:

When removing the front shock absorber, refer to the disassembly and assembly description of front shock absorber.



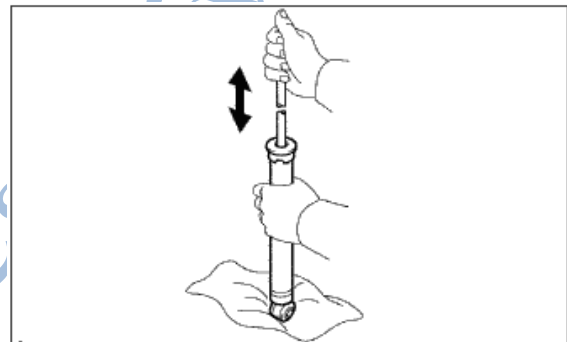
A6

Inspect rear shock absorber assembly

Compress and stretch the shock-absorber rod repeatedly, meanwhile inspect if there is abnormal resistance force or sound, if anything is abnormal, replace the rear shock absorber by a new one.

Note:

When removing the rear shock absorber, refer to the disassembly and assembly description of rear shock absorber.



A7

1 Separate cable from battery negative

2 Remove rear wheels

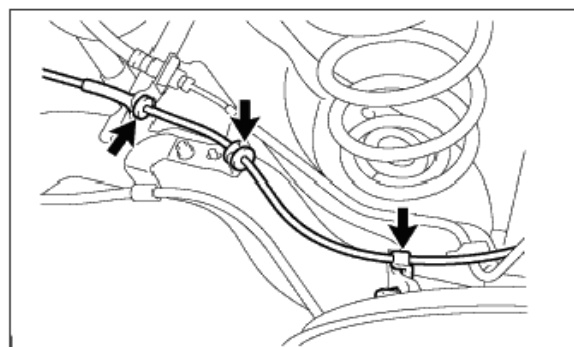
3 Discharge brake fluid

Caution:

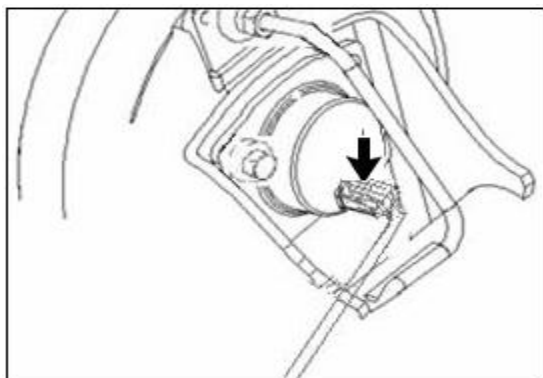
If the brake fluid splashed to any coat painting surface, wash it off immediately.

4 Separate rear wheel speed sensor

4.1 Remove and separate 3 brackets.



4.2 Disconnect the harness joint of rear wheel speed sensor.



Tip:

Remove the right sensor with the same method.

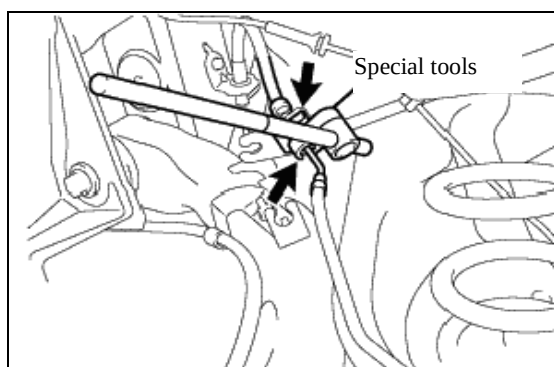
5 Remove left rear brake hose

5.1 Remove the brake pipe with special tools.

5.2 Remove the pipe clamp, separate the brake hose from the rear twist beam,

Note:

Don't damage the brake hose or the brake pipe.



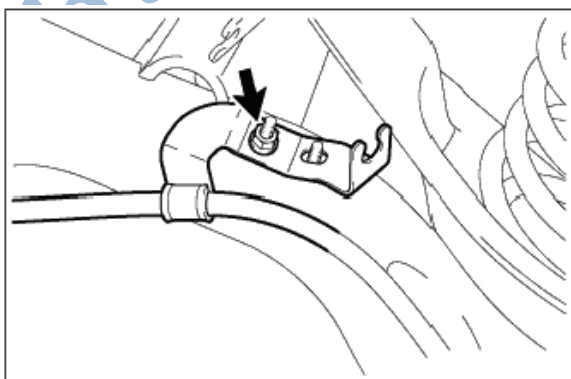
6 Remove right rear brake hose

Tip:

The method is the same as removing the left brake hose.

7 Remove left parking cable assembly

Unscrew the bolt and separate the parking cable assembly.



8 Remove right parking cable assembly

Tip:

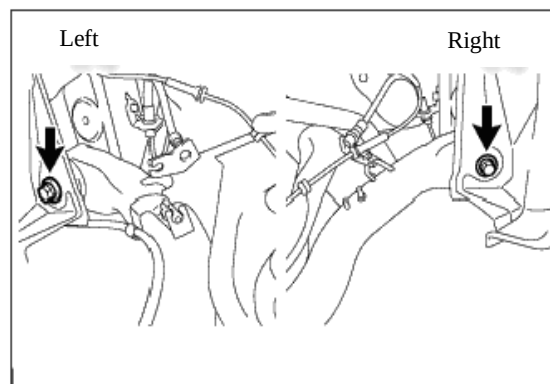
Remove the right with the method as removing the left.

9 Remove rear twist beam assembly

Loosen 2 bolts.

Note:

Don't remove them.

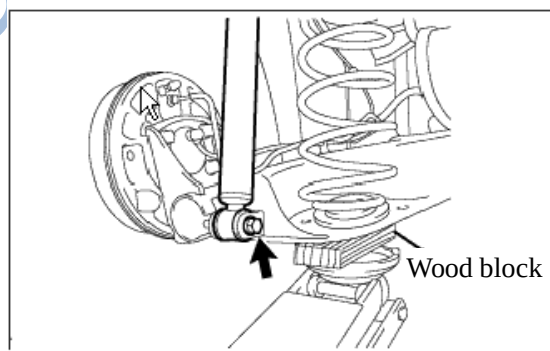


10 Separate left rear shock absorber assembly

10.1 Support the both ends of rear twist beam with lifter at the same time.

To prevent the rear twist beam from being damaged, insert a wood block between the lifter and the twist beam.

10.2 Remove the bolts and separate the rear shock absorber.



11 Separate right rear shock absorber assembly

Tip:

The removing steps are the same as the left.

12 Remove left rear shock absorber spring

(1) Lower the lifter.

(1) Remove the left rear shock absorber spring and the upper and lower cushion rubbers.

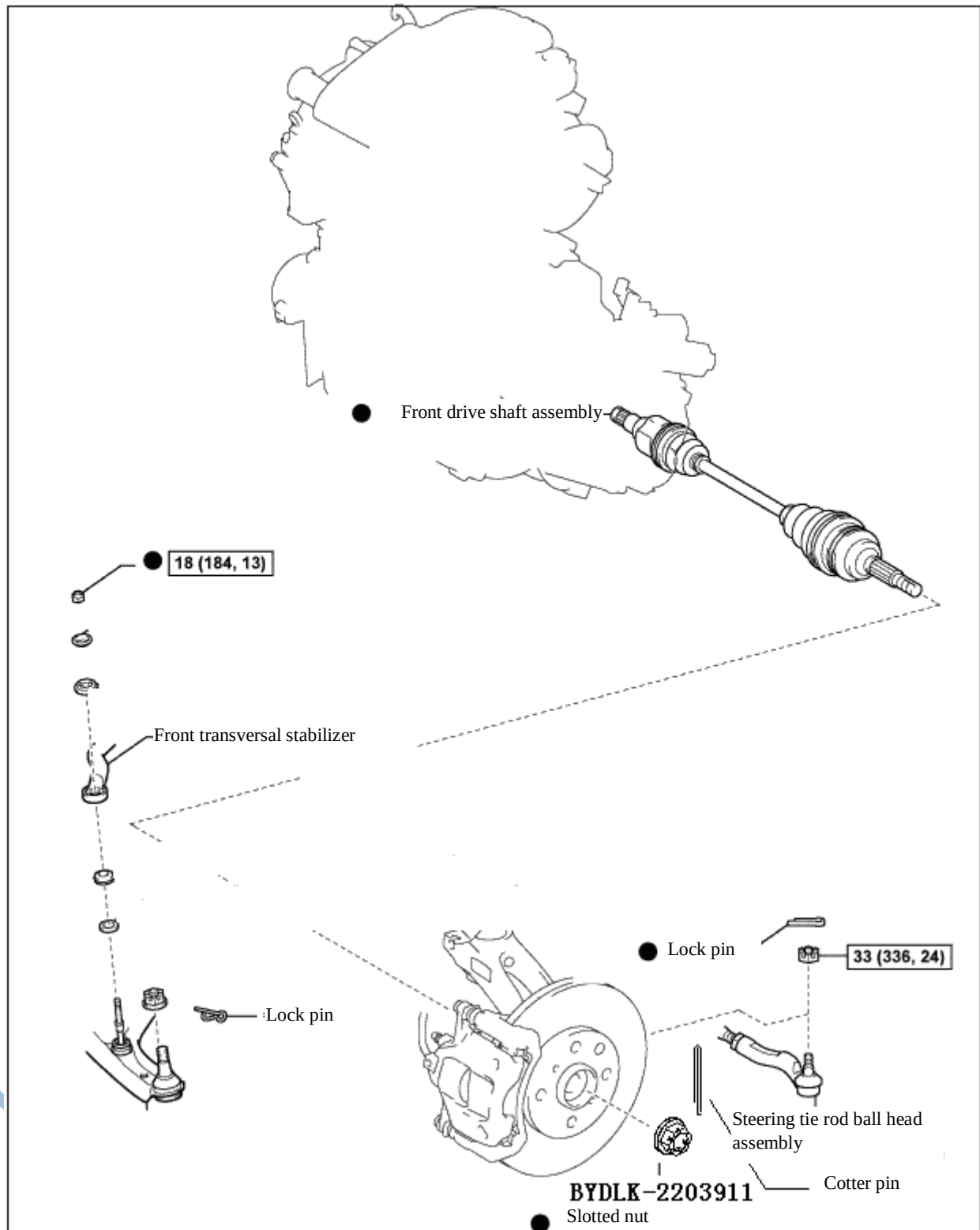
(3) Remove the right rear shock absorber spring.

Tip:

The method is the same as the left.

Section 2 Propeller Shaft

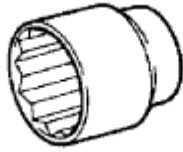
2.1 Propeller Shaft Components



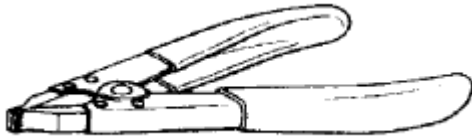
Service tool

Torque spanner

Recommended tools

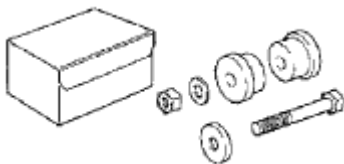


30mm Sleeve



Snap spring pliers

Special tools



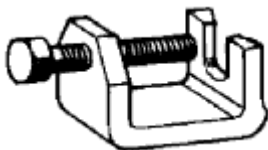
Front hub bearing adjusting tools



Bolt and nut



Fixer



Steering knuckle tie rod end pusher



Ball head pusher

2.2 Removal

Tip:

Remove the right with the method as removing the left.

2.2.1 Let the gear oil out of the gear box.

2.2.1.1 Remove the oil-fill plug and the washer.

2.2.1.2 Remove the oil drain plug and the washer, drain away all the lubrication oil.

2.2.1.3 Fit new washers and oil drain plug.

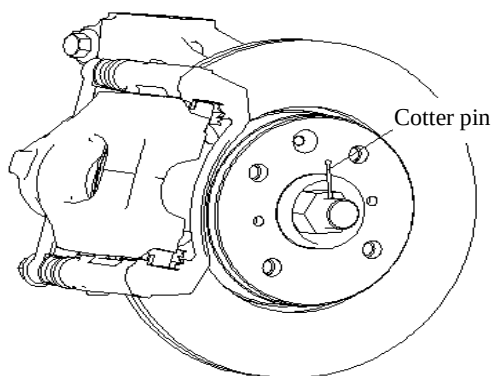
Torque: 39 N*m

2.2.2 Remove the front wheels

2.2.3 Remove the lower front propeller shaft slotted nut

2.2.3.1 Take off the cotter pin with special tools.

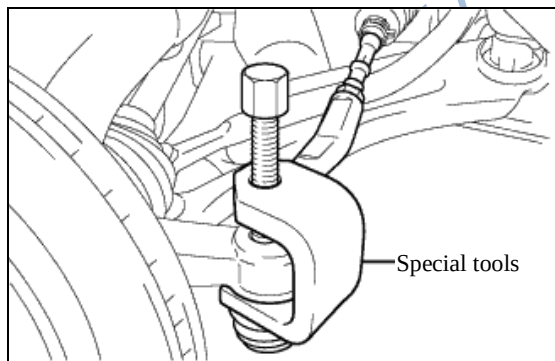
2.2.3.2 Push down the brake paddle to stop the front wheels, and remove the slotted nut.



2.2.4 Separate the steering knuckle tie rod end assembly

2.2.4.1 Remove the cotter pin and the slotted nut.

2.2.4.2 Separate the steering knuckle tie rod from the steering knuckle with special tools.



Note:

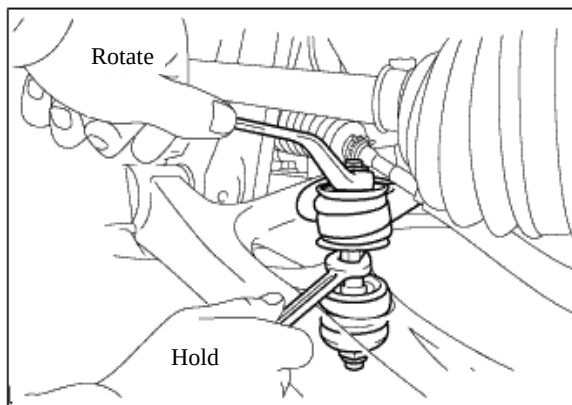
Don't damage the steering knuckle adiabatic skin covering.

Don't damage the ball-and-cage universal joint dust boot.

2.2.5 Separate the transversal stabilizer

2.2.5.1 Fix the bolt with spanner (10 mm), and unscrew the nut.

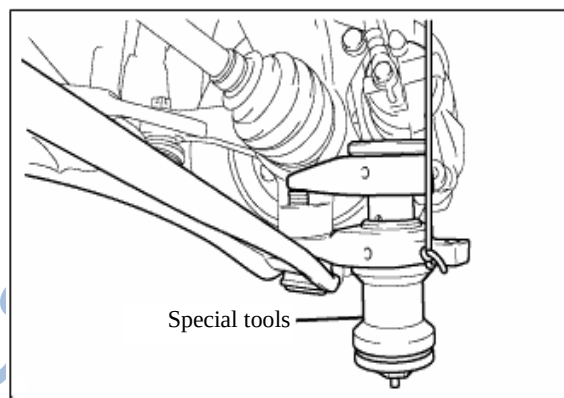
2.2.5.2 Remove 2 stabilizer gasket seats and 2 stabilizer gasket, and separate the transversal stabilizer.



2.2.6 Separate the front auxiliary frame swing arm lower pickup point assembly

2.2.6.1 Remove the cotter pin and the slotted nut.

2.2.6.2 Separate the front auxiliary frame swing arm assembly from the steering knuckle with special tools.



2.2.7 Separate propeller shaft ball cage assembly end

2.2.7.1 Beat at the end of propeller shaft components gently with rubber hammer, to make the propeller shaft components separate from the propeller shaft wheel hub assembly.

Tip:

If it's difficult to remove, use brass bar and hammer to beat at the end of the propeller shaft components gently.

2.2.7.2 Push the brake wheel hub assembly a little out of the car, to separate the brake wheel hub from the propeller shaft.

Note:

If unnecessary, never push the front brake wheel hub assembly far away from the body.

Don't damage the front wheel shaft outside ball-and-cage universal joint dust boot.

Don't damage the wheel speed sensor gear ring.

Hang the propeller shaft with string or other things.

When removing the propeller shaft, don't let it hit the wheel speed sensor.

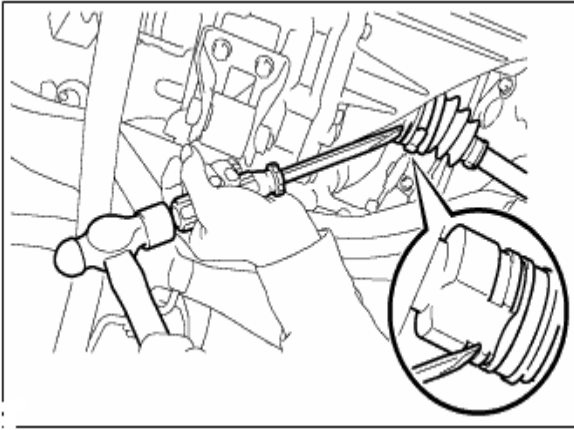
2.2.8 Separate the propeller shaft tri-ball stud assembly end

2.2.8.1 Remove the propeller shaft assembly with screwdriver and hammer.

Note:

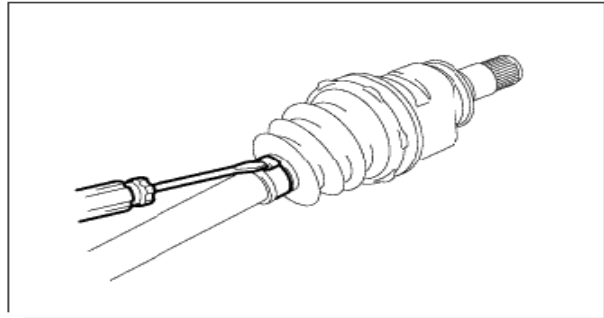
Don't damage the oil seal or the dust boot.

Don't let the propeller shaft assembly fall.

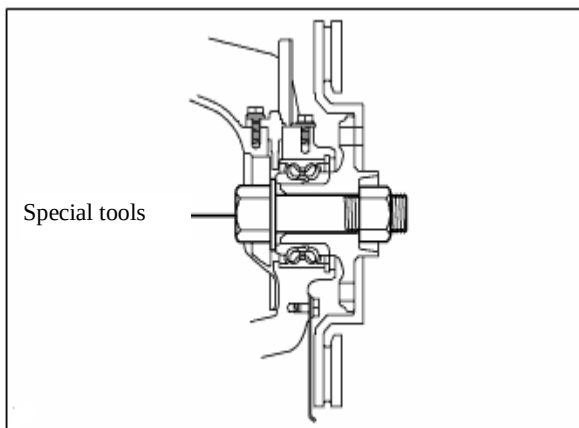


2.3.2 Remove the small clamp in the place of the propeller shaft inner universal joint dust boot.

Remove the small clamp in the place of the inner universal joint dust cover with screwdriver.



2.2.9 Fix the front hub assembly



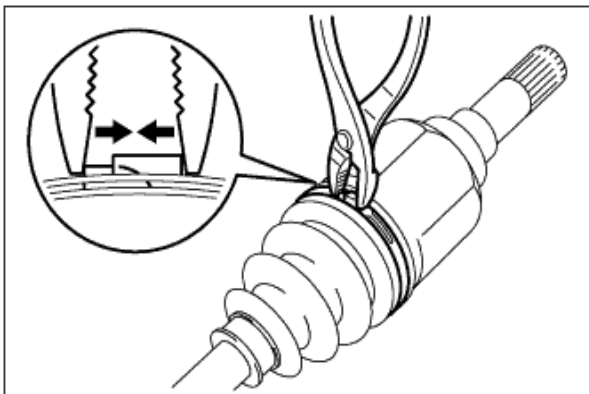
Note:

If the hub bearing bears the whole weight of the vehicle, it's easy to get damaged, like moving the vehicle without propeller shaft. If it has to add the whole weight to the hub bearing, must support it with special tools.

2.3 Disassembly

2.3.1 Remove the big clamp in the place of the propeller shaft inner universal joint dust boot.

As shown in the figure, remove the big clamp in the place of the inner universal joint dust cover with pliers.



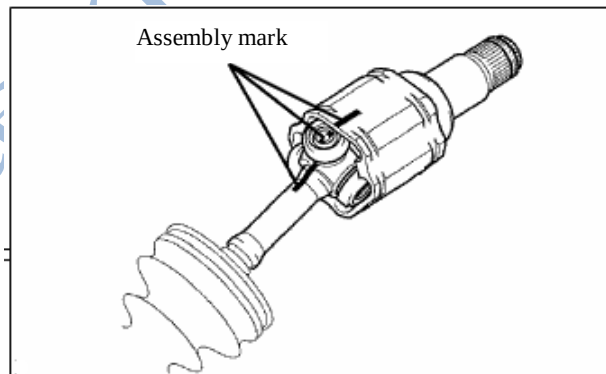
2.3.3 Remove the propeller shaft inner universal joint dust boot.

Remove the inner universal joint dust cover from the inner universal joint assembly.

2.3.4 Remove the propeller shaft inner universal joint assembly

2.3.4.1 Clear off the grease in the inner dust boot.

2.3.4.2 Make assembly marks on the inner universal joint assembly, tri-ball stud assembly and the outer universal joint assembly.

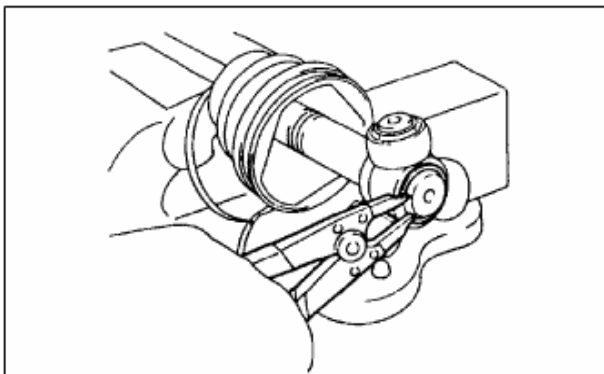


Note:

Don't cause any damage to the products when making marks.

2.3.4.3 Remove the inner universal joint assembly from the outer universal joint assembly.

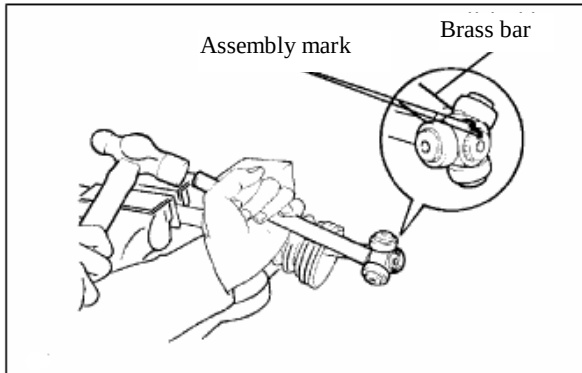
2.3.4.4 Remove the propeller shaft inner stop ring with stop ring widening pliers.



2.3.4.5 Make assembly marks on the inner universal joint assembly and tri-ball stud assembly.

Note:

Don't cause any damage to the products when making marks.



2.3.4.6 Remove the tri-ball stud assembly from the inner universal joint assembly with brass bar and hammer.

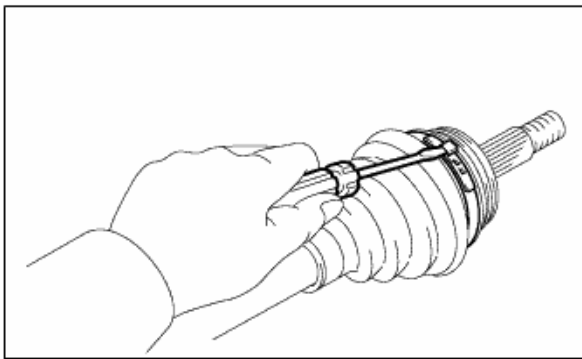
Note:

Don't beat the bearing.

2.3.4.7 Separate the inner universal joint dust boot, the No.2 clamp in the dust cover and the inner dust cover clamp.

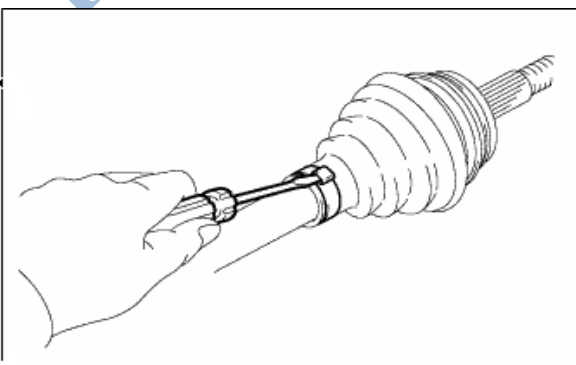
2.3.5 Remove the big clamp in the place of the propeller shaft outer dust boot

Remove the big clamp in the place of the outer universal joint dust cover with screwdriver.



2.3.6 Remove the small clamp in the place of the propeller shaft outer dust boot

Remove the small clamp in the place of the outer universal joint dust cover with screwdriver.



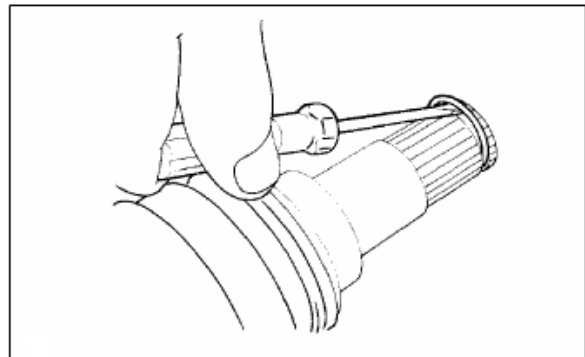
2.3.7 Remove the propeller shaft outer universal joint dust boot.

2.3.7.1 Remove the outer dust cover from the outer universal joint assembly.

2.3.7.2 Clear off the used grease in the outer universal joint assembly.

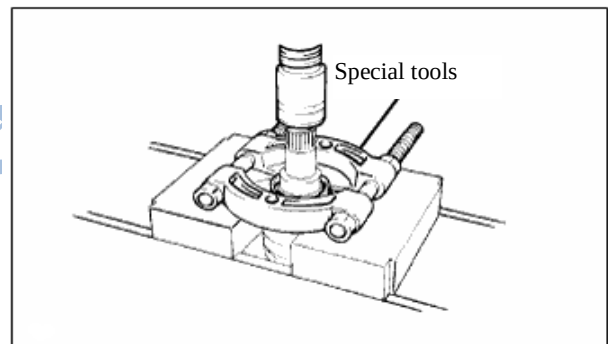
2.3.8 Remove the propeller shaft retainer ring for shaft

Remove the retainer ring for shaft on the propeller shaft bell housing with screwdriver.



2.3.9 Remove the propeller shaft dust cover

Remove the dust cover with special tools and block.

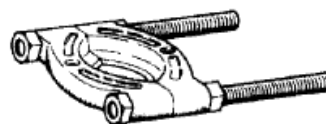


Note:

Don't let the inner universal joint assembly fall.

2.4 Reassembly

Special tools

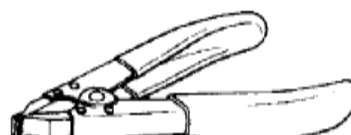


Bearing remover

Recommended tools



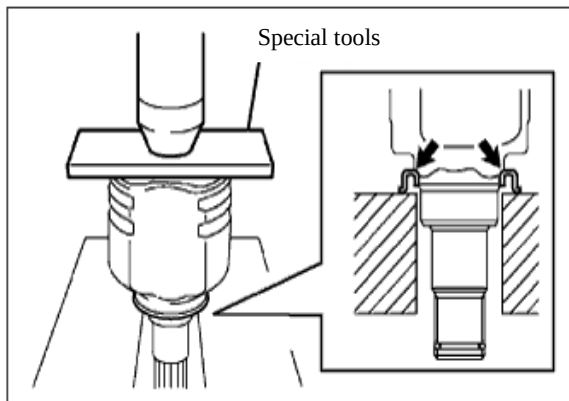
30mm sleeve



Stop ring widening pliers

2.4.1 Install the propeller shaft dust cover

2.4.1.1 As shown in the figure, install new dust cover with special tools and block.

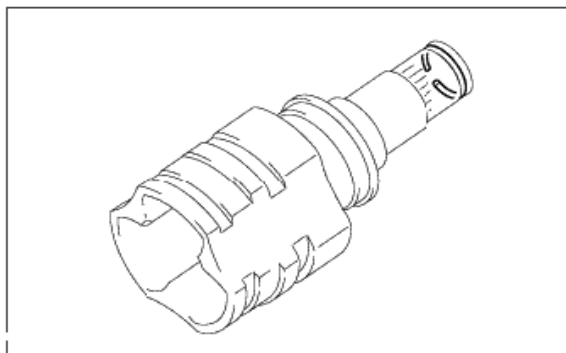


Note:

Install the dust cover firmly.
Don't damage the dust boots.

2.4.2 Install the propeller shaft retainer ring for shaft

Fit new retainer ring for shaft to the inner universal joint assembly.



2.4.3 Install the propeller shaft outer dust boot

2.4.3.1 Wrap the multiple spline of inner universal joint assembly in polyvinyl chloride insulating tape to prevent it from damage.

2.4.3.2 Install new subassemblies to the outer universal joint assembly in the sequence below.

2.4.3.2.1 The big clamp of outer dust boot.

2.4.3.2.2 The outer dust boot.

2.4.3.2.3 The small clamp of outer dust boot.

2.4.3.3 Fill in the outer universal joint assembly with grease.

Standard

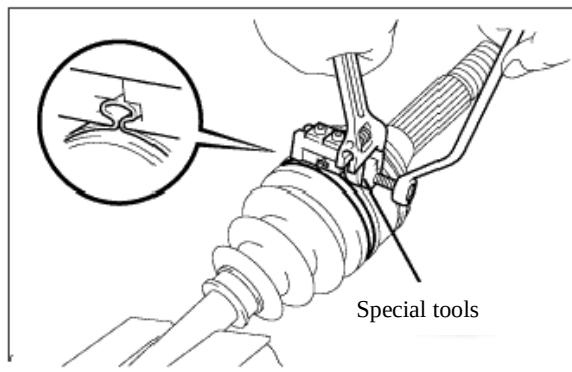
Amount of grease
 $65 \pm 10\text{g}$

2.4.3.4 Fit the outer dust cover to the outer universal joint assembly.

2.4.4 Install the big clamp in the place of the propeller shaft outer universal joint dust boot.

2.4.4.1 Put the outer dust cover big clamp onto the dust cover carefully.

2.4.4.2 Put the special tools onto the outer dust cover big clamp.

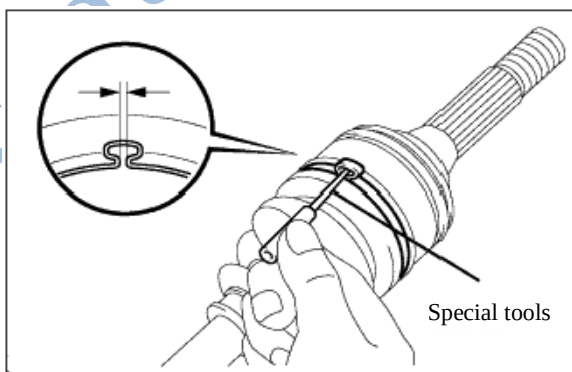


2.4.4.3 Tighten the special tools to contract the outer universal joint dust cover big clamp.

Note:

Don't tighten the special tools excessively.

2.4.4.4 Adjust the clearance of the outer universal joint dust cover big clamp with special tools.



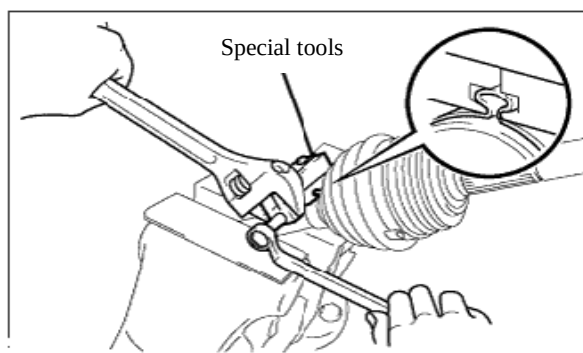
Standard clearance: $\leq 0.8\text{mm}$

2.4.5 Install the propeller shaft outer dust boot small clamp

2.4.5.1 Put the outer dust cover small clamp onto the dust cover carefully.

2.4.5.2 Put the special tools onto the outer dust cover small clamp.

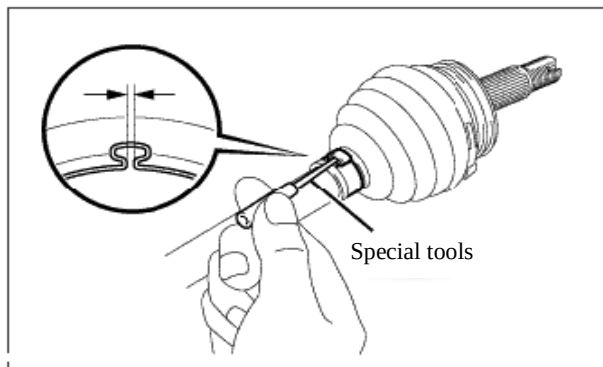
2.4.5.3 Tighten the special tools to contract the outer universal joint dust cover small clamp.



Note:

Don't tighten the special tools excessively.

2.4.5.4 Adjust the clearance of the outer universal joint dust cover small clamp with special tools.



Standard clearance: $\leq 0.8\text{mm}$

2.4.6 Install the propeller shaft inner universal joint assembly

2.4.6.1 Wrap the multiple spline of outer universal joint assembly in polyvinyl chloride insulating tape to prevent it from damage.

2.4.6.2 Install new subassemblies to the inner universal joint assembly in the sequence below.

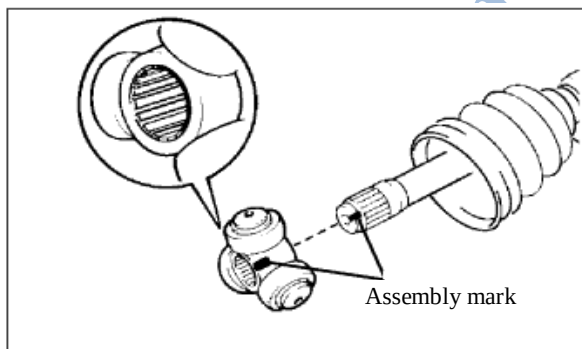
2.4.6.2.1 The small clamp of inner dust boot.

2.4.6.2.2 The inner dust boot.

2.4.6.2.3 The big clamp of inner dust boot.

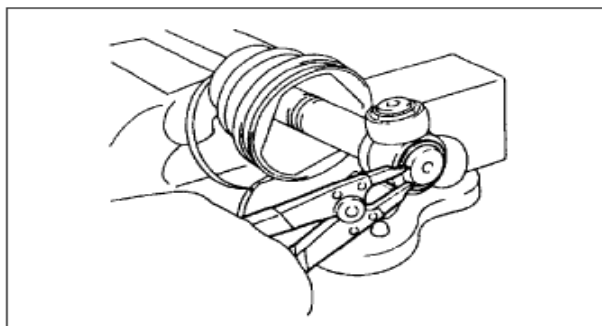
2.4.6.3 Align the assembly marks and then fit the tri-ball stud assembly to the outer universal joint assembly.

2.4.6.4 Fit the tri-ball stud assembly with brass bar and hammer.

**Note:**

Don't beat the bearing.

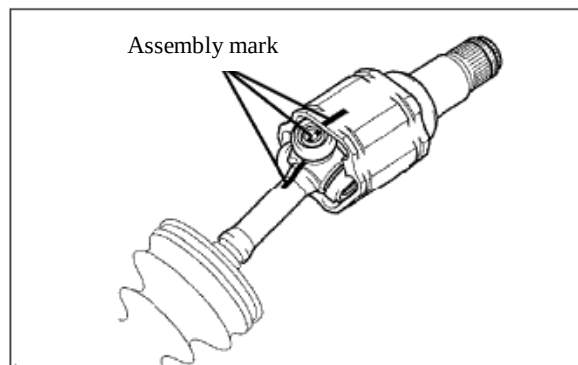
2.4.6.5 Fit new front propeller shaft inner stop ring with stop ring tightening pliers.



2.4.6.6 Fill in the inner universal joint assembly with grease.

Amount of grease: 98~112g.

2.4.6.7 Align the assembly marks and then fit the inner universal joint assembly to the outer universal joint assembly.



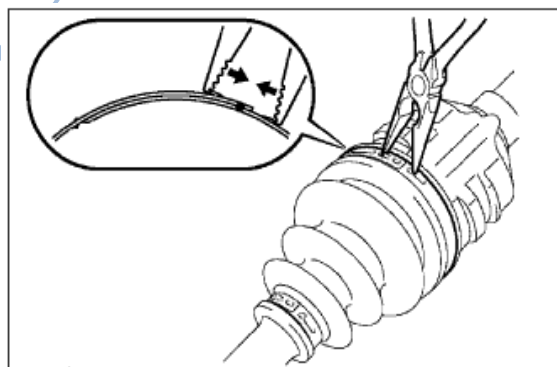
2.4.7 Install the propeller shaft inner dust boot

Fit the propeller shaft inner dust cover to the inner universal joint assembly.

2.4.8 Install the propeller shaft inner dust boot big clamp

2.4.8.1 Put the inner dust cover big clamp onto the dust cover carefully.

2.4.8.2 Align the big clamp recess with the outshot with needle nose pliers and complete the installment.

**Note:**

Don't scuff the inner dust boot.

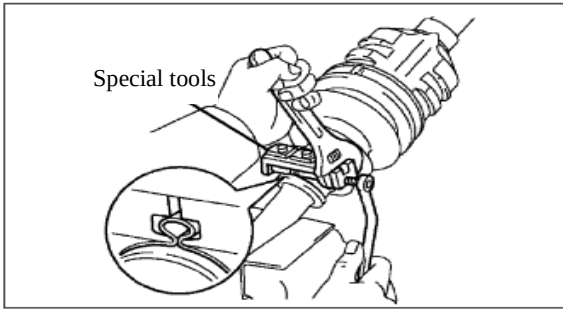
Don't make the jaw distort.

2.4.9 Install the propeller shaft inner dust boot small clamp

2.4.9.1 Put the inner dust cover small clamp onto the dust cover carefully.

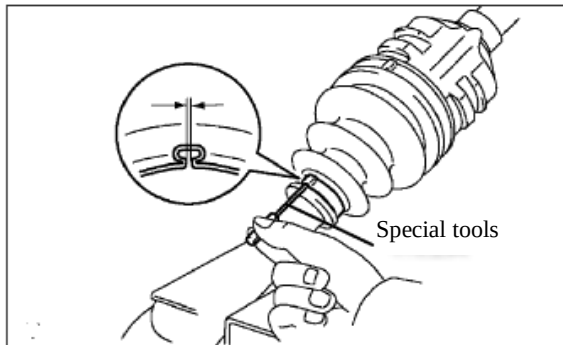
2.4.9.2 Put the special tools onto the inner dust cover small clamp.

2.4.9.3 Tighten the special tools to contract the inner universal joint dust cover small clamp.



Note:

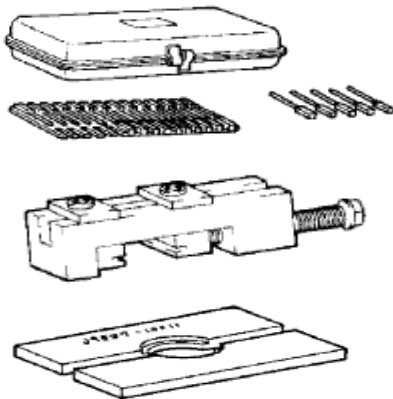
Don't tighten the special tools excessively.
2.4.9.4 Adjust the clearance of the inner universal joint dust cover small clamp with special tools.



Standard clearance: $\leq 0.8\text{mm}$

2.5 Installation

Special tools



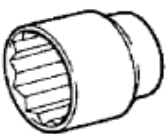
Wire gauge device

Bearing puller

Tool

Torque spanner

Recommended tools



30mm sleeve



Stop ring widening pliers

Tip:

Install the right with the same sequences as installing the left.

2.4.10 Inspect the front propeller shaft assy.

2.4.10.1 Check if the front propeller shaft assy. meets the dimensions below.

Standard dimensions (A):

Left shaft characteristic	Right shaft characteristic
length	length
418mm	600mm

2.4.10.2 While rotating the propeller shaft in the up and down, left and right directions and moving it in the retractable direction, check if the propeller shaft has obvious loose phenomenon.

2.4.10.3 Check if there are crack, damage and grease leaking phenomenon.

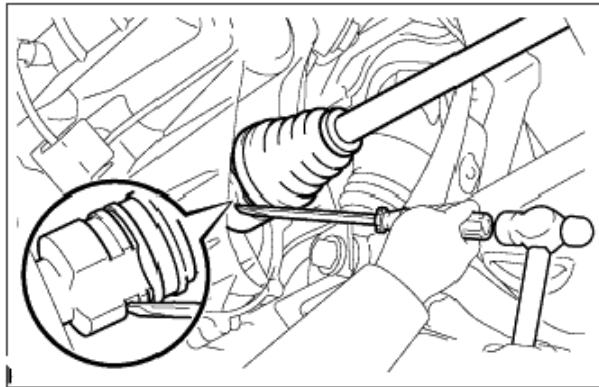
Note:

Keep the propeller shaft assembly in level when moving it.

2.5.1 Install the propeller shaft tri-ball stud components end

2.5.1.1 Paint the multiple spline of inner universal joint assembly with gear box gear oil.

2.5.1.2 Align the multiple spline, and then fit the propeller shaft with screwdriver and hammer.



Note:

Place the retainer ring for shaft with the opening downward.

Don't damage the oil seal.

Don't damage the propeller shaft dust boot.

Tip:

Through the reaction force and sound of the brass bar, judge that if the propeller shaft assy. is fitted firmly.

2.5.2 Install the propeller shaft ball cage components end

2.5.2.1 Push out the brake wheel hub assembly to the vehicle outboard side, to align the multiple spline of the ball cage end with the multiple spline of the hub bearing, and fit the propeller shaft ball cage end.

Note:

If unnecessary, never push the brake wheel hub assembly far away from the body.

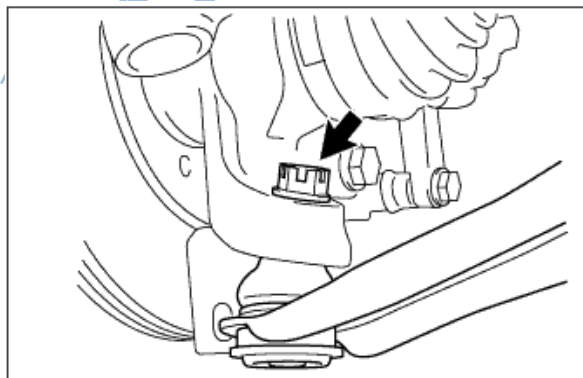
Don't damage the oil seal.

Don't damage propeller shaft ball cage end dust boot.

Don't damage the wheel speed sensor.

Inspect if there are foreign substance between wheel speed sensor and gear ring.

2.5.3 Install the front suspension lower swing arm assembly



Lower the front suspension lower swing arm a little, and fit the front suspension lower swing arm ball head, tighten the slotted nut and replace for a new cotter pin.

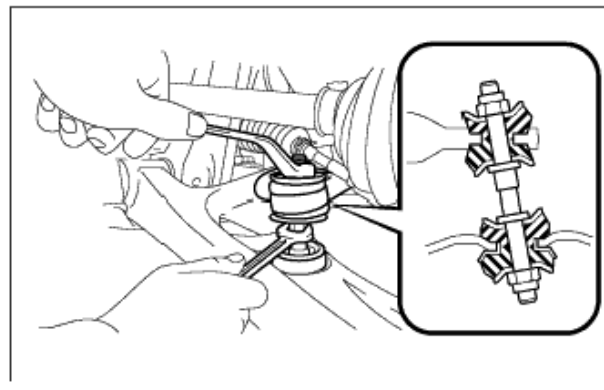
Torque: 98 N*m

Note:

Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.

2.5.4 Install the front transversal stabilizer

2.5.4.1 As shown in the figure, fit the front transversal stabilizer with 2 gasket seat washers, 2 gaskets and 1 nut.



Note:

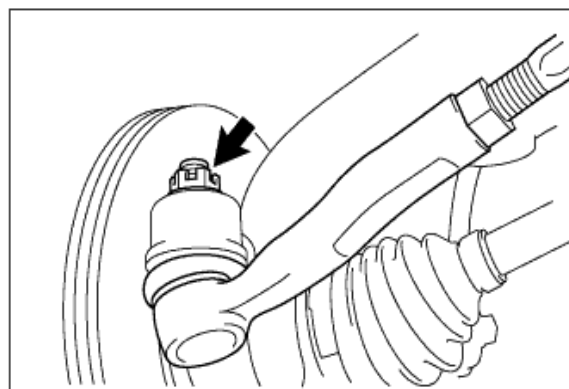
Make sure the directions of installation of the gaskets and gasket seat washers are correct.

2.5.4.2 Tighten the nut with spanner.

Torque: 18 N*m

2.5.5 Install the steering knuckle tie rod end assembly

Connect the steering knuckle tie rod with the steering knuckle, and fit it with slotted nut and cotter pin.



Torque: 33 N*m

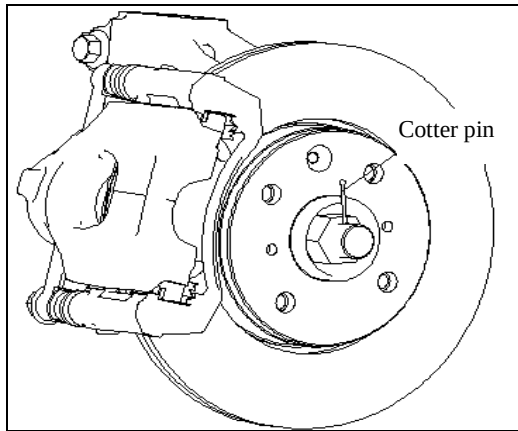
Note:

Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.

2.5.6 Install the propeller shaft ball cage end

2.5.6.1 Fit new slotted nut and cotter pin of the propeller shaft.

Torque: 216 N*m

**Note:**

Within the turn angle range of 60°, re-tighten the slotted nut and cotter pin until the cotter pin hole is aligned with the slotted nut.

2.5.7 Install the front wheels

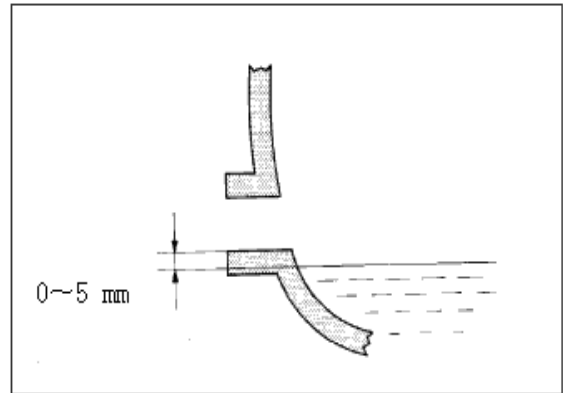
Torque: 110 N*m

2.5.8 Add the gear box gear oil**2.5.9 Check the gear box gear oil**

2.5.9.1 Park the car at level ground.

2.5.9.2 Remove the gear box oil-fill plug and the gasket.

2.5.9.3 Check that the distance from the oil face to the gear box oil-fill plug bottom is within 5mm.

**Note:**

Too much or too little oil level would cause failure. Change the lubrication oil, drive the car and recheck the oil level.

2.5.9.4 If the oil face declines, check if there is leaking phenomenon.

2.5.9.5 Fit the gear box oil-fill plug and new washer.

Torque: 39 N*m

2.5.10 Check the gear box leaking phenomenon.**2.5.11 Inspect the front wheel alignment**

Chapter 8 Brake System

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Section 1 Fault Diagnosis

1.1 When replacing the subassemblies of the car, especially replacing the subassemblies which have effects on vehicle braking performance, be particularly careful, because it has the potential to increase the risk of driving. Be sure to replace for the same parts, the same amounts.

1.2 When servicing the brake system, it's important to keep every subassembly and unit clean.

1.3 If the vehicle is equipped with mobile communication system, please read the instructions.

This form will help you to find the causes of faults, as it summarizes the most possible causes of some faults. Check every part and component one by one, and change these parts if necessary.

Fault	Possible cause
Spongy brake pedal or low brake pedal	Brake fluid in brake system leaks
	There's air in brake system.
	Piston seal (aged or damaged)
	Brake master cylinder is at fault
Braking drag	Free travel of brake pedal (too small)
	Travel of parking brake handle (improper adjustments)
	Parking cable (stuck)
	Brake shoe cleanliness (improper adjustments)
	Gasket (broken or torsion)
	Brake shoe (broken or torsion)
	Front disk wheel-brake piston (drag)
	Brake cylinder (piston drag)
	Front disk wheel-brake piston (frozen-up)
	Brake cylinder (piston frozen-up)
	Tensioning spring or return spring (trouble)
	Power assist system (air leak)
	Brake master cylinder (trouble)
	Front disk wheel-brake piston (drag)
Brake pedal rebound	Brake cylinder (piston drag)
	Gasket(oil-fouled)
	Brake shoe(oil-fouled)
	Front disk piston (frozen-up)
	Brake cylinder (piston frozen-up)
	Front brake disc(scuffing damage)
	Rear brake drum(scuffing damage)
	Gasket (broken or torsion)
	Brake shoe (broken or torsion)
Hard brake paddle but low brake effectiveness	Brake system oil leak
	There's air in brake system.
	Front disk wheel-brake piston (drag)
	Brake cylinder (piston drag)
	Gasket (broken or torsion)
	Brake shoe (broken or torsion)
	Gasket(oil-fouled)
	Brake shoe(oil-fouled)
	Gasket (slip)
	Brake shoe(slip)
	Front brake disc(scuffing damage)
	Rear brake drum(scuffing damage)
	Power assist system (air leak)

brake noise	Gasket (broken or torsion)
	Brake shoe (broken or torsion)
	Mounting bolt (loose)
	Front brake disc(scuffing damage)
	Rear brake drum(scuffing damage)
	Brake plate support sheet (loose)
	Sliding pin (fatigue wear)
	Gasket (dirty)
	Brake shoe (dirty)
	Gasket (slip)
	Brake shoe(slip)
	Tensioning spring or return spring (trouble)
	Brake return spring (damaged)

Section 2 Brake System Inspection and Repair

2.1 Brake fluid

Note: Wash off all the brake fluid sticking on coat painting surface quickly.

Tip: If when servicing the brake system or doubt there is air in the brake line, need to exhaust the air.

2.1.1 Fill in the liquid reservoir with brake fluid

Brake fluid: SAE J1703 or FMVSS NO.116 DOT3

2.1.2 Discharge the air in the brake master cylinder

Tip: If the brake master cylinder was disassembled before or the reservoir is empty, exhaust the gas from the master cylinder.

2.1.2.1 Remove the brake line from the brake master cylinder with special tools.

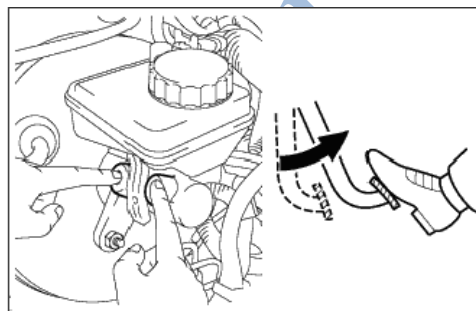
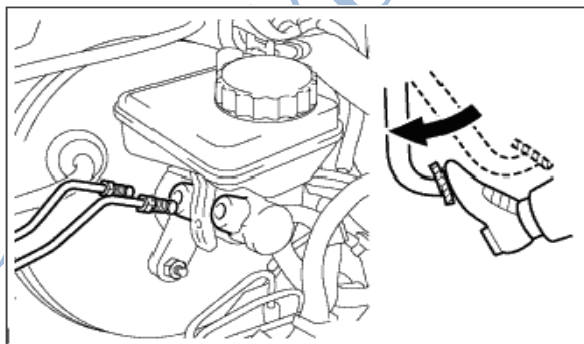
2.1.2.2 Press down the brake pedal slowly, and keep the position (Step A).

2.1.2.3 Block up the hole of the master cylinder, and release the pedal (Step B).

2.1.2.4 Repeat steps A and B for 3~4 times.

2.1.2.5 Fit brake line with special tools.

Tightening torque: 17.5 N*m



2.1.3 Brake pipe exhaust

2.1.3.1 Connect a plastic pipe to the brake caliper and the cylinder.

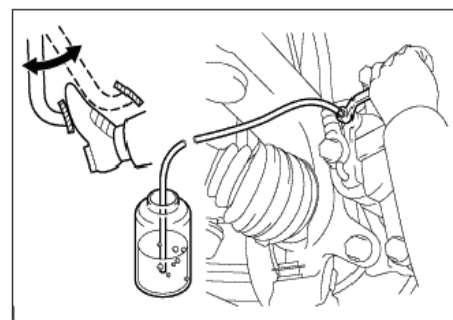
2.1.3.2 Press the brake pedal several times and keep the position, unscrew the deflation plug (Step C).

2.1.3.3 Tighten the deflation plug at the moment of the brake fluid stopping flowing out, loosen the brake paddle (Step D).

2.1.3.4 Repeat the steps C and D, until all the air in the brake fluid is exhausted.

2.1.3.5 Tighten the deflation plug, the tightening torque: 6.5 Nm.

2.1.3.6 Repeat the steps above, exhaust the air in each brake cylinder.



2.1.4 Check the liquid level in the liquid reservoir

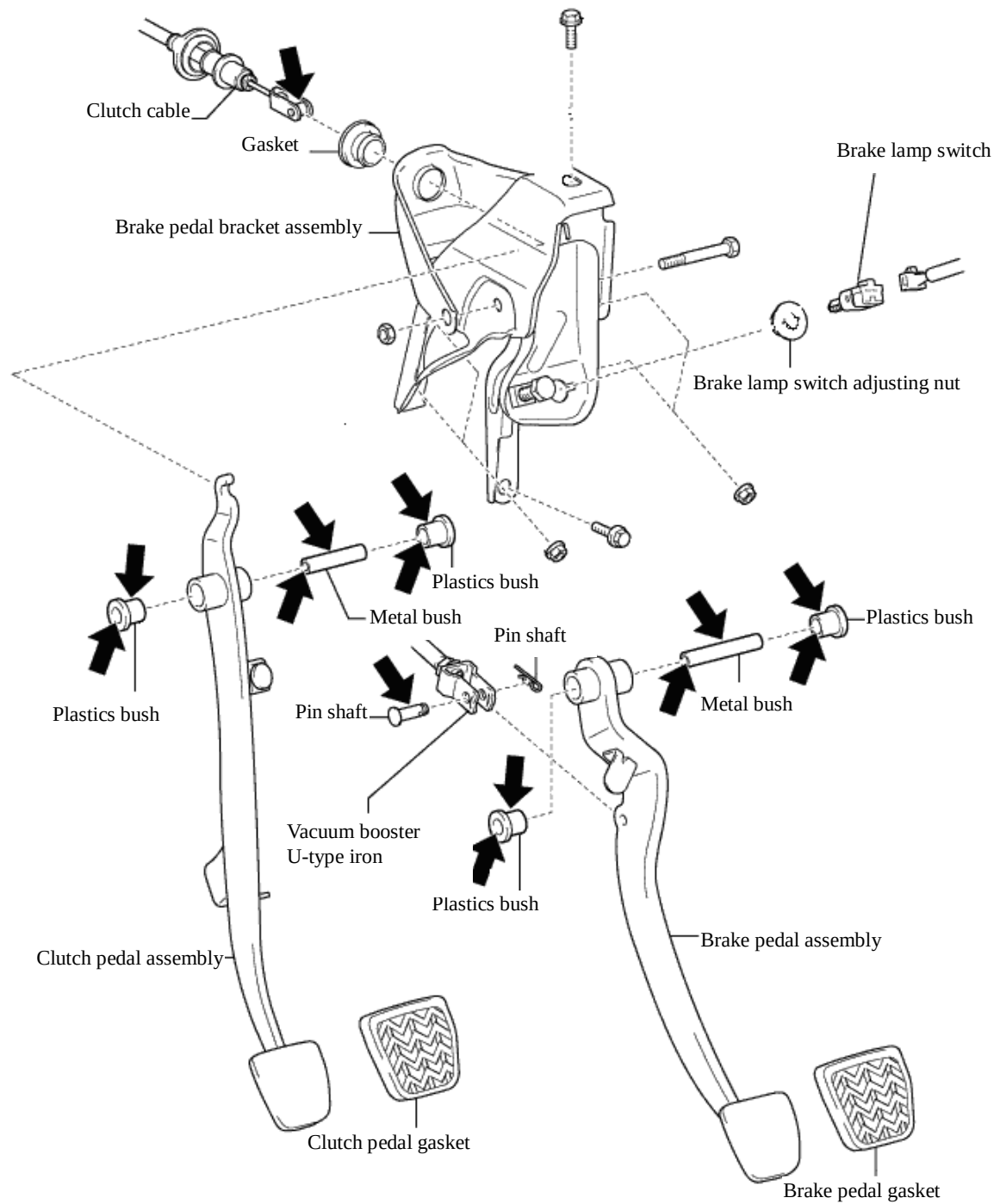
Check the liquid level in the liquid reservoir, and add brake fluid if necessary.

Hydraulic braking liquid: SAE J1703 or FMVSS NO.116 DOT3

2.1.5 Check if the brake liquid is leaking

2.2 Brake Clutch Pedal Assembly

2.2.1 Components



2.2.2 Removal

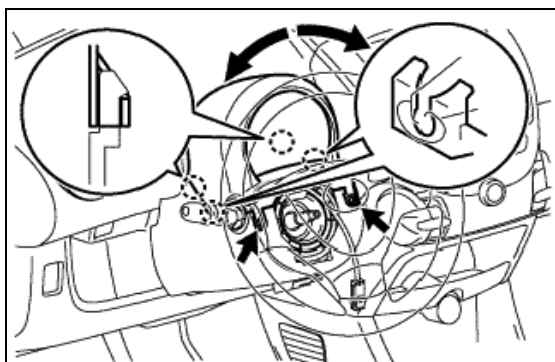
2.2.2.1 Disconnect battery negative pole.

To prevent the airbag from work, please wait for at least 90 seconds after turn off the electric source.

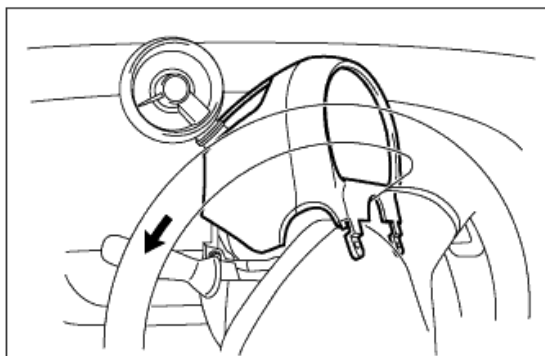
2.2.2.2 Remove the combination instrument cover

2.2.2.2.1 Turn the steering wheel to the left and right, meanwhile remove 2 mounting bolts.

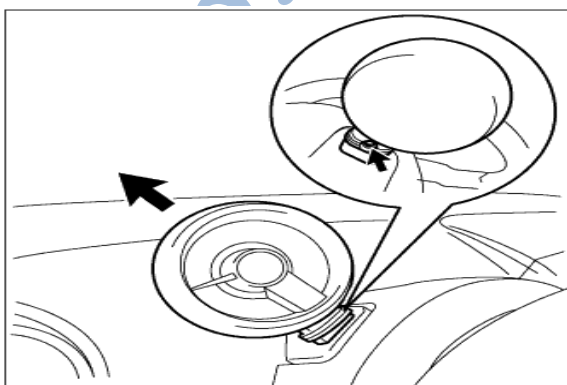
2.2.2.2.2 Release 4 snaps, remove the combination instrument cover.



2.2.2.2.3 As shown in the figure, remove the combination instrument cover.

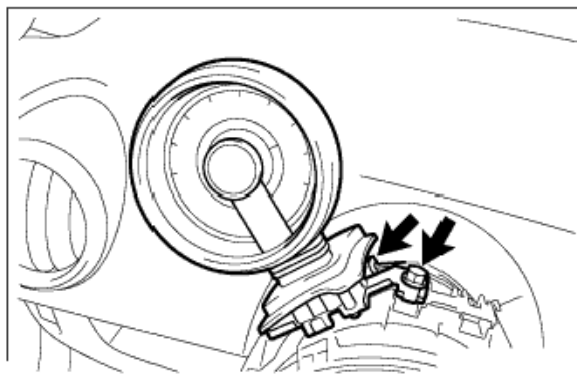


2.2.2.2.4 If it's difficult to remove the combination instrument cover, loosen the bolt behind the tachometer, pull out the tachometer and remove the combination instrument cover.



2.2.2.3 Remove the tachometer

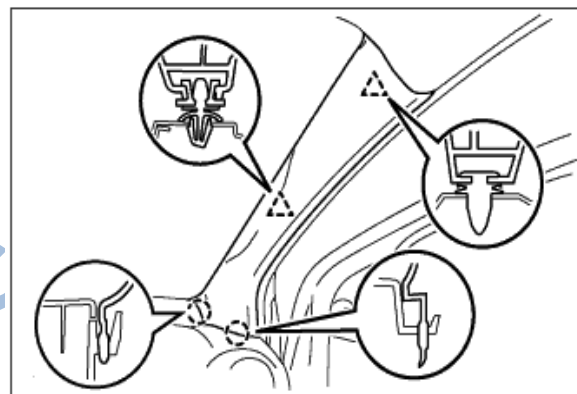
- (1) Disconnect the connector.
- (2) Remove the bolt on the tachometer.



2.2.2.4 Remove the right front door sealing strip

2.2.2.5 Remove the right A-pillar upper guard plate

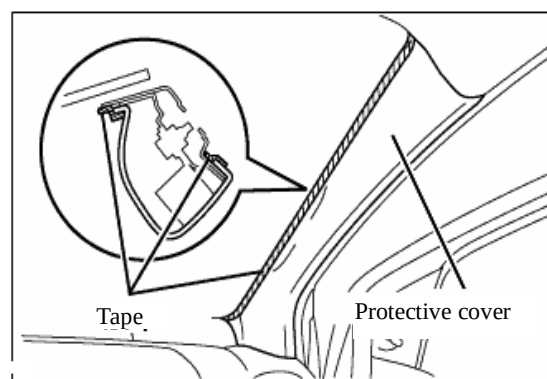
2.2.2.5.1 Separate 2 clamps and 2 snaps, remove the right A-pillar upper guard plate.



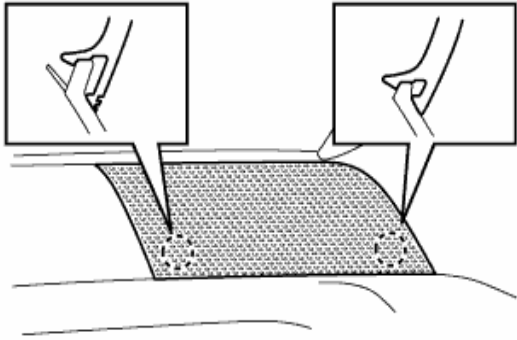
2.2.2.5.2 Wrap the airbag richly in a piece of cloth or nylon of 700mm×120 mm. Seal the wrapping cloth end in tape properly in the method as shown in the figure.

Tip:

After removing the A-pillar upper guard plate, wrap the airbag in wrapping cloth immediately.

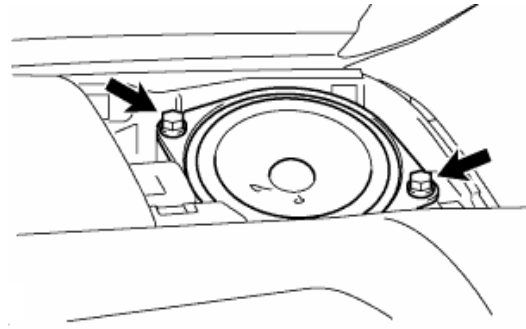


2.2.2.6 Prize the audio cover open with a flat-tip screwdriver wrapped in tape.

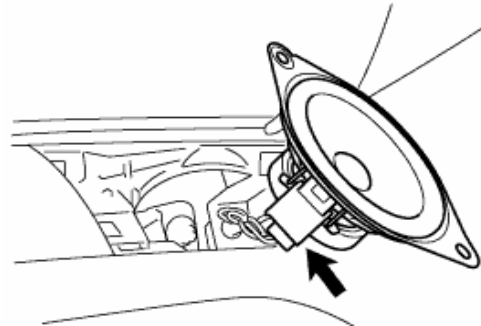


2.2.2.7 Remove the loudspeaker

2.2.2.7.1 Unscrew 2 mounting screws of the speaker

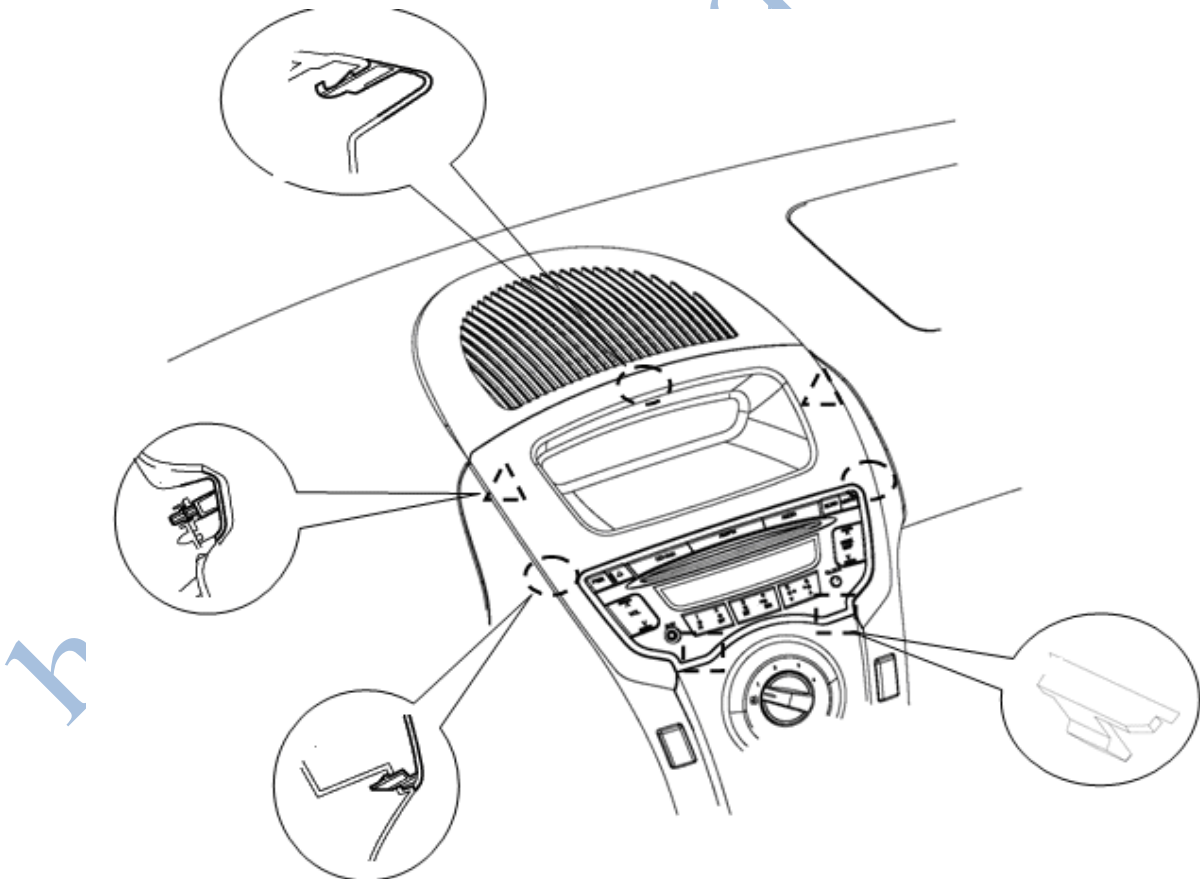


2.2.2.7.2 Take out the speaker



2.2.2.8 Remove the central control panel

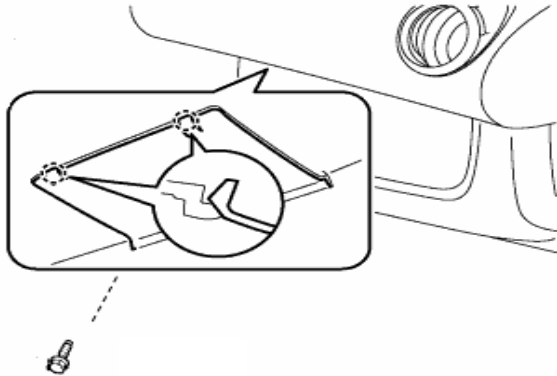
2.2.2.8.1 Prize the both sides with a flat-tip screwdriver wrapped in tape, and release the snap.



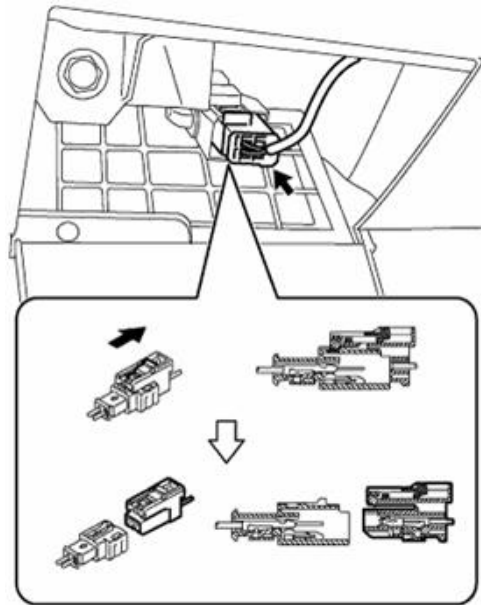
2.2.2.8.2 Pull out the connecting harness of the CD, and take out the central control panel assembly

2.2.2.9 Remove the assistant driver airbag fastening point

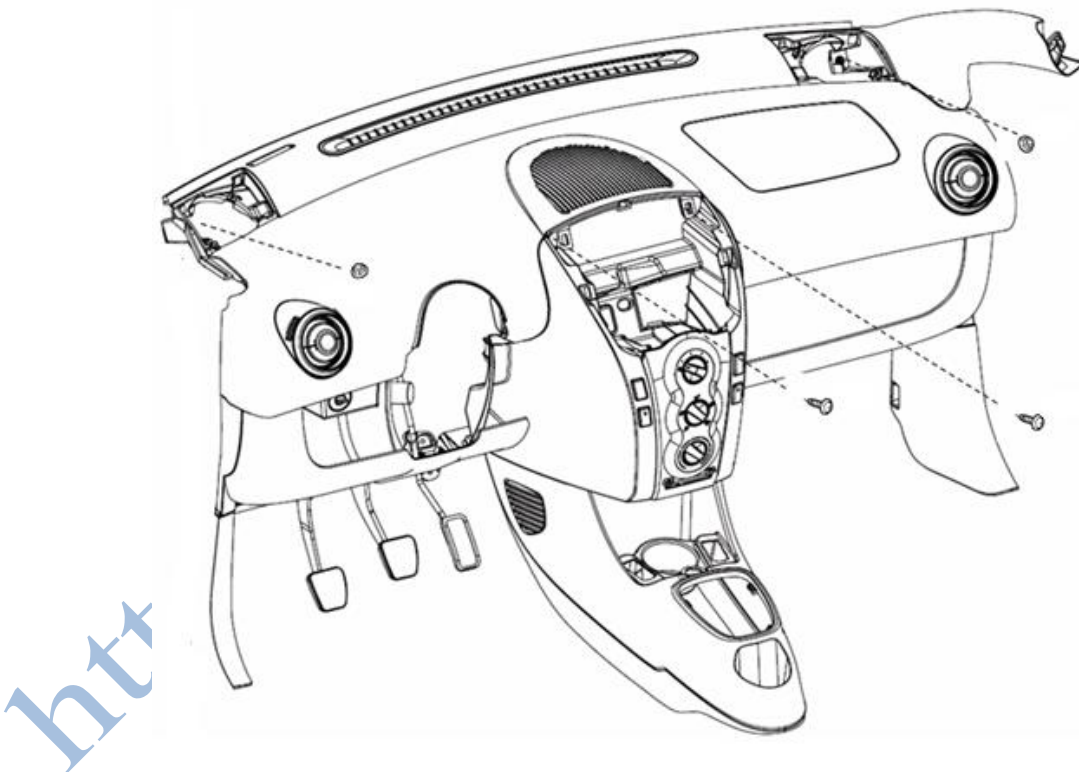
2.2.2.9.1 Open the assistant driver airbag service hole cap, and unbolt the fixing bolt of the airbag and the tubular beam.



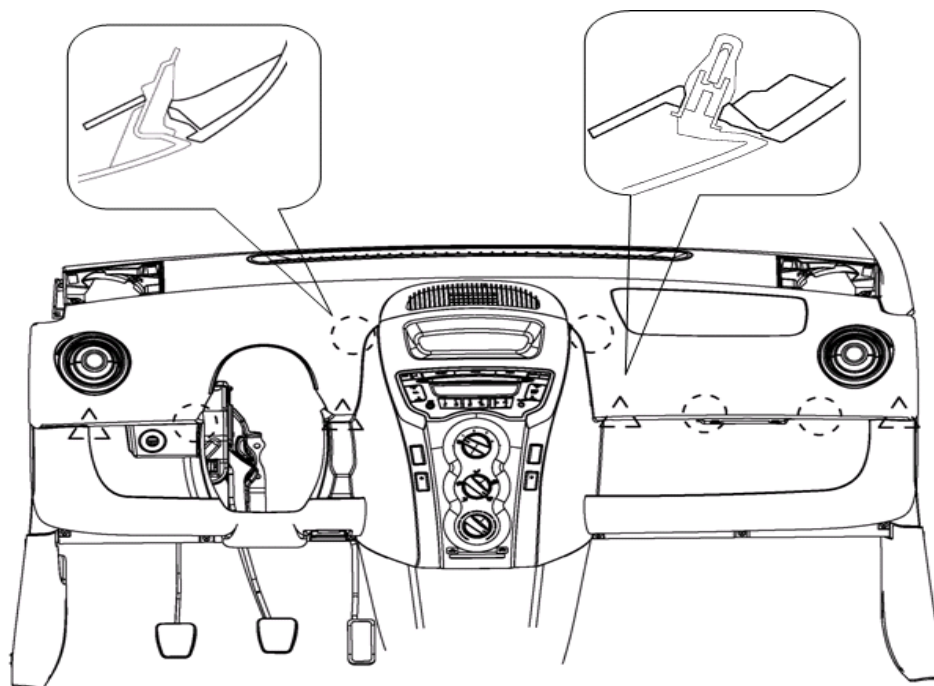
2.2.2.9.2 Pull out the airbag connecting harness as shown.



2.2.2.10 Loosen the mounting screw of the instrument panel upper guard plate.



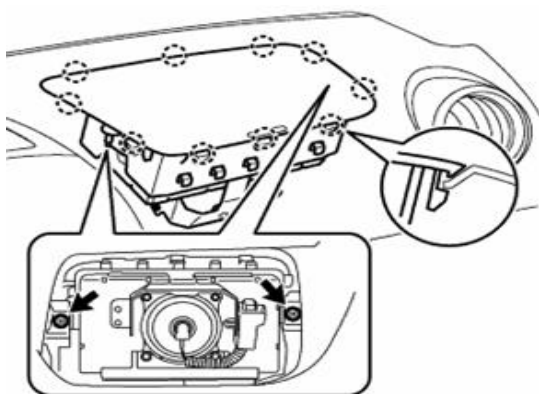
2.2.2.11 Prize the fastening points of the upper and lower guard plate snaps gently, and release the snap.



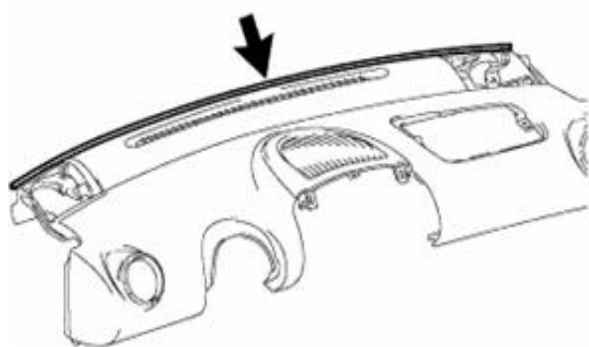
2.2.2.12 Remove the assistant driver airbag

2.2.2.12.1 Unbolt 2 mounting bolts of the assistant driver airbag and the instrument panel upper guard plate.

2.2.2.12.2 Unbolt 10 mounting snaps of the assistant driver airbag and the instrument panel upper guard plate.

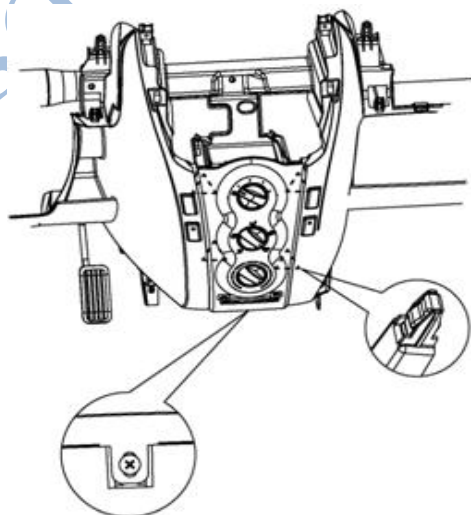


2.2.2.13 The removed instrument panel upper guard plate is as shown in the following figure

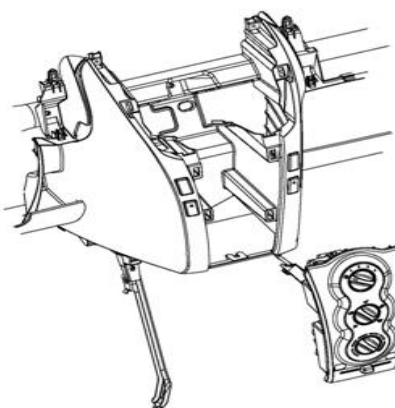


2.2.2.14 Remove the conditioning control panel

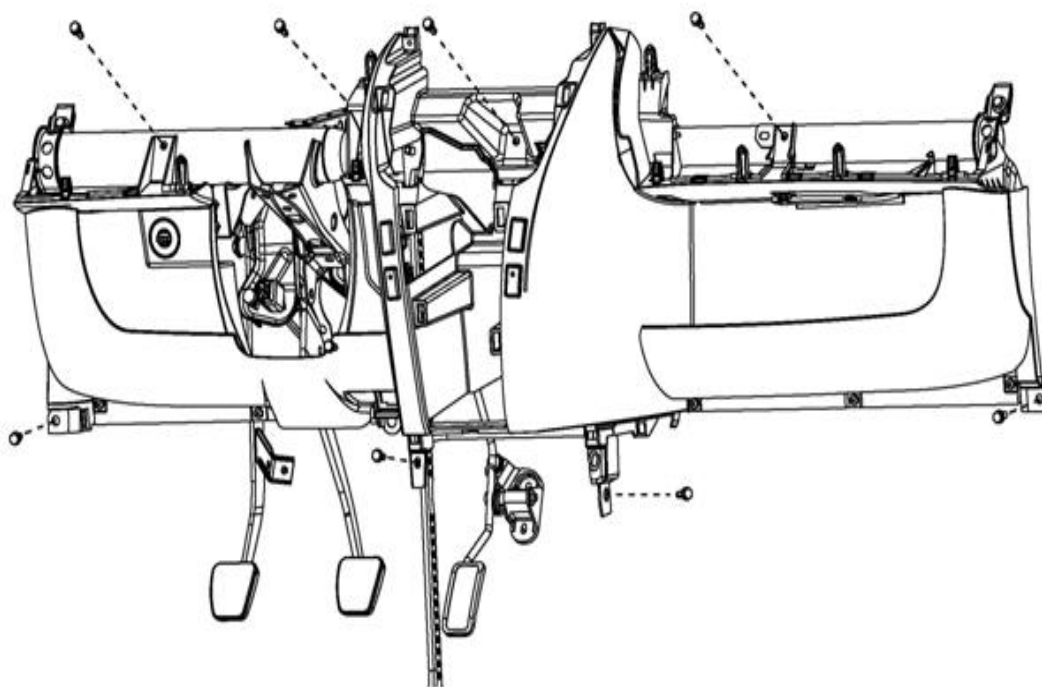
2.2.2.14.1 Fix the screw and 4 mounting snaps.



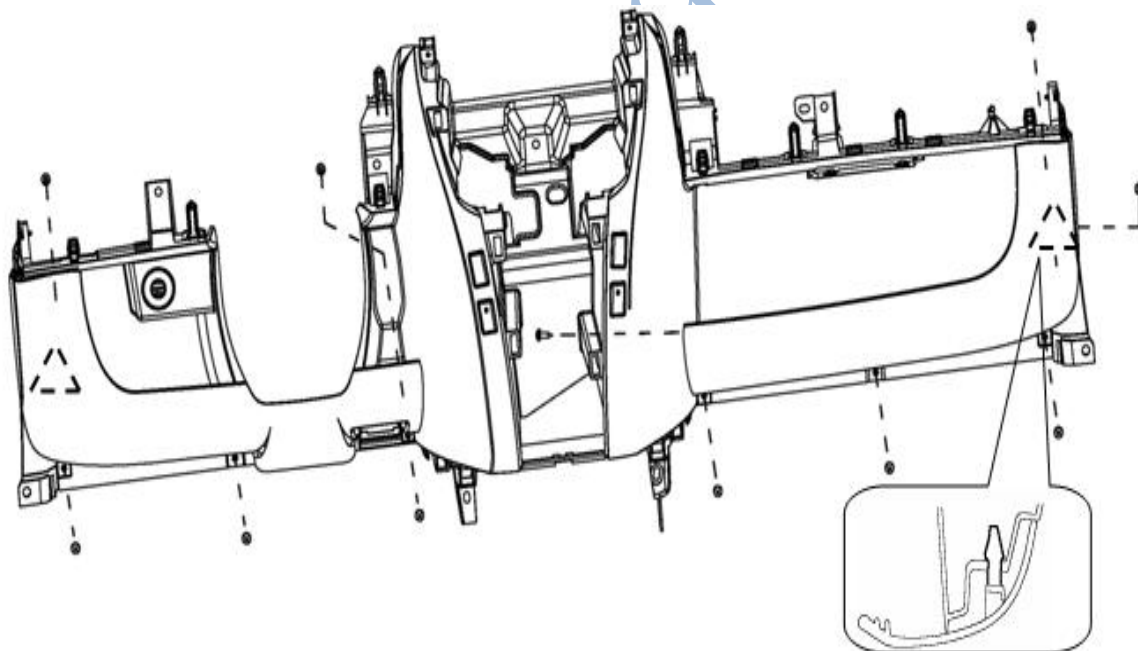
2.2.2.14.2 Pull out the speed regulation wire and other harness.



2.2.2.15 Loosen the instrument panel lower guard plate from the tubular beam and the body mounting bolt.



2.2.2.16 Remove the cover shield of glove compartment



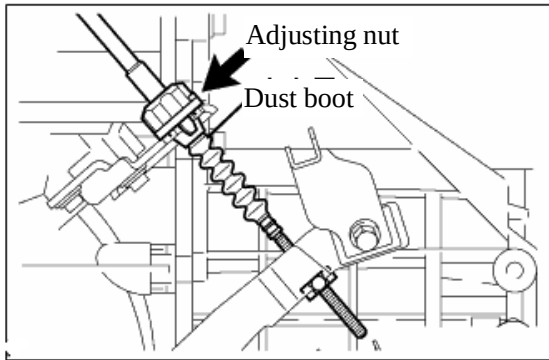
2.2.2.17 Remove the brake lamp switch assembly

2.2.2.17.1 Disconnect the switch connector.

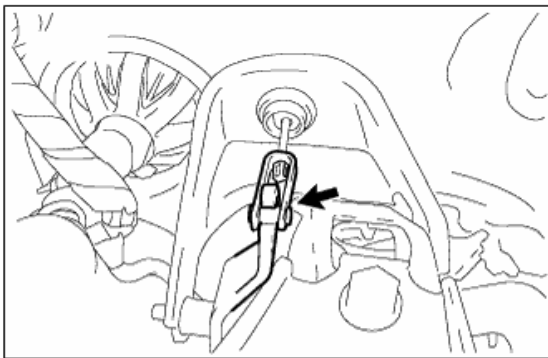
2.2.2.17.2 Unscrew the nut, and remove the brake lamp switch.

2.2.2.18 Separate the clutch cable assembly

2.2.2.18.1 Loosen the cable regulating nut.

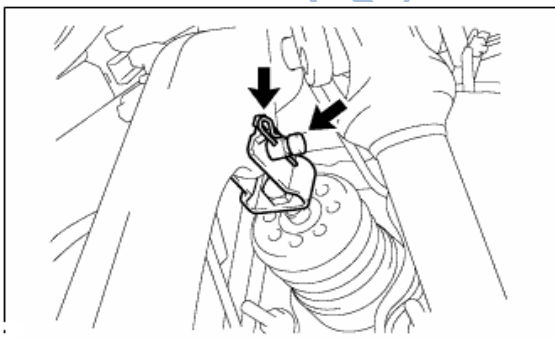


2.2.2.18.2 Separate the cable from the clutch pedal.



2.2.2.19 Separate the vacuum booster pusher U-iron

Remove the lock pin and the axis pin, separate the vacuum booster pusher U-iron.

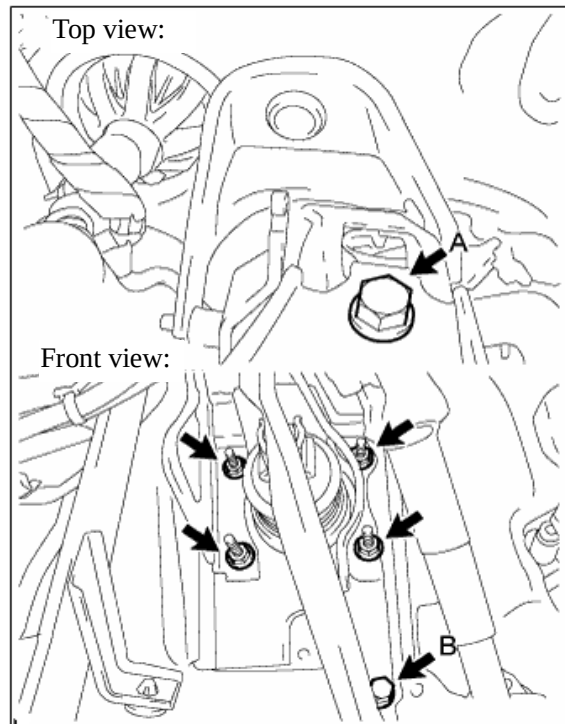


2.2.2.20 Separate the brake pedal bracket assembly

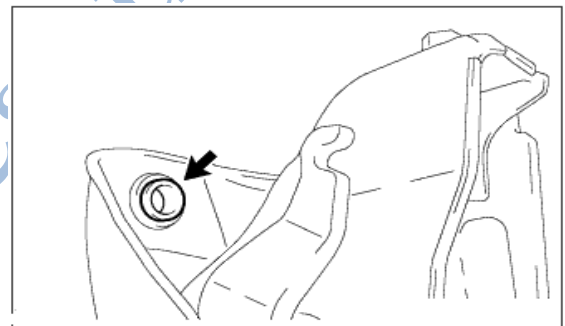
2.2.2.20.1 Remove 2 clamps of the harness from the pedal bracket.

2.2.2.20.2 The clamp on the clip.

2.2.2.20.3 4 nuts and 2 bolts and the brake pedal bracket.



2.2.2.20.4 Remove the gasket from the pedal bracket.



2.2.2.21 Remove the brake pedal bracket assembly

2.2.2.21.1 Remove the bolt and nut with torque spanner.

2.2.2.21.2 Remove the brake pedal and the clutch pedal from the bracket.

2.2.2.21.3 Remove the brake pedal metal liner.

2.2.2.21.4 Remove the brake pedal and 2 plastic bushings.

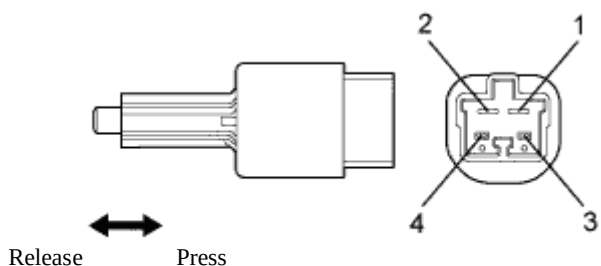
2.2.2.21.5 Remove the clutch pedal metal liner.

2.2.2.21.6 Remove the clutch pedal and 2 plastic bushings.

2.2.2.21.7 Remove the pedal lining.

2.2.3 Adjustment

2.2.3.1 Check the brake lamp switch assembly



Check the resistance

Measure the resistance with ohmmeter, and check if the results fit the values in the form below.

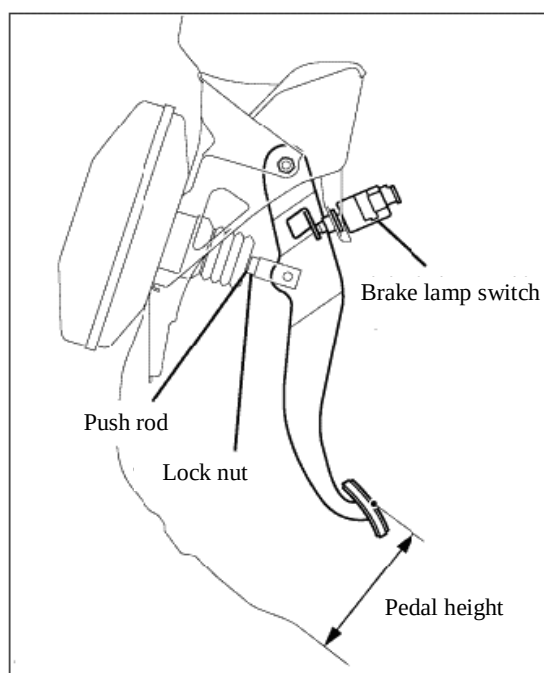
Standard resistance:

Test port connect	Switch condition	Stipulated mode
1 - 2	Off	Less than 1 Ω
1 - 2	On	10 k Ω or even more

If the results are different with the values in the form, replace the brake lamp switch assembly.

2.2.3.2 Check and adjust the brake pedal subassemblies.

2.2.3.2.1 Check the height of brake pedal.



The height of the brake pedal to the floor: 90 mm to 108 mm

If the height of brake pedal is incorrect, adjust it to correct.

2.2.3.2.2 Adjust the height of brake pedal.

2.2.3.2.2.1 Remove the connector from the brake lamp switch.

2.2.3.2.2.2 Loosen the thin nut, and remove the brake lamp switch.

2.2.3.2.2.3 Loosen the lock pin of the lock nut.

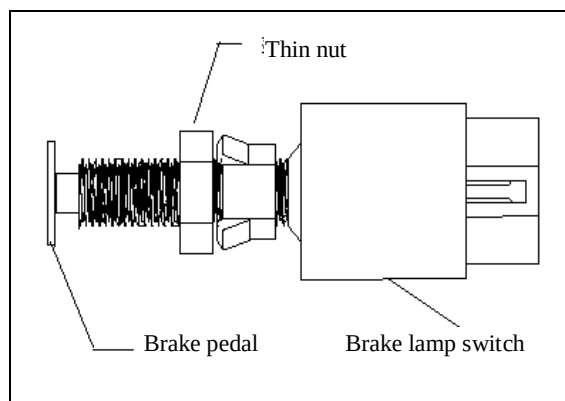
2.2.3.2.2.4 Adjust the pedal height through the brake pedal push rod.

2.2.3.2.2.5 Tighten the push rod lock nut.

Tightening torque: 22 N*m

2.2.3.2.2.6 Fit the brake lamp switch until it touches the brake pedal lightly.

Note: Don't press the brake pedal tightly.



2.2.3.2.2.7 Tighten the thin nut and fit the brake switch.

Tightening torque: 12.5 N*m

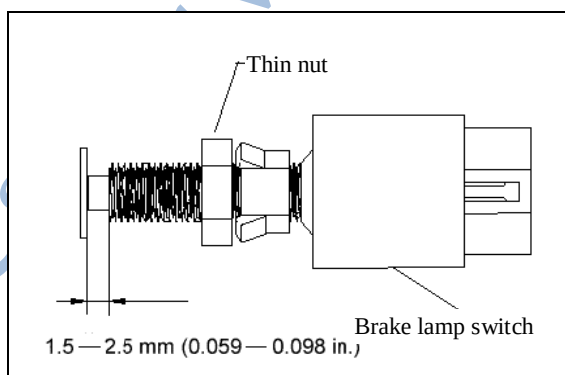
Note: Don't press the brake pedal tightly.

2.2.3.2.2.8 Check the brake lamp switch clearance, and the clearance is 1.5-2.5 mm.

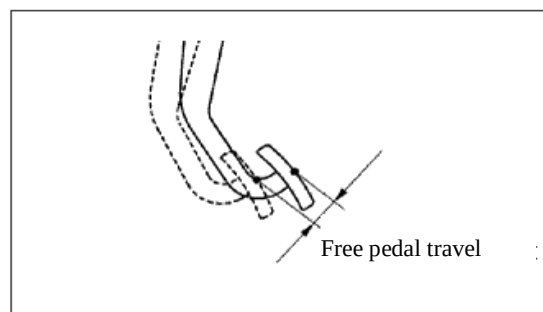
2.2.3.2.2.9 Connect the brake lamp connector.

2.2.3.2.3 Check the free travel of brake pedal.

2.2.3.2.3.1 Shut off the engine, and press the brake pedal several times until the vacuum booster has no vacuum.



2.2.3.2.3.2 Press down the brake pedal until feel the resistance force, and measure the distance at this moment.

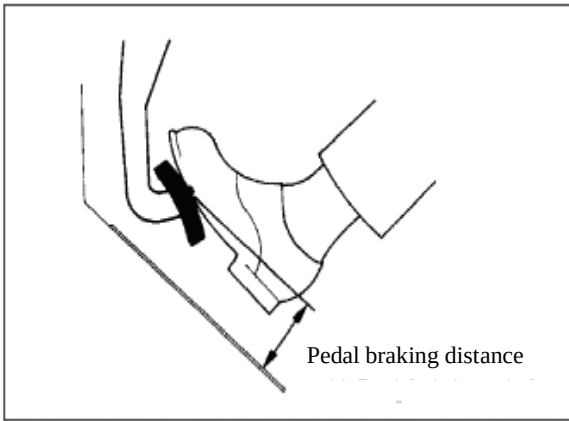


Free pedal travel: 1.0~6.0 mm.

If incorrect, inspect and repair the brake system.

2.2.3.2.4 Check the brake pedal braking distance.

Loosen the parking brake push-rod, start the engine, press the brake pedal and measure the brake pedal braking distance as shown in the figure.



Braking distance: no less than 50mm.
If incorrect, inspect and repair the brake system.

2.2.4 Installation

2.2.4.1 Install the brake pedal assembly

2.2.4.1.1 Fit the pedal gasket to the brake pedal.

2.2.4.1.2 Paint the 2 plastic bushing and metal liner with lithium base grease.

2.2.4.1.3 Fit the 2 plastic bushing and metal liner to the brake pedal.

2.2.4.1.4 Paint the 2 plastic bushing and metal liner with lithium base grease.

2.2.4.1.5 Fit the 2 plastic bushing and metal liner to the clutch pedal.

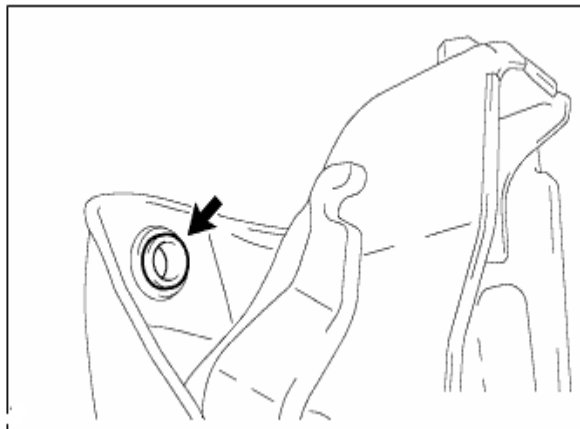
2.2.4.1.6 Fit the brake pedal and the clutch pedal to the bracket.

2.2.4.1.7 Fit the bolt and nut with torque spanner.

Tightening torque: 22 N*m

2.2.4.2 Install the brake pedal support assembly

2.2.4.2.1 Fit the gasket to the brake pedal.



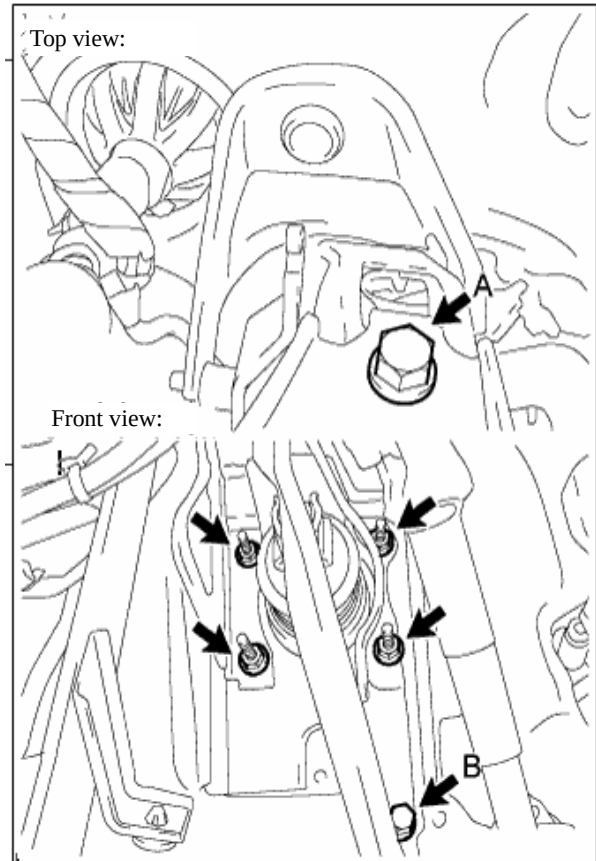
2.2.4.2.2 Fit the bracket with 2 bolts and 4 nuts.

Tightening torque:

Nuts: 30.5 N*m

Bolt A: 23.6 N*m

Bolt B: 14 N*m

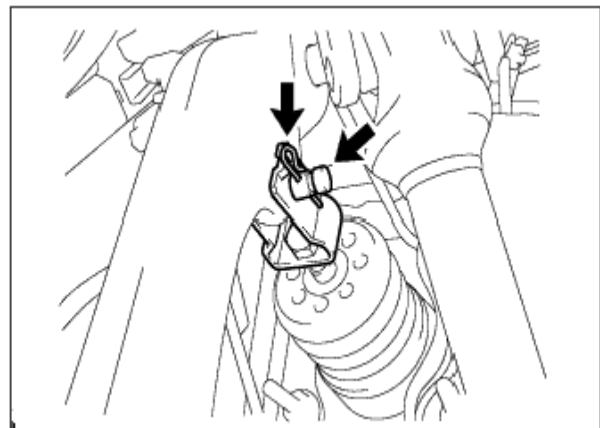


2.2.4.3

Install the vacuum booster pusher U-iron

2.2.4.3.1 Paint the vacuum booster push rod axis pin with lithium base grease.

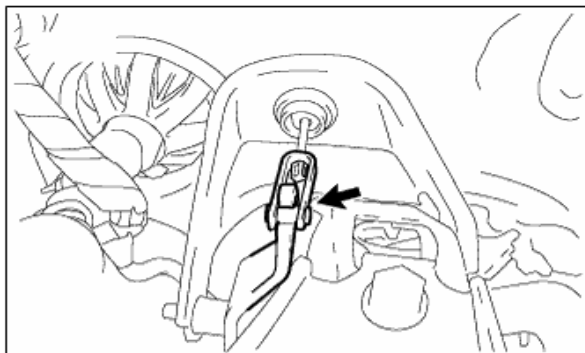
2.2.4.3.2 Fit the vacuum booster U-iron with lock pin and axis pin.



2.2.4.4 Install the clutch cable assembly

2.2.4.4.1 Paint the clutch pedal U-iron with lithium base grease

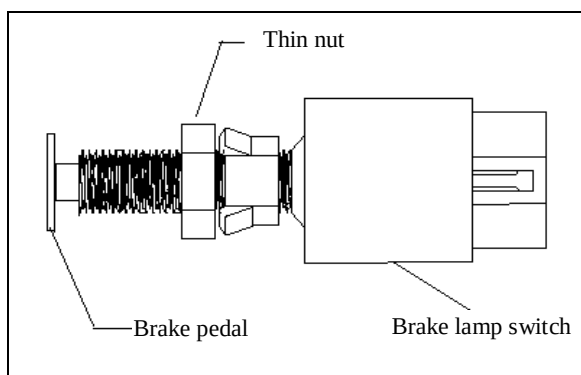
2.2.4.4.2 Fit the clutch cable to the clutch pedal.



2.2.4.5 Install the brake lamp switch assembly

2.2.4.5.1 Fit new brake lamp regulating nut to the brake pedal.

2.2.4.5.2 Fit the brake lamp switch to the bracket, and regulate the nut until the switch touches the brake pedal lightly.



Note:

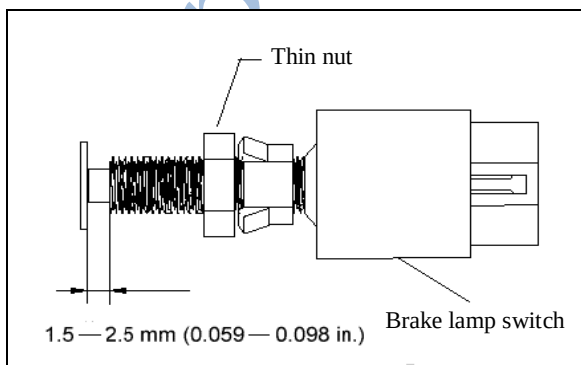
Don't pre-tighten the brake pedal.

2.2.4.5.3 Tighten the brake lamp switch regulating nut.

Note: Don't press the brake pedal tightly.

Tip: Fit the brake lamp switch with a small torque.

Tightening torque: 12.5 N*m



2.2.4.5.4 Regulate the clearance between the brake lamp switch and the pedal.

Brake lamp switch clearance: 1.5~2.5mm.

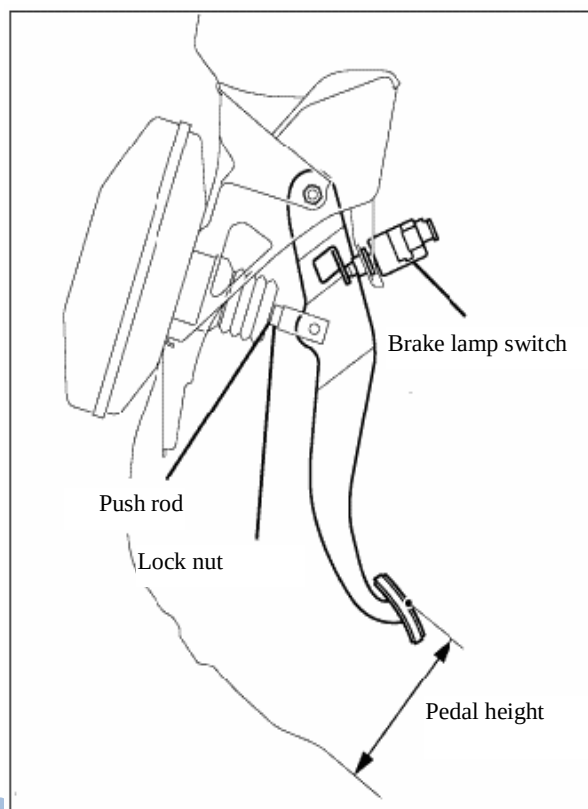
2.2.4.5.5 Fit the brake lamp switch connector.

2.2.4.6 Install and adjust the brake pedal assembly

2.2.4.6.1 Check the height of brake pedal. Brake lamp switch

The height of pedal to the floor: 90~108 mm

If the height is improper, adjust it.



2.2.4.6.2 Adjust the height of brake pedal.

2.2.4.6.2.1 Remove the connector from the brake lamp switch.

2.2.4.6.2.2 Loosen the thin nut, and remove the brake lamp switch.

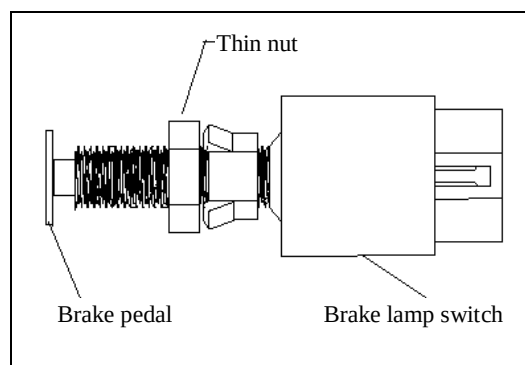
2.2.4.6.2.3 Loosen the lock pin of the lock nut.

2.2.4.6.2.4 Adjust the pedal height through the brake pedal push rod.

2.2.4.6.2.5 Tighten the push rod lock nut.

Tightening torque: 22 N*m

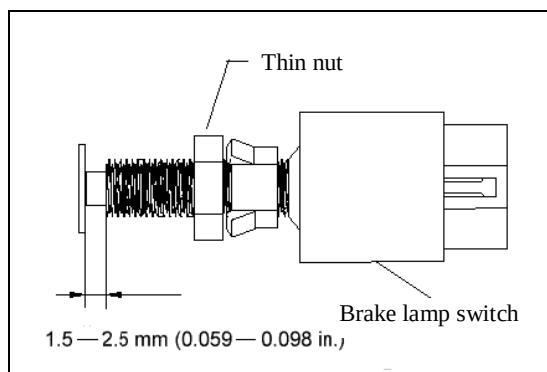
2.2.4.6.2.6 Fit the brake lamp switch until it touches the brake pedal lightly.



2.2.4.6.2.7 Tighten the thin nut and fit the brake lamp switch.

Note: Don't press the brake pedal tightly.

Tip: Fit the brake lamp switch with a small torque.



Tightening torque: 12.5 N*m

2.2.4.6.2.8 Check the brake lamp switch clearance.

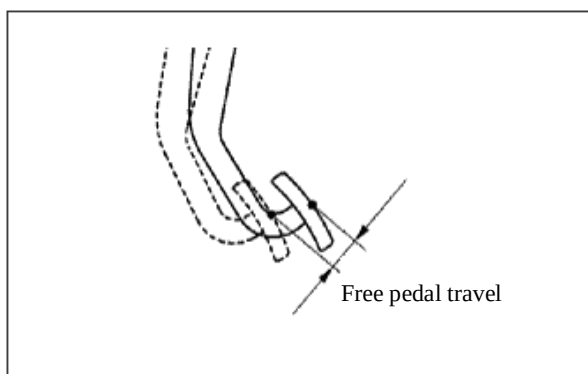
Brake lamp switch clearance: 1.5~2.5 mm.

2.2.4.6.2.9 Connect the brake lamp switch connector.

2.2.4.6.3 Check the free travel of brake pedal.

2.2.4.6.3.1 Shut off the engine, and press the brake pedal several times until the vacuum booster has no vacuum.

2.2.4.6.3.2 Press down the brake pedal until feel the resistance force, and measure the distance at this moment.

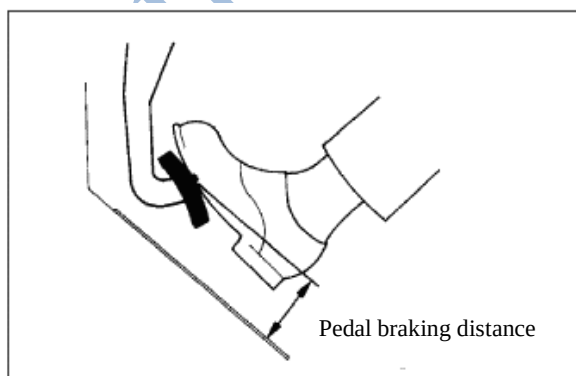


Free pedal travel: 1.0~6.0 mm.

If incorrect, inspect and repair the brake system.

2.2.4.6.4 Check the brake pedal braking distance.

Loosen the parking brake push-rod, start the engine, press the brake pedal and measure the brake pedal braking distance as shown in the figure.



Braking distance: no less than 84mm.

If incorrect, inspect and repair the brake system.

2.2.4.7 Install and adjust the clutch pedal assembly

2.2.4.7.1 Overturn the carpeting.

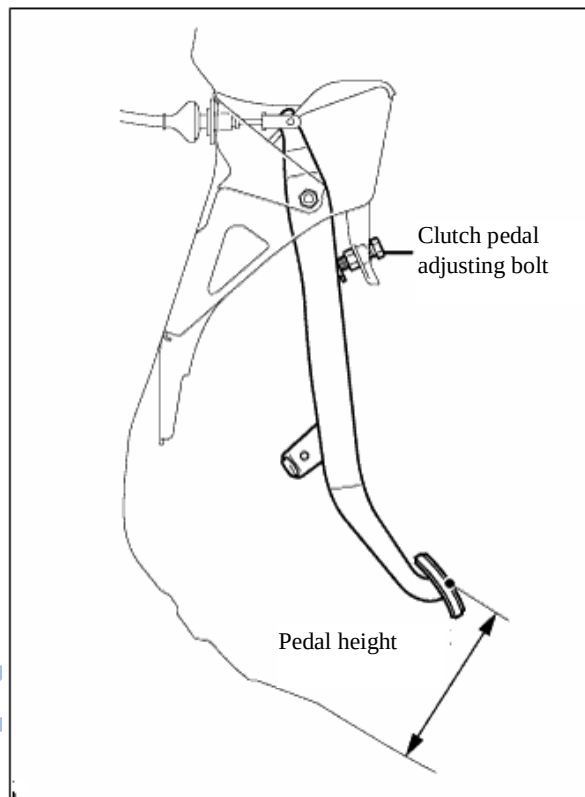
2.2.4.7.2 Check if the height of clutch pedal is correct.

The height of pedal to the floor: 134.9~144.9 mm

2.2.4.7.3 Adjust the height of pedal.

Loosen the lock nut, rotate the stopper bolt until the height is suitable, and tighten the lock nut.

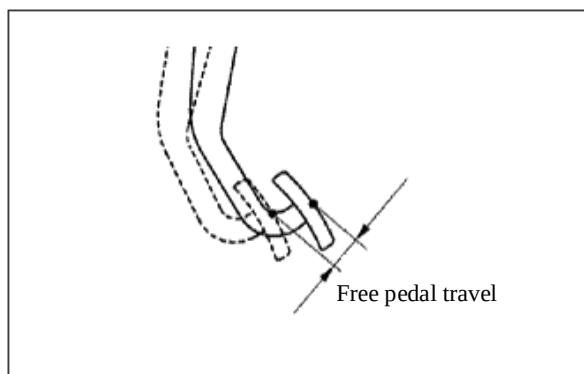
Tightening torque: 25 N*m



2.2.4.7.4 Check if the free travel of clutch pedal is correct.

Press down the pedal until feel the resistance force.

Free travel of clutch pedal: 18~28mm.

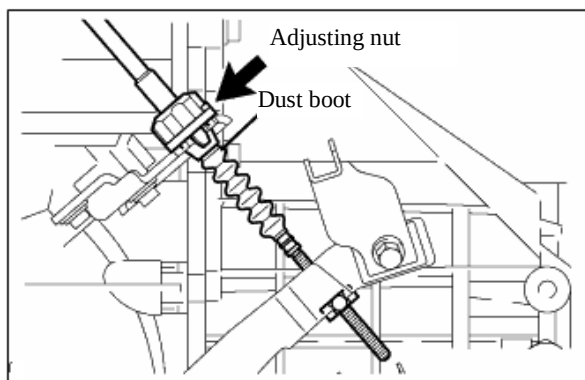


2.2.4.7.5 Adjust the free travel of clutch pedal.

i . Rotate the clutch cable regulating nut until the free travel of clutch pedal is correct.

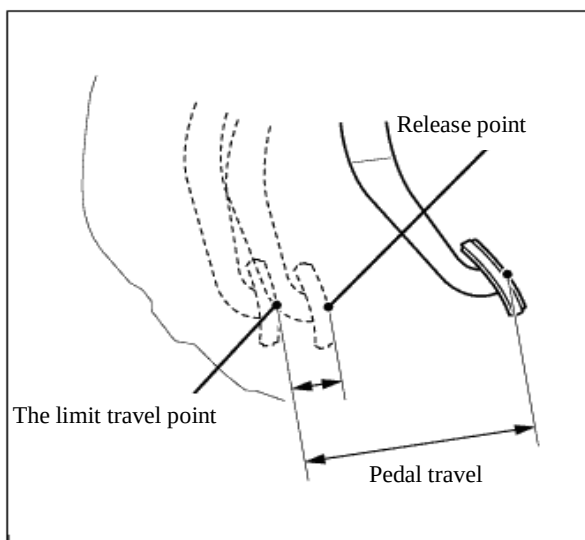
Note: Make sure to keep the clutch cable dust cover in fitted condition.

ii Adjust the free pedal travel and check the height of pedal.



2.2.4.7.6 Check the pedal stopper bolt.

- i Pull up the parking handle and fit the wheel brake.
- ii Start the engine and keep it in idling mode.
- iii In the condition of not loosening the clutch pedal, move the shifting handle to rearward driving position, until the gears come into contact.



- iv Press down the clutch gradually, and measure the distance between the noise disappearing to maximum pedal travel.
Standard distance: more than 20 mm.
If the distance is not in the range, please do the flowing:

- Check the height of pedal.
- Check the free pedal travel
- Check the clutch cover and the clutch disc.
- Check the pedal travel, pedal travel: 148mm

2.2.4.8 Install the instrument panel lower guard plate

2.2.4.9 Install the cover shield of glove compartment

2.2.4.10 Connect the air conditioning speed regulation wire and other harness

2.2.4.11 Install the conditioning control panel

2.2.4.12 Install the instrument panel upper guard plate

2.2.4.13 Install the assistant driver airbag and connect the airbag connecting harness

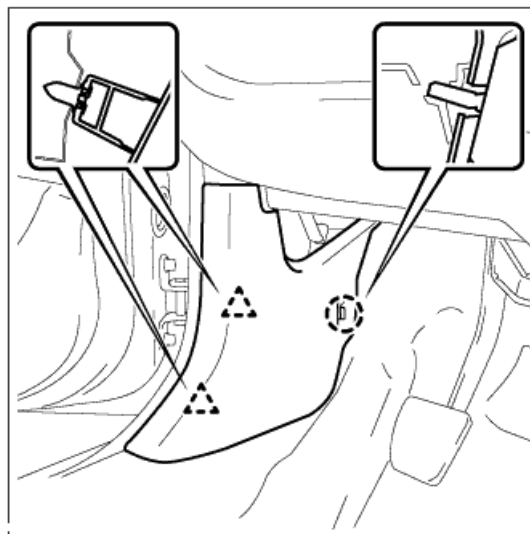
2.2.4.14 Install the central control panel

2.2.4.15 Install the speaker

2.2.4.16 Install the audio cover

2.2.4.17 Install the A-pillar lower guard plate

Connect 2 clips and jaws, and fit the A-pillar lower guard plate



2.2.4.18 Install the right A-pillar lower guard plate

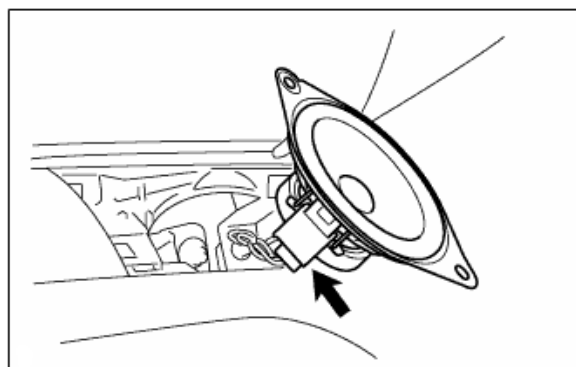
2.2.4.19 Install the combination instrument assembly

2.2.4.20 Install the instrument-cluster harness end assembly

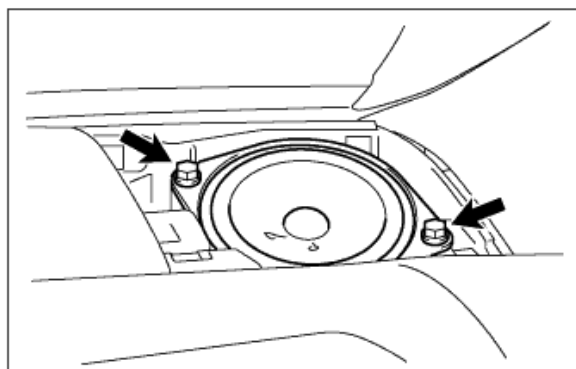
2.2.4.21 Install the instrument panel speaker assembly

1

2.2.4.21.1 Connect the connector.

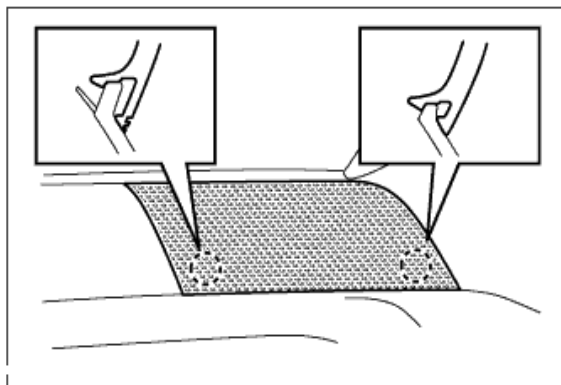


2.2.4.21.2 Fix 2 screws.



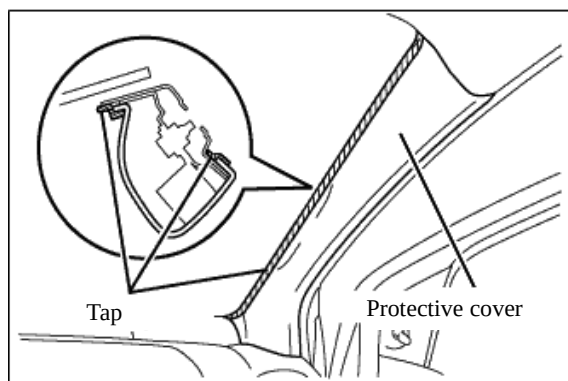
2.2.4.22 Install the instrument panel speaker outer cover assembly

Connect 2 jaws.



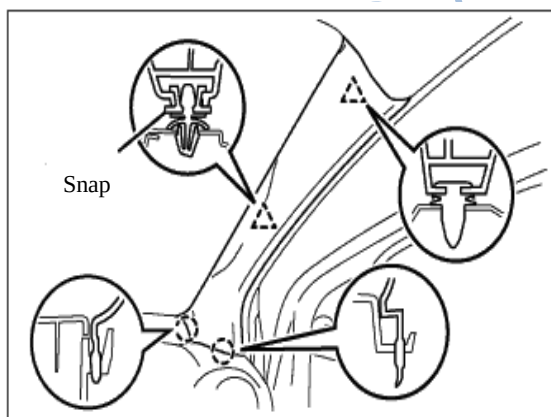
2.2.4.23 Install the right A-pillar upper guard plate

2.2.4.23.1 Take off the tape and wrapping cloth.



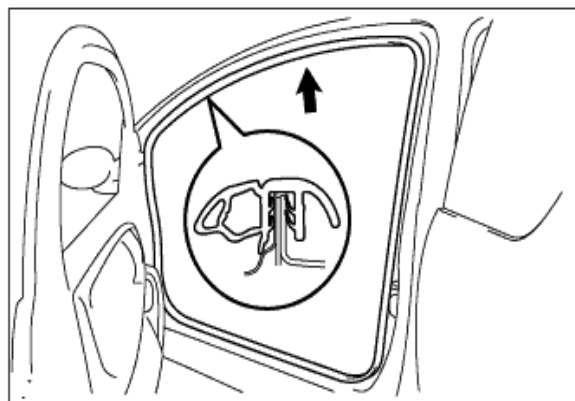
2.2.4.23.2 Fit the new snaps.

2.2.4.23.3 Connect 2 snaps and 2 jaws, and fit the right A-pillar upper guard plate.



2.2.4.24 Install the left A-pillar upper guard plate

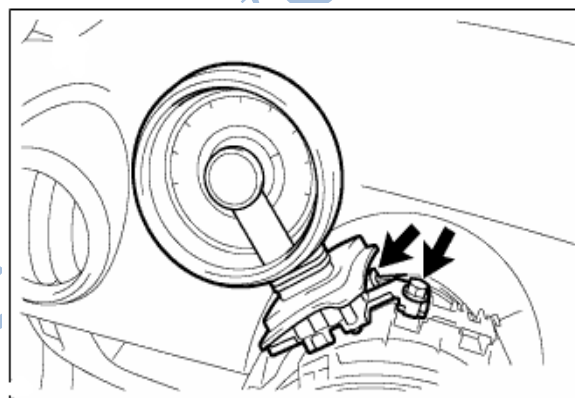
2.2.4.25 Install the left front door sealing strip



2.2.4.26 Install the right front door sealing strip

2.2.4.27 Install the tachometer

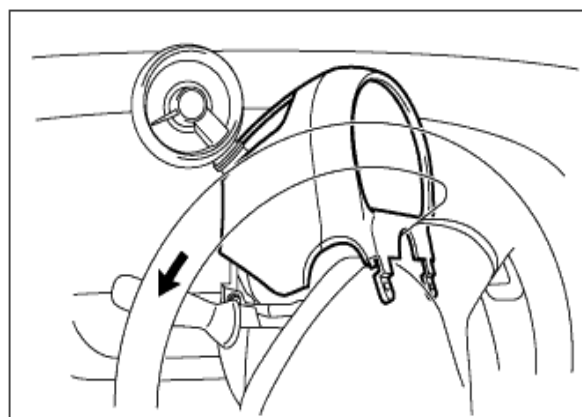
2.2.4.27.1 Fit the tachometer with bolt, the tightening torque: 6.5 mm



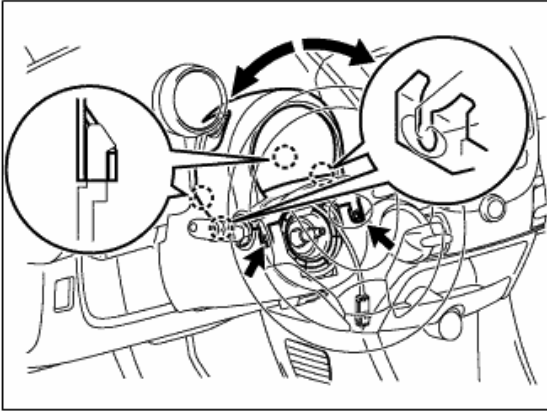
2.2.4.27.2 Connect the connector.

2.2.2.28 Install the combination instrument cover

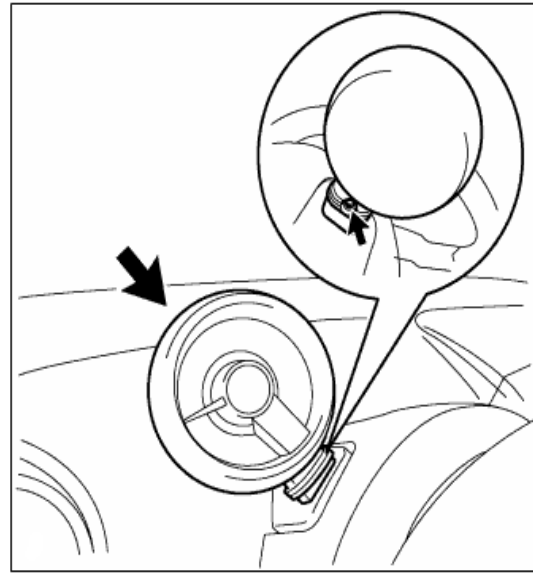
2.2.4.28.1 Fit the combination instrument cover, as shown in the figure.



2.2.4.28.2 Rotate the steering wheel to the left and right, to make 4 snaps connect, and fit the clustered instrument board with 2 mounting screws, the tightening torque: 2.0 N*m.



2.2.4.28.3 Tighten the bolt behind the tachometer. If the tachometer was pulled out and the clustered instrument board was moved sometime, please tighten the screw, the tightening torque: 9 N*m.



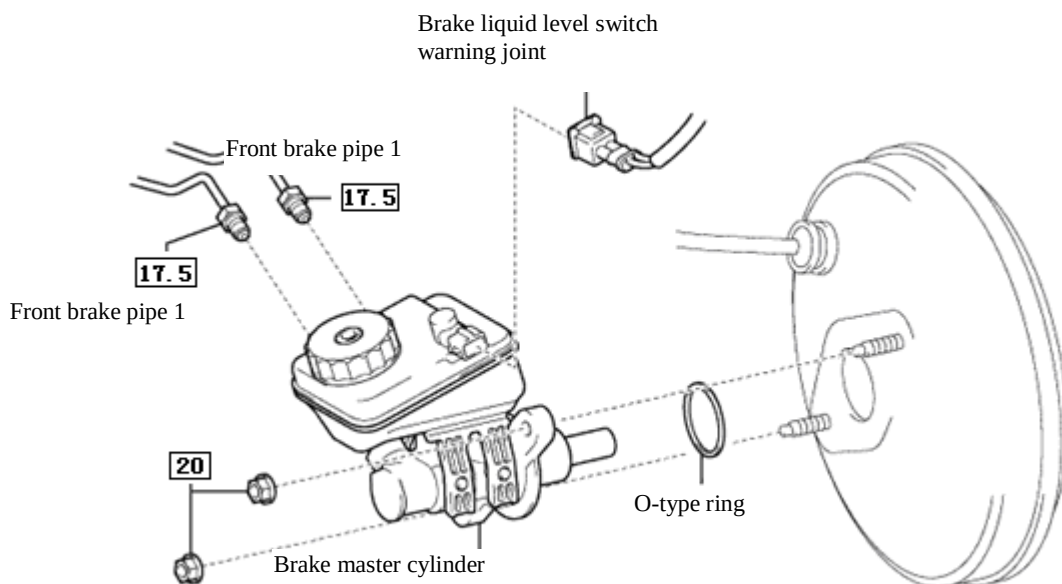
2.2.4.29 Connect the battery end electric source

Tightening torque: 5.4 N*m

2.2.4.30 Check the SRS warning lamp

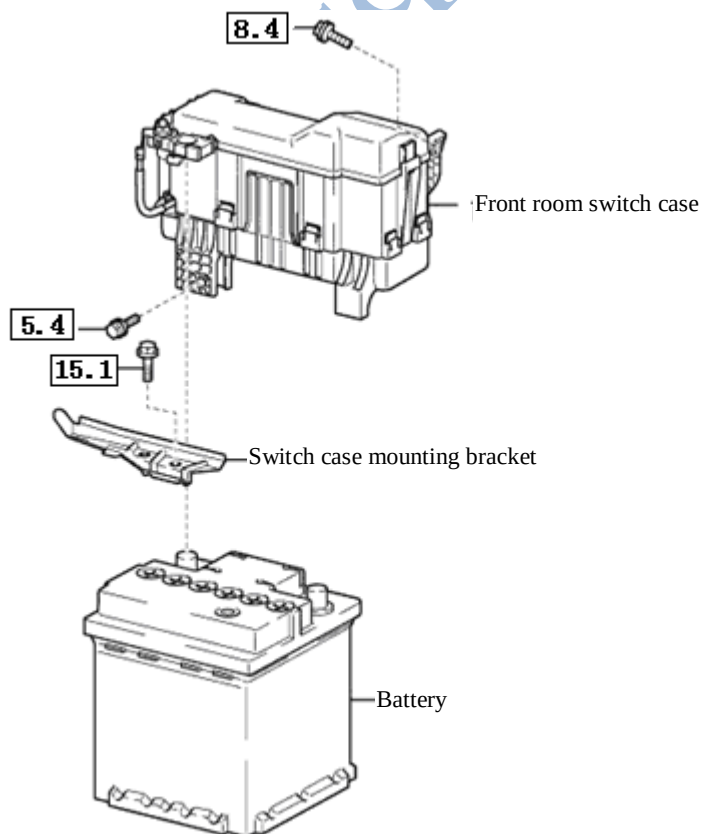
2.3 Brake Master Cylinder

2.3.1 Components



[N·m] : Tightening torque

● Non-reusable parts



[N·m] : Tightening torque

● Non-reusable parts

2.3.2 Removal

Note: Don't regulate the booster pusher.

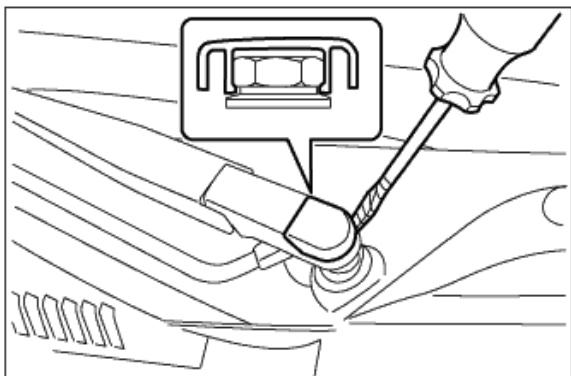
Press the brake pedal several times to make the vacuum booster completely vacuum. Because of that the internal pressure would push the piston out of the cylinder.

2.3.2.1 Disconnect the battery negative pole.

2.3.2.2 Remove the front wheels

2.3.2.3 Remove the front wiper rocker arm guard cover

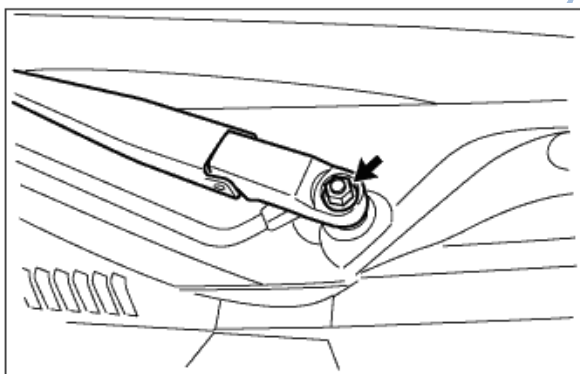
With a screwdriver of the edge wrapped in protective tape as shown below, remove the front wiper rocker arm guard cover.



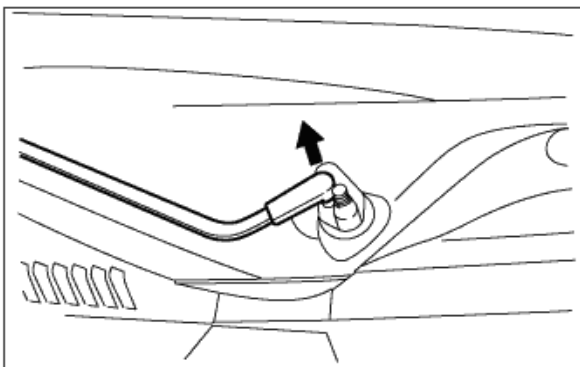
2.3.2.4 Remove the front wiper rocker arm

2.3.2.4.1 Operate the front wiper, remain it at the location of wiper motor automatic return.

2.3.2.4.2 Remove the nut and the front wiper main arm.



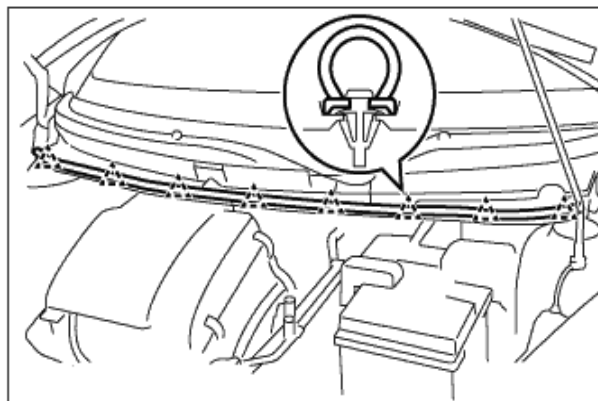
2.3.2.4.3 Release the meshing engagement of the aided rocker arm with the front wiper motor and bracket assembly.



Note: Don't make the aided rocker arm flexural deformation when removing.

2.3.2.5 Remove the ventilation cover plate sealing strip

Release 8 snaps and remove the ventilation cover plate sealing strip.

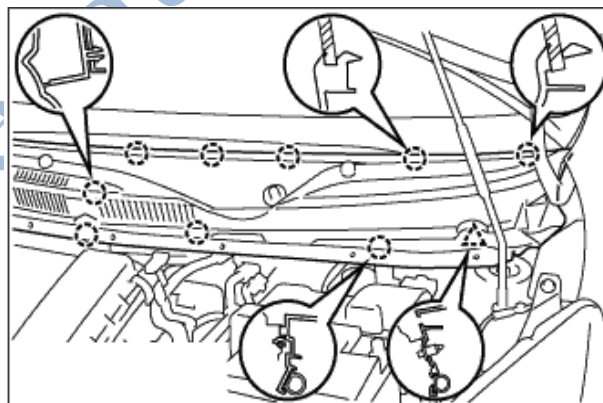


2.3.2.6 Remove the left ventilation cover plate

2.3.2.6.1 Remove the tube clamp.

2.3.2.6.2 Remove 9 mounting snap buttons and the ventilation cover plate.

2.3.2.6.3 Disconnect the washer tube.

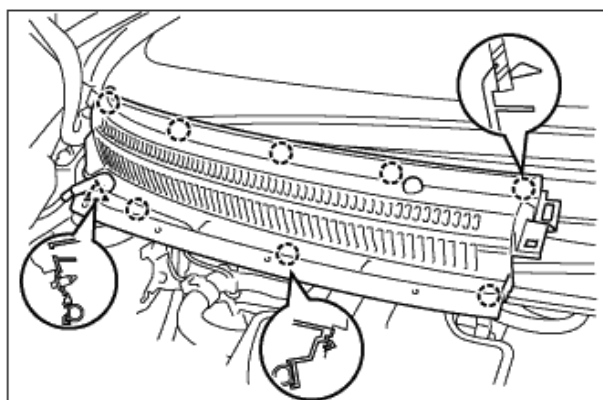


2.3.2.7 Remove the right ventilation cover plate

2.3.2.7.1 Remove the tube clamp.

2.3.2.7.2 Remove 9 mounting snap buttons and the right ventilation cover plate.

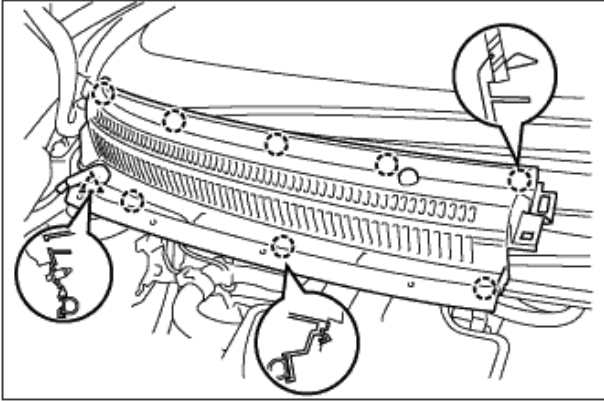
2.3.2.7.3 Disconnect the washer tube.



2.3.2.8 Disconnect the connect between the front wiper and the motor

2.3.2.8.1 Unscrew 2 bolts.

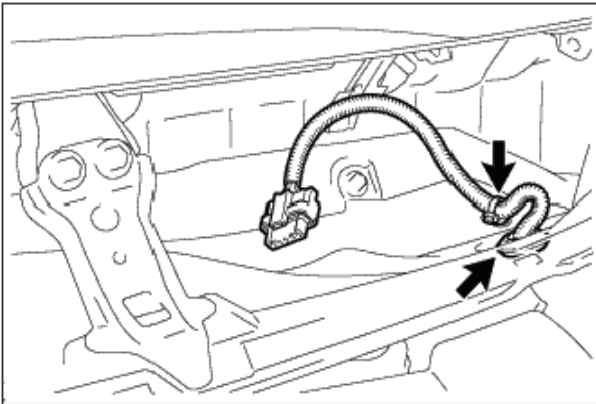
2.3.2.8.2 Disconnect the wiper motor and the connector.



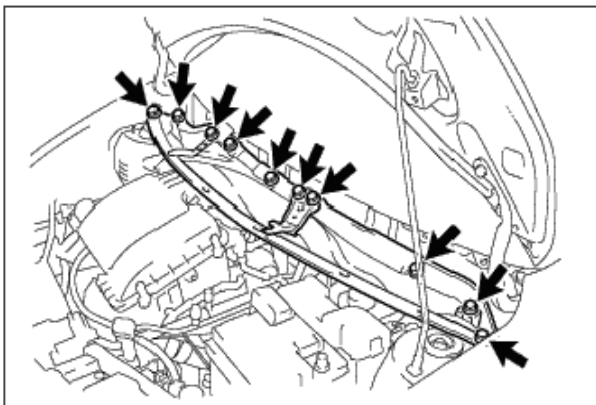
2.3.2.9 Remove the rain groove

2.3.2.9.1 Remove the harness clamp.

2.3.2.9.2 Remove the harness snap.



2.3.2.9.3 Unscrew 10 bolts on the rain groove.



2.3.2.10 Discharge the brake fluid

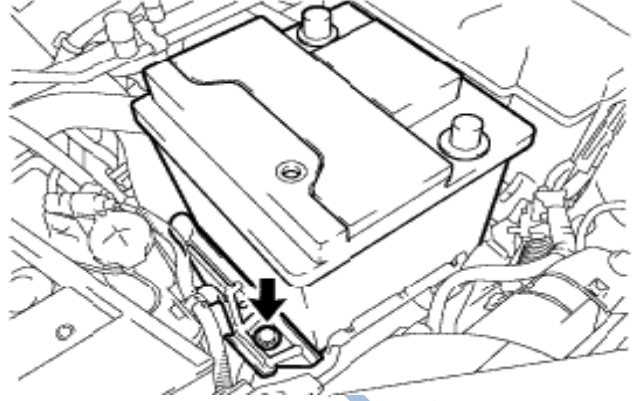
Note: When the brake fluid splashes to coat painting surface, wash it off quickly.

2.3.2.11 Remove the battery

2.3.2.11.1 Loosen the bolt, and disconnect battery positive and negative poles.

2.3.2.11.2 Remove the bolt and the battery bracket.

2.3.2.11.3 Remove the cell.

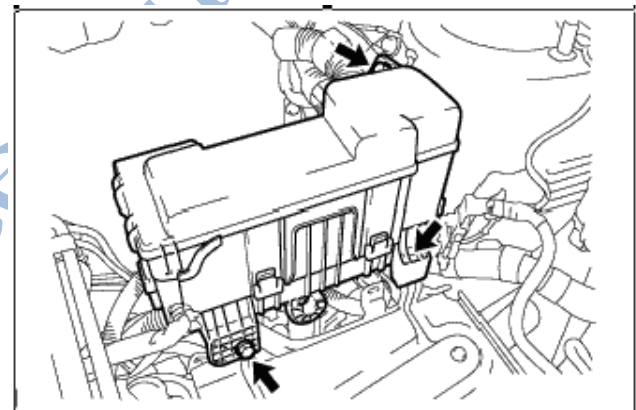


2.3.2.12 Remove the engine room switch case

2.3.2.12.1 Remove 2 bolts and snaps.

2.3.2.12.2 Remove 2 snaps, take off the switch case.

Tip: Put the switch case on the engine room cover temporarily.



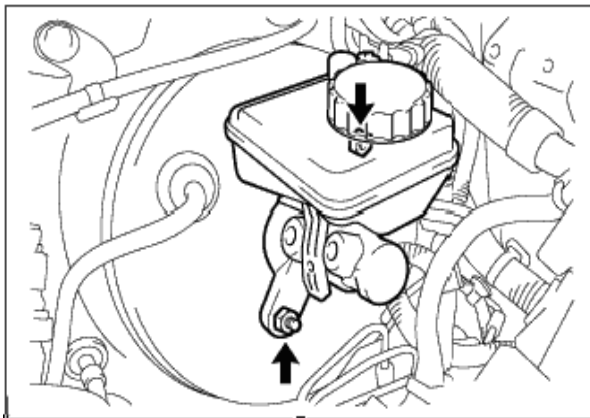
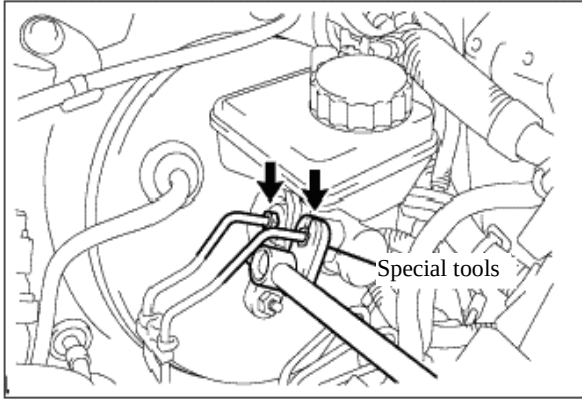
2.3.2.13 Remove the brake master cylinder.

2.3.2.13.1 Press the clamp, and turn off the brake fluid level switch.

2.3.2.13.2 Remove the brake pipe from both master cylinders with standard tools.

2.3.2.13.3 Unscrew 2 nuts, and pull the master cylinder out of the vacuum booster.

2.3.2.13.4 Remove the O-ring from the master cylinder.

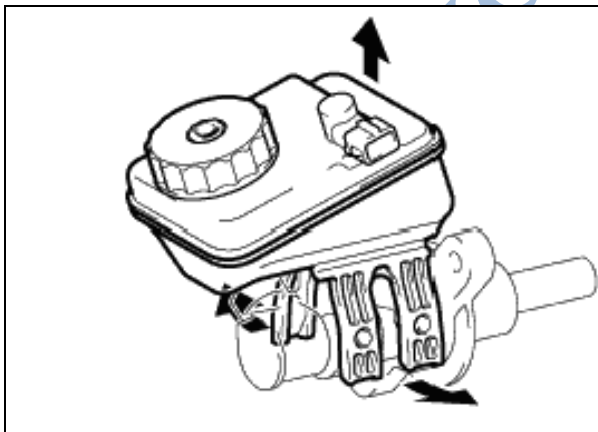


2.3.3 Disassembly

2.3.3.1 Remove the master-cylinder reservoir

Release 3 jaws, take off the liquid reservoir.

Note: Don't damage the 3 jaws.



2.3.3.2 Remove the liquid reservoir assembly

2.3.4 Reassembly

2.3.4.1 Install the master brake cylinder reservoir assembly

2.3.4.2 Install the liquid reservoir snaps

2.3.4.2.1 Smear some soapy water onto the snaps.

2.3.4.2.2 Fit 2 snap to the master cylinder.

2.3.4.3 Install the master-cylinder reservoir

Fit the liquid reservoir to the master cylinder.

2.3.5 Installation

Note: When treating with the master cylinder, don't hold the piston, as the piston may be out of the master cylinder.

2.3.5.1 Install the brake master cylinder

2.3.5.1.1 Fit a new O-ring to the master cylinder.

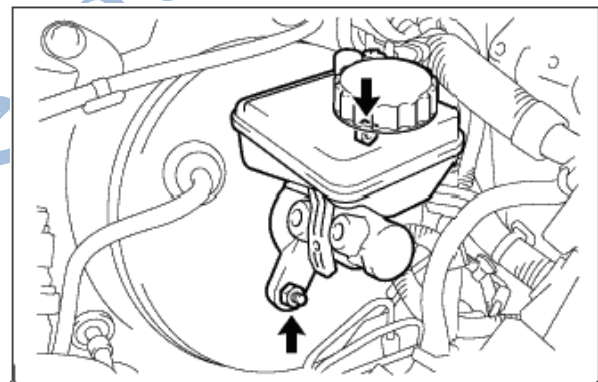
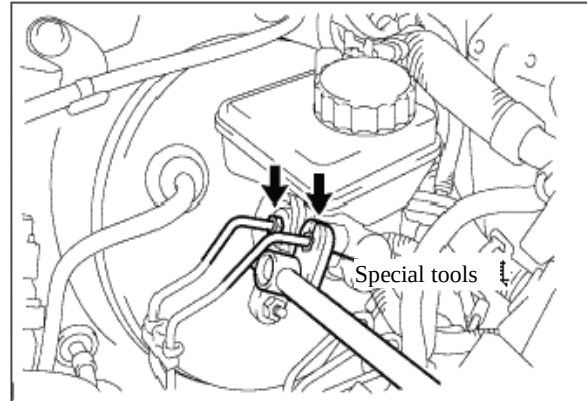
2.3.5.1.2 Fit the 2 nuts that connect the brake master cylinder with the vacuum booster.

Tightening torque: 20 N*m

2.3.5.1.3 Fit 2 brake pipes with standard tools.

Tightening torque: 17.5 N*m

2.3.5.1.4 Connect the brake fluid level switch.



2.3.5.2 Install the battery

2.3.5.2.1 Press the cell on the battery fixing bracket as shown in the figure.

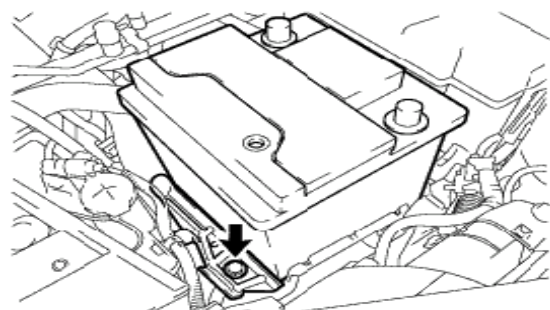
Note: The contrast lines should be seen after the installation.

2.3.5.2.2 Fit the bolt of the battery fixing bracket.

Tightening torque: 15 N*m

2.3.5.2.3 Tighten the nut of the battery positive and negative connection.

Tightening torque: 6 N*m



2.3.5.3 Add brake fluid to the liquid reservoir

Brake fluid: SAE J1703 or FMVSS NO.116 DOT3

2.3.5.4 The brake master cylinder exhaust

Tip: If the brake master cylinder was disassembled before or the reservoir is empty, exhaust the gas from the master cylinder.

2.3.5.4.1 Remove brake line from brake master cylinder with special tools.

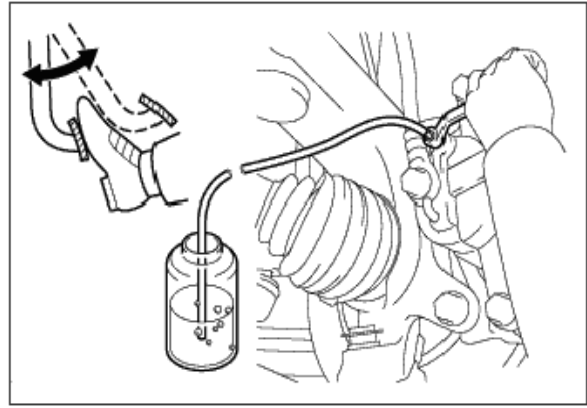
2.3.5.4.2 Press down brake pedal slowly, and keep the position (Step A).

2.3.5.4.3 Block up the hole of master cylinder, and release the pedal (Step B).

2.3.5.4.4 Repeat steps A and B for 3-4 times.

2.3.5.4.5 Fit brake line with special tools.

Tightening torque: 17.5 N*m



2.3.5.6 Check the liquid level in the liquid reservoir

Check the liquid level in the liquid reservoir, and add brake fluid if necessary.

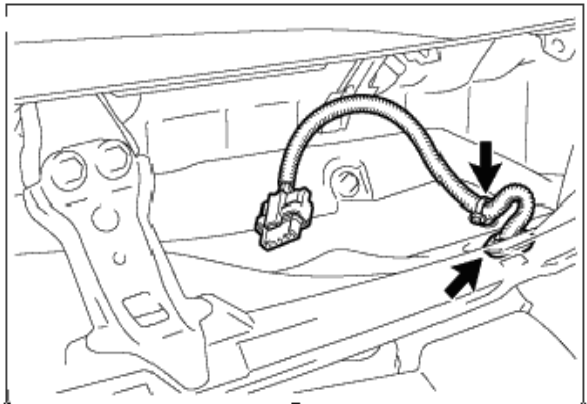
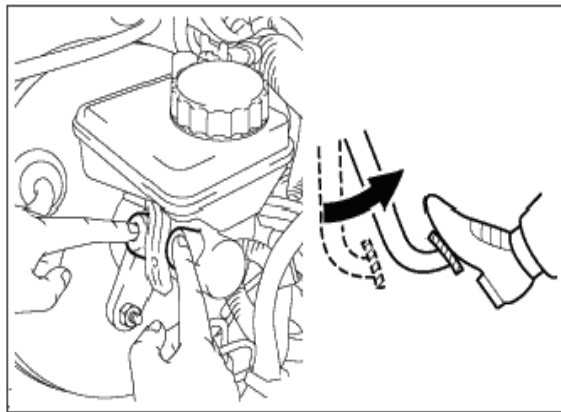
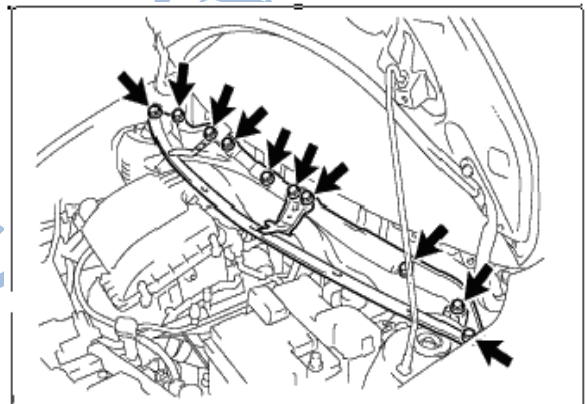
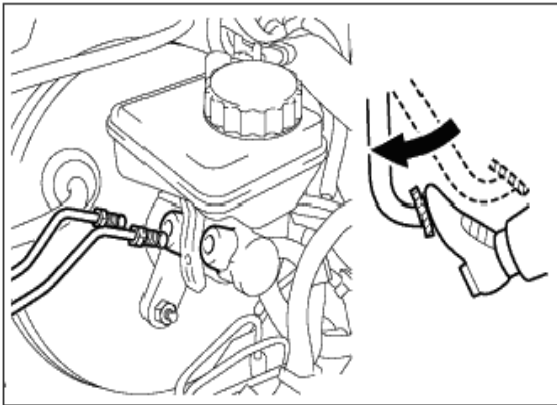
Brake fluid: SAE J1703 or FMVSS NO.116 DOT3

2.3.5.7 Install the rain groove

(1) Fit 10 bolts of the rain groove.

Tightening torque: 9.2 N*m

(2) Fit the snap of the harness.



2.3.5.5 The brake pipe exhaust

2.3.5.5.1 Connect a plastic pipe to the brake caliper and the cylinder.

2.3.5.5.2 Press the brake pedal several times and keep the position, unscrew the deflation plug.

2.3.5.5.3 Tighten the deflation plug at the moment of the brake fluid stopping flowing out, loosen the brake paddle.

2.3.5.5.4 Repeat the steps 2) and 3), until all the air in the brake fluid is exhausted.

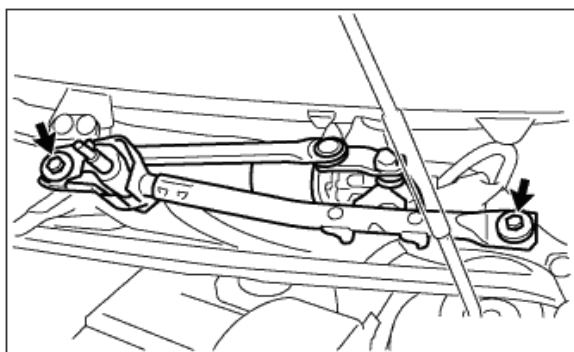
2.3.5.5.5 Repeat the steps above, and discharge the air in each brake cylinder.

2.3.5.8 Install the connect of the front wiper motor and the pin

2.3.5.8.1 Fit the connector.

2.3.5.8.2 Fit 2 bolts of the connect of the front wiper motor and the pin.

Tightening torque: 13 N*m



2.3.5.12 Install the front wiper arm

2.3.5.12.1 Scrape off the metal-powder from the wiper arm with file or other substitutes.

2.3.5.12.2 Clean up the wiper supporting point with steel brush.

2.3.5.12.3 Start the wiper, and let it stop at its auto stop position.

2.3.5.12.4 Fit the nut of the front wiper arm temporarily.

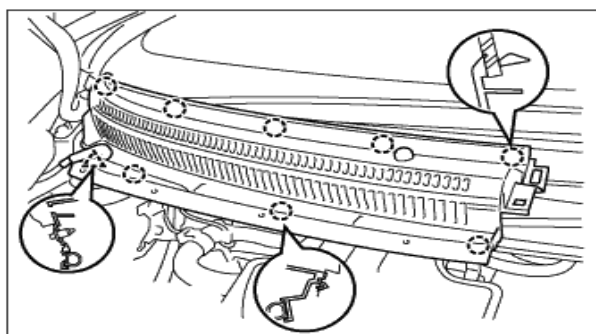
2.3.5.12.5 Fit the wiper rocker to the wiper motor and the drive mechanism.

2.3.5.9 Install the right ventilation cover plate

2.3.5.9.1 Connect the washer tube.

2.3.5.9.2 Connect 8 snap points, and fit the left ventilation cover plate.

2.3.5.9.3 Fit the snaps.

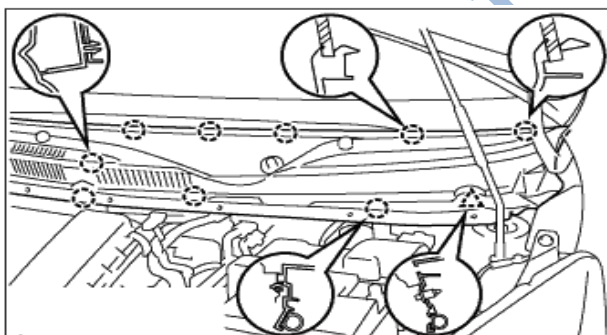


2.3.5.10 Install the left ventilation cover plate

2.3.5.10.1 Connect the washer tube.

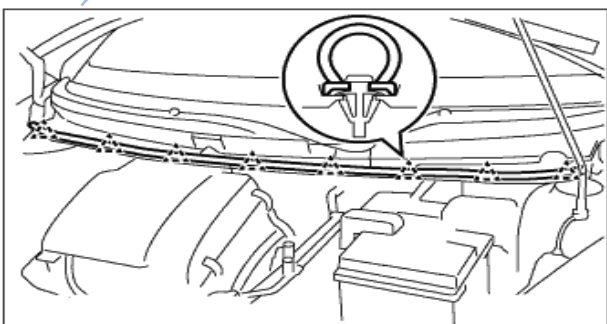
2.3.5.10.2 Connect 8 snap points, and fit the right ventilation cover plate.

2.3.5.10.3 Fit the snaps.

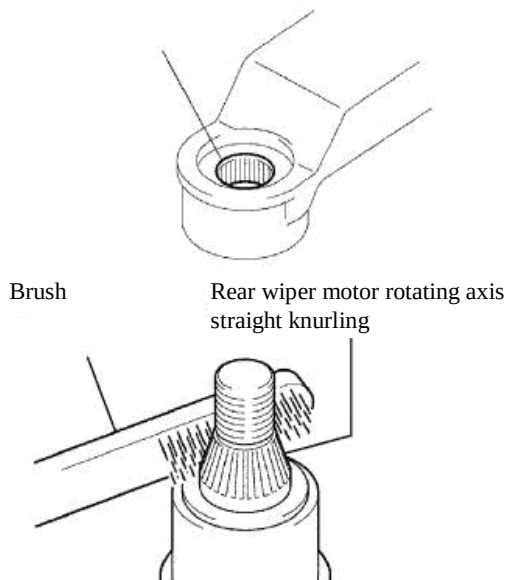


2.3.5.11 Install the ventilation cover plate sealing strip

Connect 8 snap points, and fit the ventilation cover plate sealing strip.

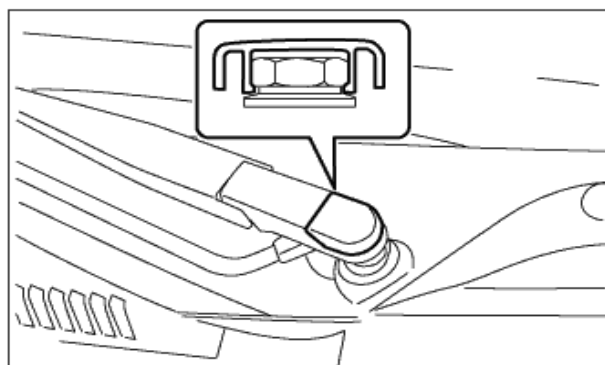


Rear wiper rocker arm seat insert



2.3.5.13 Install the front wiper arm head cap

Mesh the jaw, and fix the front wiper arm head cap.



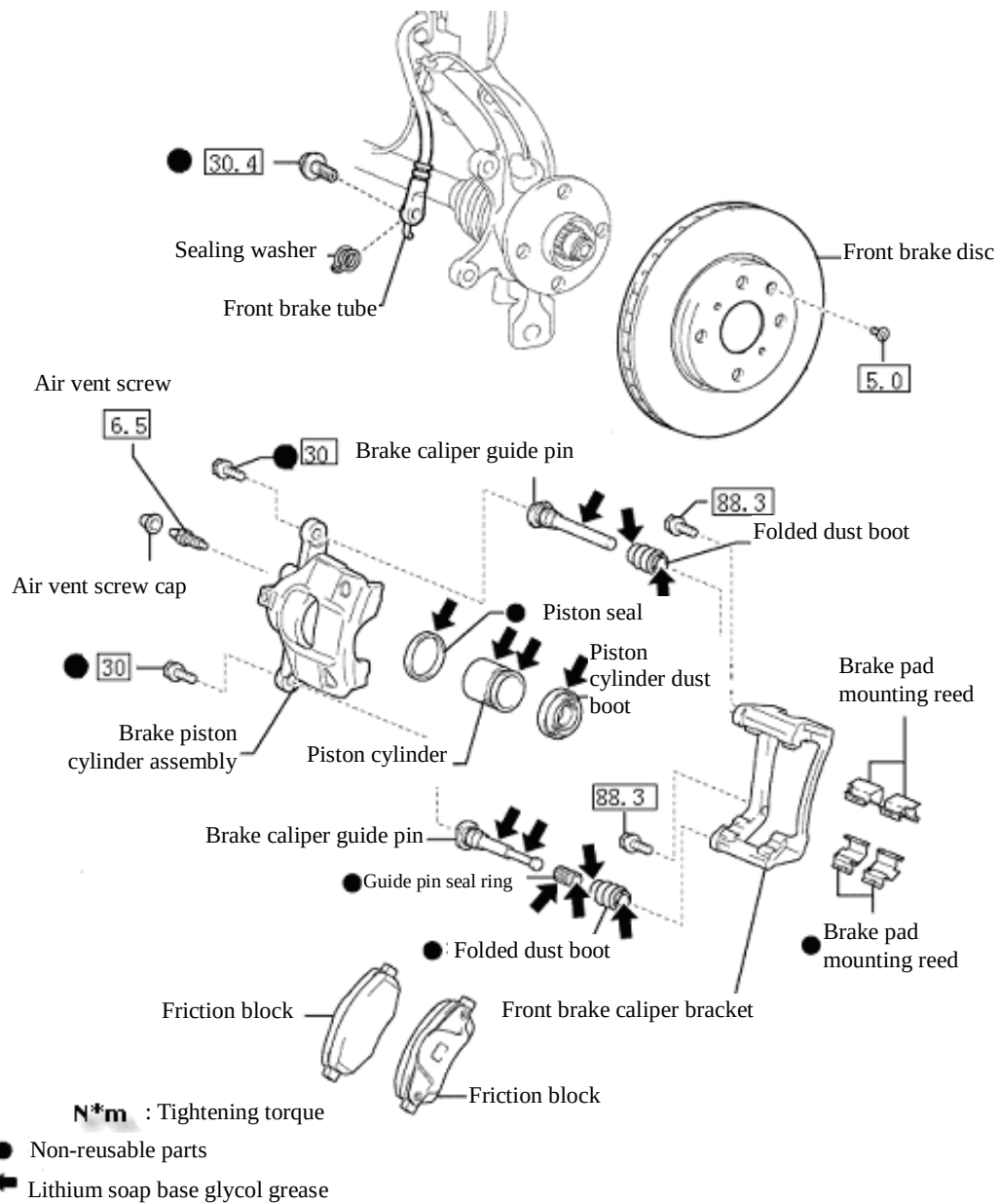
2.3.5.14 Reconnect the battery negative pole

Tightening torque: 5.4 N*m

2.3.5.15 Check if the brake liquid leaks

2.4 Front Brake

2.4.1 Components



2.4.2 Removal

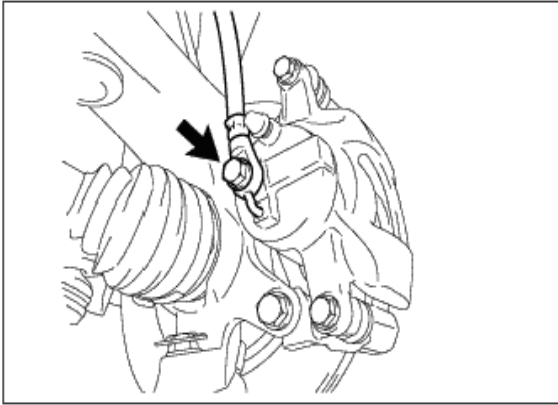
2.4.2.1 Remove the front wheels

2.4.2.2 Discharge the brake fluid

Note: Wash off all the brake fluid sticking on coat painting surface immediately.

2.4.2.3 Disconnect the front brake hose

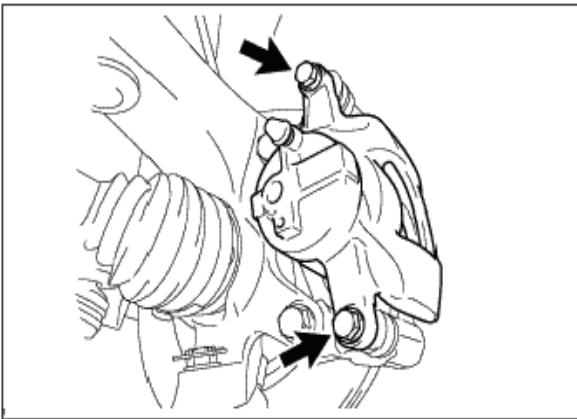
Remove the mounting bolt and washer of the front brake, and remove the brake hose.



2.4.2.4 Remove the front brake caliper assembly

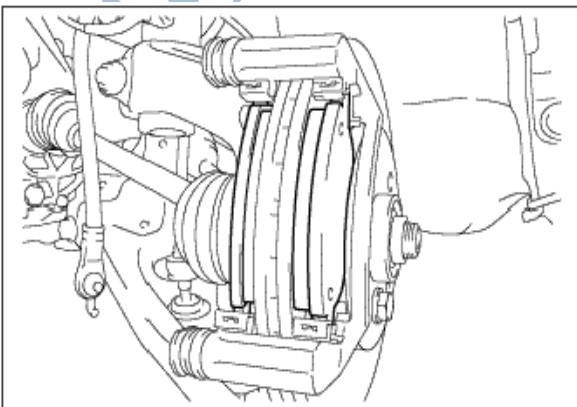
2.4.2.4.1 Remove 2 bolts with spanner.

2.4.2.4.2 Remove the brake piston cylinder from the front brake-caliper bracket.



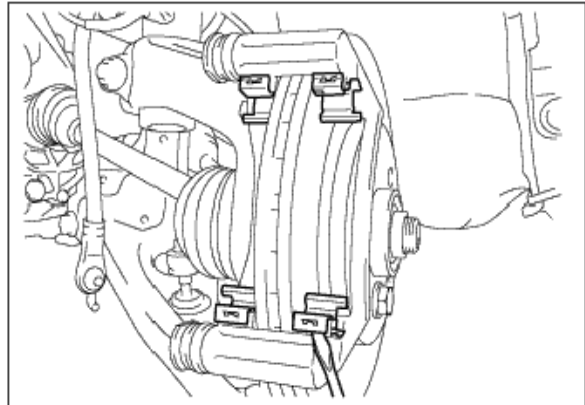
2.4.2.5 Remove the front brake pad assembly

Remove the brake pad from the brake-caliper bracket.



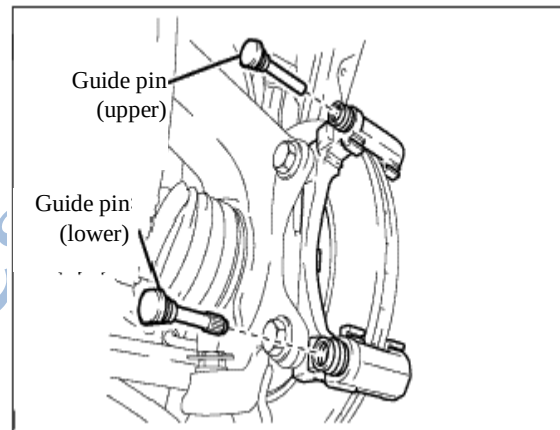
2.4.2.6 Remove the front brake mounting reeds

Remove 4 mounting reeds from the brake-caliper bracket.



2.4.2.7 Remove the front brake guide pins

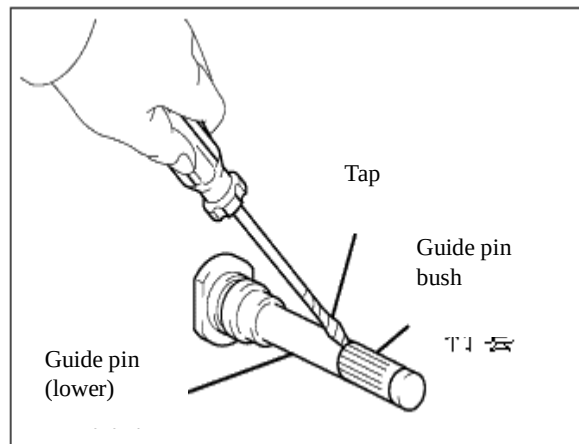
Remove the lower and upper guide pins from the brake bracket.



2.4.2.8 Remove the front brake guide pin sealing ring

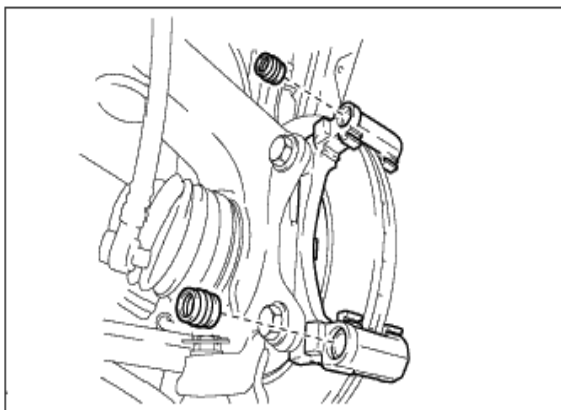
Remove the guide pin sealing ring with flat-tip screwdriver.

Tip: Before using the screwdriver, wrap the edge in plastic tape for protect.



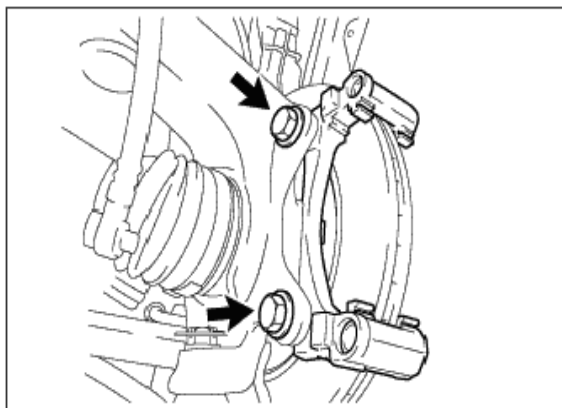
2.4.2.9 Remove the front brake folding dust boots

Take 2 folding dust boots off the brake-caliper bracket.



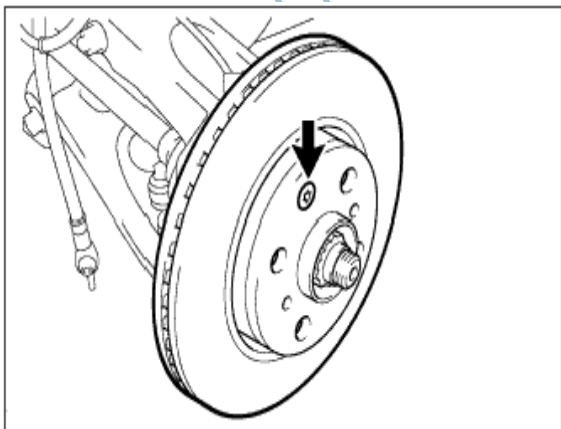
2.4.2.10 Remove the front brake caliper bracket

Unscrew 2 bolts and remove the brake caliper bracket from the steering knuckle.



2.4.2.11 Remove the front brake disc

Remove the bolt of the front disk brake with special tools.



2.4.3 Disassembly

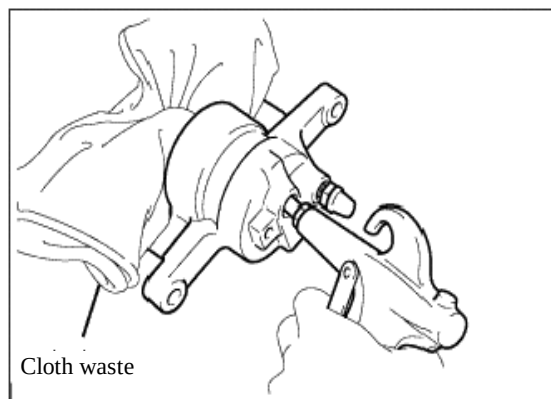
2.4.3.1 Remove the front brake piston

2.4.3.1.1 Put some old clothes or cloth strips between the piston and the front brake piston cylinder.

2.4.3.1.2 Remove the piston from the master cylinder with air compressor.

Note: When using the compressor, don't put fingers in front of the piston cylinder.

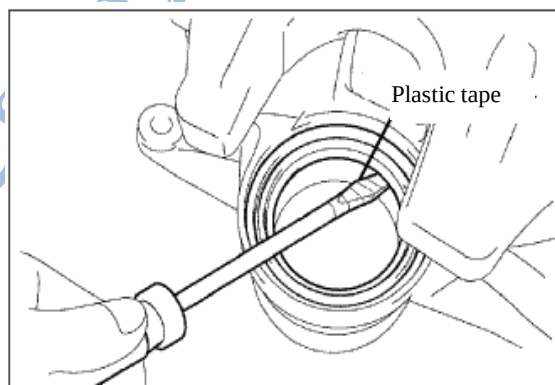
Caution: Don't splash the brake fluid.



2.4.3.2 Remove the master cylinder dust boot

Remove the dust cover in the piston cylinder with flat-tip screwdriver.

Tip: Before using the screwdriver, wrap the edge in plastic tape for protect.

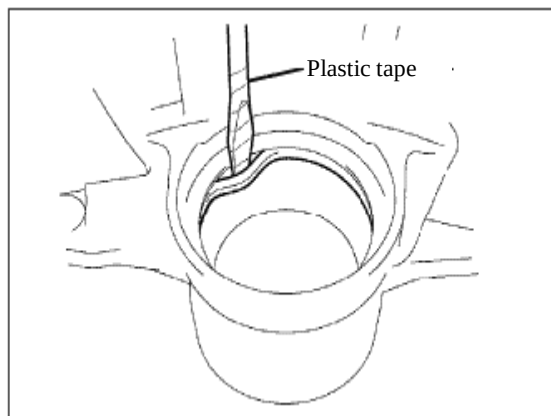


2.4.3.3 Remove the piston sealing ring

Remove the sealing ring in the piston cylinder with screwdriver.

Note: Don't damage the inside surface and the slot of piston cylinder.

Tip: Before using the screwdriver, wrap the edge in plastic tape for protect.



2.4.3.4 Remove the exhausting nut of the front brake

2.4.3.5 Remove the exhausting screw of the front brake

2.4.4 Inspection

2.4.4.1 Check the brake cylinder and piston

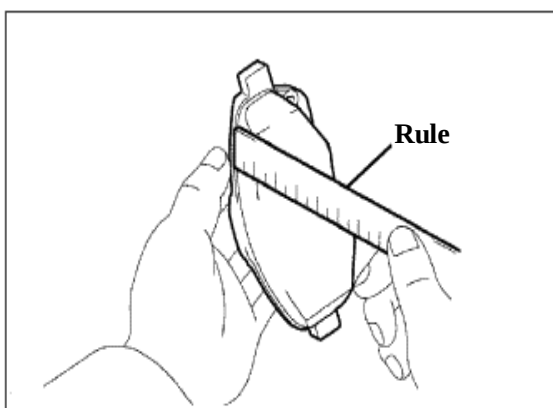
Check if the brake piston cylinder inside surface and the piston rust, and replace the brake cylinder and piston if necessary.

2.4.4.2 Check the inner layer thickness of the brake pad

Measure the inner layer thickness of the linings with ruler.

The standard thickness is 11 mm and the minimum thickness is 1 mm.

If the inner layer thickness is less than or equal to the minimum thickness, replace the brake lining assembly.



2.4.4.3 Check the mounting reeds of the front brake pad

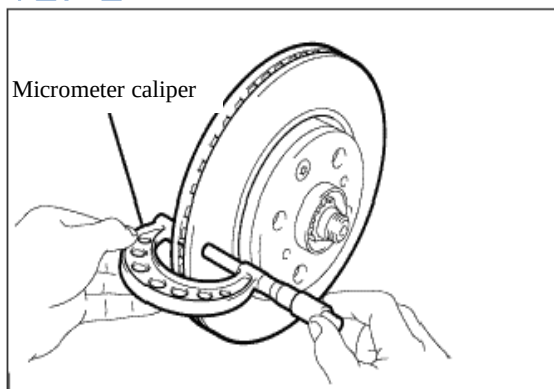
Confirm that the mounting reeds of the front disk brake have enough bound force. No deformation, fracture and wear, not rusted and have no fouling dirt.

Replace the mounting reed if necessary.

2.4.4.4 Check the brake disc thickness

Measure the brake disc thickness with micrometer. The standard thickness is 20 mm and the minimum thickness is 18 mm.

If the brake disc thickness is less than or equal to the minimum thickness, replace the brake disc.



2.4.4.5 Check the brake disc eccentric center

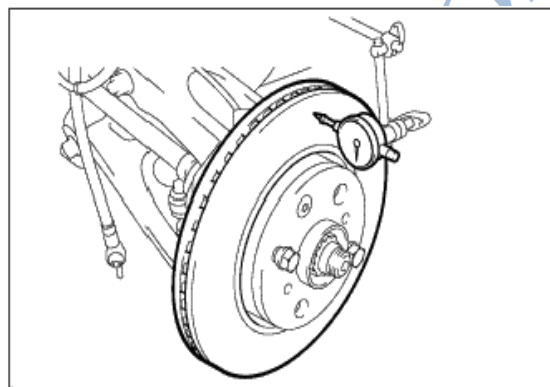
2.4.4.5.1 Check the bearing axial direction and the brake disc nodding action.

2.4.4.5.2 Tighten the front brake disc bolt temporarily.

Tightening torque: 108 N*m

2.4.4.5.3 Measure the brake disc nodding action at a distance of 10 mm from the brake disc outside edge with dial indicator, and the maximum nodding action value of the brake disc is 0.05 mm.

If the brake disc nodding action reaches or exceeds the maximum range, check the bearing axial clearance and the wheel hub nodding action, and if the bearing and the wheel hub nodding action are normal, need to adjust the brake disc nodding action.



2.4.5 Reassembly

2.4.5.1 Tighten the exhausting screw temporarily

2.4.5.2 Install the exhausting screw cap of the front brake

2.4.5.3 Install the piston sealing ring

2.4.5.3.1 Paint a new sealing ring with some lithium soap base glycol grease.

2.4.5.3.2 Fit the piston seal to the brake piston cylinder.

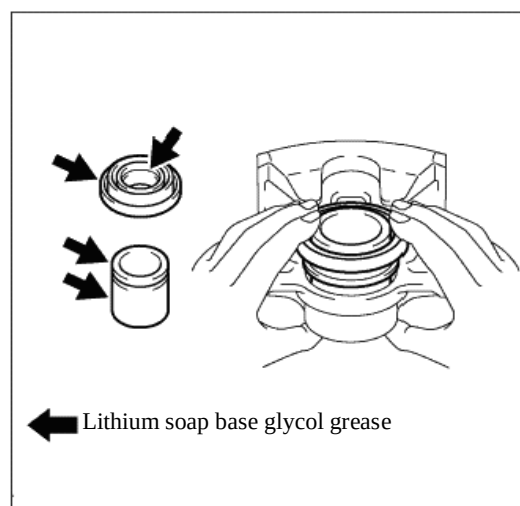
2.4.5.4 Install the front brake piston

2.4.5.4.1 Paint the piston cylinder and the dust cover with some lithium soap base ethanediol grease.

2.4.5.4.2 Fit the piston dust cover to the piston.

2.4.5.4.3 Fit the piston into the brake piston cylinder.

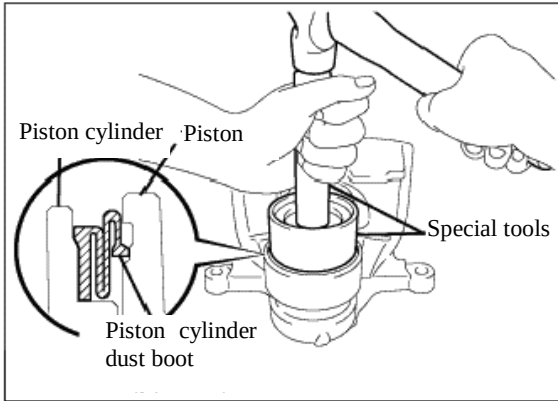
Note: Don't too hard to put it into the brake piston cylinder



2.4.5.5 Install the cylinder body dust boot

Fit the piston dust cover into the piston with special tools and hammer.

Note: Don't damage the cylinder body dust boot. Be careful to fit the dust cover into the piston cylinder.

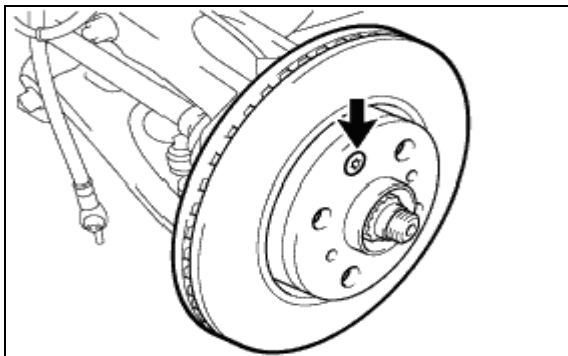


2.4.6 Installation

2.4.6.1 Install the front brake disc

Fit the screw on the front brake disc with standard tools.

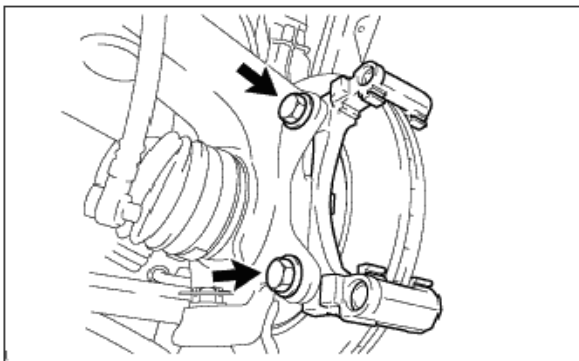
Tightening torque: 5 N*m



2.4.6.2 Install the front brake caliper bracket

Tighten 2 bolts of the brake-caliper bracket on the steering knuckle.

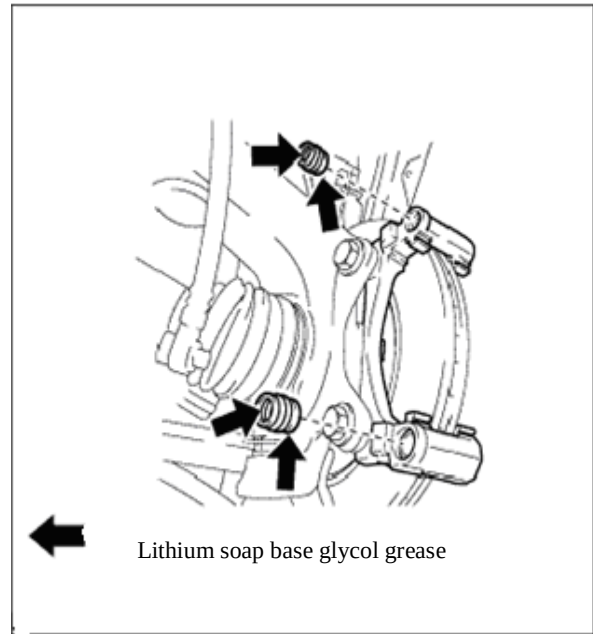
Tightening torque: 88 N*m



2.4.6.3 Install the dust boot of the front disk brake

2.4.6.3.1 Paint the dust cover with some lithium soap base glycol grease first.

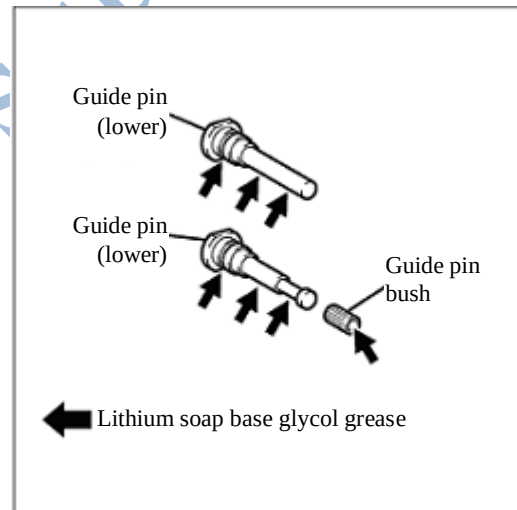
2.4.6.3.2 Fit 2 dust boots to the bracket.



2.4.6.4 Install the front brake guide pin bushing

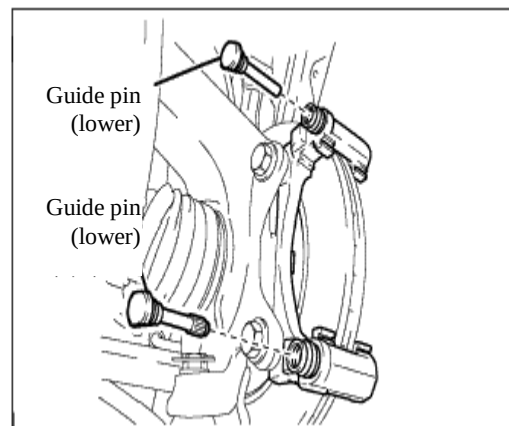
2.4.6.4.1 Paint the front brake disc guide pin and a new guide pin bushing with some lithium soap base glycol grease, the assembly relation as shown in the figure.

2.4.6.4.2 Fit the guide pin bushing to the guide pin.



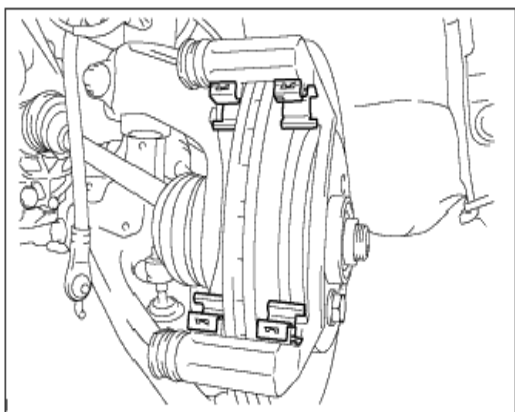
2.4.6.5 Install the front brake guide pins

Fit the guide pin (upper) and the guide pin (lower) to the bracket.



2.4.6.6 Install the brake pad mounting reeds

Fit 4 new brake pad mounting reeds to the bracket.

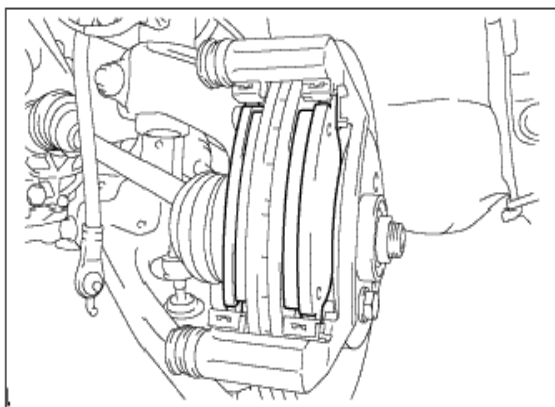


2.4.6.7 Install the linings

Fit 2 brake linings to the bracket.

Note:

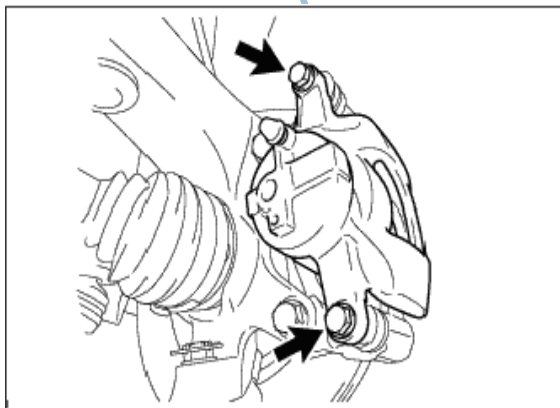
No oil or fats between the brake shoe and the front brake disc may be present.



2.4.6.8 Install the front brake caliper assembly

2.4.6.8.1 Fit the front brake piston cylinder to the bracket.

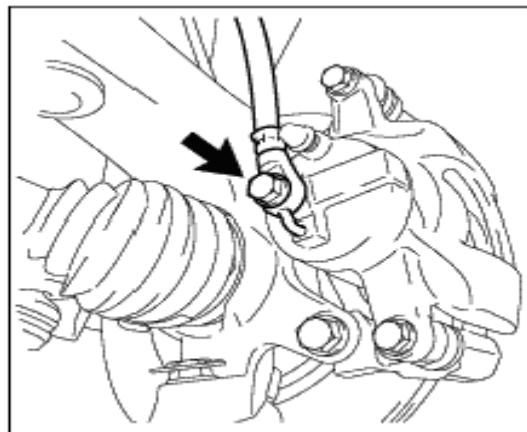
2.4.6.8.2 Tighten 2 bolts with spanner, and the tightening torque is 30 N*m.



2.4.6.9 Install the front brake hose

Fit the brake hose with a new combinatory bolt and gasket.

Tightening torque: 30 N*m



Tip: Fix the front brake hose inside the bracket lock hole safely.

2.4.6.10 Add brake fluid

Brake fluid type: SAE J1703 or FMVSS NO.116 DOT3

2.4.6.11 Evacuate the brake master cylinder

Tip: If the brake master cylinder had been disassembled or the reservoir is empty, exhaust the gas from the master cylinder.

2.4.6.11.1 Remove brake line from brake master cylinder with special tools.

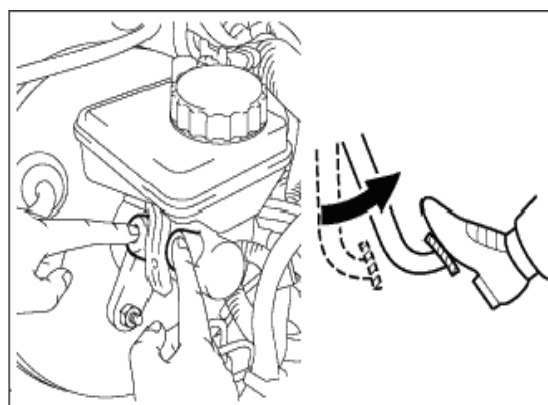
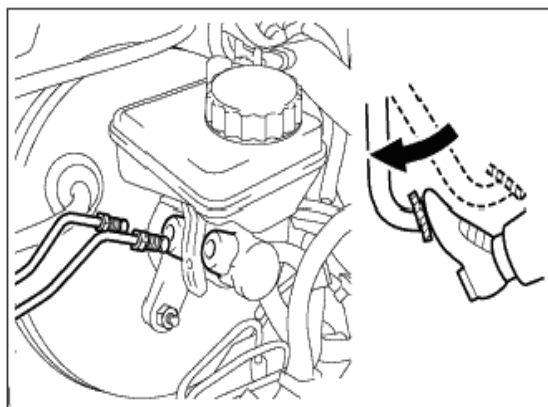
2.4.6.11.2 Press down brake pedal slowly, and keep the position (Step A).

2.4.6.11.3 Block up the hole of master cylinder, and release the pedal (Step B).

2.4.6.11.4 Repeat steps A and B for 3-4 times.

2.4.6.11.5 Fit brake line with special tools.

Tightening torque: 17.5 N*m



2.4.6.12 The brake oil line exhaust

2.4.6.12.1 Connect the exhausting screw with plastic pipe.

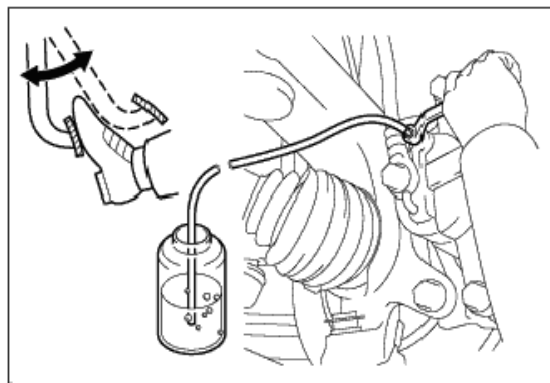
2.4.6.12.2 Press down the brake pedal several times, loosen the oil drain valve and press down the brake pedal meanwhile.

2.4.6.12.3 Now, the liquid stops flowing outside, tighten the exhausting screw and loosen the brake pedal.

2.4.6.12.4 Repeat the steps (2) and (3) until the all the air is exhausted.

2.4.6.12.5 Tighten the exhausting screw. Torque: 6 N*m.

2.4.6.12.6 Repeat the steps above, until the air is exhausted from each wheel.



2.4.6.13 Check the brake fluid level in the liquid reservoir

Check the brake fluid level, and add the liquid if necessary.

Brake fluid type: SAE J1703 or FMVSS NO.116 DOT3

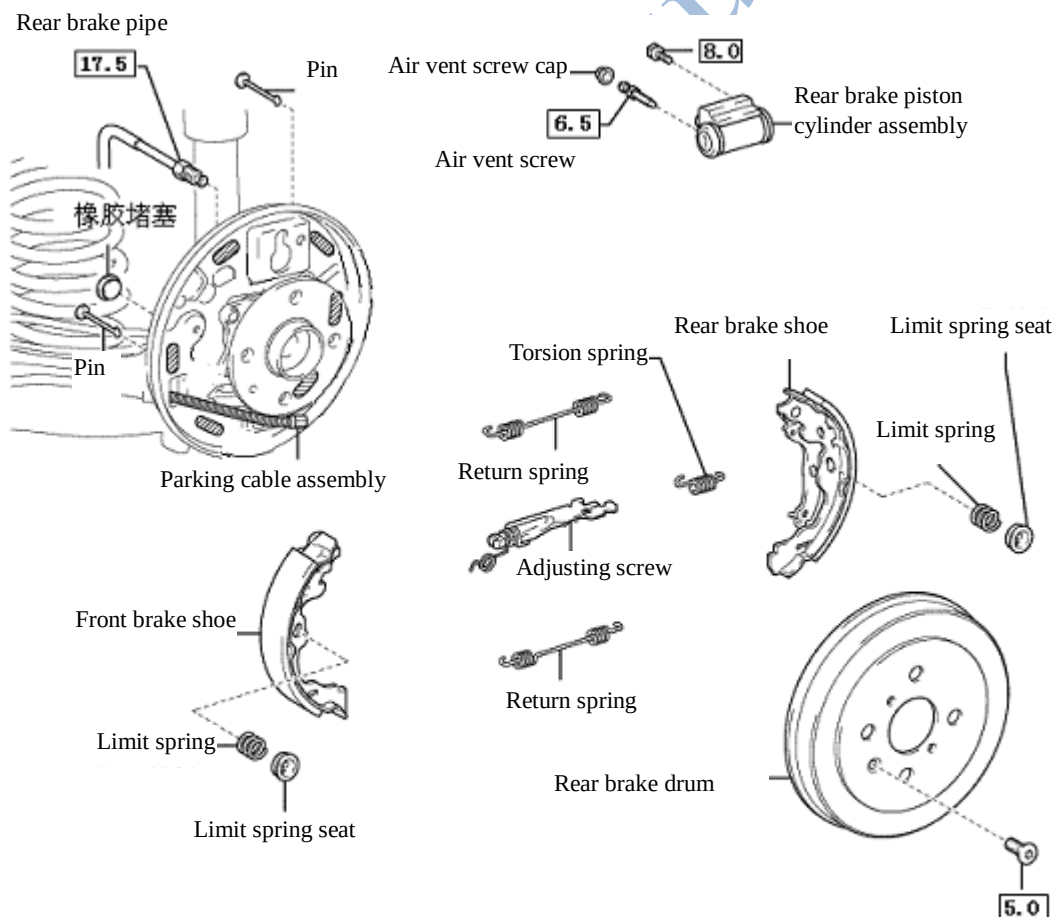
2.4.6.14 Check if the brake fluid leaks

2.4.6.15 Install the front wheels

Tightening torque: 108 N*m

2.5 Rear Brake

2.5.1 Components



N*m : Tightening torque

↺ High temperature greases

2.5.2 Removal

2.5.2.1 Remove the rear wheels

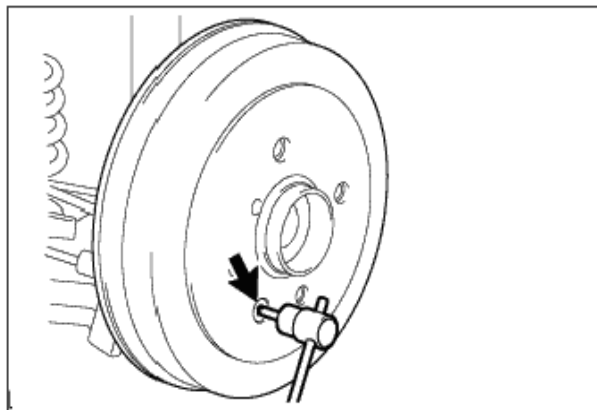
2.5.2.2 Discharge the brake fluid

Note: Wash off all the brake fluid sticking on coat painting surface immediately.

2.5.2.3 Remove the rear brake drum

2.5.2.3.1 Loosen the parking drag rod.

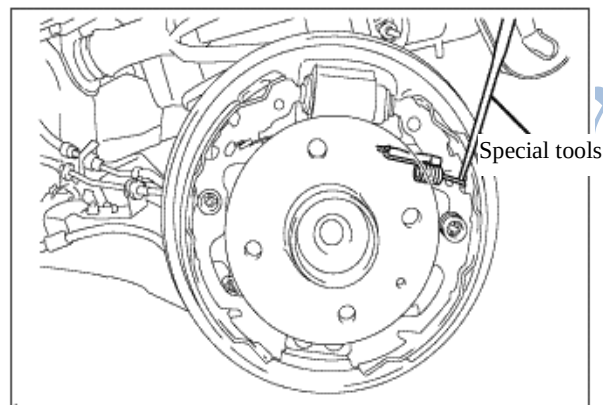
2.5.2.3.2 Remove the bolt and rear brake drum with special tools.



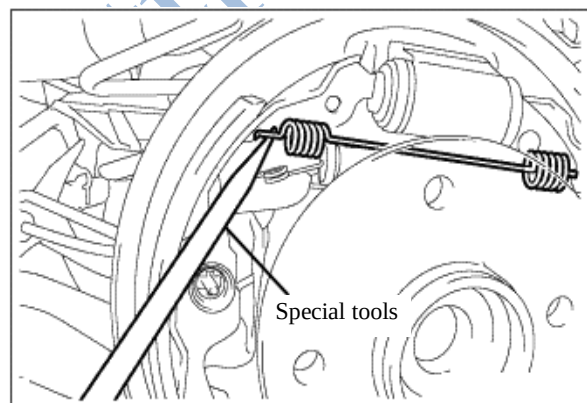
2.5.3 Disassembly

2.5.3.1 Remove the brake shoe assembly

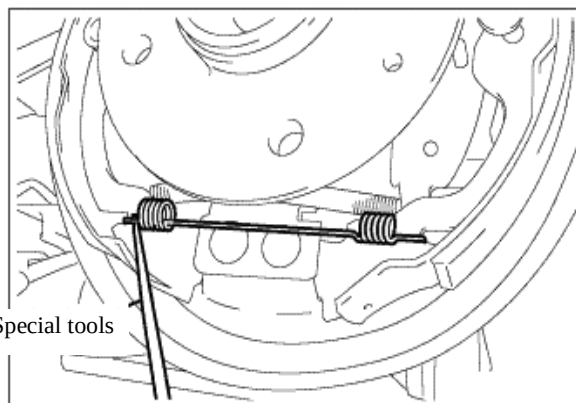
2.5.3.1.1 Remove the regulating rod torsion spring with special tools.



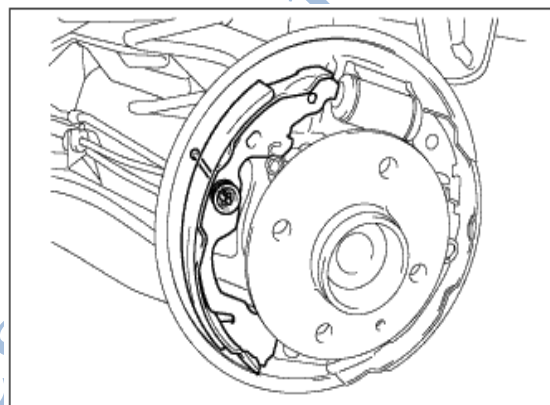
2.5.3.1.2 Remove the brake shoe return spring with special tools.



2.5.3.1.3 Remove the return spring with special tools.



2.5.3.1.4 Remove the brake shoe hold down spring seat, spring, peg and the brake shoe assembly with vice.



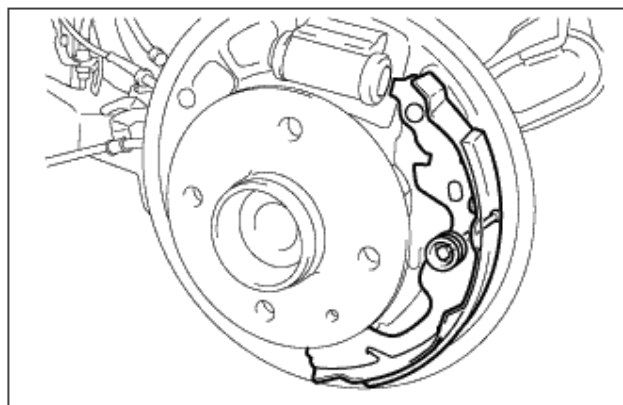
2.5.3.2 Remove the parking braking push rod assembly

Note: Don't disassemble the parking braking push rod assembly.

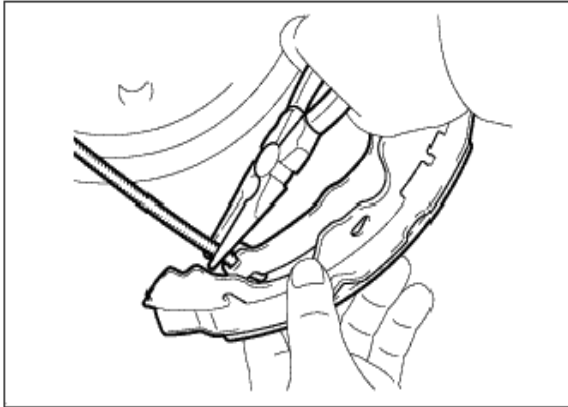
Don't damage and bend any subassembly.

2.5.3.3 Remove the brake shoe and parking pulling plate assembly

2.5.3.3.1 Remove the brake shoe hold down spring seat, spring, peg and the brake shoe and parking pulling plate assembly with pliers.



2.5.3.3.2 Remove the parking cable from the parking pulling plate with needle nose pliers.

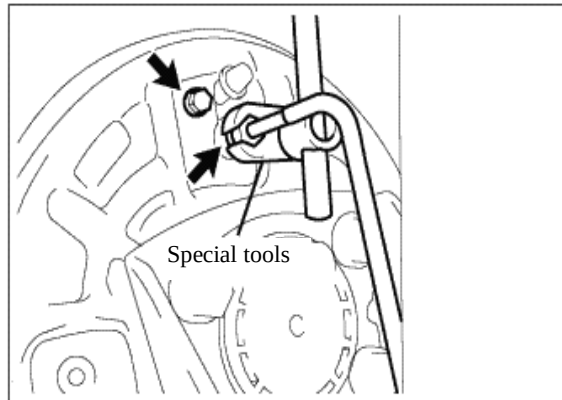


2.5.3.4 Remove the rear wheel brake cylinder assembly

2.5.3.4.1 Remove the brake pipe with special tools and receive the brake fluid with receiver element.

2.5.3.4.2 Remove the bolt and brake cylinder.

2.5.3.4.3 Remove the exhausting screw cap and the exhausting screw from the brake cylinder..



2.5.4 Inspection

2.5.4.1 Check the interior diameter of brake drum

Measure the interior diameter of brake drum with standard measuring tool for brake drum or substitute.

Standard interior diameter: 200 mm

Maximum interior diameter: 201 mm

If the interior diameter is beyond the range, replace the brake drum.

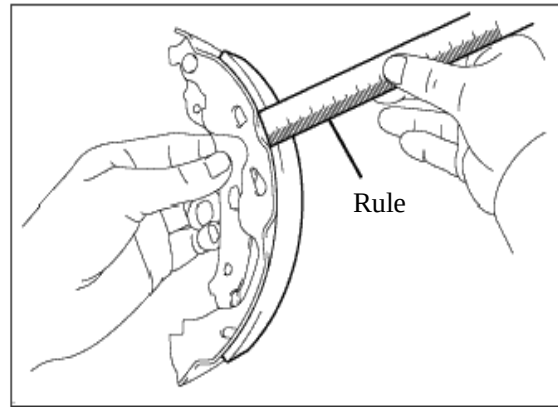
2.5.4.2 Check the thickness of brake shoe lining

Standard thickness: 4.5 mm

Minimum thickness: 1 mm

If the thickness is less than the minimum value or badly worn, relined the brake.

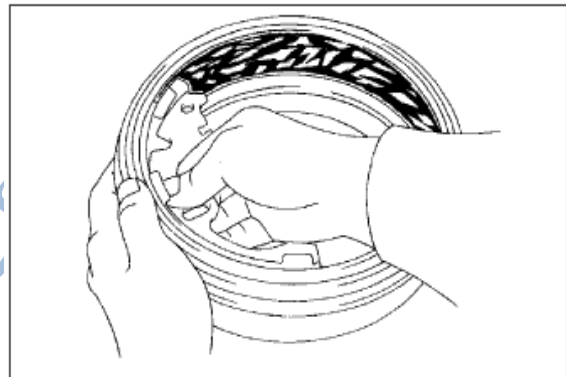
Tip: If one brake shoe needs to be replaced, replace all the brake shoes.



2.5.4.3 Check if the contact between the brake shoe and the brake drum interior lining is suitable

Paint the brake drum inside surface with chalk, and make suitable friction. If the contact between the brake drum and the lining is abnormal, trim it with grinding apparatus or replace it.

Tip: If one brake shoe needs to be replaced, replace all the brake shoes.



2.5.5 Reassembly

2.5.5.1 Install the rear wheel piston cylinder assembly

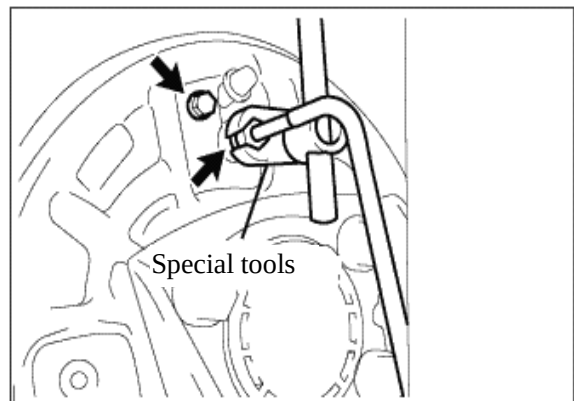
2.5.5.1.1 Tighten the exhausting screw temporarily, fit the exhausting screw cap.

2.5.5.1.2 Fit the bolt of the brake piston cylinder.

Tightening torque: 8 N*m

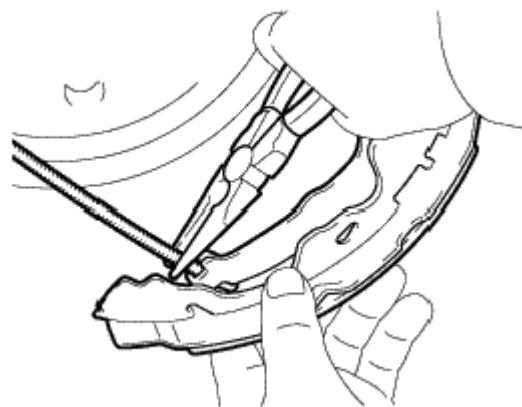
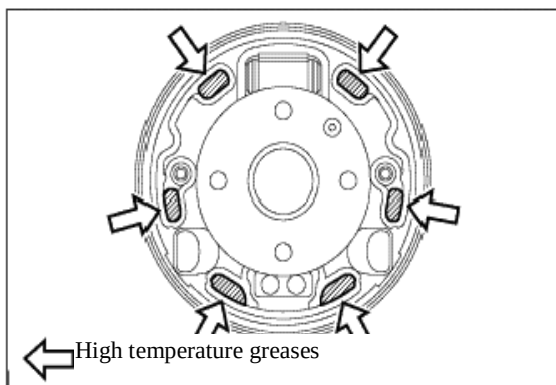
2.5.5.1.3 Fit brake pipe with special tools.

Tightening torque: 17.5 N*m



2.5.5.2 Paint high-temperature fatty oil

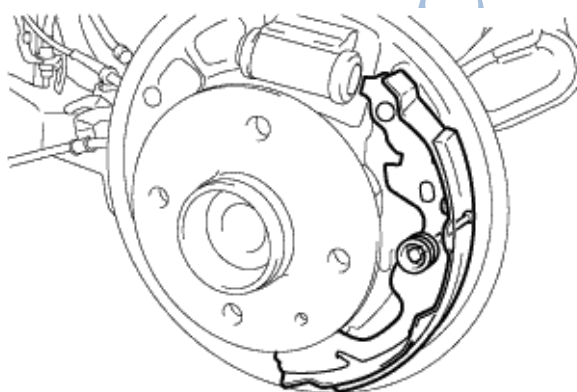
Paint the brake shoe on the supporting panel with high-temperature fatty oil.



2.5.5.3.2 Fit the brake shoe, pin, supporting spring and supporting spring seat with pliers.

2.5.5.3 Install the brake shoe and parking pulling plate assembly

2.5.5.3.1 Connect the parking cable with the parking drag rod with needle nose pliers.



2.5.5.4 Install the parking braking push rod assembly

2.5.5.4.1 Remove the regulating screw arbor from the push rod.

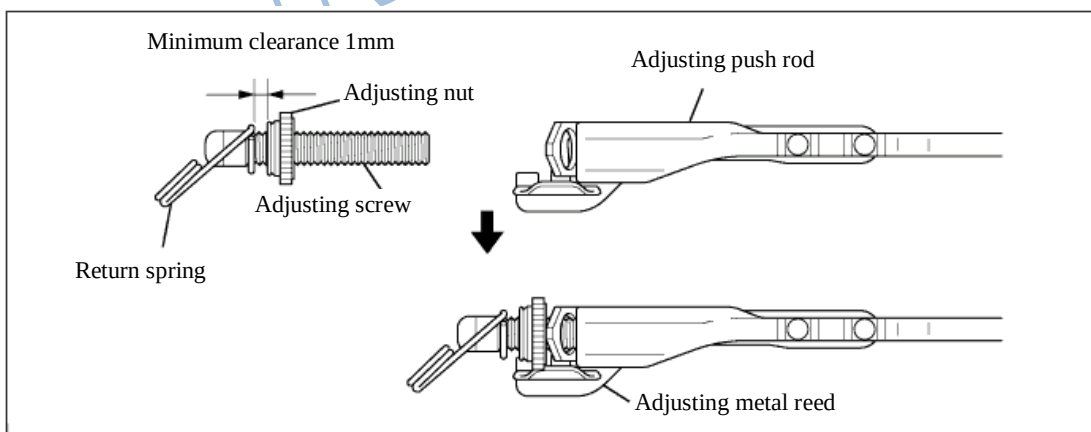
2.5.5.4.2 Fit the regulating nut in position.

The position of the regulating nut is close to the return spring for 1~2 mm.

Tip: The regulator is not in direct contact with the return spring. There is a clearance of 1~2 mm between them, so the clearance can be adjusted automatically.

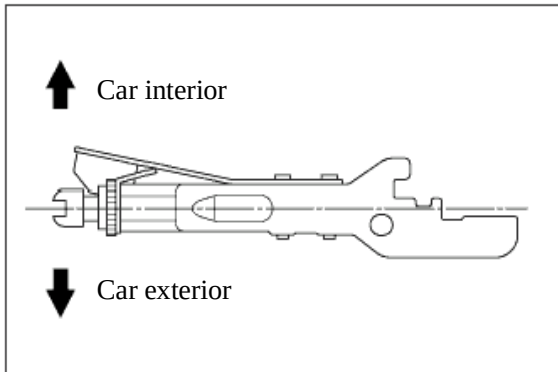
2.5.5.4.3 Screw the regulating screw arbor to the push rod.

Note: Fit the regulating nut to the metal reed reasonably.



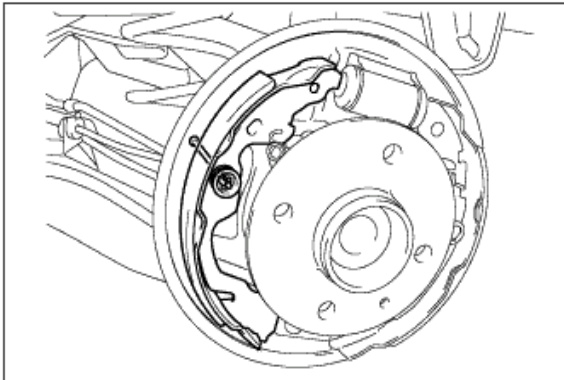
2.5.5.4.4 Install the parking braking push rod assembly.

Note: The directions of the regulator should be correct.

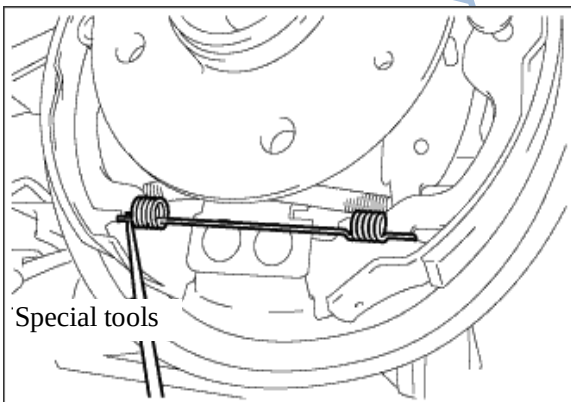


2.5.5.5 Install the brake shoe

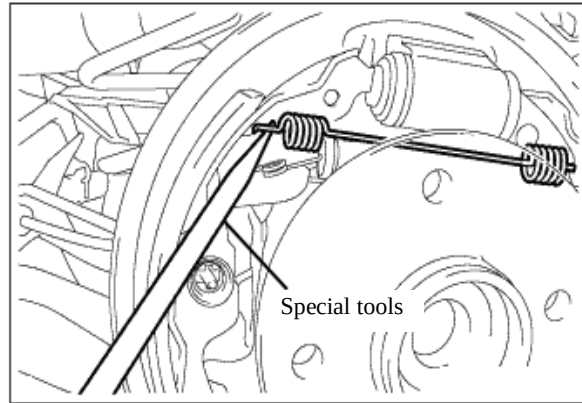
2.5.5.5.1 Fit the front brake shoe, pin, hold down spring and hold down spring seat with pliers.



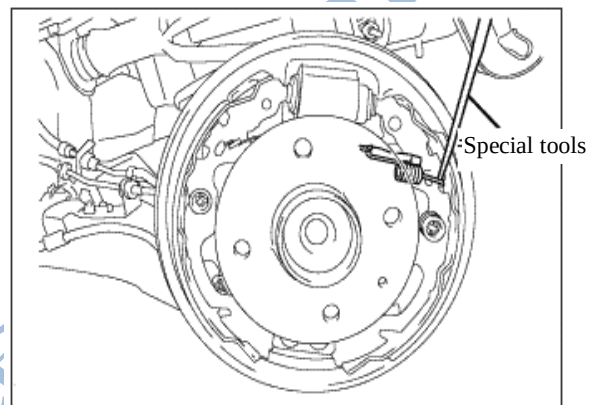
2.5.5.5.2 Install the brake shoe underside return spring with special tools.



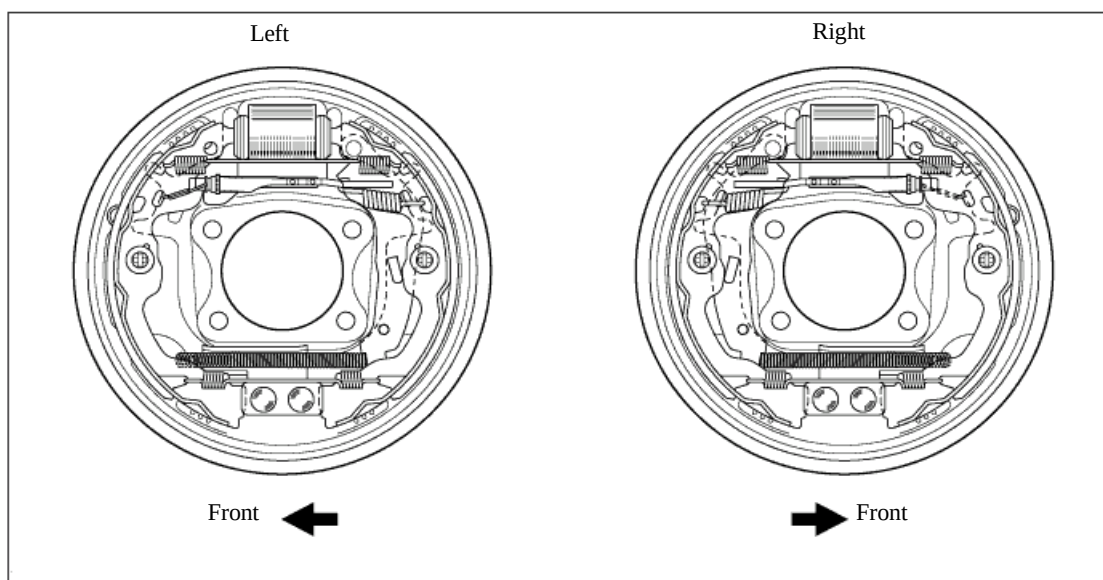
2.5.5.5.3 Install the brake shoe upside return spring with special tools.



2.5.5.5.4 Install the parking pulling plate return spring with special tools.



2.5.5.6 Check the installation of the rear wheel drum



Check if each unit is fitted correctly.

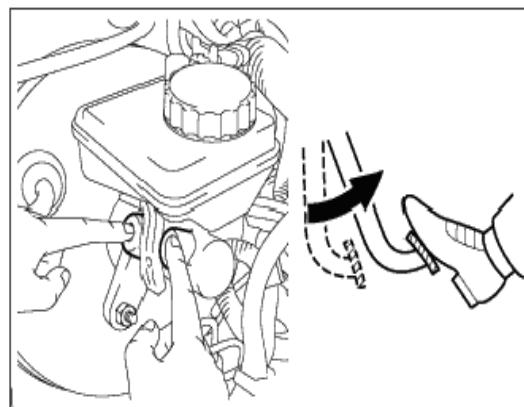
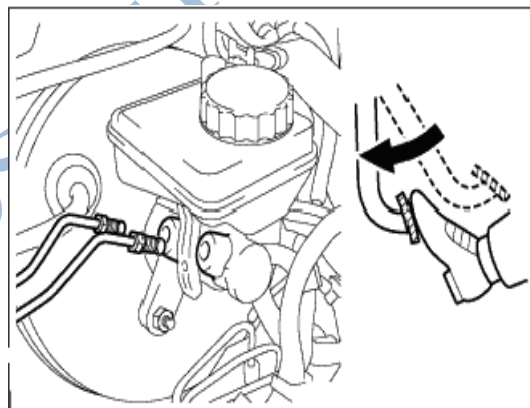
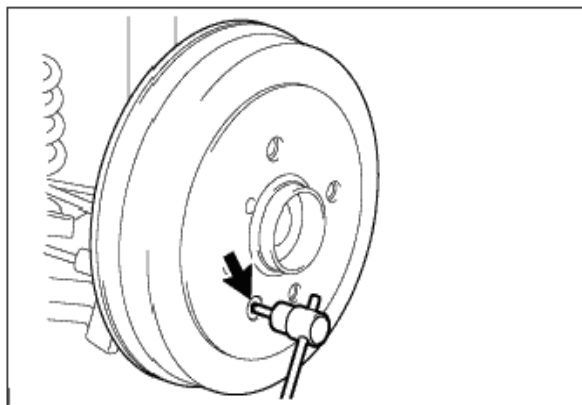
Note: Keep the friction surfaces of brake shoe or drum from oil fouling.

2.5.6 Installation

2.5.6.1 Install the rear wheel drum

Tighten the bolt of the rear brake drum with flare nut spanner.

Tightening torque: 5 N*m



2.5.6.2 Add brake fluid to the liquid reservoir

Brake fluid: SAE J1703 or FMVSS NO.116 DOT3

2.5.6.3 Evacuate the brake master cylinder

Tip: If the brake master cylinder was disassembled before or the reservoir is empty, exhaust the gas from the master cylinder.

2.5.6.3.1 Remove brake line from brake master cylinder with special tools.

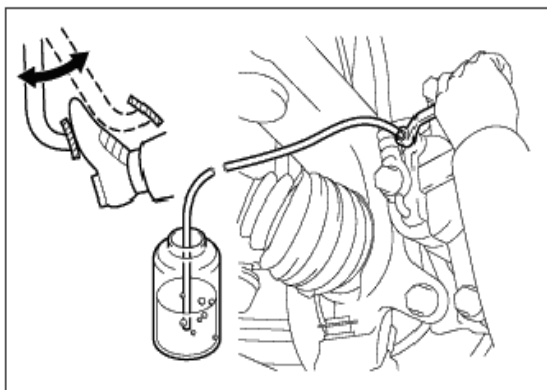
2.5.6.3.2 Press down brake pedal slowly, and keep the position (Step A).

2.5.6.3.3 Block up the hole of master cylinder, and release the pedal (Step B).

2.5.6.3.4 Repeat steps A and B for 3-4 times.

2.5.6.3.5 Fit brake line with special tools.

Tightening torque: 17.5 N*m



2.5.6.4 Check the liquid level in the liquid reservoir

Check the liquid level in the liquid reservoir, and add brake fluid if necessary.

Brake fluid: SAE J1703 or FMVSS NO.116 DOT3

2.5.6.5 Check if brake liquid leaks

2.5.6.6 Adjust the clearance between the brake shoe and the brake drum

Note: Don't rotate the regulator with screwdriver or any other tool.

Press down the brake pedal 30 times (no parking), and the clearance is adjusted automatically.

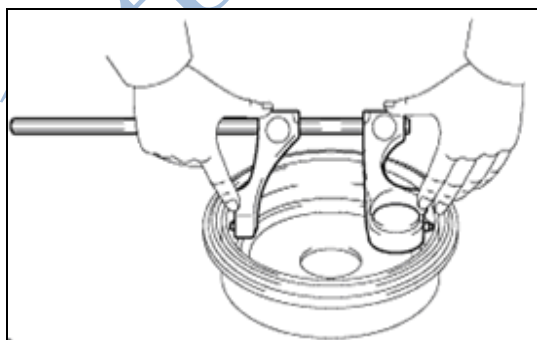
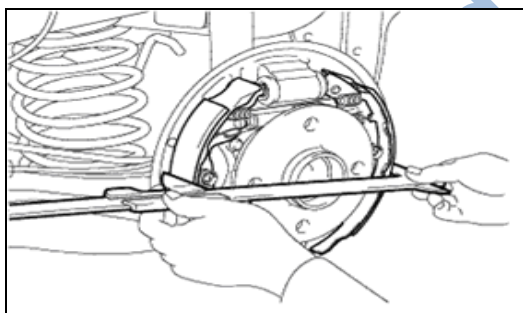
2.5.6.7 Check the clearance between the brake shoe and the brake drum

2.5.6.7.1 Remove the rear brake drum

2.5.6.7.2 Measure the interior diameter of brake drum and the diameter of brake shoe, the diameters difference value is exactly the correct clearance.

Clearance: 0.6 mm

If incorrect, check the brake system.



2.5.6.8 Install the rear wheels

Tightening torque: 108 N*m

2.6 Parking Brake System

2.6.1 Parking brake handle

2.6.1.1 Regulate the original state of the brake shoe and the brake drum

Note: Don't rotate the regulator with screwdriver or other tools.

Press down the brake pedal 30 times (not parking brake), the original state of the brake shoe and the brake drum should be regulated automatically.

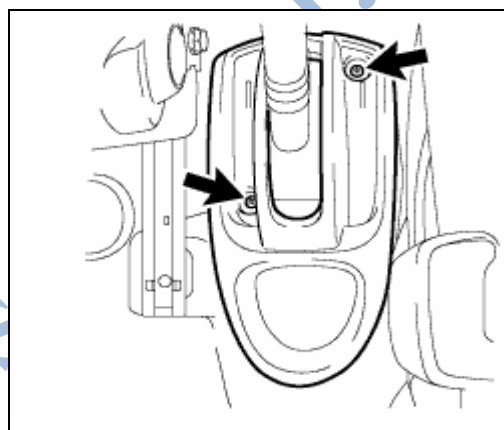
2.6.1.2 Check the travel stroke of the parking brake handle

Stretch the parking handle to the maximum position slowly, hear the sound of clicking.

Parking braking travel stroke: pull to 5~8 gears with a force of 200N

2.6.1.3 Remove the grip brake cover shield

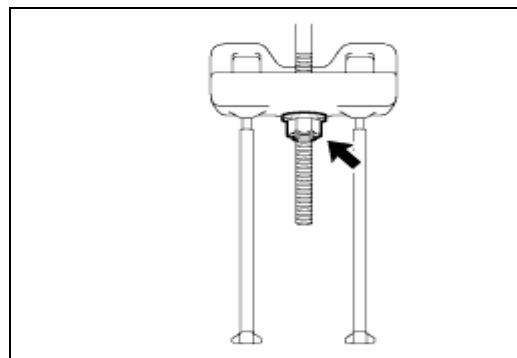
Remove 2 mounting bolts and the grip brake cover shield.



2.6.1.4 Regulate the travel stroke of the parking brake handle

2.6.1.4.1 Rotate the regulating nut, make the travel stroke of the parking handle accurate and in the prescribed range.

Parking braking travel stroke: pull to 5~8 gears with a force of 200N



2.6.1.4.2 Pull the parking handle repeatedly for 3 to 4 times, check the handle travel stroke.

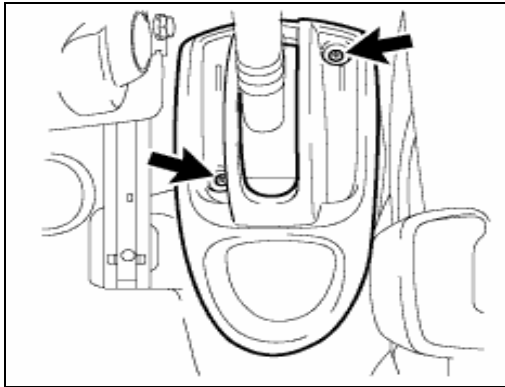
2.6.1.4.3 Check if the parking braking works.

2.6.1.4.4 In the course of operating the parking handle, make sure the parking lamp is in proper working order.

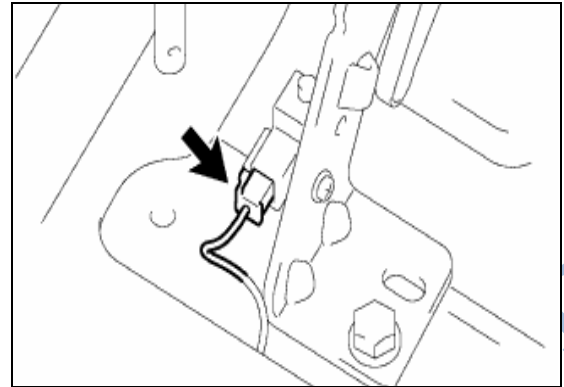
Standard: The parking lamp always becomes on in the inverted tooth.

2.6.1.5 Install the grip brake cover shield

Fit the cover shield with 2 mounting bolts.

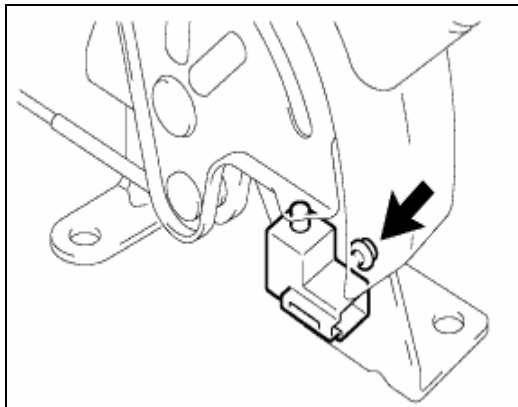


2.6.1.7.2 Connect the harness of the parking lamp switch.



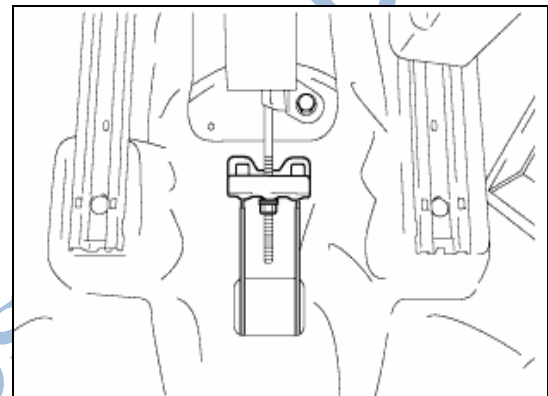
2.6.1.6 Install the parking lamp switch

(1) Fit the parking lamp switch with screwdriver.



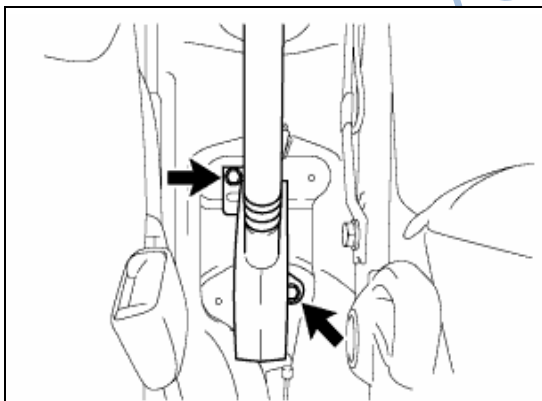
2.6.1.8 Install the parking equalizer

Fit the equalizer with a new regulating nut.



2.6.1.7 Install the parking handle

2.6.1.7.1 Fit the parking handle with 2 bolts, the tightening torque: 15 N*m.



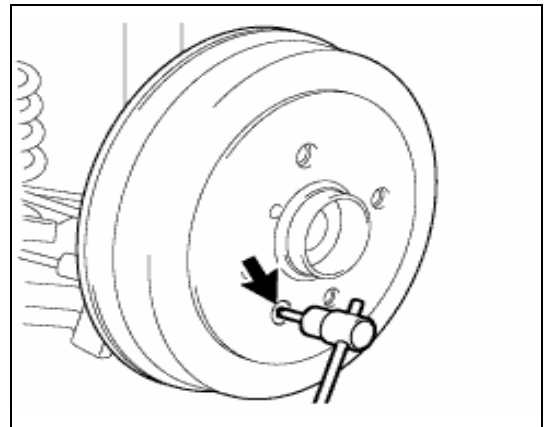
2.6.2 Parking brake cable

2.6.2.1 Remove the rear wheels

2.6.2.2 Remove the rear brake drum

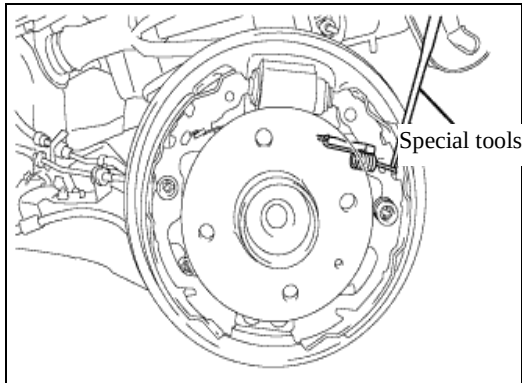
2.6.2.2.1 Loosen the grip brake.

2.6.2.2.1 Remove the bolt and the rear brake drum with special pipe pliers T30.

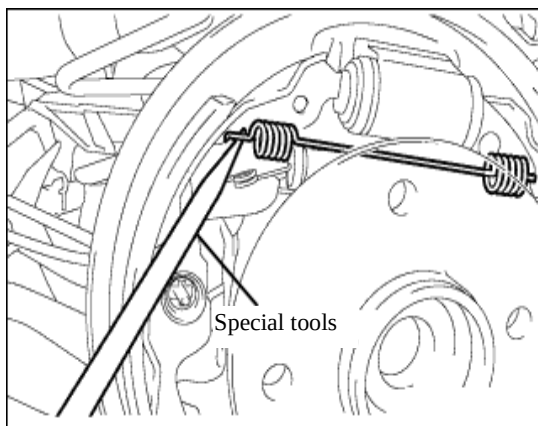


2.6.2.3 Remove the front brake shoe

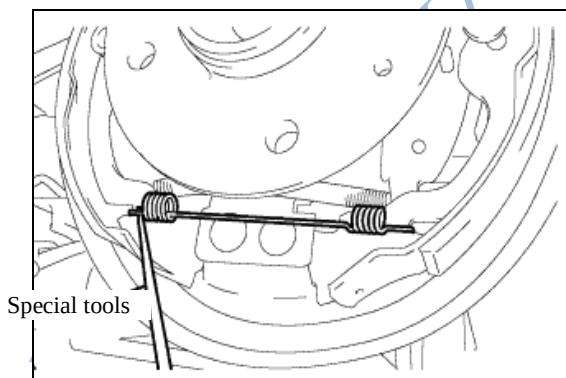
2.6.2.3.1 Remove the holding spring with special tools.



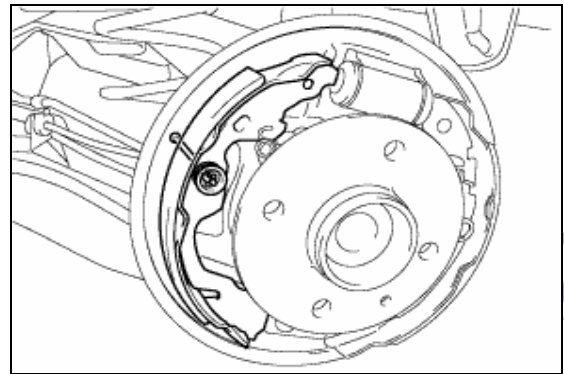
2.6.2.3.2 Remove the shoe return spring with special tools.



2.6.2.3.3 Remove the shoe return spring with special tools.



2.6.2.3.4 Remove the brake shoe hold down spring seat, spring, peg and the front brake shoe with pliers.



2.6.2.4 Remove the regulator

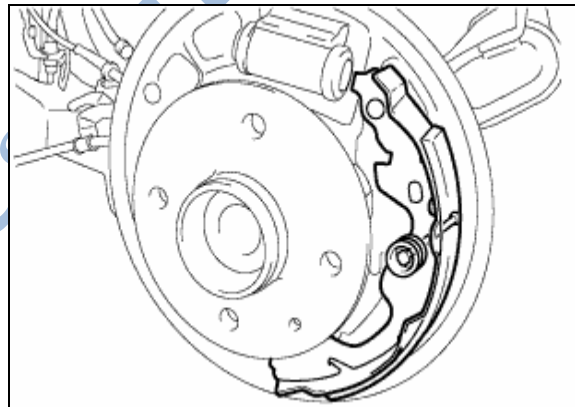
Note:

Don't disassemble the regulator.

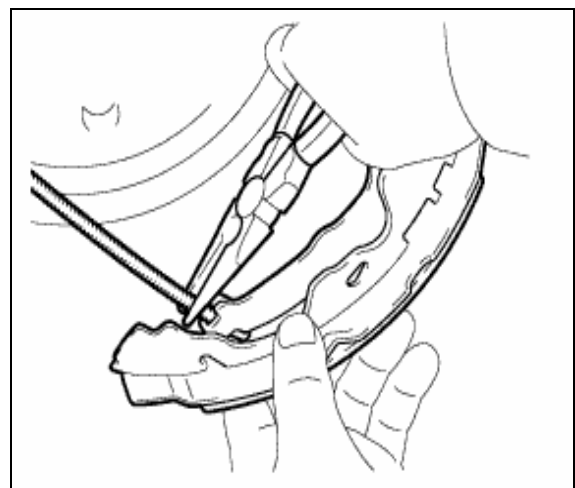
Don't damage and bend any part.

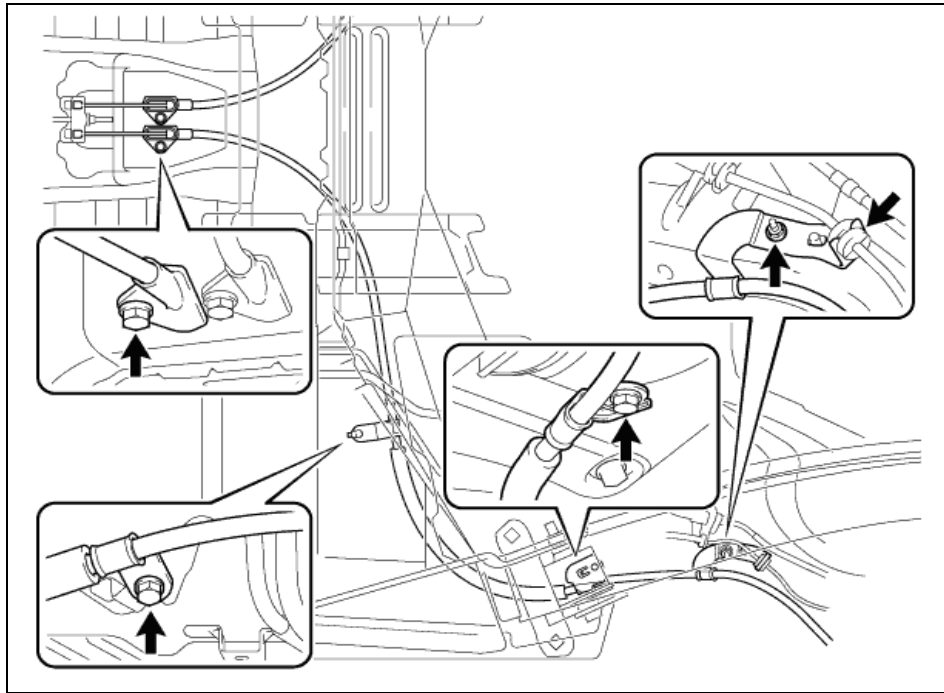
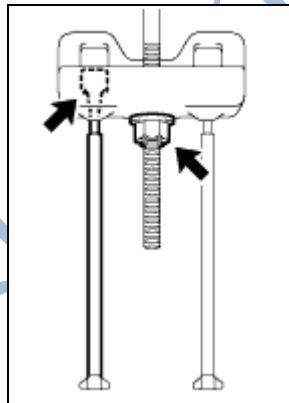
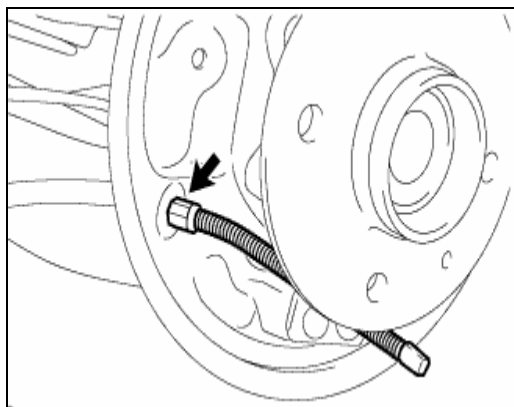
2.6.2.5 Remove the rear brake shoe

2.6.2.5.1 Remove the brake shoe hold down spring seat, spring, peg and the rear brake shoe with pliers.



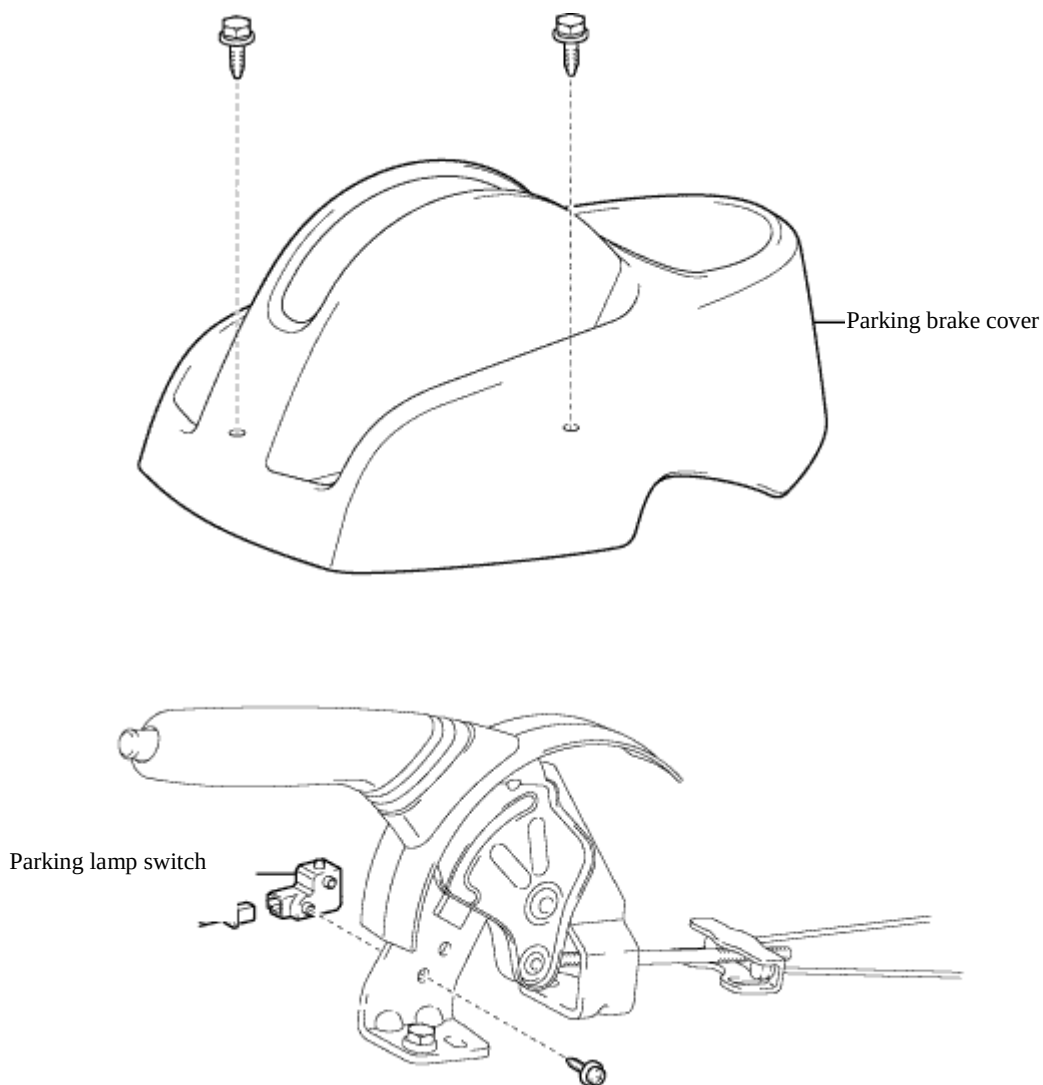
2.6.2.5.2 Remove the parking cable from the brake shoe with needle nose pliers.



2.6.2.6 Remove the parking brake cable**2.6.2.6.1 Remove the regulating nut.****2.6.2.6.2 Remove the cable from the equalizer.****2.6.2.6.3 Remove the wheel speed sensor clip.****2.6.2.6.4 Remove 3 bolts and nuts.****2.6.2.6.5 Take off the cable.****2.6.2.6.6 Extrude and pull out the cable in the direction of arrow as shown in the figure.**

2.6.3 Parking lamp switch

2.6.3.1 Components



2.6.3.2 Related information

Check the resistance

The resistance values of alpha and omega tested with universal meter should meet the following table:

Coupled condition	Off/On	Designated value
1 - ground	Initial free state (Off)	Less than 1 Ω
1 - ground	Compression (On)	Greater than or equal to 10 k Ω

If the measured result doesn't meet the values in the figure above, please replace the switch.

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Section 1 Anti-Lock Brake System (ABS)

1.1 Dos and Don'ts

1.1.1 If the connectors or parts installation has problems, it can make the system return to normal completely or temporary by pulling and plugging the connectors again or reinstalling the questionable parts.

1.1.2 To make the localization of faults, check the Diagnostic Trouble Code (DTC) of diagnosis port when the fault occurs, and record data before disconnecting any connector or disassembling and assembling any part.

1.1.3 The Anti-Lock Brake System (ABS) may be affected by other systems faults, so please check the Diagnostic Trouble Code (DTC) of other systems meanwhile.

1.1.4 During any service job, it ought to disassemble and assemble the braking controller and sensor in the case of ignition switch off, unless otherwise specified.

1.1.5 It ought to recheck the Diagnostic Trouble Code (DTC), after disassembling and assembling the braking controller and sensor and resuming the installation of all the parts.

1.2 How to do Troubleshooting

Tip: The steps 3, 6, 9 and 12 need to use the fault diagnosis instrument.

1.2.1 Drive the car into the service shop

1.2.2 Check the battery voltage

Standard voltage: 11~14.7V

If the voltage is less than 11V, please charge up or replace the battery.

1.2.3 Confirm the symptom and check the DTC

1.2.3.1

Check if there are open circuit, short circuit in the harness, connect and fuse by sight.

1.2.3.2

Warm up the engine at normal working temperatures.

1.2.3.3

Confirm the symptom and the occurring conditions of the fault, check the DTC.

The DTC exists (to Step 1.2.3.4)

No DTC (to Step 1.2.3.5)

1.2.3.4

DTC Table

Find the DTC obtained in Step 3 in the DTC Table, check through the Column "Problem regions" and find the potential faulty electrical circuits or parts. (To Step 6)

1.2.3.5

Fault Symptoms Table

Find the fault symptoms in the Fault Symptom Table, look through the Column "Suspicious regions" and find the potential faulty electrical circuits or parts. (To Step 1.2.3.6)

1.2.3.6

Check the circuits or parts

Confirm the circuits or parts fault.

1.2.3.7

Adjusting, servicing or replacing

Adjust, service or replace the problem circuits or parts.

1.2.3.8

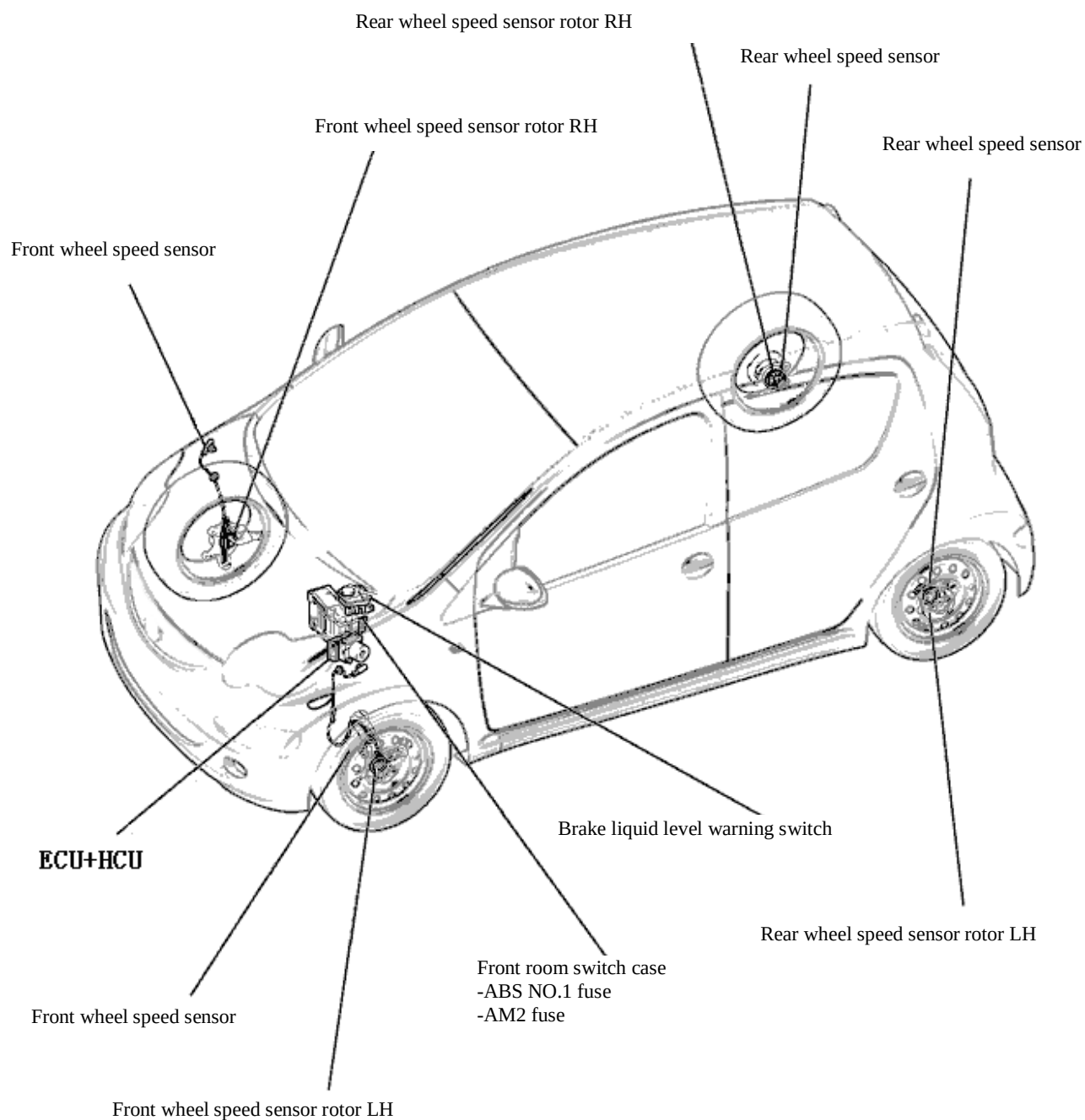
Verification test

After adjusting, servicing or replacing the problem circuits or parts, confirm that the problem no longer exists. If the problem no longer appears, take the verification test under the same conditions and environment as where the problem occurs.

1.2.3.9

The end

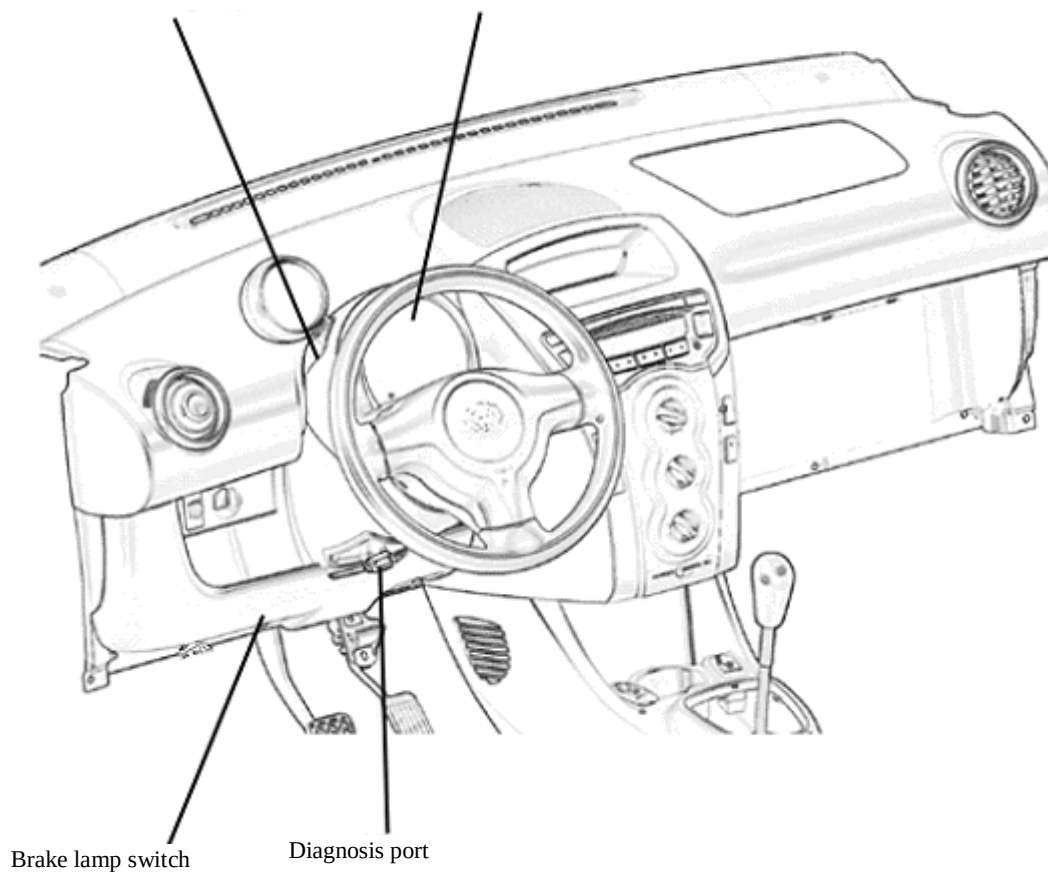
1.3 Parts Layout



Anti-Lock Brake System (ABS) Layout 1

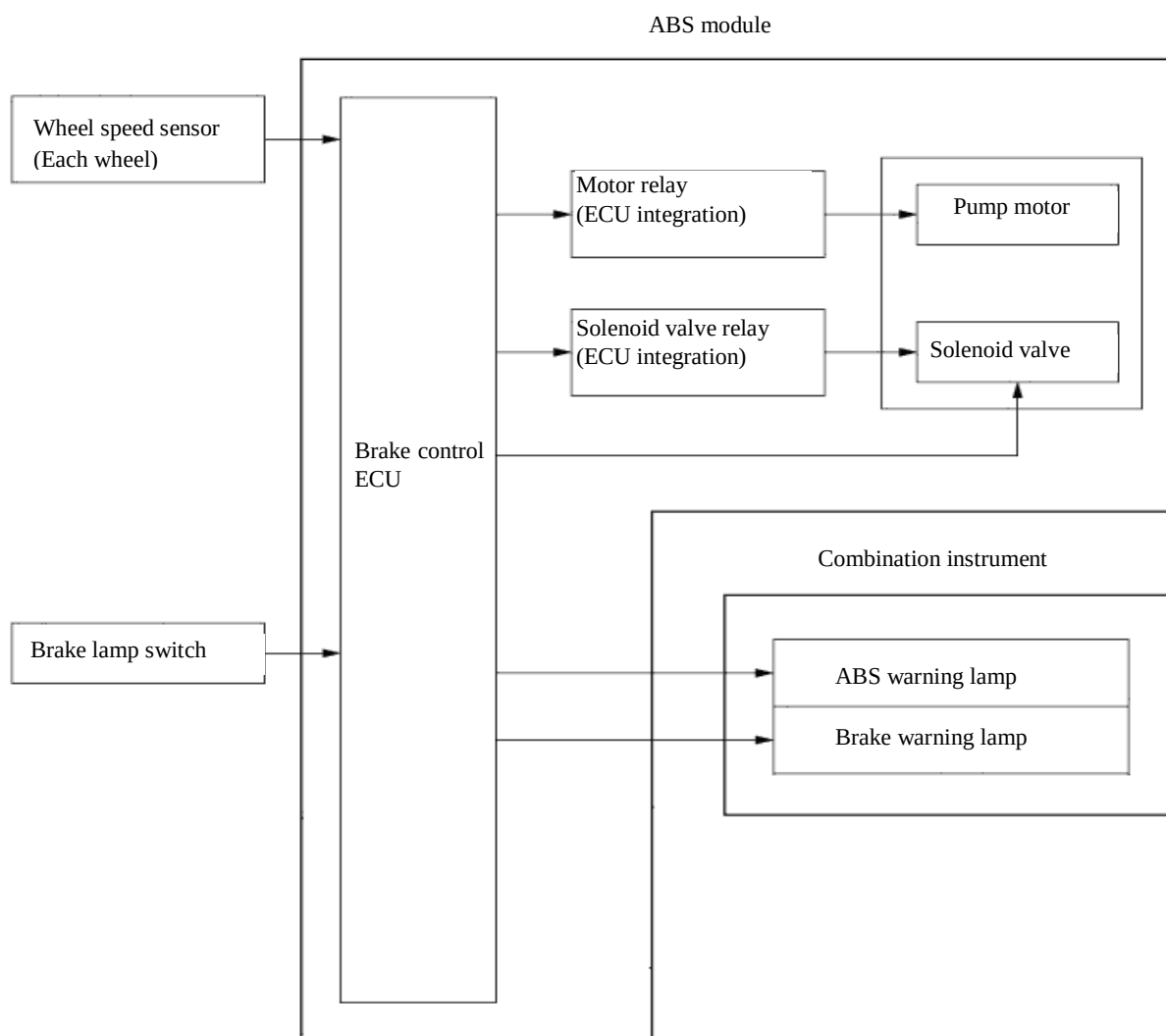
Combination instrument
ECU-IG fuse
STOP fuse

Combination instrument
ABS warning lamp
Brake warning lamp



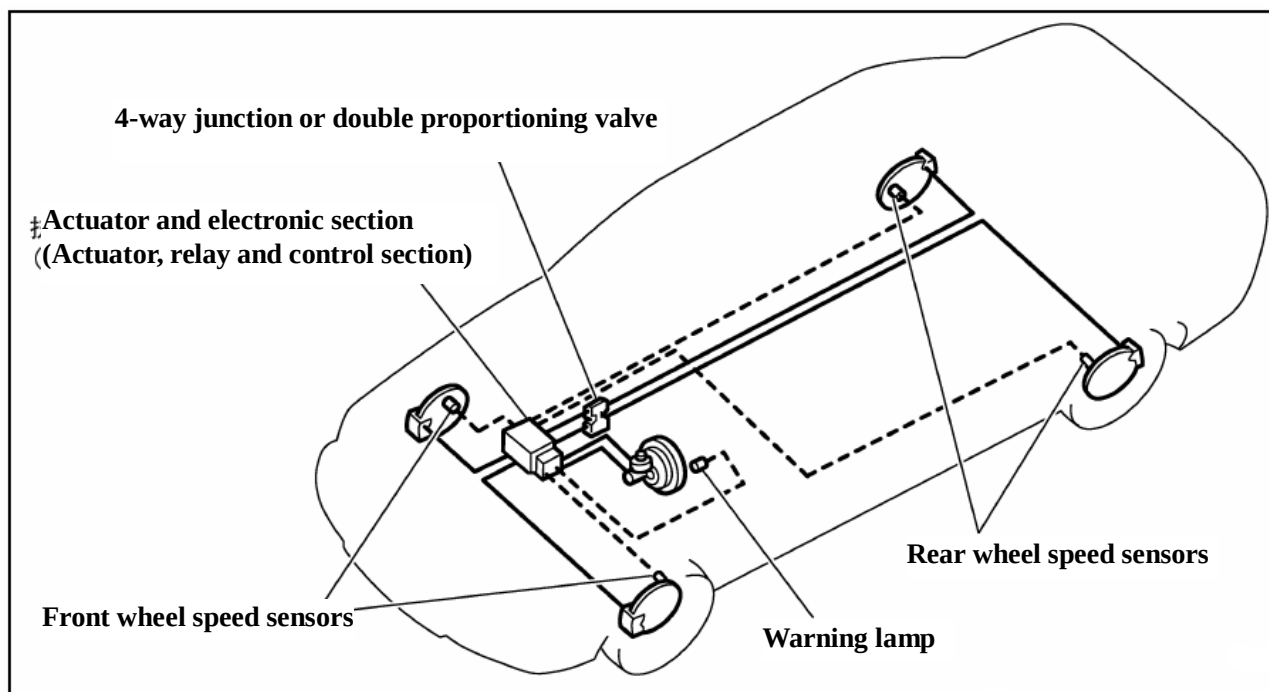
Anti-Lock Brake System (ABS) Layout 2

1.4 System Block Diagram



Anti-Lock Brake System Block Diagram

1.5 System Description



The vehicle Anti-Lock Brake System (ABS), a kind of active feature on vehicle, is used to prevent wheel lockup and full-lock skidding, to enhance the directional stability, steering control ability and shorten the braking distance in the vehicle braking procedure, and to bring the vehicle braking efficiency into full play. The Anti-Lock Brake System is controlled by the ABS control unit, which include the Electrical Control Unit (ECU) assembly and the Hydraulic Control Unit (HCU) assembly. The ABS is used to prevent wheel lockup by regulating the brake hydraulic pressure of the respective wheel during emergency braking. When the ECU inspects that the wheels begin to lock up, the ABS will work circularly in the following processes:

- Maintaining braking pressure
- Reducing braking pressure
- Increasing braking pressure

1.5.1 ABS process—maintaining braking pressure

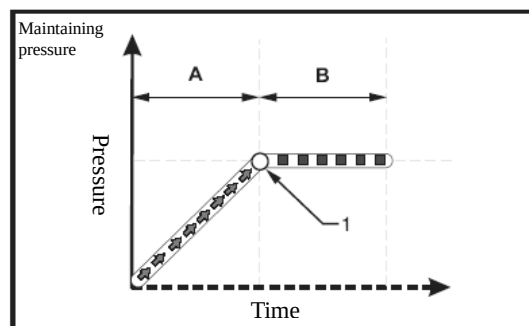
1.5.1.1 Condition description:

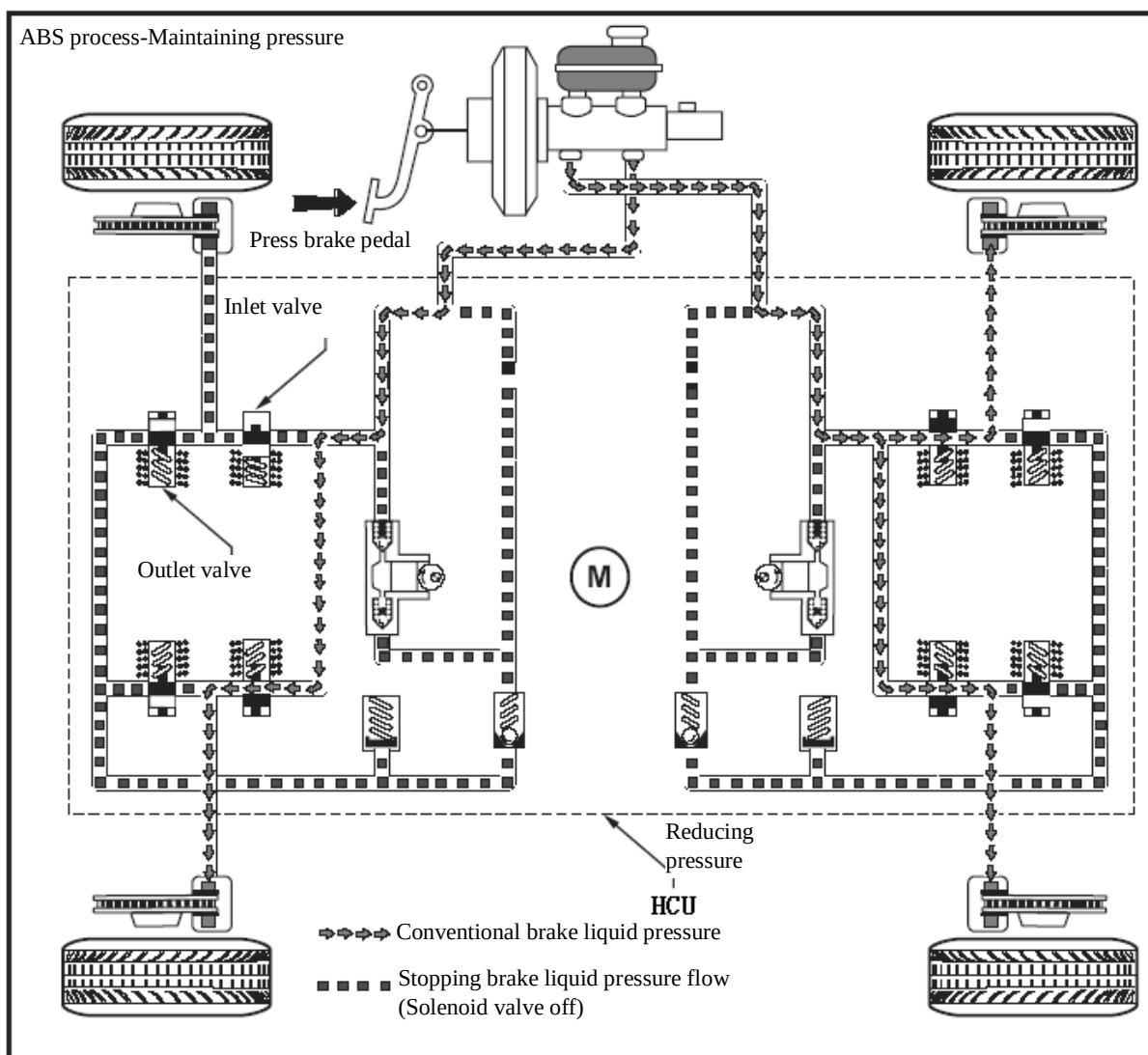
When the brake combines and the ECU inspects that one wheel is going to reach the lockup critical point, the ECU will control the brake hydraulic pressure of this wheel to maintain the brake hydraulic pressure (B) and prevent wheel lockup.

1.5.1.2 Control operation (suppose the left rear wheel is going to lock up):

The ECU detects and compares the signals of each wheel speed sensor to determine that if the wheels skid. If wheel skid is detected during braking procedure, the ECU will switch to the process of maintaining braking pressure, and send a control signal to HCU to close the left rear inlet valve.

When the left rear inlet valve and outlet valve are all closed, no matter how much the brake hydraulic pressure applied by the brake pedal is, the left rear brake circuit would be closed off to maintain constant of the left rear brake hydraulic pressure.





1.5.2 ABS process—reducing braking pressure

1.5.2.1 Condition description:

If the ABS—ECU detects that the respective wheel is still in lockup condition when the ABS has been in the process of maintaining braking pressure (B), the ABS will switch to the process of reducing braking pressure at the predetermined point. The ECU will regulate the brake hydraulic circuit of the relational wheel to reduce the brake hydraulic pressure and prevent wheel lockup.

1.5.2.2 Control operation (suppose that the wheel is still in lockup condition when the ABS has been in the process of maintaining braking pressure)

The ECU detects and compares the signals of each wheel speed sensor to determine that if the wheels skid. If the ABS detects that the left rear wheel is still in skid condition during the ABS maintaining braking pressure. The ECU will switch to the ABS process of reducing braking pressure, and send signals to the HCU to do the followings:

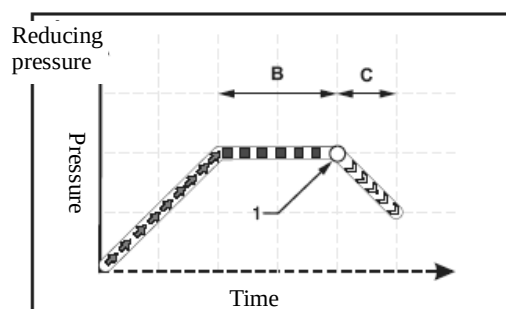
Close the left rear inlet valve

Open the left rear outlet valve

Run the hydraulic adjuster pump (it will always keep operative condition during ABS processes)

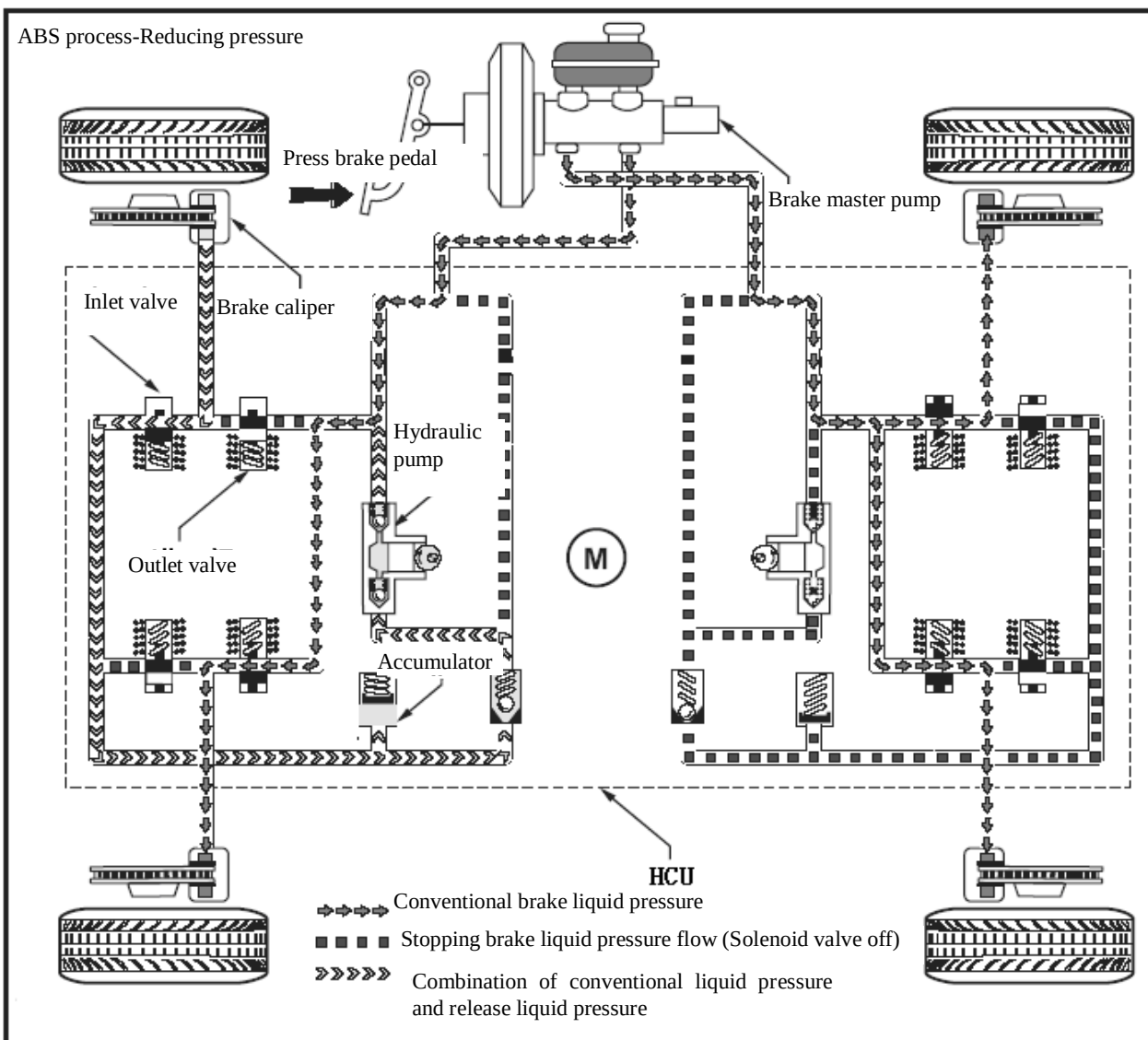
Produce the following effects:

When the left rear outlet valve is open, the left rear wheel brake fluid is led to the energy accumulator first to ensure that the brake hydraulic pressure reduces immediately.



The energy accumulator stores excessive left rear wheel brake fluid.

The hydraulic adjuster pump accumulates the return pressure of the left rear wheel brake fluid, so it can make the brake fluid discharged from the left rear wheel brake caliper returns to the brake master cylinder to counteract the brake-pedal pressure. In this process, as the brake pedal is still in pressed down condition, the pressure discharged from the brake caliper must be greater than the pressure applied by the brake master cylinder.

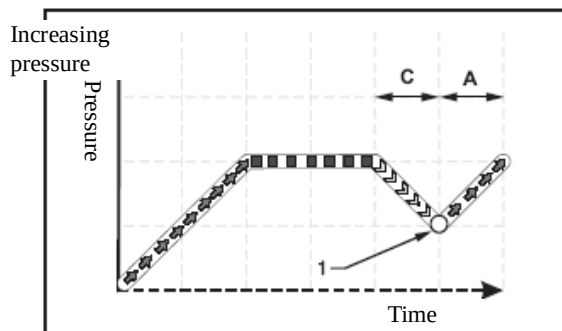


1.5.3 ABS process—increasing braking pressure

1.5.3.1 Condition description:

If after the brake hydraulic pressure reduced in the process of reducing braking pressure (C), the followings happen:
The brake hydraulic pressure reaches the critical point, but the brake force applied to the respective wheel is not enough
The ECU determines that the respective wheel brake is not enough

The ABS switches to the process of increasing braking pressure from the process of reducing braking pressure, and in this process, the ECU regulates the respective wheel brake circuit to increase the brake hydraulic pressure, to increase the brake force and balance the wheel speed in braking procedure thereby.



1.5.3.2 Control operation (suppose the brake force applied in the process of reducing braking pressure reduces, thus it causes the lack of brake of the left rear wheel)

The ECU detects and compares the signals of each wheel speed sensor to determine that if the wheels skid. If the ECU detects that the brake force applied in the process of reducing braking pressure reduces, thus the speed of left rear wheel is greater than the speed of other 3 wheels. The ECU will switch to the ABS process of increasing braking pressure, and send signals to the HCU to do the followings:

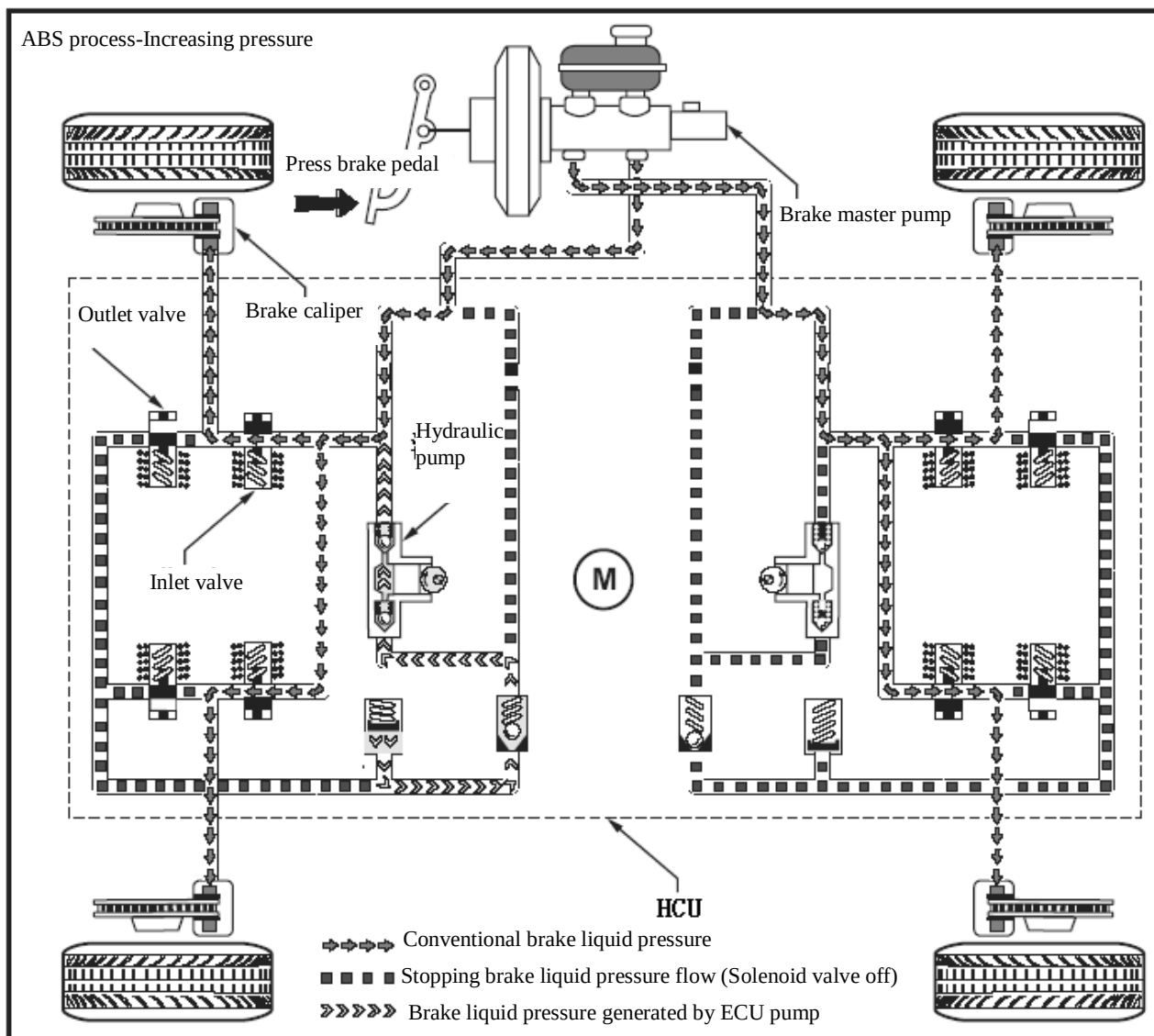
Close the left rear outlet valve (normal position)

Close the left rear inlet valve (normal position)

Continue to run the hydraulic adjuster pump during ABS processes

Produce the following effects:

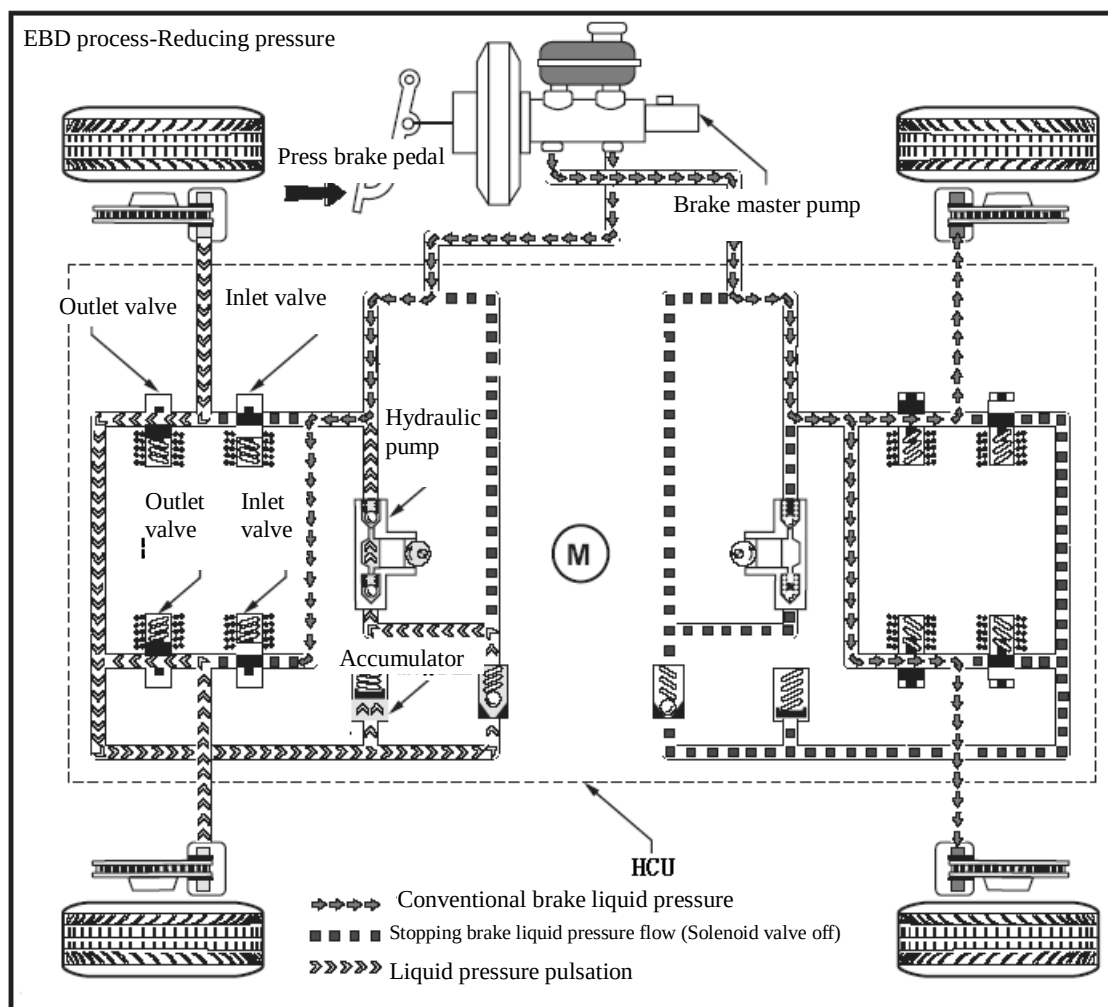
The master cylinder brake fluid is led to the left rear brake caliper again like in the routine braking operation, the brake hydraulic pressure reduced before increases now thus to reduce the speed of left rear wheel.



The ABS with Electronic Brake-force Distribution system, EBD system for short, is like a rear proportioning valve in the function. The EBD system makes use of the ABS system to control the rear wheel skid during part braking modes. Once entering the EBD, the inlet is switched on, so the fluid supply from the master cylinder is cut off. To reduce the rear brake pressure, the discharge valve goes on with pulsation to make the fluid enter the energy accumulator in the HCU and to reduce the brake hydraulic pressure of the rear brake. To increase the rear brake pressure, the discharge valve is closed and the feed valve goes on with pulsation, which will increase the pressure of the rear brake. This process will continue until reaching the desired skid rate. When the EBD brake is finished (no brake force applied), the discharge valve is

switched on, and the brake fluid in the energy accumulator is discharged to the brake master cylinder through the feed valve and the check valve. Meanwhile, the feed valve is switched on to prevent the hydraulic system from short circuit in the condition of applying brake again. In a lot of ABS fault modes, the EBD is still able to work. When switching on the ignition and driving the car every time, the system will do self-checking when the speed is greater than 4km/h. The ECU monitors the system input and output circuits to confirm that the system is working properly. If the on-board diagnostic system finds a certain electrical circuit fault, the system will set a DTC in memory and set fault indicator lamp in the combination instruments.

This ABS uses a DELPHI-DBC7.4 system.



1.6 ABS DTC Table

OBD-II DTC	Fault diagnosis	Fault location
C0011	ABS warning lamp fault	1. ECU and instrument lamp communication fault 2. ECU fault
C0012	Brake warning lamp fault	ECU and instrument lamp communication fault
C0014	System relay contact or coil circuit closed	1. Battery voltage too low or power circuit fault 2. ABS fuse poor contact or closed 3. ECU internal fault
C0017	Pump motor ground fault	Power circuit fault or ECU fault
C0018	Pump motor and battery short circuit or motor ground open/high resistance value	1. Pump motor ground electric circuit fault 2. ECU fault
C0021	Left front wheel speed=0kph	1. Remove the protective pipe, and check if the

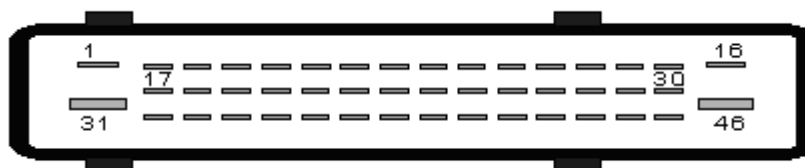
C0022	Right front wheel speed=0kph	circuit is damaged, shorted or polluted 2. Check if the terminal is distorted and/or damaged 3. Use the spare cathode/anode terminal to check the terminal contact (retention) 4. Remove the terminal from the connector, check if the terminal of conducting wire compression joint is correct
C0023	Left rear wheel speed=0kph	
C0024	Right rear wheel speed=0kph	
C0025	Left front wheel speed changes too much	1. Remove the protective pipe, and check if the circuit is damaged, shorted or polluted 2. Check if the terminal is distorted and/or damaged 3. Use the spare cathode/anode terminal to check the terminal contact (retention) 4. Remove the terminal from the connector, check if the terminal of conducting wire compression joint is correct 5. Gear ring may be damaged
C0026	Right front wheel speed changes too much	
C0027	Left rear wheel speed changes too much	
C0028	Right rear wheel speed changes too much	
C0032	Left front wheel speed circuit open or ground/battery short circuit	1. Remove the protective pipe, and check if the circuit is damaged, shorted or polluted 2. Check if the terminal is distorted and/or damaged 3. Use the spare cathode/anode terminal to check the terminal contact (retention) 4. Remove the terminal from the connector, check if the terminal of conducting wire compression joint is correct
C0033	Right front wheel speed circuit open or ground/battery short circuit	
C0034	Left rear wheel speed circuit open or ground/battery short circuit	
C0035	Right rear wheel speed circuit open or ground/battery short circuit	
C0036	Voltage too low	1. Battery voltage weak or run out 2. Battery terminal poor contact 3. Equipment installed after sale (additional load) voltage from battery is too much 4. Battery negative ground poor contact 5. ECU terminal poor contact 6. ECU ground poor contact 7. Charging system fault (electric generator)
C0037	Voltage too high	1. Charging system fault 2. Poor connect 3. ECU fault
C0042	Pump motor open circuit	1. The circuit from pump motor to ECU connector is open or high resistance 2. Pump motor circuit is open 3. ECU fault
C0043	Pump motor stop	1. Pump motor fault 2. ECU fault
C0048	DRP failure	1. ECU fault 2. Coaxial wheel speed sensor fault at the same time
C0055	Internal failure	1. The connect between ECU and HCU is reliable, tight and corroded or not 2. ECU internal fault
C0056	System relay always turn-on	
C0061	Left front pressurized solenoid valve fault	
C0062	Left front discharge solenoid valve fault	
C0063	Right front pressurized solenoid valve fault	
C0064	Right front discharge solenoid valve fault	
C0065	Left rear pressurized solenoid valve fault	

C0066	Left rear discharge solenoid valve fault	
C0067	Right rear pressurized solenoid valve fault	
C0068	Right rear discharge solenoid valve fault	
C0091	Brake pedal failure when speed down	1. Brake lamp switch output voltage is lower than brake required 2. Brake lamp switch fault
C0093	Brake pedal failure when speed down during last ignition cycle	1. Speed down at the last moment of test, detect the brake pedal failure
C0094	Fault of that the brake pedal is always effective without speed down	1. Brake lamp switch fault 2. Harness fault
C0095	Brake lamp switch is open	1. One or multiple brake lamp bulb filament is open circuit 2. One or multiple brake lamp bulb and/or socket connect is loose 3. One or multiple brake lamp ground is loose or open circuit 4. Brake lamp switch input terminal has poor connect or open circuit 5. Brake lamp switch input circuit is open
C0118	Left rear pressurized solenoid valve related fault	ECU Internal failure
C0121	Right rear pressurized solenoid valve related fault	
C0122	Discharge or front pressurized solenoid valve related fault	
C0127	Fault of that the brake pedal is always effective without speed down during last ignition cycle	At the last moment of test, detect the brake pedal failure
C0151	Left front wheel discharge time is too long	1. Hydraulic device is polluted 2. Intermittence signals of wheel speed sensor 3. Solenoid valve is stuck 4. Basic brake system braking drag or resistance is too large
C0152	Right front wheel discharge time is too long	
C0153	Left rear wheel discharge time is too long	
C0154	Right rear wheel discharge time is too long	
C0191	No starting current for pump motor	1. High impedance of pump motor coil 2. High impedance of pump motor ground
C0192	Pump motor current overload	1. Low impedance of pump motor coil 2. Motor or pump isn't stuck, but it need additional torque to be rotated
C0194	Pump motor circuit current is shorted	1. Extremely low impedance of pump motor coil 2. Pump motor hot end ground is shorted
C0198	Bump road misfiring PWM output fault	1. Bump road misfiring PWM output open circuit 2. Bump road misfiring PWM output ground short circuit 3. Bump road misfiring PWM output and battery short circuit

1.7 Fault Symptoms Table

Fault symptom	Fault cause	Fault symptom	Fault cause
ABS is out of work	1. Confirm DTC exists or not 2. Ignition power circuit is at fault 3. Wheel speed sensor circuit is at fault 4. Hydraulic circuit is at fault (dynamic test metering)	ABS can't work effectively	1. Confirm DTC exists or not 2. Wheel speed sensor circuit is at fault 3. Brake lamp switch circuit is at fault 4. Hydraulic circuit is at fault (dynamic test metering)
ABS warning lamp is abnormal	1. ABS warning lamp circuit is at fault 2. ECU is at fault 3. Parking switch and brake fluid level switch are at fault	DTC check can't be carried on	1. ABS warning lamp circuit is at fault 2. DTC diagnosis port power circuit is at fault 3. ECU is at fault

1.8 ECU Connector End View and Pin Distribution View



Test terminal	Wiring color	Terminal description	Testing condition	Standard value
1-body	W/B	ECU ground	Always	Less than 1Ω
8-body	O	KW2000 communication diagnostic line	Ignition switch ON, system is at fault	Output square signal (See DTC definition)
12-body	O	Left rear wheel speed sensor low potential	Rotate left rear wheel, always	Output pulse signal waveform
13-body	L	Left rear wheel speed sensor high potential	Rotate left rear wheel, always	Output pulse signal waveform
16-body	L	Ignition switch power input	Ignition switch ON, always	10~14V
24-body	B	Right front wheel speed sensor low potential	Rotate right front wheel, always	Output pulse signal waveform
25-body	W	Lamp driver module	Ignition switch ON, system is normal, always	Less than 1V (See indicator lamp driver)
27-body	R	Left front wheel speed sensor high potential	Rotate left front wheel, always	Output pulse signal waveform
28-body	G	Left front wheel speed sensor low potential	Rotate left front wheel, always	Output pulse signal waveform
31-body	Br	Motor pump ground	Always	Less than 1Ω
39-body	Y	Right front wheel speed sensor high potential	Rotate right front wheel, always	Output pulse signal waveform
41-body	G	Brake lamp switch signal input	Press down brake pedal, always	10~14V
42-body	Lg	Right rear wheel speed sensor high potential	Rotate right rear wheel, always	Output pulse signal waveform
43-body	R	Right rear wheel speed sensor low potential	Rotate right rear wheel, always	Output pulse signal waveform
46-body	B	Normal power input	Always	10~14V

1.9 System Diagnosis

1.9.1 Diagnosis

If ABS module detects a fault, the ABS warning lamp or brake warning lamp will be on to warn the driver.

ABS warning lamp



Brake warning lamp



1.9.2 Warning lamp inspection

1.9.2.1 Loosen the parking brake lever.

Note: Fix the vehicle with wedge to ensure safety before loosening the parking brake lever.

Tip: When the parking brake is started to use or the brake fluid level is too low, the brake warning lamp should be on.

ABS warning lamp



Brake warning lamp



1.9.2.2 Ignition on, the ABS warning lamp and brake warning lamp should be off after 3 seconds.

Tip: If the warning lamp isn't on, check if the lamp bulb is burn out and check the harness between the ABS control unit and the combination instruments. If the warning lamp is always on, check the related warning lamp circuit.

1.9.2.3 Self-inspection

After the ignition switch on, when the car speed is over 4km/h, the system will take self-inspection. If finding a fault, the ABS warning lamp will be on and set a DTC.

Tip: It can be verified through self-inspection after finishing the servicing.

1.10 DTC Inspection and Erase

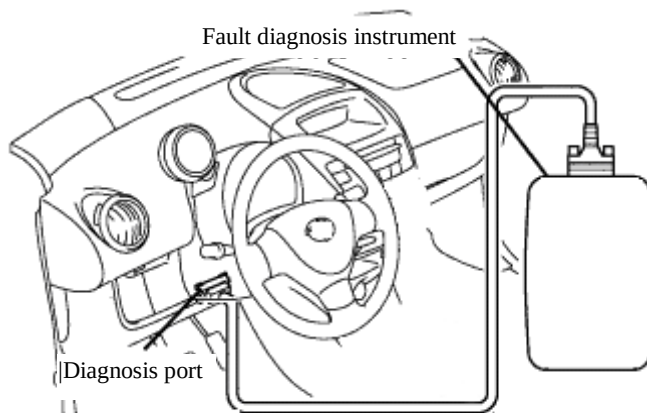
1.10.1 Check the DTC.

1.10.1.1 Connect the fault diagnosis instrument to the diagnosis port.

1.10.1.2 Turn the ignition switch to ON.

1.10.1.3 Turn on the fault diagnosis instrument power switch.

1.10.1.4 Use the fault diagnosis instrument to read the DTC.



1.10.2 Erase the DTC

1.10.2.1 Connect the fault diagnosis instrument to the diagnosis port.

1.10.2.2 Turn the ignition switch to ON.

1.10.2.3 Turn on the fault diagnosis instrument power switch.

1.10.2.4 Use the fault diagnosis instrument to erase the DTC.

1.11 Dynamic test metering/DTM

1.11.1 Connect the fault diagnosis instrument.

1.11.2 Set the ignition switch to ON, and take “dynamic test metering” according to display on the test-meter.

Item	Test content	Diagnosis notation
ABS solenoid (LF Release)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
ABS solenoid (RF Release)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
ABS solenoid (LR Release)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
ABS solenoid (RR Release)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
ABS solenoid (LF Apply)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
ABS solenoid (RF Apply)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
ABS solenoid (LR Apply)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
ABS solenoid (RR Apply)	Operate the solenoid ON or OFF	Be able to hear the solenoid working sound of clicking
Solenoid relay	Operate the solenoid relay ON or OFF	Be able to hear the solenoid relay working sound of clicking
ABS motor relay	Operate the motor relay ON or OFF	Be able to hear the motor relay working sound of clicking
ABS warning lamp	Operate the ABS warning lamp ON or OFF	Watch the combination instrument ABS warning lamp on or off
Brake warning lamp	Operate the brake warning lamp ON or OFF	Watch the combination instrument brake warning lamp on or off

7	Need to take some impedance detection about ECU ground before replacing ECU	The resistance is less than 1Ω	Next step	To Step 9
8	Repair the fault of open circuit or high resistance between ECU and Instruments	Normal	To Step 10	Inspection and repair
9	Repair the fault of harness battery short circuit	Normal	Next step	Inspection and repair
10	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.2 DTC C0012 checking

1.12.2.1 Checking the circuit diagram (See 1.12.1.1)

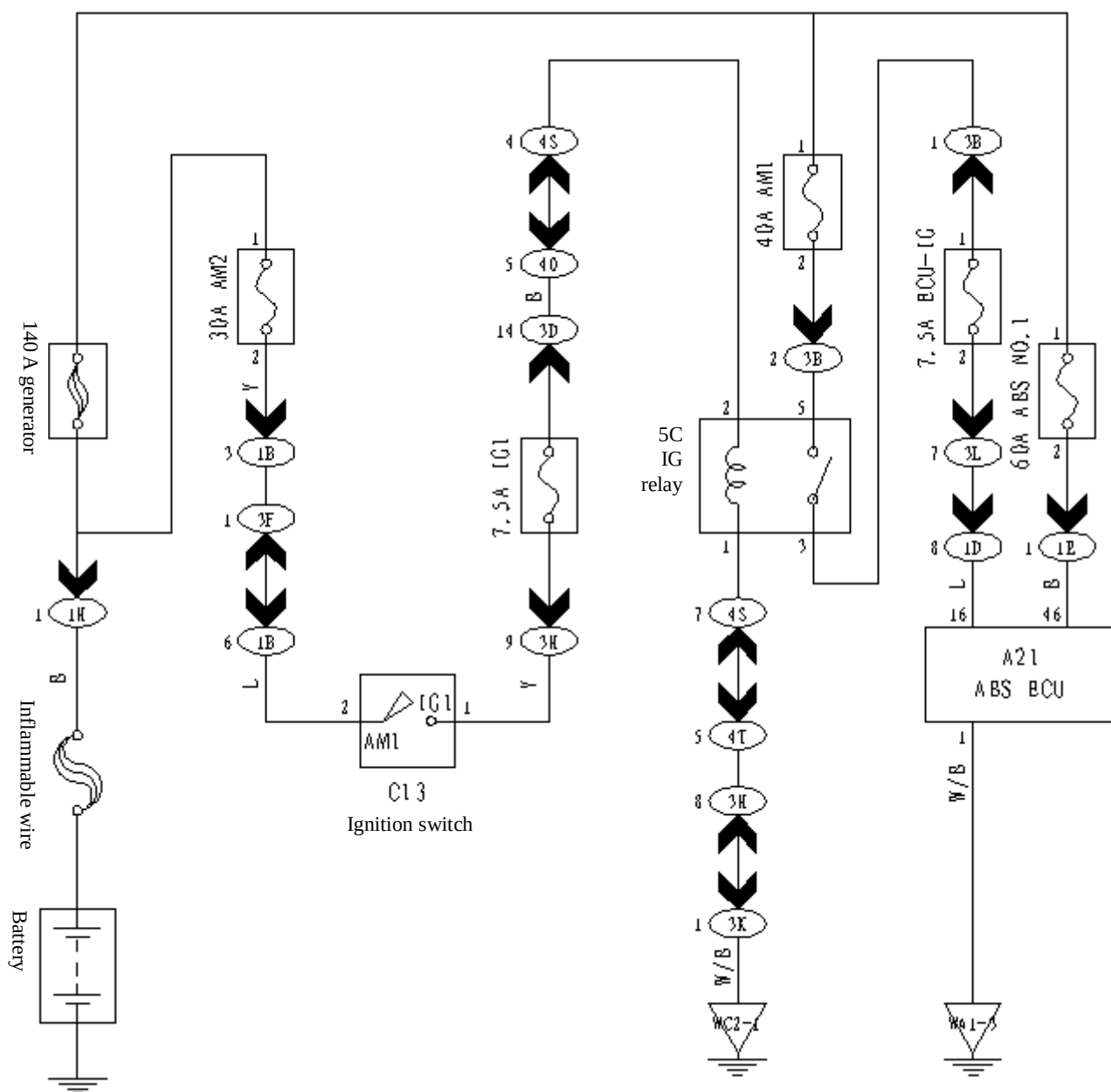
1.12.2.2 Checking steps

C0012--Brake Warning Lamp Fault				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 4
2	1. Test the battery load 2. Test the charging system load	The voltage is within 10-14V	Next step	To Step 5
3	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Detect if the impedance between ECU harness end A21-1 and body is less than 1Ω 4. Detect if the voltage between ECU harness end A21-46 and body is within 10-14V 5. Ignition switch to ON 6. Detect if the voltage between ECU harness end A21-16 and body is within 10-14V	Normal	To Step 8	To Step 6
4	Perform system diagnosis electrical check	Done	To Step 1	Inspection
5	Repair the battery or charging system	Normal	To Step 10	To Step 3
6	Repair the wiring or connector	Normal	To Step 10	Next step
7	Check and repair the fault of high resistance between battery negative wire and ECU harness connector A21-1	Normal	To Step 10	Next step
8	Check and repair the low voltage fault of ECU terminal A21-16	Normal	To Step 10	Next step
9	Replace ECU	Normal	Next step	Replace the combination instruments
10	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.3 DTC C0014 checking
1.12.3.1 Checking steps

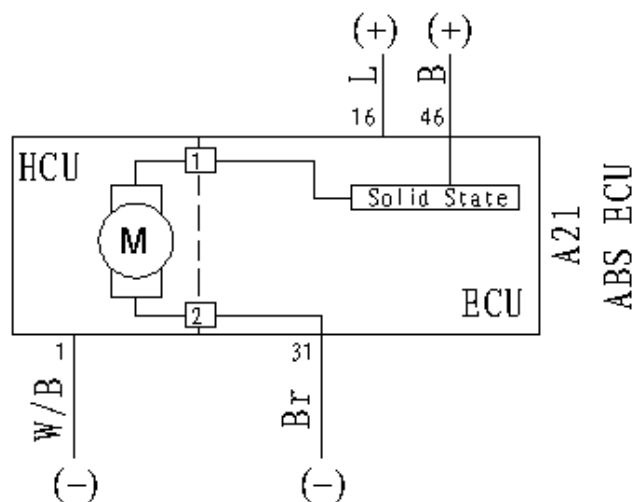
C0014—System Relay Contact Open				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 4
2	1. Test the battery load 2. Test the charging system load	The voltage is within 10-14V	Next step	To Step 5
3	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Detect if the impedance between ECU harness end A21-1 and body is less than 1Ω 4. Detect if the voltage between ECU harness end A21-46 and body is within 10-14V 5. Ignition switch to ON 6. Detect if the voltage between ECU harness end A21-16 and body is within 10-14V	Normal	To Step 9	To Step 6
4	Perform system diagnosis electrical check	Done	To Step 1	Inspection
5	Repair the battery or charging system	Normal	To Step 10	To Step 3
6	Repair the wiring or connector	Normal	To Step 10	Next step
7	Check and repair the fault of high resistance between battery negative wire and ECU harness connector A21-1	Normal	To Step 10	Next step
8	Check and repair the low voltage fault of ECU terminal A21-16	Normal	To Step 10	Next step
9	Replace ECU	Normal	Next step	
10	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.3.2 Checking the circuit



1.12.4 DTC C0017 checking

1.12.4.1 Checking the circuit



1.12.4.2 Checking steps

C0017—Pump Motor Power Circuit Open				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 4
2	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Detect if the impedance between ECU harness end A211-(1), A21-31 and body is less than 1Ω 4. Detect if the voltage between ECU harness end A21-46 and body is within 10-14V	Normal	To Step 5	Next step
3	Check and repair the fault of high resistance/open circuit between the battery negative and ECU harness end A21-46	Normal	To Step 6	To Step 5
4	Perform system diagnosis electrical check	Done	To Step 1	Inspection
5	Replace ECU	Normal	Next step	
6	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.5 DTC C0018 checking

1.12.5.1 Checking the circuit (1.12.4.1)

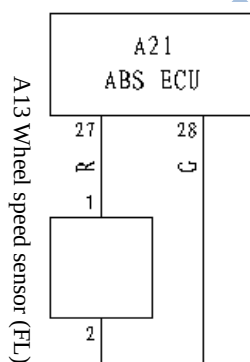
1.12.5.2 Checking steps

C0018--Pump Motor and Battery Short Circuit or Motor Ground Open Circuit/High Impedance				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 6
2	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Detect if the impedance between ECU harness end A211-(1), A21-31 and body is less than 1Ω 4. Detect if the voltage between ECU harness end A21-46 and body is within 10-14V	Normal	Next step	To Step 7
3	1. Remove ECU from HCU	Normal	To Step 6	To Step 9

	2. Check if the connector of ECU to HCU is damaged, corroded, in poor contact or giving off brake fluid and so on			
4	Detect the resistance between HCU terminal 1 and 2	Less than 2 Ω	To Step 7	To Step 10
5	Replace ECU	Normal	To Step 11	Next step
6	Perform system diagnosis electrical check	Done	To Step 1	Inspection
7	Check and repair the fault of ECU terminal A21-31 ground circuit break	Normal	To Step 11	Next step
8	Repair the ground poor connect	Normal	To Step 11	Next step
9	1. If damage and/or corrosion appear(s), replace ECU and/or HCU if necessary 2. If the brake fluid leak appears, replace ECU and HCU	Normal	To Step 11	Next step
10	Repair HCU	Normal	To Step 11	Next step
11	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.6 DTC C0021 checking

1.12.6.1 Checking the circuit



1.12.6.2 Checking steps

C0021—Left Front Wheel Speed Sensor Input Signal=0kph				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 11
2	1. Ignition switch to OFF 2. Check the left front wheel speed sensor, harness and toothed ring exterior	Physical damage	To Step 12	Next step
3	Check DTC-C021 display status	Present DTC	To Step 13	Next step
4	1. Connect the fault diagnosis instrument and select the data list, monitor the wheel speed sensor 2. Test-drive the car at the speed of 24 km/h, then decrease the speed to 0 slowly, repeat it several times	C0021 is reset or the left front wheel speed decreases to 0 suddenly	Next step	To Step 14
5	1. Park the car and shut off the engine, set the Ignition switch to OFF 2. Lift and support the vehicle suitably 3. Disconnect the harness connector of ECU 4. Connect a voltmeter to ECU terminals 28 and 27	The output should be not less than 100 mV	To Step 15	Next step

	5. Select the alternating mV scale 6. Rotate the left front wheel, watch the voltmeter (the voltage should increase as the wheel speed increases)			
6	1. Disconnect the harness connector from the left front wheel speed sensor 2. Connect the ohmmeter between 2 terminals of left front wheel speed sensor	1780±150Ω	Next step	To Step 16
7	1. The harness connector is still disconnected from the left front wheel speed sensor 2. Connect the voltmeter between 2 terminals of left front wheel speed sensor 3. Select the alternating mV scale 4. Rotate the left front wheel, watch the voltmeter (the voltage should increase as the wheel speed increases)	The output should be not less than 100 mV	Next step	To Step 16
8	1. The harness connector is still disconnected from the left front wheel speed sensor 2. ECU harness connector is still disconnected from ECU 3. Connect the ohmmeter to ECU terminals -28 and -27	The resistance value is greater than 1MΩ	Next step	To Step 17
9	1. ECU harness connector is still disconnected from ECU 2. The harness connector is still disconnected from the left front wheel speed sensor 3. Connect one end of the ohmmeter to ECU harness terminal A21-27, the other end to the wheel speed sensor harness connector terminal A31-1	The resistance is less than 1Ω	Next step	To Step 18
10	1. ECU harness connector is still disconnected from ECU 2. The harness connector is still disconnected from the left front wheel speed sensor 3. Connect one end of the ohmmeter to ECU harness terminal A21-28, the other end to the wheel speed sensor harness connector terminal A31-2	The resistance is less than 1Ω	To Step 15	To Step 19
11	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
12	Check and repair the damaged left front wheel speed sensor and/or gear ring	Damaged	To Step 20	To Step 15
13	Perform DTC C0021 diagnosis before detect	Exist	Next step	To Step 4
14	The DTC C0021 is intermittent	Exist	Next step	To Step 4
15	Replace ECU	Repaired	To Step 20	Next step
16	Replace the left front wheel speed sensor	Repaired	To Step 20	Next step
17	Search and repair the short circuit fault between 2 terminals A21-2(7) and A21-28	Repaired	To Step 20	Next step
18	Repair the open circuit or high impedance between terminals A21-27 and A13-1	Repaired	To Step 20	Next step
19	Repair the open circuit or high impedance between terminals A21-28 and A13-2	Repaired	Next step	
20	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.7 DTC C0022, C0023, C0024 checking

The principle and steps of DTC C0022, C0023, C0024 checking are the same with DTC C0021 checking. The right front wheel speed sensor is connected with ECU harness terminals A21-39 and A21-24, the wheel speed sensor resistance value 1780±150Ω; the left rear wheel speed sensor is connected with ECU harness terminals A21-13 and A21-12, the wheel speed sensor resistance value 1200±120Ω; the right rear wheel speed sensor is connected with ECU harness terminals A21-42 and A21-43, the wheel speed sensor resistance value 1200±120Ω.

1.12.8 DTC C0025 checking

1.12.8.1 Checking the circuit (1.12.6.1)

1.12.8.2 Checking steps

C0025—Left Front Wheel Speed Sensor Speed Changes Too Much				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 11
2	Check DTC-C025 display status	Present DTC	To Step 12	Next step
3	1. Ignition switch to OFF 2. check left front wheel speed sensor exterior 3. check left front wheel speed sensor gear ring exterior	Physical damage	To Step 13	Next step
4	1. Park the car and shut off the engine, set the Ignition switch to OFF 2. Connect the fault diagnosis instrument and select the data list, monitor the wheel speed sensor 3. Start the engine but not move the vehicle 4. Press down the accelerator pedal gently to increase the engine idling speed	C0025 is reset or the wheel speed sensor has signal at this moment	To Step 14	Next step
5	1. Connect the fault diagnosis instrument and select the data list, monitor the wheel speed sensor 2. Test-drive the car to the greatest limit speed, then decrease the speed to 0 slowly, repeat it several times	C0025 is reset or compared with other wheel signals, the change is more than 5km/h	Next step	To Step 15
6	1. Park the car, and turn ignition switch to OFF 2. Lift and support the vehicle suitably 3. Disconnect the harness from the left front wheel speed sensor 4. Connect the ohmmeter to 2 terminals A13-(1) and A13-2 of left front wheel speed sensor, measure the resistance value	The resistance value is $1780 \pm 150 \Omega$	Next step	To Step 16
7	1. The wheel speed sensor is still disconnected with the harness 2. Connect the voltmeter to 2 terminals of left front wheel speed sensor 3. Select the alternating mV scale 4. Rotate the left front wheel, and observe the voltage on the voltmeter	The output should be not less than 100 mV	Next step	To Step 16
8	1. Disconnect the harness connector of ECU 2. Connect one end of the ohmmeter to ECU harness terminal A21-28, the other end to the wheel speed sensor harness connector terminal A31-2	The resistance is less than 1Ω	Next step	To Step 17
9	1. Disconnect the harness connector of ECU 2. Connect one end of the ohmmeter to ECU harness terminal A21-27, the other end to wheel speed sensor harness connector terminal A31-1	The resistance is less than 1Ω	Next step	To Step 18
10	1. Disconnect the harness connector of ECU 2. Connect the ohmmeter to ECU terminals A21-28 and A21-27	The resistance value is greater than $1 M\Omega$	To Step 20	To Step 19
11	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
12	Make C0025 diagnostic diagram before C0025 fault diagram	Done	To Step 1	Make
13	Repair the damaged left front wheel speed sensor and/or gear ring	Repaired	To Step 21	To Step 16
14	Check if there's potential ignition noise origin in left front ABS module harness, such as spark plug lead etc.	Exist	To Step 21	To Step 16

15	The DTC C0021 is intermittent	Exist	Next step	To Step 4
16	Replace the left front wheel speed sensor	Repaired	To Step 21	Next step
17	Repair the open circuit or high resistance between terminals A21-28 and A13-2	Repaired	To Step 21	Next step
18	Repair the open circuit or high resistance between terminals A21-27 and A13-1	Repaired	To Step 21	Next step
19	Repair the short circuit fault between terminals A21-28 and A13-1	Repaired	To Step 21	Next step
20	Replace ECU	Repaired	Next step	
21	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.9 DTC C0026, C0027, C0028 checking

The principle and steps of DTC C0026, C0027, C0028 checking are the same with DTC C0025 checking.

1.12.10 DTC C0032 checking

1.12.10.1 Checking the circuit (1.12.6.1)

1.12.10.2 Checking steps

C0032—Left Front Wheel Speed Sensor Circuit Open or Short				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 13
2	1. Ignition switch to OFF 2. check left front wheel speed sensor and gear ring exterior	Physical damage	To Step 14	Next step
3	Test-drive the car with various speeds and surfaces of roads	C0032 is reset	Next step	To Step 15
4	1. Park the car, and turn ignition switch to OFF 2. Lift and support the vehicle suitably 3. Disconnect the harness connector from the left front wheel speed sensor 4. Connect the ohmmeter to 2 terminals A13-1 and A13-2 of left front wheel speed sensor, measure the resistance value	The resistance value is $1780 \pm 150 \Omega$	Next step	To Step 16
5	1. The wheel speed sensor is still disconnected with the harness 2. Connect one end of the ohmmeter to the left front wheel speed sensor terminal A13-2, the other end to body, and measure the resistance value	The resistance value is greater than $1 M\Omega$	Next step	To Step 16
6	1. Disconnect the harness connector of ECU 2. Connect one end of the ohmmeter to ECU harness terminal A21-28, the other end to the wheel speed sensor harness connector terminal A31-2, and measure the resistance value	The resistance is less than 1Ω	Next step	To Step 17
7	1. Disconnect the harness connector of ECU 2. The wheel speed sensor is still disconnected with the harness. 3. Connect one end of the ohmmeter to ECU harness terminal A21-27, the other end to the wheel speed sensor harness connector terminal A31-1, and measure the resistance value	The resistance is less than 1Ω	Next step	To Step 18
8	1. Disconnect the harness connector of ECU 2. The wheel speed sensor is still disconnected with the	The voltage is less than 1V	Next step	To Step 19

	harness 3. Connect one end of the voltmeter to ECU harness terminal A21-28, the other end to body, and measure the voltage			
9	1. Disconnect the harness connector of ECU 2.The wheel speed sensor is still disconnected with the harness 3. Connect one end of the voltmeter to ECU harness terminal A21-27, the other end to body, and measure the voltage	The voltage is less than 1V	Next step	To Step 20
10	1. Disconnect the harness connector of ECU 2.The wheel speed sensor is still disconnected with the harness 3. Connect one end of the ohmmeter to ECU harness terminal A21-28, the other end to body, and measure the voltage, and measure the resistance value	The resistance value is greater than 1MΩ	Next step	To Step 21
11	1. Disconnect the harness connector of ECU 2.The wheel speed sensor is still disconnected with the harness 3. Connect one end of the ohmmeter to ECU harness terminal A21-27, the other end to body, and measure the voltage, and measure the resistance value	The resistance value is greater than 1MΩ	Next step	To Step 22
12	1. Disconnect the harness connector of ECU 2.The wheel speed sensor is still disconnected with the harness 3. Connect one end of the ohmmeter to ECU harness terminal A21-27, the other end to ECU harness terminal A21-28, and measure the voltage, and measure the resistance value	The resistance value is greater than 1MΩ	To Step 24	To Step 23
13	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
14	Repair the damaged left front wheel speed sensor and/or gear ring	Repaired	To Step 25	Next step
15	DTC C0032 is intermittent	Exist	Next step	To Step 3
16	Replace the left front wheel speed sensor	Repaired	To Step 25	Next step
17	Repair the open circuit or high resistance between terminals A21-28 and A13-2	Repaired	To Step 25	Next step
18	Repair the open circuit or high resistance between terminals A21-27 and A13-1	Repaired	To Step 25	Next step
19	Repair the fault of shorted to voltage between terminals A21-28 and A13-2	Repaired	To Step 25	Next step
20	Repair the fault of shorted to voltage between terminals A21-27 and A13-1	Repaired	To Step 25	Next step
21	Repair the fault of shorted to ground between terminals A21-28 and A13-2	Repaired	To Step 25	Next step
22	Repair the fault of shorted to ground between terminals A21-27 and A13-1	Repaired	To Step 25	Next step
23	Repair the short circuit fault between terminals A21-27 and A21-28	Repaired	To Step 25	Next step
24	Replace ECU	Repaired	Next step	
25	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

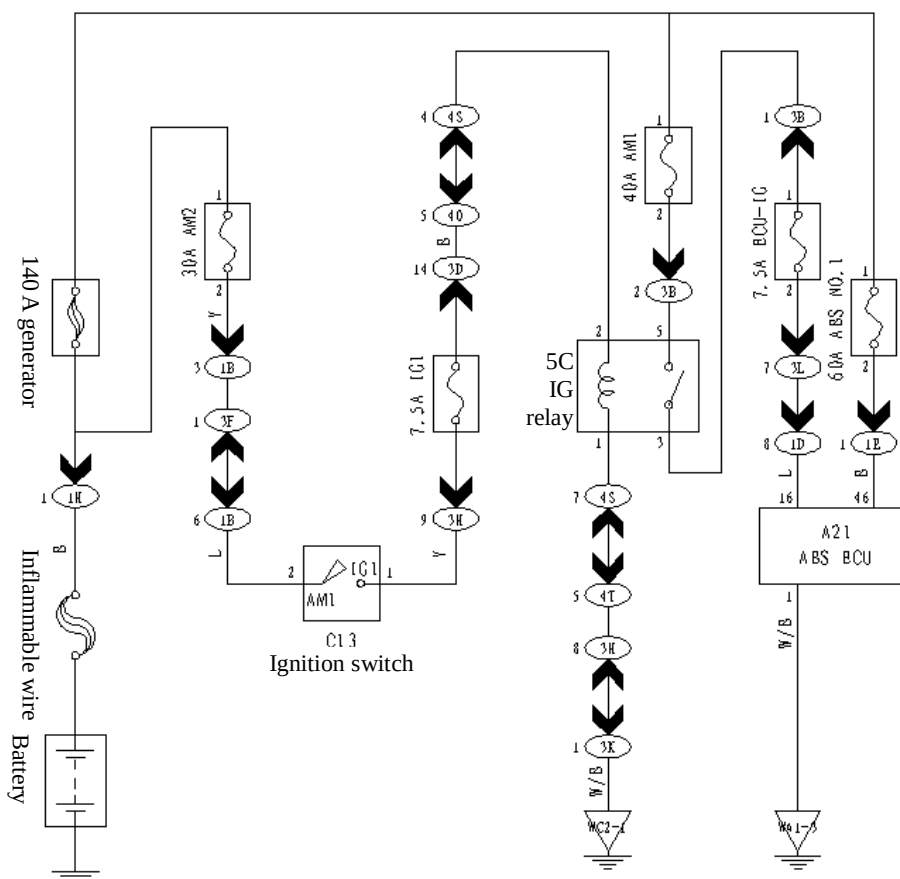
1.12.11 DTC C0033, C0034, C0035 checking

The principle and steps of DTC C0033, C0034, C0035 checking are the same with DTC C0032 checking.

1.12.12 DTC C0036 checking
1.12.12.1 Checking steps

C0036—System Low Voltage				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 6
2	1. Test the battery load 2. Test the charging system load	The voltage is within 10-14V	Next step	To Step 7
3	1. Ignition switch to OFF 2. Disconnect the battery positive and negative wires 3. Disconnect the harness connector of ECU 4. Check connecting condition of respective wiring	Poor contact	Next step	To Step 8
4	1. Disconnect the harness connector of ECU 2. The harness connector of ECU is still disconnected 3. Connect an ohmmeter between ECU harness terminal A21-1 and battery negative harness, and measure the resistance	The resistance is less than 1Ω	Next step	To Step 9
5	1. Connect the battery positive and negative wires 2. The harness connector of ECU is still disconnected 3. Ignition switch to ON 4. Measure the voltage value of ECU harness terminal A21-16 and A21-46 with voltmeter	The voltage is within 10-14V	To Step 11	To Step 10
6	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
7	Repair the battery or charging system	Normal	To Step 12	Next step
8	Repair the harness or connector	Normal	To Step 12	Next step
9	Check and repair the fault of high impedance between battery negative harness and ECU harness connector	Normal	To Step 12	Next step
10	Check and repair the fault of ECU terminal low voltage	Normal	To Step 12	Next step
11	Replace ECU	Normal	Next step	
12	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.12.2 Checking the circuit



1.12.13 DTC C0037 checking

1.12.13.1 Checking the circuit (1.12.12.2)

1.12.13.2 Checking steps

C0037—System High Voltage				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 4
2	1. Connect a voltmeter between the battery positive and negative 2. Turn off all aftermarket parts 3. Start the engine 4. Monitor the voltage on voltmeter under the environment that the engine runs several seconds at a speed of 2000 revolutions per minute	The voltage is less than 16.0V	Next step	To Step 5
3	1. Connect the fault diagnosis instrument, and select the data list 2. Monitor the battery voltage value on ABS data list under the environment that the engine runs several seconds at a speed of 2000 revolutions per minute	The voltage is less than 16.0V	To Step 6	To Step 7
4	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
5	Check and repair the start-up and charging system	Normal	To Step 8	To Step 7
6	Condition intermittent	Exist	To Step 2	To Step 7
7	Replace ECU	Normal	Next step	
8	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.14 DTC C0042 checking**1.12.14.1 Checking the circuit (1.12.12.4)****1.12.14.2 Checking steps**

C0042--Pump Motor Circuit Open				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 4
2	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Remove ECU from HCU 4. Check if the connector of ECU to HCU is damaged, corroded, poor contact with terminal or giving off brake fluid and so on	In good condition	Next step	To Step 5
3	Connect the ohmmeter to ECU terminal 1 and 2, and measure the resistance value	Less than 2 Ω	To Step 6	To Step 7
4	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
5	1. if damage and/or corrosion exist, replace ECU and/or HCU 2. If the brake fluid leak appears, replace ECU and HCU	Exist	To Step 8	Next step
6	Replace ECU	Repaired	To Step 8	Next step
7	Replace HCU	Repaired	Next step	
8	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.15 DTC C0055 C0056 C0061 C0062 C0063 C0064 C0065 C0066 C0067 C0068 checking**1.12.15.1 Checking the circuit (1.12.12.2)****1.12.15.2 Checking steps**

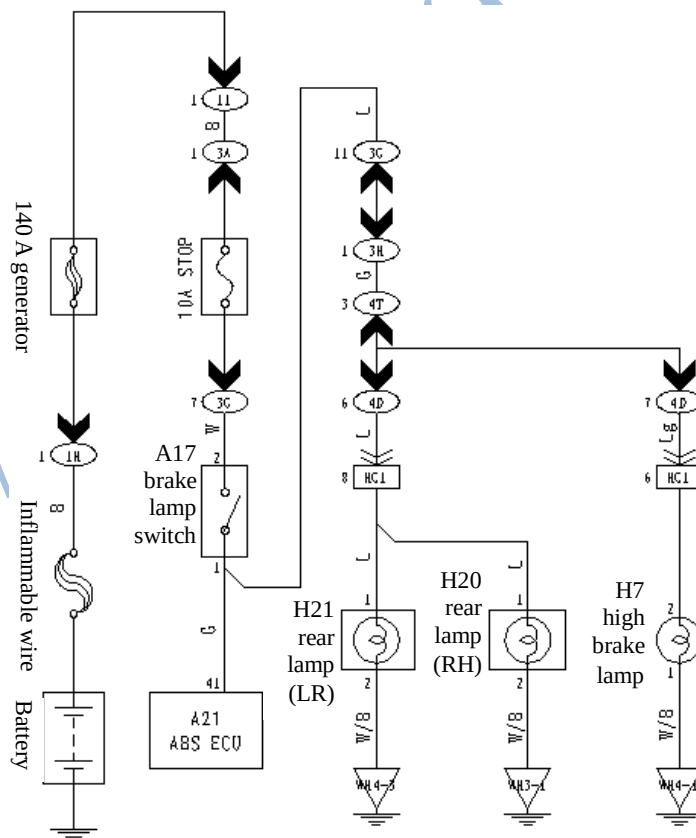
C0055--ECU Internal failure				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 5
2	1. Connect the fault diagnosis instrument 2. Turn the ignition switch to ON in the condition of the engine shutoff 3. Use the diagnosis instrument to observe the DTC information	Other DTC codes exist	To Step 6	Next step
3	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Check if the connector is damaged, corroded and poor contact with terminal	In good condition	To Step 7	Next step
4	Replace ECU	Repaired	To Step 8	Next step
5	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
6	Perform the related DTC diagnosis for the other DTC codes	Normal	To Step 2	Next step
7	Perform the fault check and repair as required	Repaired	Next step	
8	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.16 DTC C0091, C0093, C0094, C0095 checking

1.12.16.1 Checking steps

C0091 C0093 C0094 C0095				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 5
2	Press down the brake pedal, check the brake lamp working condition	Off	To Step 6	Next step
3	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Detect the voltage between ECU harness terminal A21-41 and body ground with voltmeter	Less than 1V	Next step	To Step 7
4	Replace ECU	Repaired	To Step 8	Next step
5	Detect the brake circuit	In good condition	Next step	To Step 2
6	Check and repair if the circuit of the broken lamp has poor contact	Repaired	To Step 8	Next step
7	Check if all the rear brake lamps have poor contact/high resistance, and if ECU 5V reference voltage is connected with a low voltage less than 2V	Repaired	Next step	
8	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.16.2 Checking the circuit



1.12.17 DTC C0118, C0121, C0122 checking**1.12.17.1 Checking the circuit (1.12.12.2)****1.12.17.2 Checking steps**

C0118 C0121 C0122				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 5
2	1. Ignition switch to OFF 2. Check ECU and HCU exterior	Physical damage	To Step 6	Next step
3	1. Disconnect the harness connector of ECU 2. Remove ECU from HCU 3. Check if the space of ECU and HCU is giving off oil, corroded and/or damaged	In good condition	To Step 7	Next step
4	1. Connect the fault diagnosis instrument 2. Turn the ignition switch to ON and shut off the engine 3. Use the diagnosis instrument to erase DTC 4. Run the vehicle and observe if the system has fault	The fault is reset or is the present one	To Step 8	Next step
5	Perform the diagnosis electrical detection as respective procedures	In good condition	Next step	System OK
6	Replace the damaged parts	Repaired	To Step 9	Next step
7	Replace HCU	Repaired	To Step 9	Next step
8	Replace ECU	Repaired	Next step	
9	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.18 DTC C0127 checking**1.12.18.1 Checking the circuit (12.16)****1.12.18.2 Checking steps**

C0127--Fault of that the brake pedal is always effective without speed down during last ignition cycle				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 5
2	Press down the brake pedal and check the brake lamp working condition	Off	To Step 6	Next step
3	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Detect the voltage between ECU terminal A21-41 and body ground with voltmeter	The voltage is less than 2V	Next step	To Step 7
4	Replace ECU	Repaired	To Step 2	Next step
5	Perform the brake circuit detection	In good condition	Next step	System OK
6	Press down the brake pedal, check if the broken lamp circuit has poor contact and repair it	Repaired	To Step 8	Next step
7	Check if all the rear brake lamps have poor contact/high resistance, and if ECU 5V reference voltage is connected with a low voltage less than 2V	Repaired	Next step	
8	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

1.12.19 DTC C0151, C0152, C0153 C0154 checking

Checking steps

DTC C0151, C0152, C0153 C0154—The Wheel Release Time Is Too Long				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To brake system detection
2	1. Connect the fault diagnosis instrument 2. Turn the ignition switch to ON and shut off the engine 3. Use the diagnosis instrument to observe the DTC parameters information	Other interrelated DTC codes exist	To the respective DTC flow diagram	Next step
3	While the vehicle speed is decreased from 56km/h to 0, use the fault diagnosis instrument to monitor all the wheel speed sensor data display	Bad condition	To the respective DTC flow diagram	Next step
4	Check the basic brake system according to the following conditions: If the brake fluid is polluted or not If the brake drag is too large If the mounting system has regularity	Correction	To Step 7	Next step
5	1. Use the diagnosis instrument to erase DTC 2. Pressurize the brake pedal with foot 3. Use the diagnosis instrument to activate the respective pressure reducing valve	The brake pedal goes down	To the respective DTC flow diagram	Next step
6	Replace HCU	Repaired	Next step	
7	1. Use the diagnosis instrument to erase DTC 2. Test-drive the car, finish one ABS braking operation	DTC is reset	To Step 2	System OK

1.12.20 DTC C0191 checking
1.12.20.1 Checking the circuit (See 12.4)
1.12.20.2 Checking steps

C0191--No Starting Current For Pump Motor				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 4
2	1. Ignition switch to OFF 2. Disconnect the battery negative harness 3. Disconnect the harness connector of ECU 4. Connect an ohmmeter between the battery negative harness and ECU harness end A21-31	The resistance is less than 1Ω	Next step	To Step 7
3	1. Check if each ground point of engine harness, negative harness and wing panel harness is clean and connected firmly 2. Check if ECU harness terminal is connected firmly with the ground point	In good condition	Next step	To Step 8
4	1. The harness connector of ECU is still disconnected 2. Remove ECU from HCU 3. Check if the connector of ECU to HCU is damaged, corroded, in poor contact or giving off brake fluid and so on	In good condition	Next step	To Step 9
5	Connect an ohmmeter between HCU terminals 1 and 2, measure the impedance	Less than 2 Ω	To Step 10	To Step 11

6	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
7	Check and repair the fault of ECU ground circuit high impedance	Repaired	To Step 12	Next step
8	Check and repair the fault of ground poor contact	Repaired	To Step 12	Next step
9	1. if damage and/or corrosion exist, replace ECU and/or HCU 2. If the brake fluid leak appears, replace ECU and HCU	Repaired	To Step 12	Next step
10	Replace ECU	Repaired	To Step 12	Next step
11	Replace HCU	Repaired	Next step	
12	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 2	System OK

1.12.21 DTC C0192 C0194 checking

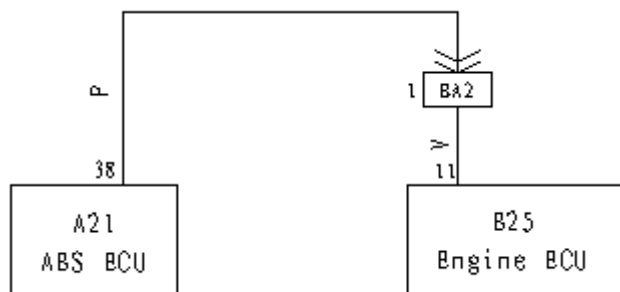
1.12.21.1 Checking the circuit (See 12.4)

1.12.21.2 Checking steps

C0192—Pump Motor Overload C0194--Pump Motor Circuit Current Is Shorted				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 5
2	1. Connect the fault diagnosis instrument 2. Use the fault diagnosis instrument to run the pump motor	Abnormal noise	To Step 8	Next step
3	1. Ignition switch to OFF 2. Disconnect the battery negative harness 3. Disconnect the harness connector of ECU 4. Remove and separate ECU and HCU 5. Connect an ohmmeter between HCU motor connector 1 and 2	Less than 2 Ω	Next step	To Step 8
4	1. Connect an ohmmeter between terminal 1 and HCU motor outside shell 2. Connect an ohmmeter between terminal 2 and HCU motor outside shell	Greater than 100kΩ	To Step 6	To Step 8
5	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
6	Replace ECU	Repaired	To Step 7	Next step
7	Use the diagnosis instrument to erase DTC	Reset	Next step	System OK
8	Replace HCU	Repaired	Next step	
9	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 2	System OK

1.12.22 DTC C0198 checking

1.12.22.1 Checking the circuit

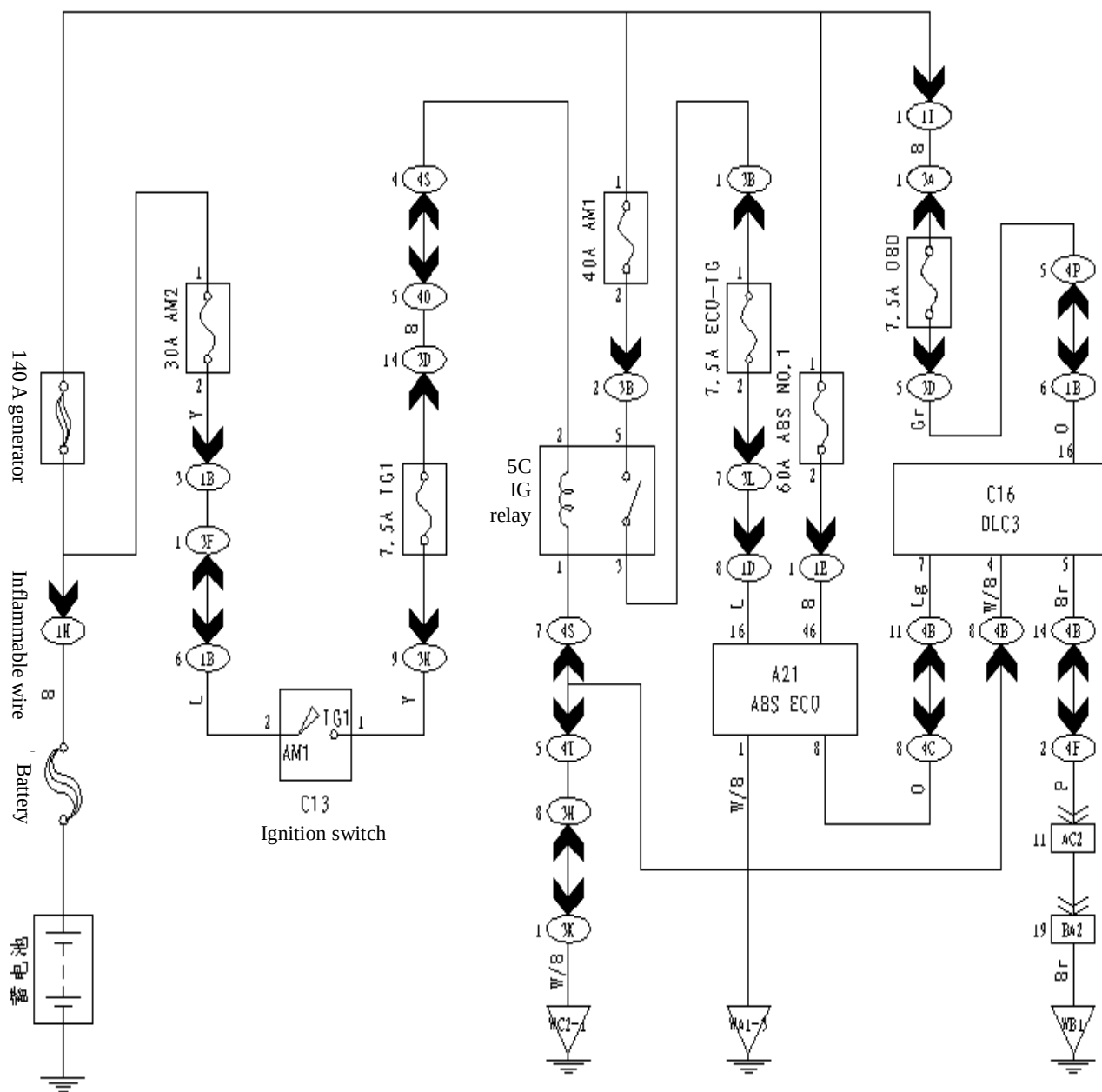


1.12.22.2 Checking steps

C0198--Bump Road Misfiring PWM Output Fault				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To diagnostics system checking
2	1. Turn off the ignition 2. Disconnect the ABS-ECU harness connect 3. Fit a storage box which can store the bump road misfiring PWM signals 4. Turn on ignition switch 5. Use the diagnosis instrument to control the duty ratio within 5%—95% 6. Measure the DC duty ratio between the bump road misfiring signal circuit and good ground circuit	5—95%	Next step	To Step 4
3	6. Measure the DC frequency between the bump road misfiring signal circuit and good ground circuit	121-134HZ	To Step 6	Next step
4	1. Turn off the ignition 2. Disconnect the storage box 3. Turn on the ignition, and shut off the engine 4. Measure the voltage between the bump road misfiring signal circuit and good ground circuit	Battery V	To Step 8	Next step
5	1. Turn off the ignition switch 2. Disconnect the power assembly control module harness connect 3. Detect the bump road misfiring signal circuit according to the following conditions • Short to battery • Short to ground		To Step 11	To Step 8
6	1. Turn off the ignition switch 2. Disconnect the power assembly control module harness connect 3. Detect the torque signal circuit required according to the following conditions • Open circuit • High resistance		To Step 11	To Step 7
7	Check if the power assembly control module harness has poor connect		To Step 11	To Step 9
8	Check if ABS ECU harness has poor connect		To Step 11	To Step 10
9	Replace the engine control module-power assembly control module		To Step 11	
10	Replace ABS ECU, refer to Replacing ECU		To Step 11	
11	Use the diagnosis instrument to erase the DTC 2. Drive DTC in the condition of prescriptive supporting range to start the car		To Step 2	System OK

1.12.23 Communication between the fault diagnosis instrument and ECU is not possible

1.12.23.1 Checking the circuit

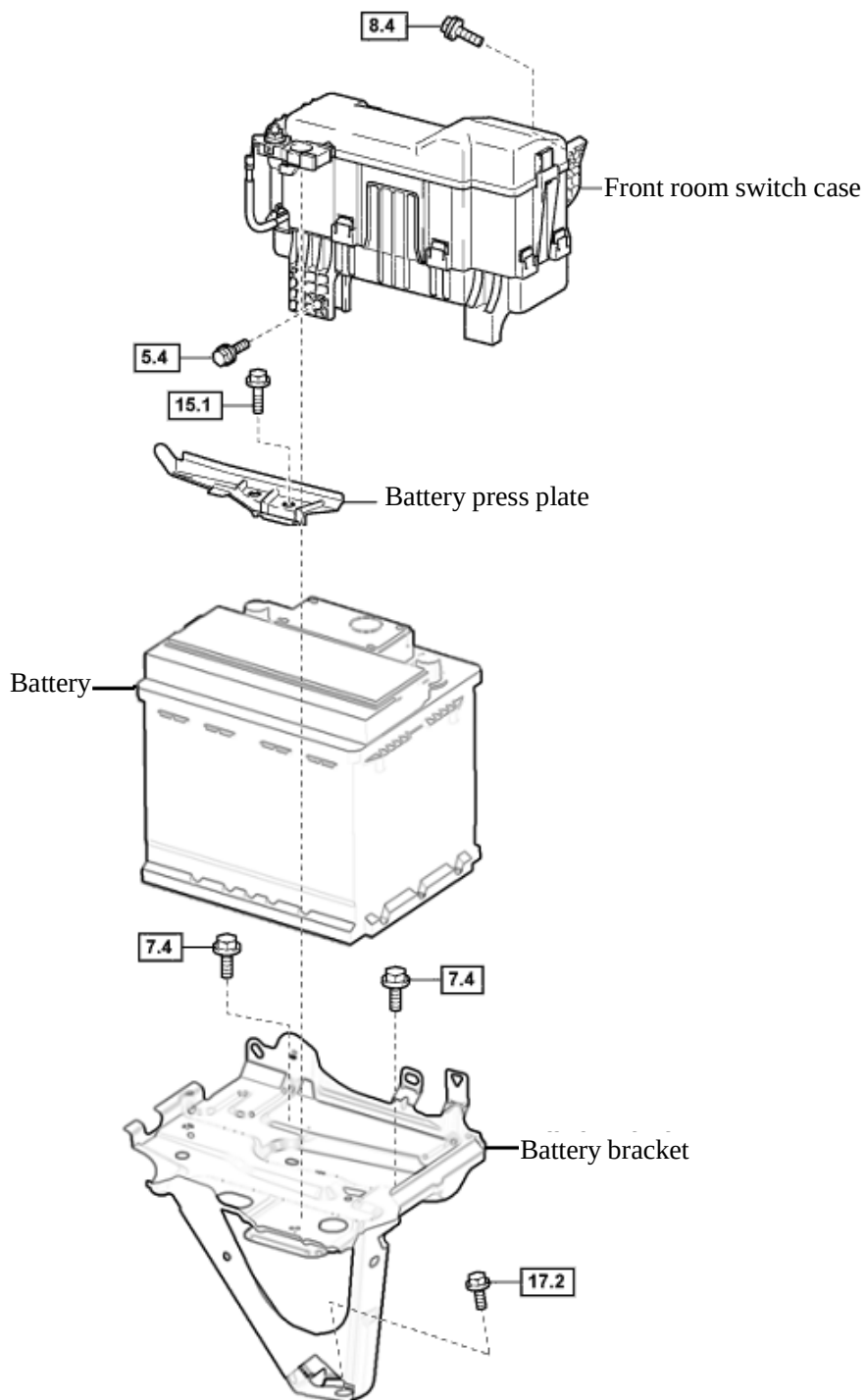


1.12.23.2 Checking steps

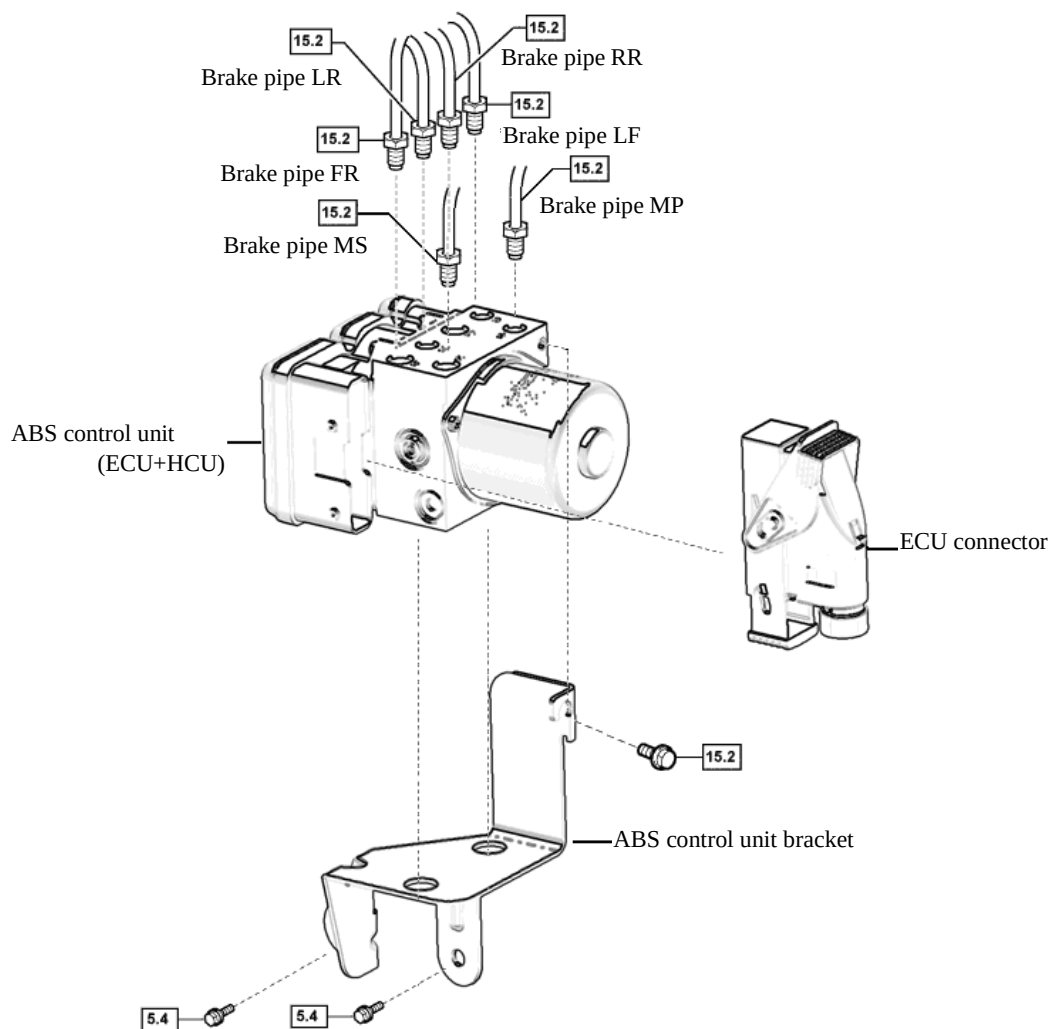
Communication between the fault diagnosis instrument and ECU is not possible				
Step	Diagnosis operation	Standard value	Y	N
1	System self-diagnostics process	Done	Next step	To Step 8
2	1. Ignition switch to OFF 2. Disconnect the harness connector of ECU 3. Connect a voltmeter between ECU harness terminal A21-46 and body	The voltage is within 10-14V	Next step	To Step 9
3	1. Ignition switch to ON 2. Connect a voltmeter between ECU harness terminal A21-16 and body	The voltage is within 10-14V	Next step	To Step 10
4	1. Ignition switch to OFF 2. Connect an ohmmeter between ECU harness terminal A21-1 and body	Less than 1 Ω	Next step	To Step 11
5	1. Ignition switch to OFF 2. Connect an ohmmeter between ECU harness terminals A21-8 and C16-7	Less than 1 Ω	Next step	To Step 12
6	Connect an ohmmeter between ECU harness terminal A21-8 and body	Greater than 1M Ω	Next step	To Step 13
7	Replace ECU	Repaired	To Step 14	Next step
8	Perform diagnosis electrical check before do the fault tree	Done	To Step 1	Inspection
9	Repair the low voltage source of terminal A21-46, and check if there are open circuit safety fuse, poor contact or improper ground	Repaired	To Step 14	Next step
10	Repair the low voltage source of terminal A21-16, and check if there are open circuit safety fuse, poor contact or improper ground	Repaired	To Step 14	Next step
11	Repair the high voltage source between the terminal A21-16 and body, find and check the ground location after connecting the ground circuit	Repaired	To Step 14	Next step
12	Repair the high resistance source between the terminals A21-8 and C16-7	Repaired	To Step 14	Next step
13	Find and repair the ground short of the data circuit	Repaired	Next step	
14	Use the diagnosis instrument to erase the DTC	The DTC is reset	To Step 1	System OK

Section 2 ABS Control

2.1 Components



N*m : Regulation torque



[N*m] : Regulation torque

2.2 Removal

2.2.1 Disconnect battery negative pole.

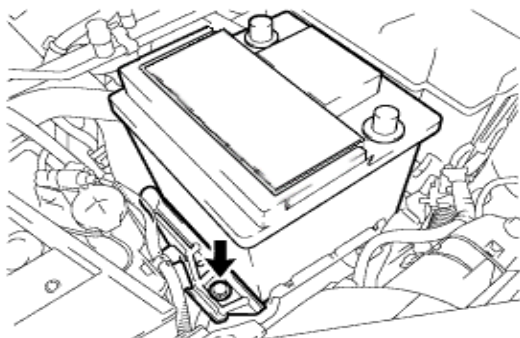
2.2.2 Discharge brake fluid.

Note: If the brake fluid flows to coat painting surface, please wash it off quickly.

2.2.3 Remove the battery.

2.2.3.1 Unscrew the nut and cut the wire.

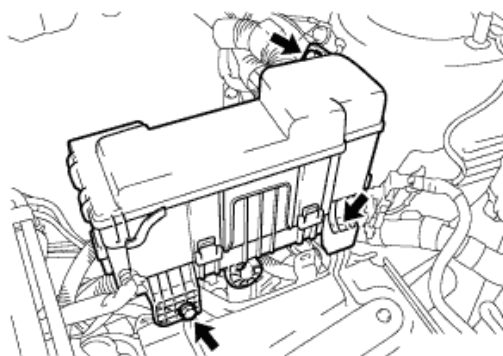
2.2.3.2 Remove the nut and the battery press plate.



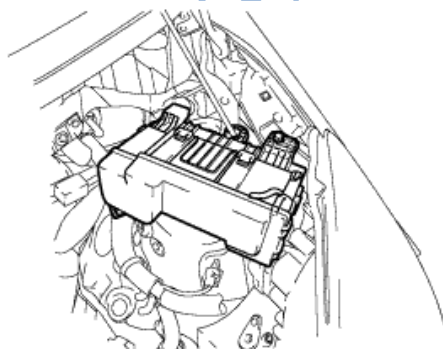
2.2.3.3 Remove the battery.

2.2.3.4 Remove the front room switch case.

2.2.3.4.1 Remove 2 nuts and clips.



2.2.3.4.2 Remove 2 clips, take off the switch case.

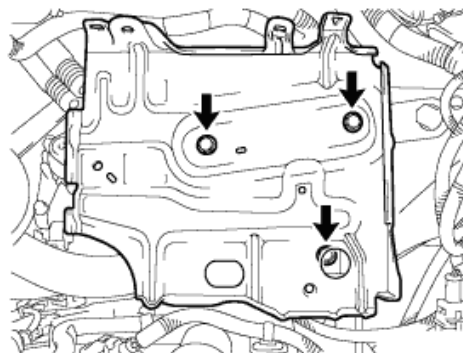


Tip: Fix the switch case with front room cover support rod temporarily.

2.2.3.4.3 Remove the battery bracket.

a. Remove 2 snaps from the front room harness.

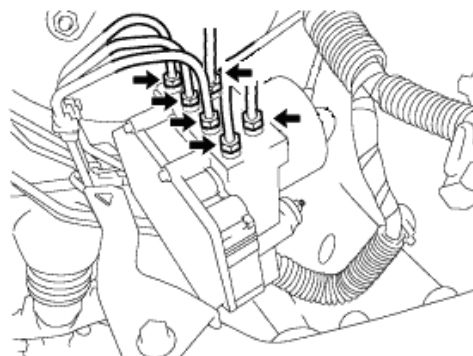
b. Unscrew 3 nuts and remove the battery bracket.



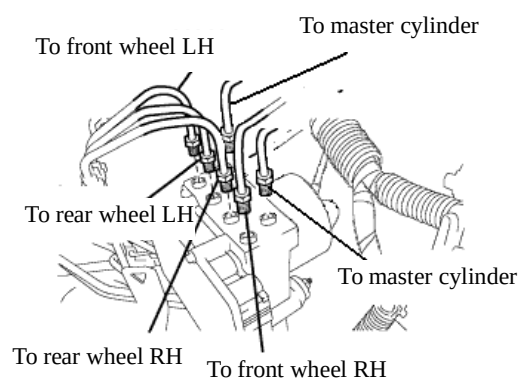
2.2.3.5 Remove the ABS control and bracket.

2.2.3.5.1 Pull out the connector.

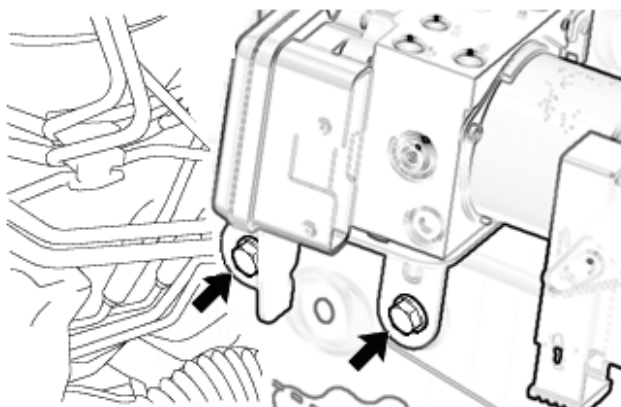
2.2.3.5.2 Pull out the brake pipe.



2.2.3.5.3 Stick labels on the brake pipe for convenience of reconnecting the brake pipe later.

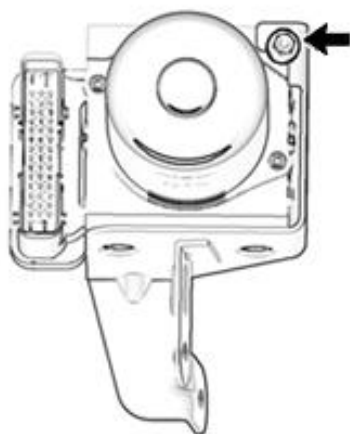


2.2.3.5.4 Unscrew 2 nuts and remove the ABS control unit and bracket.



Note: Don't damage the brake pipe and harness.

2.2.3.6 Remove the ABS control unit.

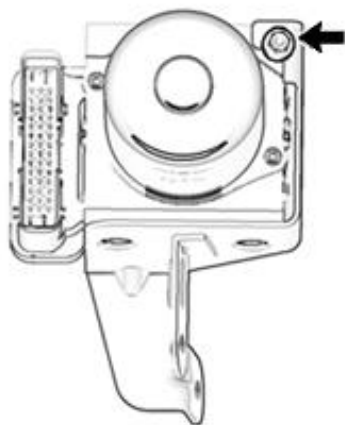


Unscrew the nut and remove the bracket.

2.3 Installation

2.3.1 Install the ABS control unit to bracket.

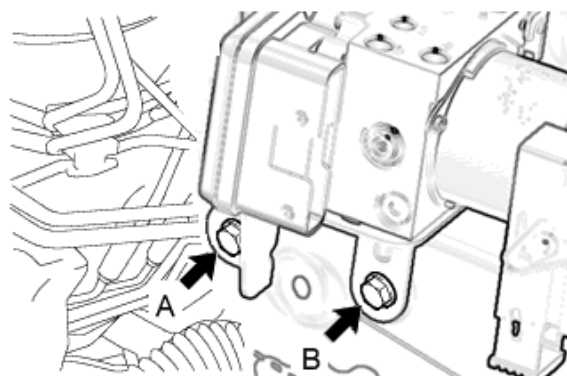
Tighten the nut and fit the bracket.



Torque: 7.0 N*m

2.3.2 Install the ABS control unit and bracket.

2.3.2.1 Fit the actuator (with bracket) with 2 nuts.



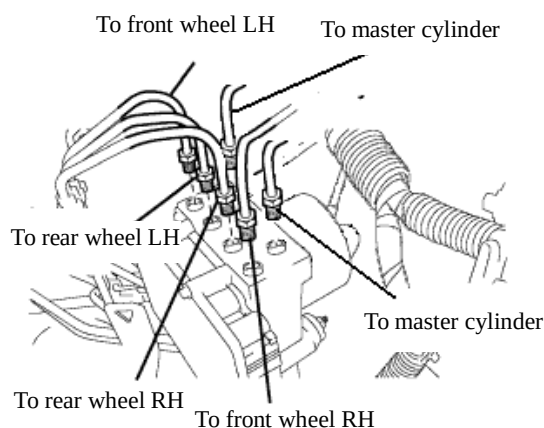
Screw the nut B first.

Tighten the nuts A and B. Torque: 19 N*m

Note: Don't damage the brake pipe and harness.

Tighten the nuts in order, from A to B

2.3.2.2 Connect the brake pipe correctly as shown in the figure.



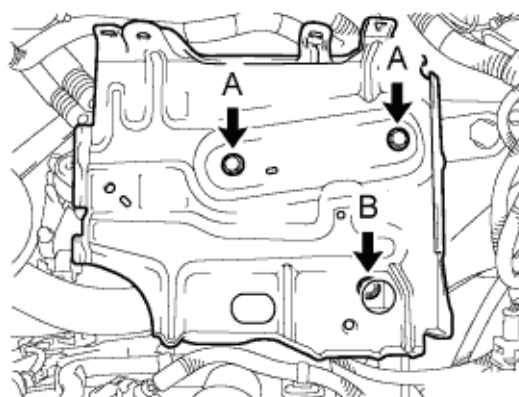
Torque: 15.2 N*m

2.3.2.3 Insert the connector.

Note: Fasten the connector.

2.3.3 Install the battery bracket

2.3.3.1 Fit the battery bracket with 3 nuts.



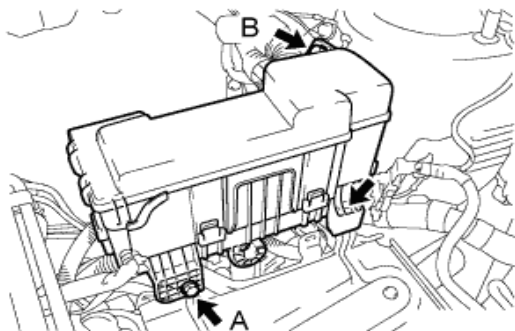
Torque: Nut A: 7.4 N*m Nut B: 17.2 N*m

2.3.3.2 Install 2 snaps of the front room harness.

2.3.4 Install the front room switch case

2.3.4.1 Fit 2 snaps.

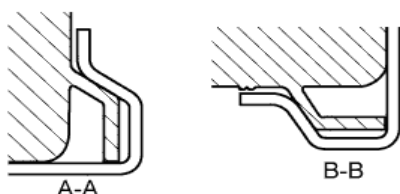
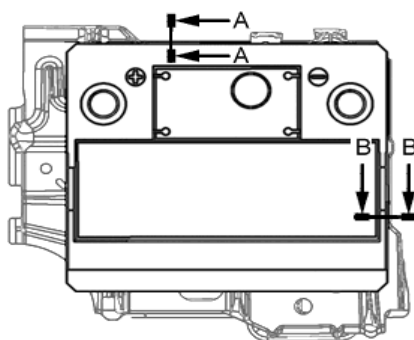
2.3.4.2 Fit the switch case with clip and 2 nuts.



Torque: Nut A: 5.4 N*m Nut B: 8.4 N*m

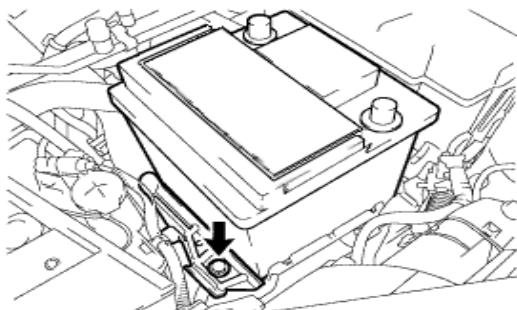
2.3.5 Install the battery

2.3.5.1 Fit the battery to the bracket as shown in the figure.



Note: The bottom of battery should be in contact with the bracket.

2.3.5.2 Install the battery press plate.



Torque: 15.1 N*m

2.3.5.3 Fix the battery harness connector with nut.

Torque: 5.4 N*m

2.3.6 Add brake fluid

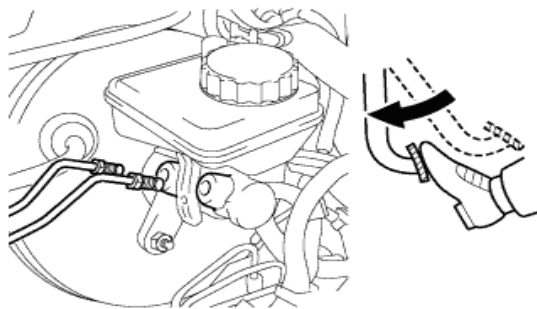
Brake fluid: SAE J1704 or FMVSS No. 116 DOT4

2.3.7 Discharge the air in the brake master cylinder

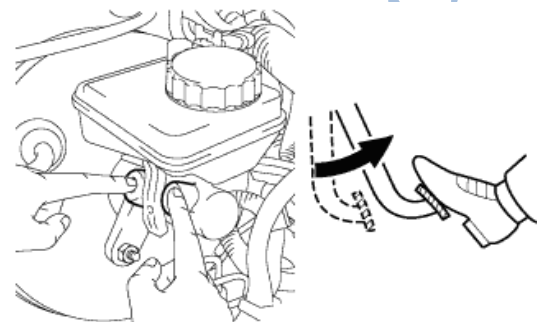
Tip: If the master cylinder is removed or the brake fluid reservoir, discharge the air in the master cylinder.

2.3.7.1 Remove the brake pipe from the master cylinder.

2.3.7.2 Press down brake pedal slowly, and keep the position (Step A).



2.3.7.3 Block up the hole with hand, release the brake pedal (Step B).

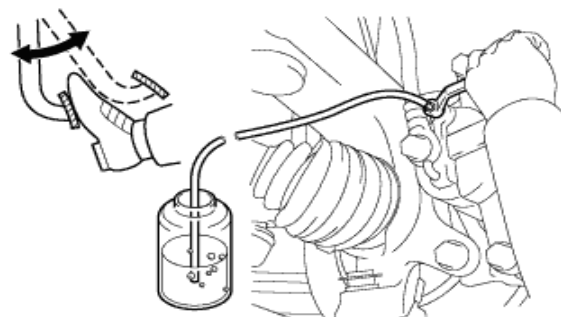


2.3.7.4 Repeat the steps A and B for 3~4 times.

2.3.7.5 Connect the brake pipe with the master cylinder.

Torque: 15.2 N*m

2.3.8 Discharge the air in the brake line



2.3.8.1 Connect the vinyl pipe to the drain cock.

2.3.8.2 Press down the brake pedal several times, then keep it down and loosen the drain cock (Step C).

2.3.8.3 Tighten the drain cock when the air isn't discharged, and loosen the brake pedal (Step D).

2.3.8.4 Repeat the steps C and D, until all the air in the brake fluid is discharged.

2.3.8.5 Tighten the drain cock.

Torque: 6.5 N*m

2.3.8.6 Repeat the steps above, discharge the air in each wheel brake line.

2.3.9 Check the brake fluid level

Check the brake fluid level, and add brake fluid if necessary.

Brake fluid: SAE J1704 or FMVSS No. 116 DOT4

2.3.10 Connect the battery negative

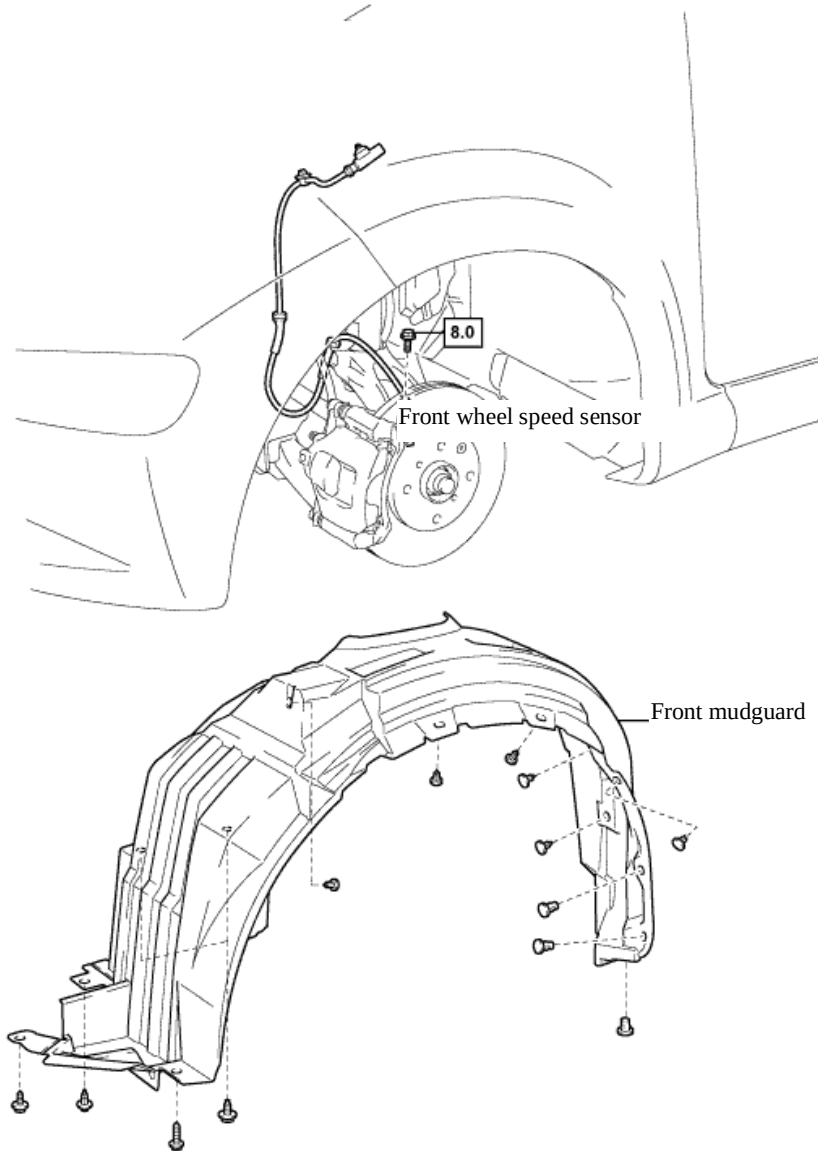
Torque: 5.4 N*m

2.3.11 Check the brake fluid leak

2.3.12 Check the ABS control unit with the diagnosis instrument.

Section 3 Front Wheel Speed Sensor

3.1 Components

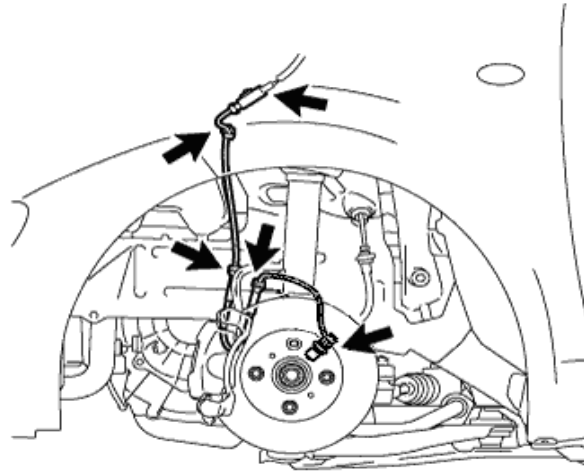


N*m : Regulation torque

3.2 Removal

- 3.2.1 Disconnect battery negative.
- 3.2.2 Remove the front wheels.
- 3.2.3 Remove the front mudguard.
- 3.2.4 Remove the front wheel speed sensor
 - 3.2.4.1 Pull out the connector.
 - 3.2.4.2 Remove 3 snaps.

3.2.4.3 Remove the nut and sensor. Note: Don't rotate it when removing the sensor, so as not to hit the sensor rotor.



3.3 Inspection

Check if the connector sleeve and terminal have deformation and corrosion.

Normal: No deformation and corrosion.

Replace the sensor if necessary.

3.4 Installation

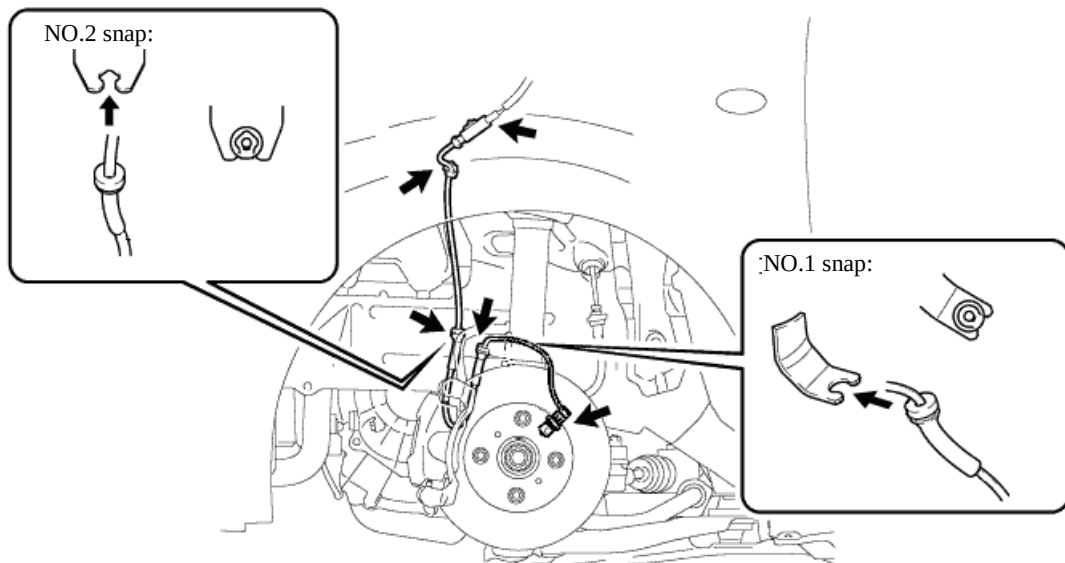
3.4.1 Install the front wheel speed sensor

3.4.1.1 Fix the sensor with bolt. Torque: 8.0 N*m. Note: Don't rotate it when fitting the sensor, so as not to hit the sensor rotor.

Tip: If the fitting part of the sensor got dirty, clean and reinstall it.

3.4.1.2 Fix 3 snaps. Note: Don't twist the wire between the snaps No.1 and No.2.

3.4.1.3 Insert the connector.



3.4.2 Install the front mudguard.

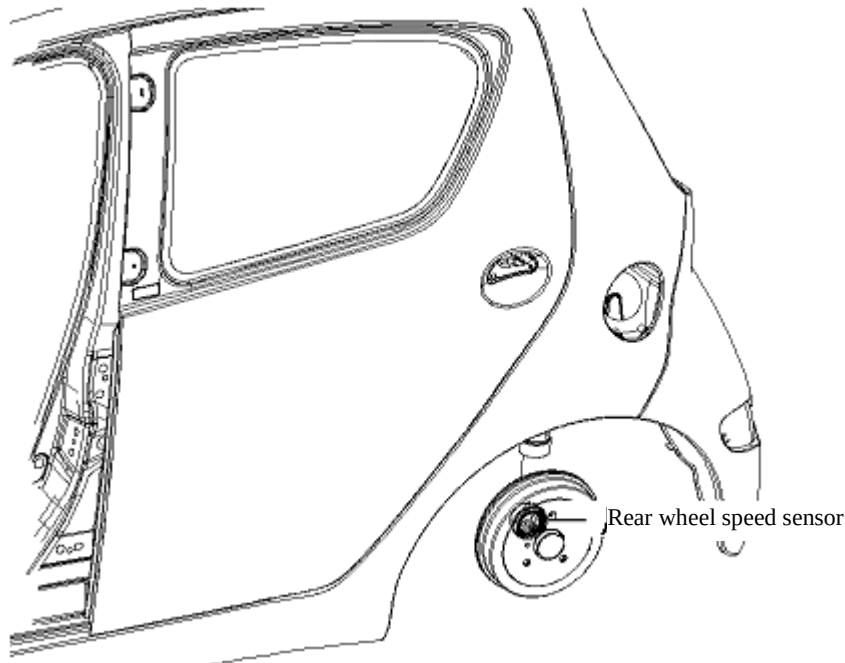
3.4.3 Install the front wheels.

3.4.4 Connect the battery negative.

3.4.5 Check the wheel speed sensor signals.

Section 4 Rear Wheel Speed Sensor

4.1 Components



4.2 Removal

- 4.2.1 Disconnect battery negative.
- 4.2.2 Remove the rear wheels.
- 4.2.3 Pull out the connector.
- 4.2.4 Remove the rear brake (along with rear wheel speed sensor)

4.3 Inspection

Check if the connector sleeve and terminal have deformation and corrosion.
Normal: No deformation and corrosion.
Replace the rear wheel hub (along with rear wheel speed sensor) if necessary.

4.4 Installation

- 4.4.1 Install the rear brake (along with rear wheel speed sensor)
- 4.4.2 Insert the connector.
- 4.4.3 Install the rear wheels.
- 4.4.4 Connect the battery negative.
- 4.4.5 Check the wheel speed sensor signals.

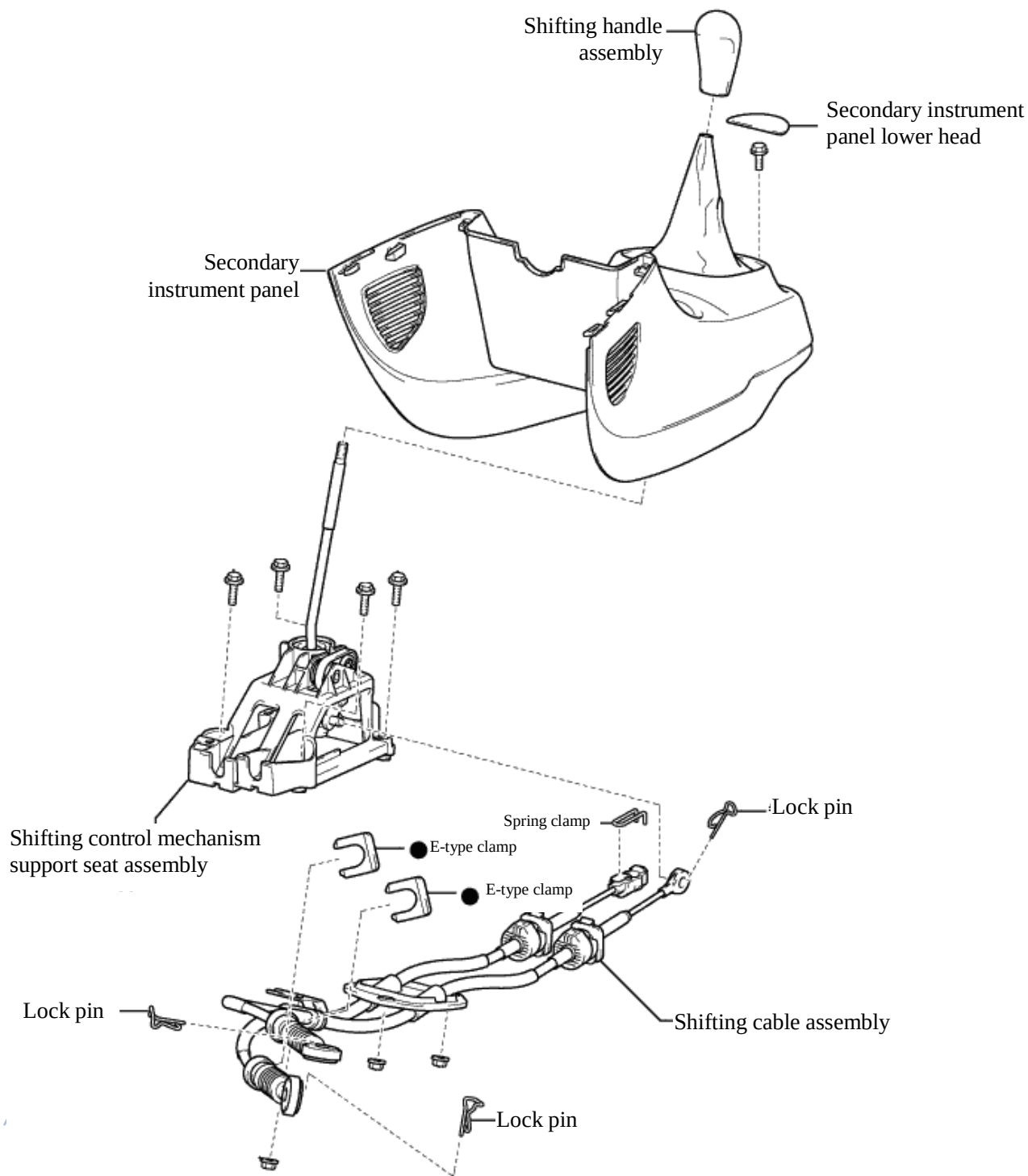
Chapter 10 Other Components of Chassis

Section 1 Gear Shift Mechanism	224
1.1 Components	224
1.2 Removal	225
1.3 Installation	227
Section 2 Accelerator Pedal	230
2.1 Components	230
2.2 Removal	230
2.3 Installation	230

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Section 1 Gear Shift Mechanism

1.1 Components



1.2 Removal

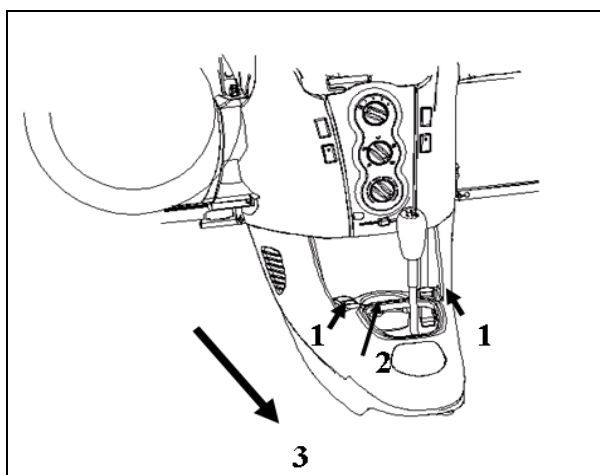
1.2.1 Remove the shifting handle head assembly

1.2.2 Remove the secondary instrument panel

1.2.2.1 Remove the shifting handle head.

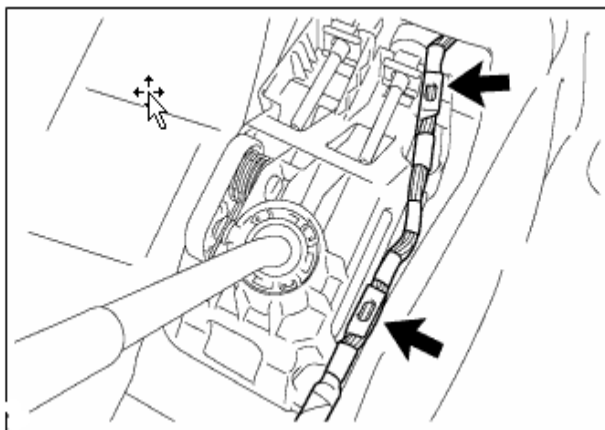
1.2.2.2 Pull the dust cover near the shifting handle hard out the body of the secondary instrument panel, and remove the two power window switch buttons at the place of arrow 1 and the cigar lighter and the on-board power supply at the place of arrow 2, with a screwdriver wrapped in tape.

1.2.2.3 Take off the decoration gasket at the bottom of the secondary instrument panel box, unbolt the hexagon bolt with flange, then pull the secondary instrument panel body hard in the direction of arrow 3 to separate the connect of the secondary instrument panel body and the instrument panel lower guard plate, lift it along the shifting handle to remove the secondary instrument panel body.

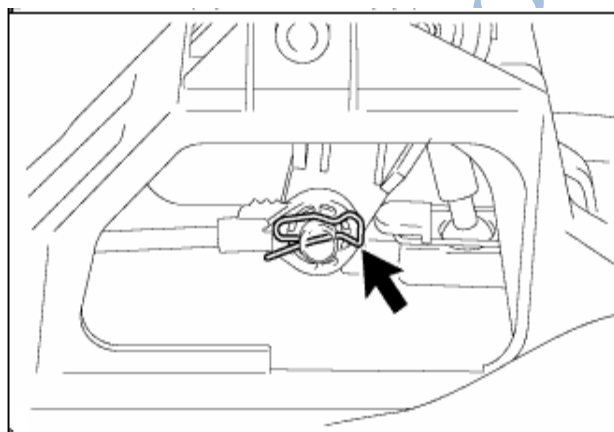
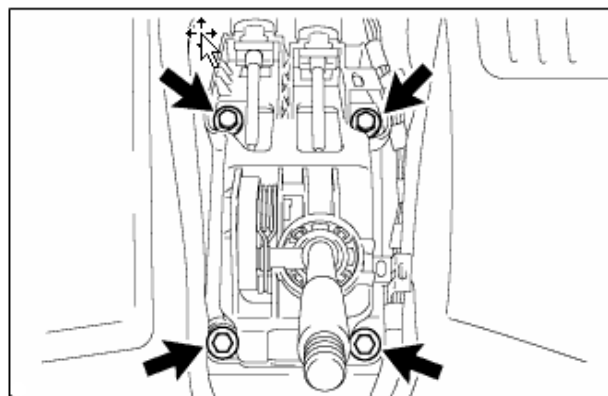


1.2.3 Separate the gearshift controlling mechanism bracket assembly

1.2.3.1 Separate the harness clamps.



1.2.3.2 Remove 4 bolts and the gearshift support seat.

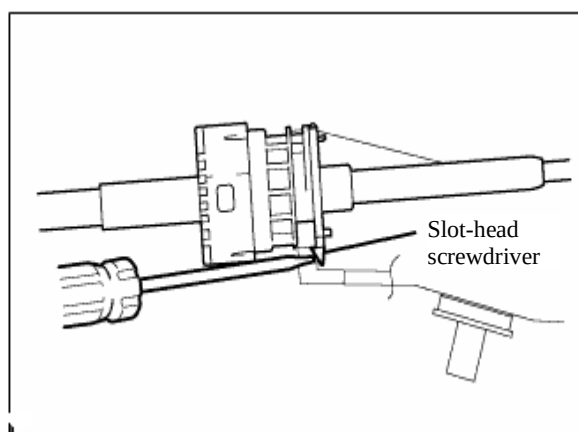


1.2.4 Remove the gearshift controlling mechanism bracket assembly

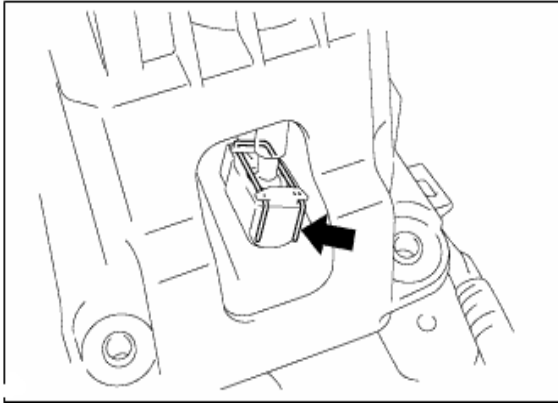
1.2.4.1 Remove the selector cable from the transposition swing arm after removing the lock pin.

1.2.4.2 Loosen the jaw with slot-head screwdriver.

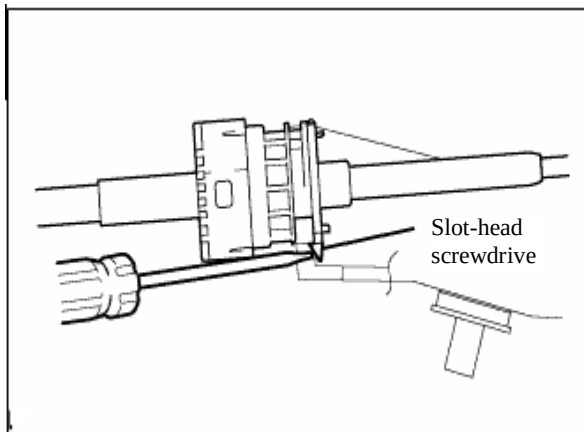
1.2.4.3 Remove the selector cable from the gearshift controlling mechanism bracket.



1.2.4.4 Take the selector cable off the shifting handle lever after taking off the spring clamp.

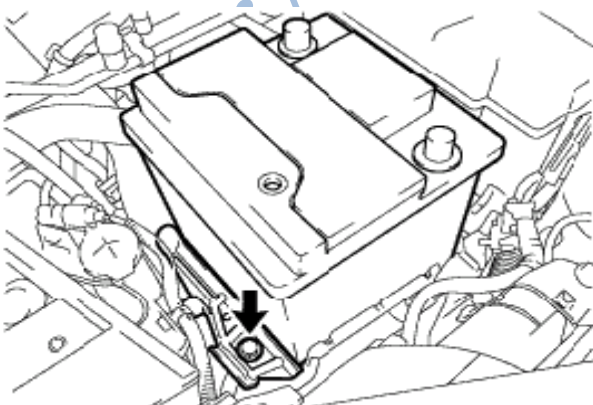


1.2.4.5 Loosen the jaw with slot-head screwdriver.
1.2.4.6 Remove the shifting cable from the gearshift controlling mechanism bracket.



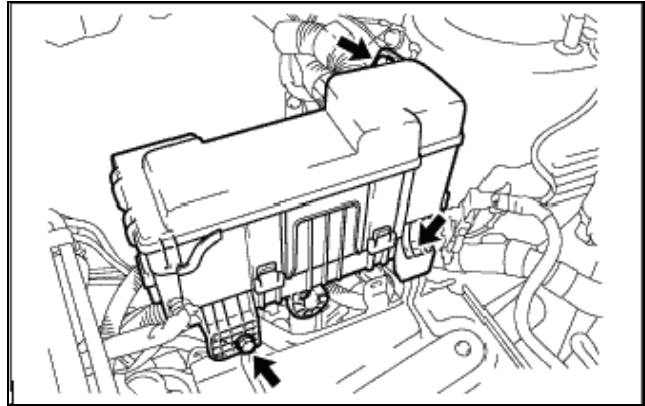
1.2.5 Remove the battery

1.2.5.1 Unscrew the nut and pull the engine harness.
1.2.5.2 Remove the nut and take off the battery bracket.
1.2.5.3 Remove the battery.



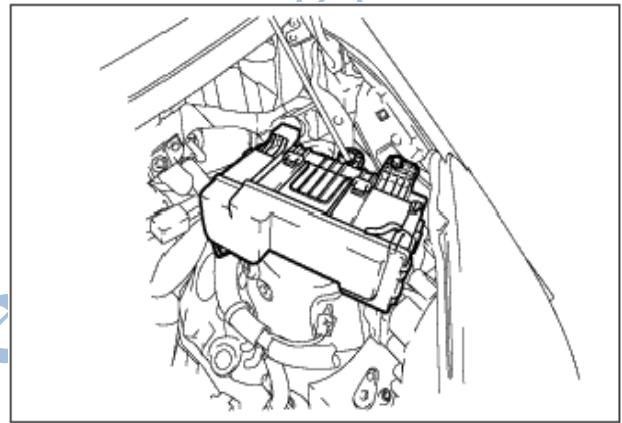
1.2.6 Remove the engine room switch case

1.2.6.1 Remove 2 bolts and snaps.



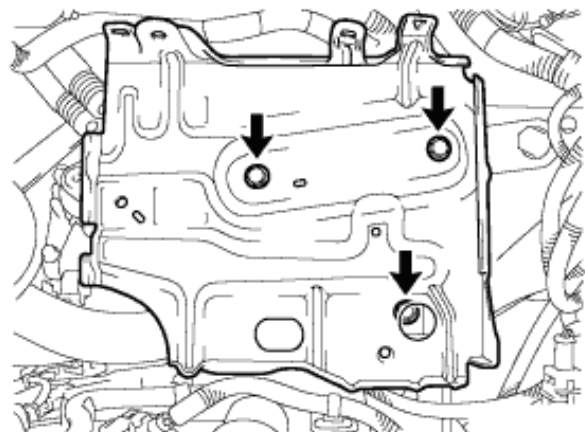
1.2.6.2 Remove 2 snaps, take off the switch case.

Tip: Put the switch case on the engine room cover temporarily.



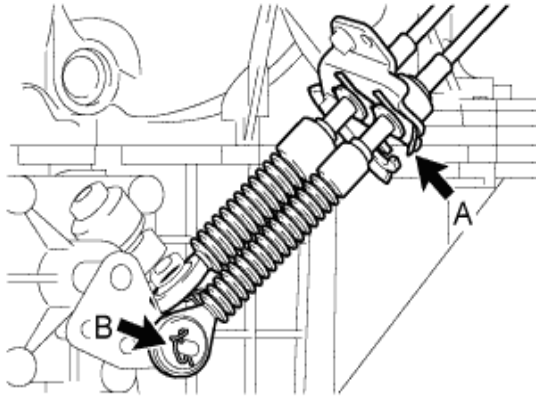
1.2.7 Remove the battery bracket.

1.2.7.1 Remove the harness snap.
1.2.7.2 Remove 3 nuts and take off the battery bracket.

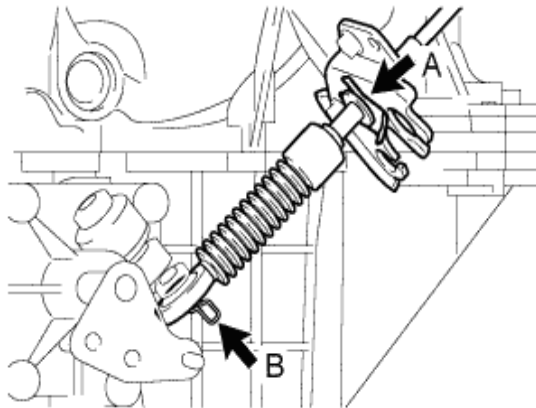


1.2.8 Separate the shifting cable

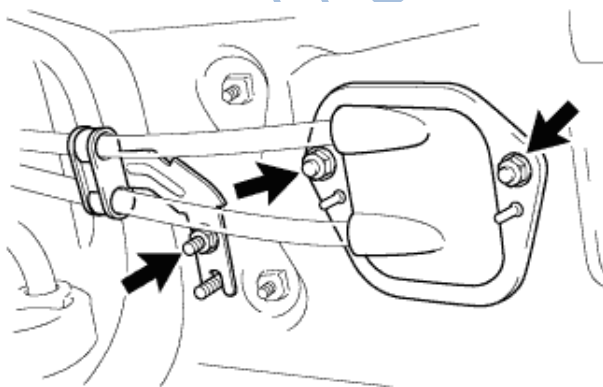
Remove the E-type clamp A and lock pin B, and take the shifting cable off the gear shift.

**1.2.9 Remove the transposition cable**

Remove the E-type clamp A and lock pin B, and take the transposition cable off the gear shift.

**1.2.10 Remove the shifting cable**

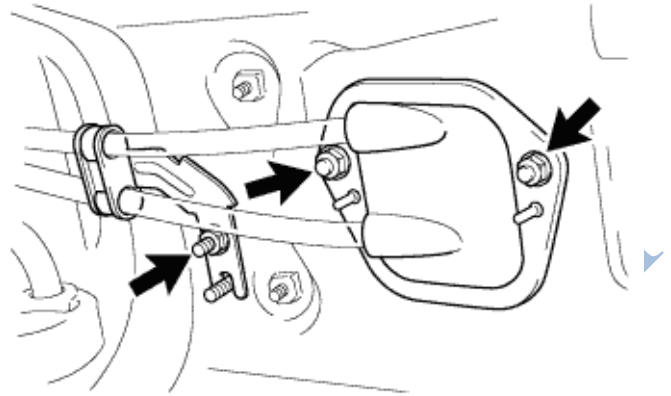
Remove 3 bolts and push the cable out from the floor tunnel.

**1.3 Installation****1.3.1 Install the shifting cable**

1.3.1.1 Push in the shifting cable through the floor tunnel.

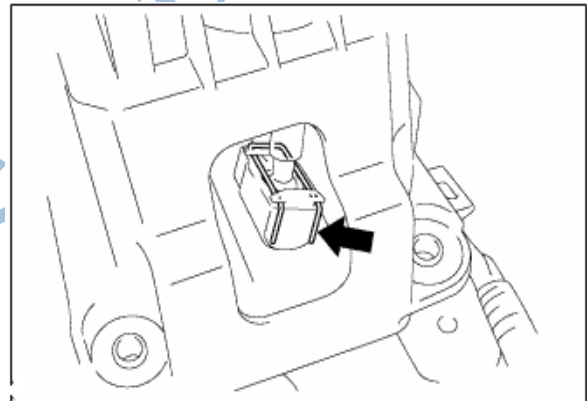
1.3.1.2 Fix the metal cover shield and tube clamp to the floor with 3 nuts.

Tightening torque: 5.0 N*m

**1.3.2 Connect the shifting and transposition cables assembly**

1.3.2.1 Fit the shifting cable to the gearshift controlling mechanism bracket.

1.3.2.2 Fit the shifting cable to the shifting cable handle lever.



1.3.2.3 Fit the transposition cable to the gearshift controlling mechanism bracket.

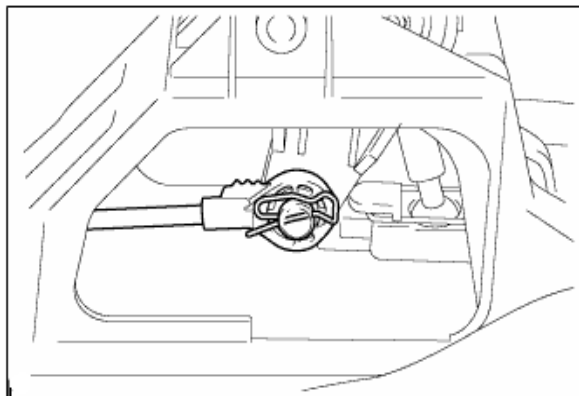
1.3.2.4

Fit the transposition cable to the transposition swing arm.

Note:

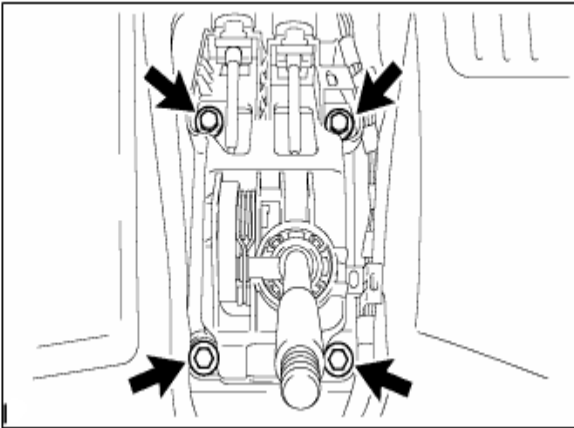
When fit the shifting cable, please keep the saw-tooth surface upwards.

Fit the lock pin in the direction as shown in the figure.



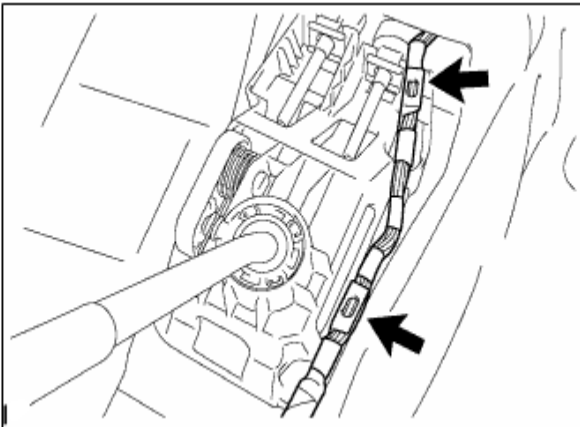
1.3.3 Install the gearshift controlling mechanism bracket assembly

1.3.3.1 Fit the bracket with 4 bolts.



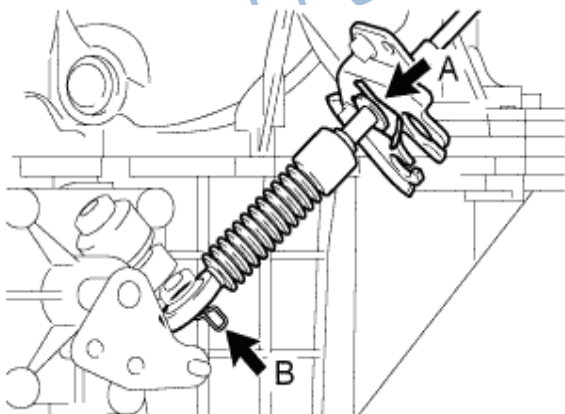
Tightening torque: 12 N*m

1.3.3.2 Fit the harness clamps.

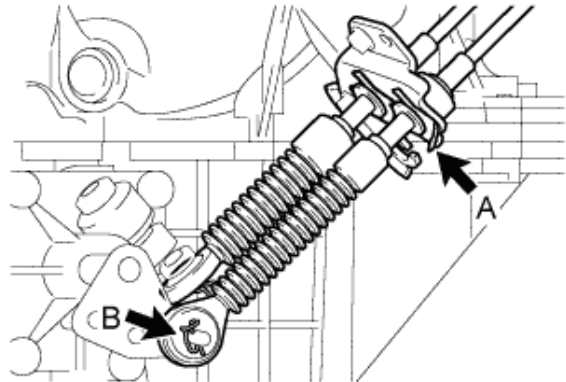


1.3.4 Connect the shifting cable

1.3.4.1 Connect the transposition cable to the gear shift with new E-type clamp and lock pin.



1.3.4.2 Connect the shifting cable to the gear shift with new E-type clamp and lock pin.

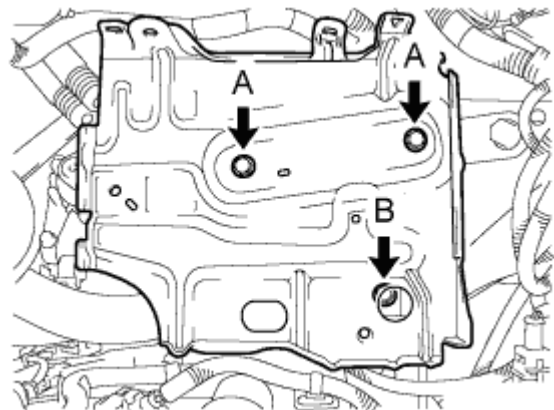


1.3.5 Install the battery bracket

Install the battery bracket and fix it with 3 bolts.

Tightening torque: Bolt A: 7.4 N*m

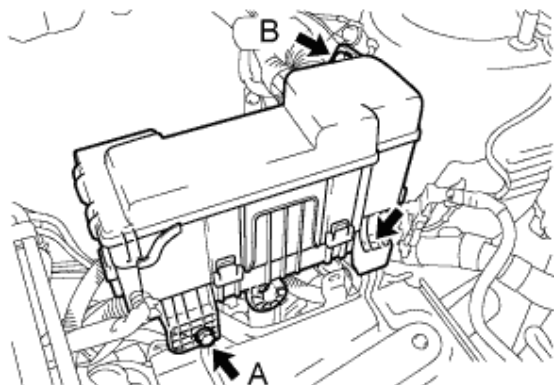
Bolt B: 17.2 N*m



1.3.6 Install the switch case

Tightening torque: Bolt A: 5.4 N*m

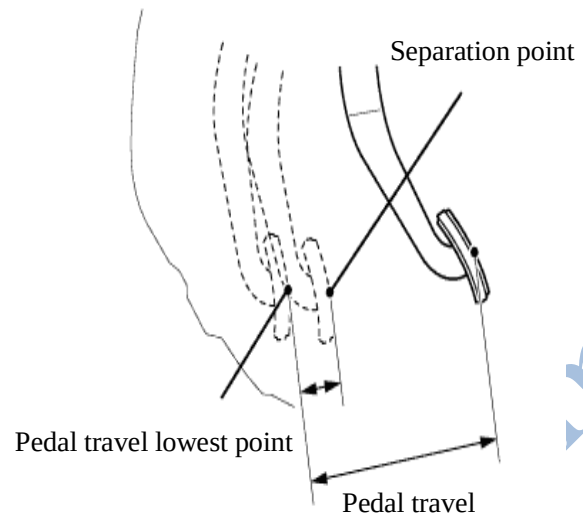
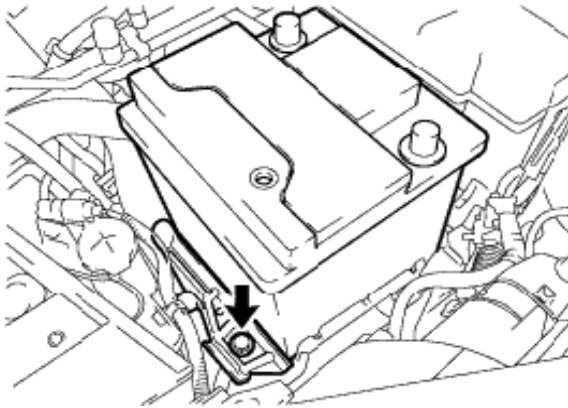
Bolt B: 8.4 N*m



1.3.7 Install the bolt of battery snap.

Tightening torque: 15.1 N*m

Connect the nut of engine wire, the tightening torque: 5.4 N*m.



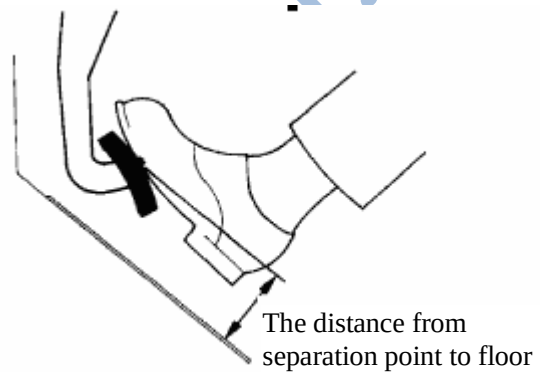
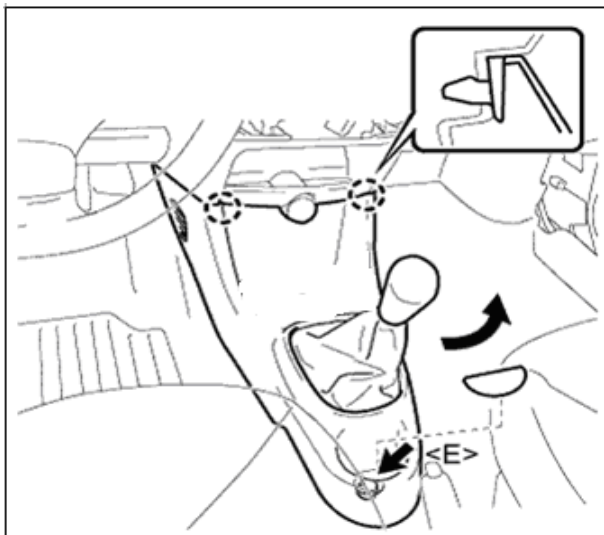
1.3.8 Install the secondary instrument panel

1.3.8.1 Connect 2 jaws.

1.3.8.2 Fit the bolt (E).

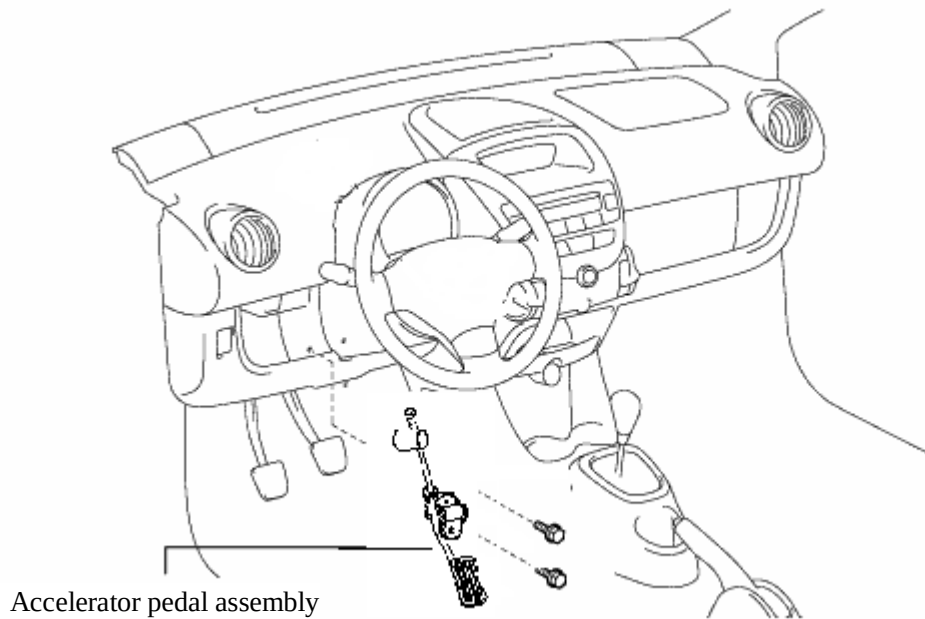
1.3.8.3 Install the secondary instrument panel cover shield.

1.3.8.4 Fit the shifting handle head assembly.



Section 2 Accelerator Pedal

2.1 Components



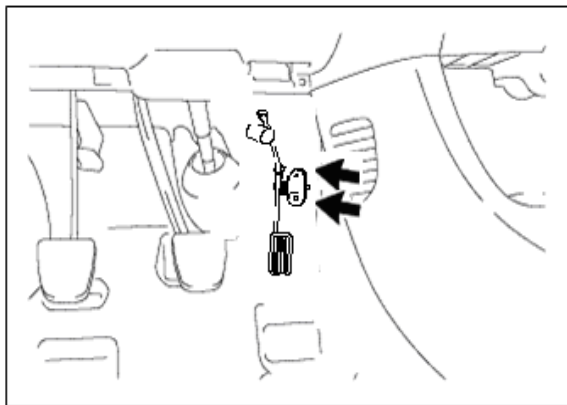
2.2 Removal

2.2.1 Disconnect the battery power source negative.

2.2.2 Remove the accelerator pedal lever

2.2.2.1 Disconnect the accelerator pedal connector

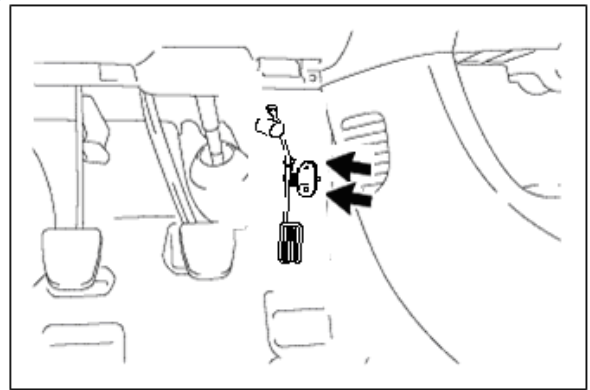
2.2.2.2 Remove 2 bolts and the accelerator pedal lever



2.3 Installation

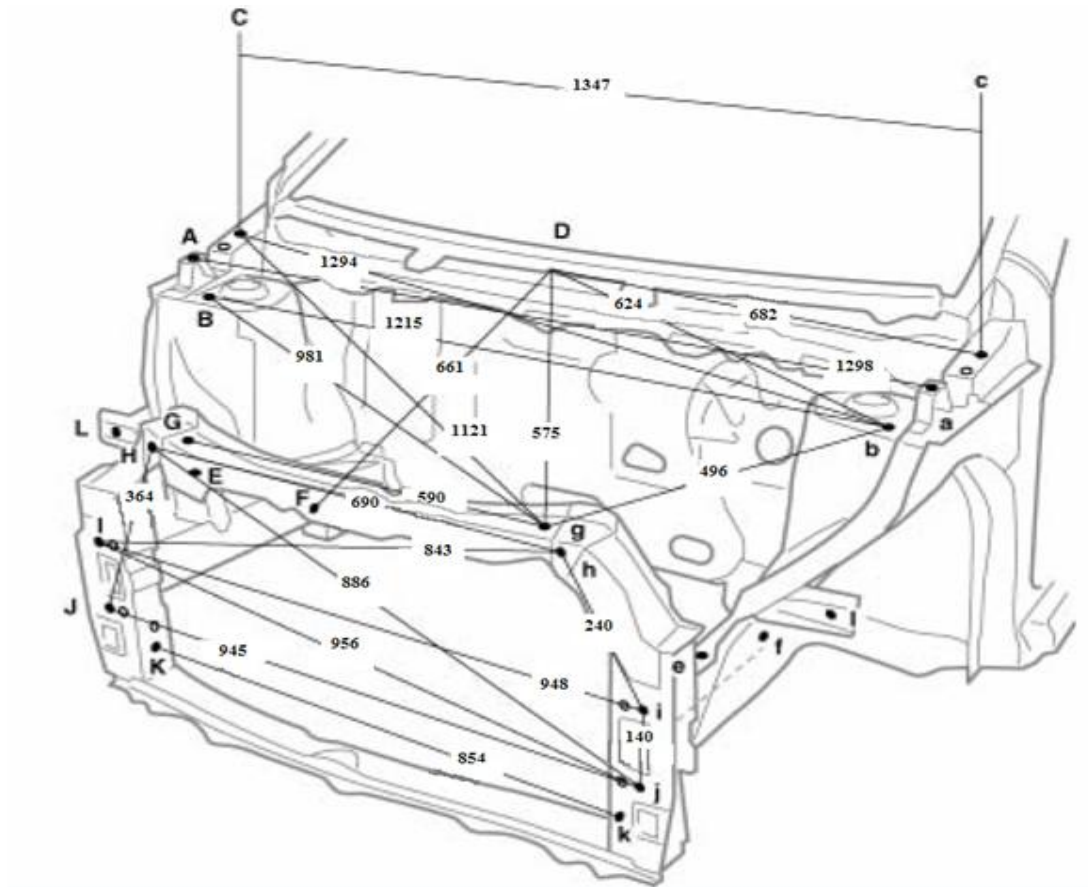
2.3.1 Install the accelerator pedal lever

2.3.1.1 Fit the accelerator pedal lever with 2 bolts, the tightening torque: 8.5 N*m.



2.3.1.2 Connect the accelerator pedal connector.

Chapter 11 Body Dimensions Instructions



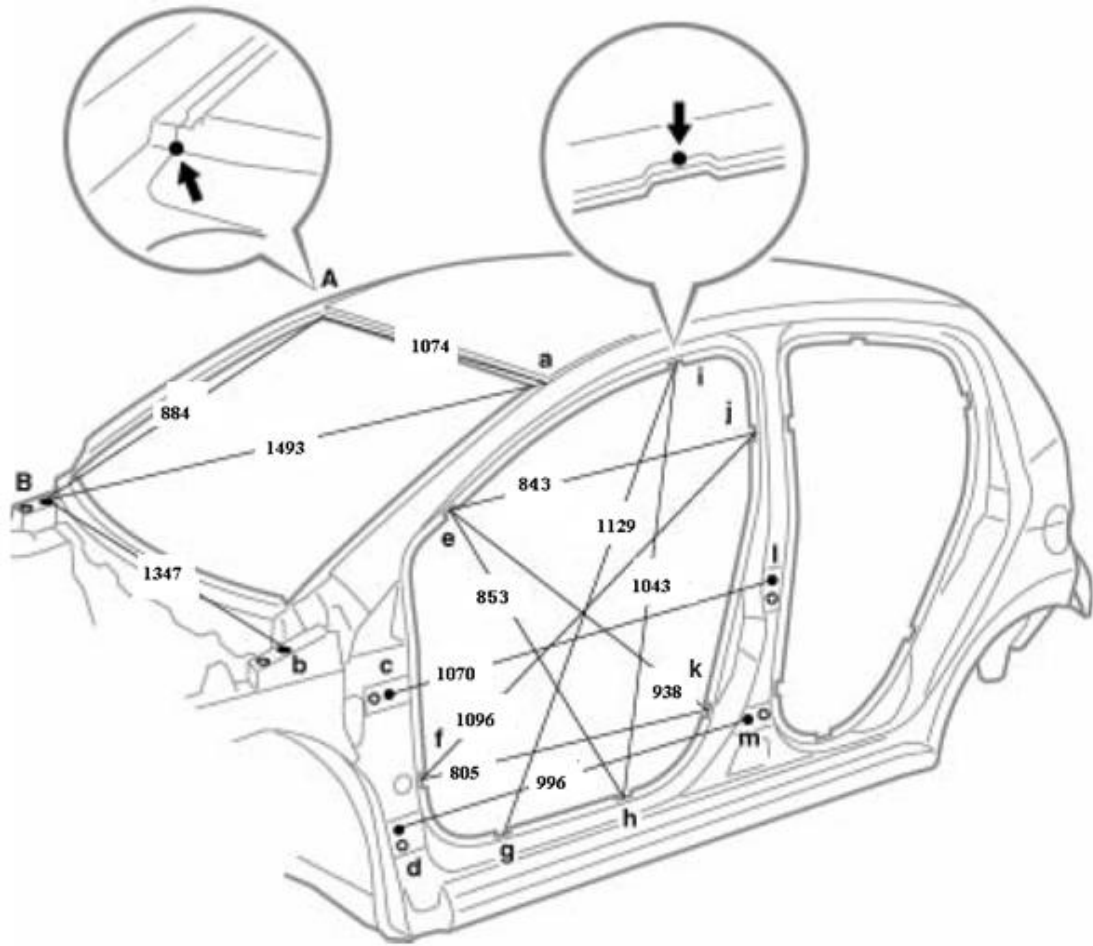
Car dimensions (Left→Right)

A-D or a-d	B-C or b-c	C-G or c-g	D-E	D-e	L-I
658	192	679	666	697	1269

Height from the assumed standard line

A, a	C, c	G, g
817	845	676

NO.	Name	Size of bore	NO.	Name	Size of bore
A, a	Fender panel mounting nut	M6	G, g	Water chamber cross member reference hole	Φ 15
B, b	Front spring seat panel reference hole	Φ 10	H, h	Front lamp bracket reference hole	Φ 7
C, c	Engine room cover hinge rear mounting nut	M8	I, i	Front anti-impact beam upper outside mounting nut	M10
D	Front windshield lower cross member center	R1	J, j	Front anti-impact beam lower outside mounting nut	M10
E, e	Engine right mounting right mounting nut	M10	K, k	Front post lower-segment lower reference hole	Φ 10
F, f	Front side frame rear reference hole	Φ 10	L, l	Front fender mounting bracket reference hole	Φ 10

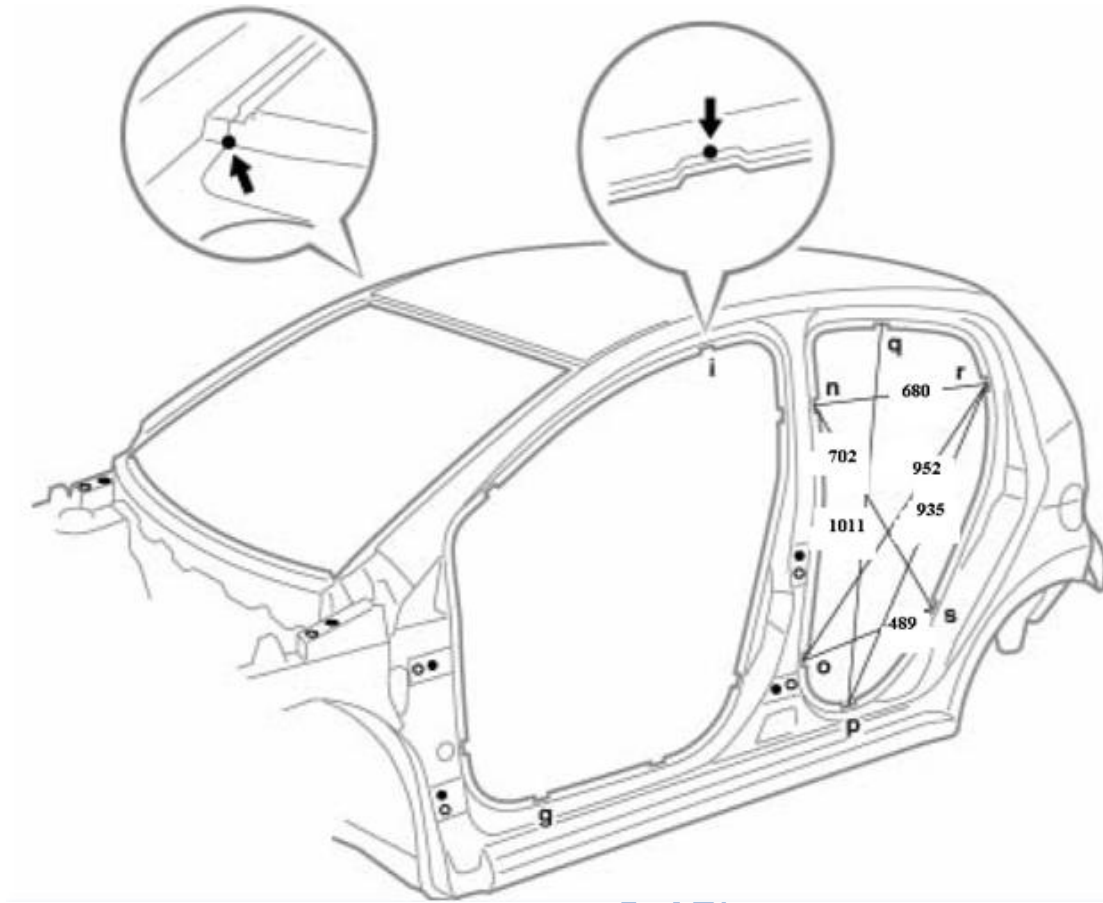


Car dimensions (Left→Right)

E-e	F-f	G-g	I-i	J-j	K-k
1238	1331	1365	1083	1278	1353

E-f or e-F	E-h or e-H	E-j or e-J	F-j or f-J	F-k or f-K	H-I or h-I
1415	1555	1514	1703	1565	1602

NO.	Name	Size of bore	NO.	Name	Size of bore
A, a	Roof corner	—	I, i	Roof frame assembly mark	—
B, b	Engine room cover hinge brace panel reference hole	∅ 13	J, j	Body mid post assembly mark	—
C, c	Front door hinge mounting nut	M8	K, k	Body mid post assembly mark	—
D, d	Front door hinge mounting nut	M8	L, l	Rear door hinge mounting nut	M8
E, e	Body front post assembly mark	—	M, m	Rear door hinge mounting nut	M8
F, f	Body front post assembly mark	—	—		—
G, g	Door sill assembly mark	—	—		—
H, h	Door sill assembly mark	—	—		—

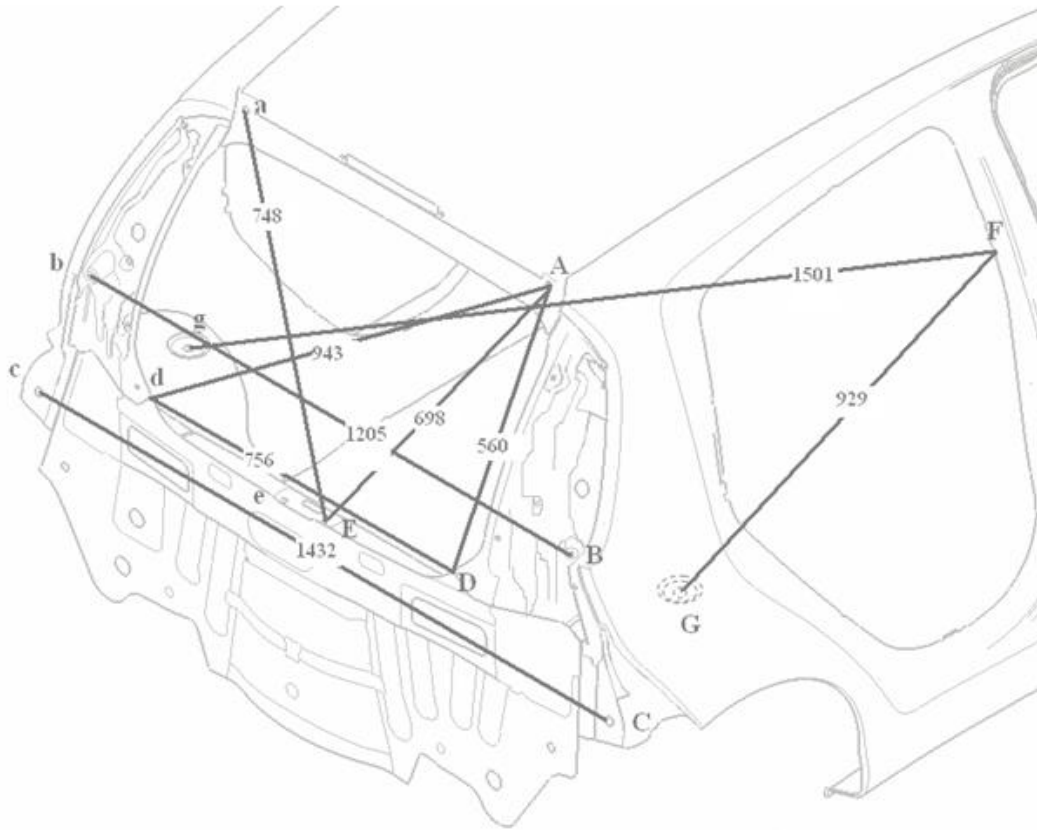


NO.	Name	Size of bore	NO.	Name	Size of bore
G,g	Door sill assembly mark	—	P,p	Door sill assembly mark	—
I,i	Roof frame assembly mark	—	Q,q	Roof frame assembly mark	—
N,n	Body mid post assembly mark	—	R,r	Rear quarter panel assembly mark	—
O,o	Body mid post assembly mark	—	S,s	Rear quarter panel assembly mark	—

Car dimensions (Left→Right)

N-n	O-o	P-p	Q-q	R-r	S-s
1277	1350	1364	1074	1213	1348

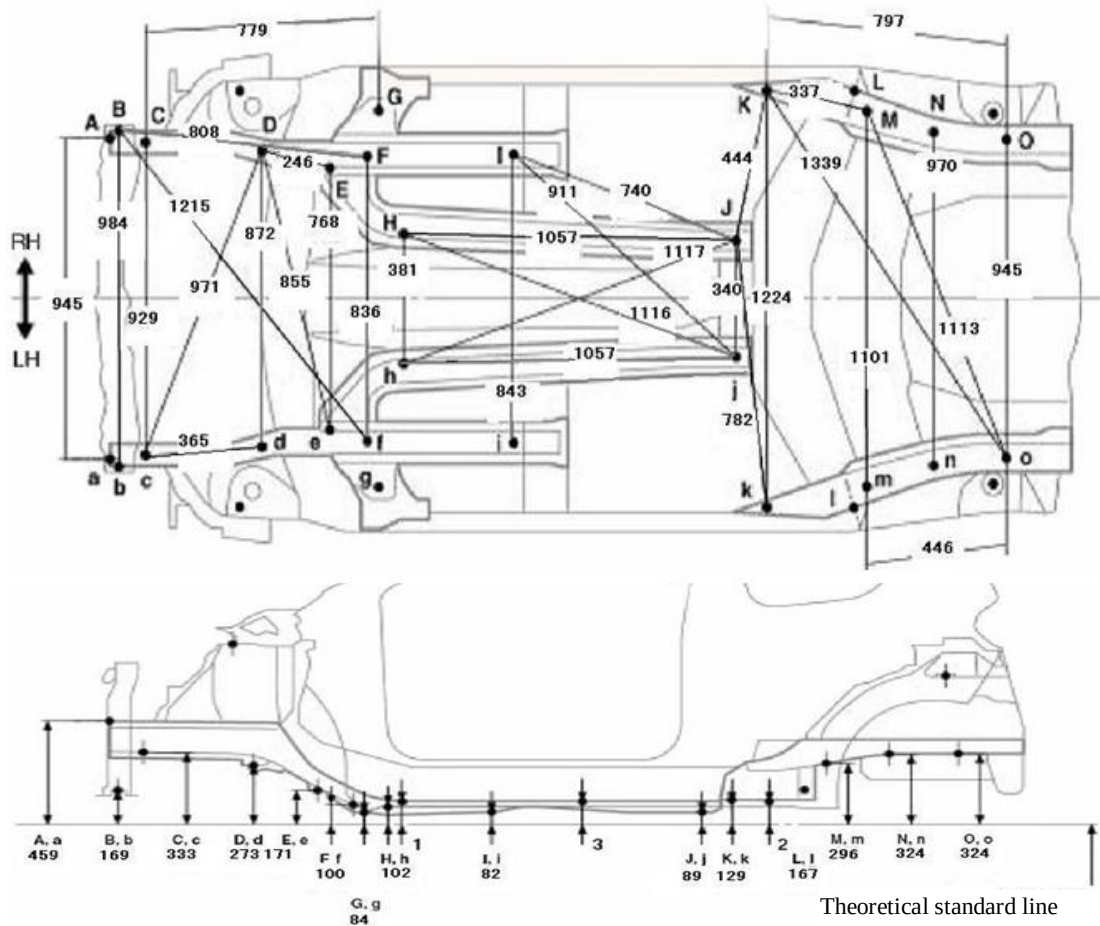
G-p Or g-P	I-q Or i-Q	N-p Or n-P	N-r Or n-R	N-s Or n-S	O-s Or o-S	P-q Or p-Q	R-s Or r-S
1646	1234	1515	1418	1488	1435	1577	1421



Car dimensions (Left→Right)

a-e	E-G	e-g	B-D or b-d	E-g	e-G	B-d or b-D
697	561	558	262	646	649	990

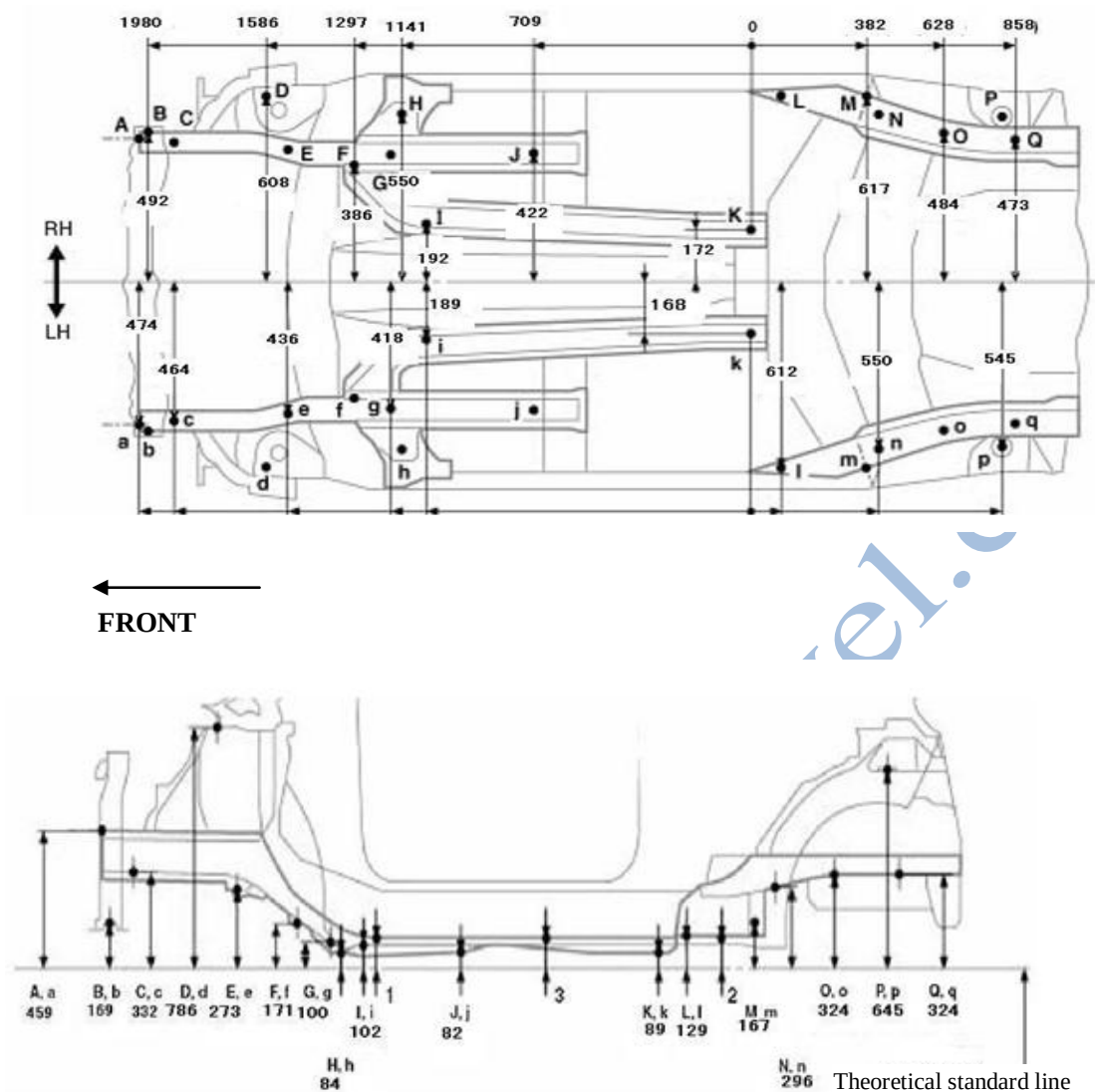
NO.	Name	Size of bore	NO.	Name	Size of bore
A , a	Back door hinge mounting hole	Φ 13	E , e	Back door lock ring mounting nut	M6
B , b	Rear combined lamps reference hole	Oblong 8x10	F , f	Body mid post assembly mark	—
C , c	Rear quarter panel reference hole	Φ 9	G , g	Rear shock absorber mounting hole	Φ 18
D , d	Rear back door open notch/rear quarter panel connection point	—	—	—	—



1	2	3
100	100	102

C-g or c-G	K-m or k-M	N-O or n-o	N-o or n-O
1276	1216	229	988

NO.	Name	Size of bore	M8	NO.	Name	Size of bore
A, a	Front bumper mounting nut	M10	M8	I, i	Front room side frame posterior segment reference hole	∅ 18
B, b	Water chamber lower cross member mounting nut	M6	M8	J, j	Front floor lower brace panel reference hole	∅ 10
C, c	Front room side frame reference hole	∅ 18	M8	K, k	Rear door sill cover shield reference hole	∅ 18
D, d	Front auxiliary frame mounting nut	M12	M8	L, l	Rear suspension mounting hole	∅ 14
E, e	Front auxiliary frame mounting nut	M12	M8	M, m	Rear floor side frame reference hole	∅ 18
F, f	Front auxiliary frame mounting nut	M10	M8	N, n	Rear floor side frame reference hole	∅ 13
G, g	Front side frame posterior segment outer support plate reference hole	∅ 25		O, o	Rear floor side frame reference hole	Oblong 26×40
H, h	Front room side frame posterior segment reference hole	∅ 10		—		—



1	2	3
100	100	102

NO.	Name	Size	NO.	Name	Size
A,a	Front bumper mounting nut	M10	J,j	Front room side frame posterior segment reference hole	Φ 18
B,b	Water chamber lower cross member mounting nut	M6	K,k	Front floor lower brace panel reference hole	Φ 10
C,c	Front room side frame reference hole	Φ 18	L,l	Rear door sill cover shield reference hole	Φ 18
D,d	Front shock-absorber spring seat panel reference hole	Φ 10	M,m	Rear suspension mounting hole	Φ 14
E,e	Front auxiliary frame mounting nut	M12	N,n	Rear floor side frame reference hole	Φ 18
F,f	Front auxiliary frame mounting nut	M12	O,o	Rear floor side frame reference hole	Φ 13
G,g	Front auxiliary frame mounting nut	M10	P,p	Rear shock absorber mounting hole	Φ 18
H,h	Front side rail posterior segment outer support plate reference hole	Φ 25	Q,q	Rear floor side frame reference hole	Long circular hole 26×40
I,i	Front room side frame posterior segment reference hole	Φ 10			