Table of Contents (Volume 2)

8.1 Power Steering System		Removal and Refitting of Steering Control	
Notes	8.1-3	Unit	
Precautions for Servicing SRS (Supplemental		EPS Motor Inspection	8.2-12
Restraint System)		9.1 Seat Belt	
Precautions for Steering System		Precautions	9.1-3
Preparations		Precautions for Servicing Seat Belt	9.1-3
Special Tools		Precautions after Collision	9.1-3
Service Data and Specifications		Preparations	
Service parameters		Special tools	
Tightening Torque		System overview	
System overview		Structure and Features	
Structure and Features		Front Seat Belt	
System Overview of EPS		Removal and Refitting of Driver's Seat Belt	9.1-7
Troubleshooting		Removal and Refitting of Front Passenger's	0 1 11
Troubleshooting of Power Steering System		Seat Belt	
Steering Angle of Front Wheels		Removal and Refitting of Rear Seat Belt	
Check steering angle of front wheels			9.1-20
Removal and Refitting of Steering Wheel		Removal and Refitting of Child Safety Seat	0.4.04
Replacement of Steering Wheel Buttons	1-12	Anchorage	9.1-24
Assembly	8.1-15	9.2 Supplemental Restraint System	
Rotary Switches and Combination switches		Precautions	9.2-3
Steering column assembly		Precautions for Servicing SRS (Supplemental	
Removal and Refitting of Steering Column		Restraint System)	9.2-3
Assembly	8.1-23	Preparations	9.2-4
Steering Lock Assembly	8.1-30	Special tools	9.2-4
Removal and Refitting of Steering Wheel Lock		Troubleshooting	9.2-5
		ACU DTCs	
Steering gear assembly	1-32	Data Flow	
Removal and Refitting of Tie Rod Outer Ball Joint	8 1-32	System overview	
Removal and Refitting of Steering Gear Dust	0.1-32	Structure and Features	
Cover	8.1-35	Frontal airbag	
Removal and Refitting of Tie Rod Inner Ball		Removal and Refitting of Driver's Airbag	9.2-8
Joint	8.1-38	Removal and Refitting of Front Passenger's	0.0.40
Removal and Refitting of Steering Gear		Airbag Airbag Control Unit (ACU)	
Assembly	8.1-41	-	
8.2 Steering Control System		Removal and Refitting of ACU	9.2-17
Precautions	8.2-3	10.1 Body and Door Locks	
Precautions for Service of EPS	8.2-3	Precautions	10 1-3
Service Data and Specifications	8.2-4	Precautions for Service	
Technical parameters	8.2-4	Special tools	
Tightening Torque	8.2-4	Service Data and Specifications	
System overview	8.2-5	Technical Parameters	
Function Description for Control System		Tightening Torque	-
Components		Troubleshooting	
Location			
Troubleshooting		BCM data stream	10.1-6
EPS Common Fault Troubleshooting Table			
Data Flow			
FDC	0 0 40		

Hood10.1	-7 Removal and Refitting of Door Electric
Removal and Refitting of Hood10.1	-7 Auxiliary Switch10.2-33
Removal and Refitting of Hood Hinge10.1	-9
Hood Lock	
Removal and Refitting of Hood Lock10.1-	
Doors	
Removal and Refitting of Front Door Assembly	Special tools10.3-3
	· · · · · · · · · · · · · · · · · · ·
Removal and Refitting of Rear Door Assembly 10.1-	
Removal and Refitting of Front Door Sealing	Structure and Features10.3-4
Strip	1104010011004119
Strip	Common Fault Troubleshooting10.3-5
Front door lock	3011100110.3-0
Removal and Refitting of Front Door Lock	Removal and Relitting of Sunroof Assembly10.3-6
Cylinder	Removal and Refitting of Sunroof Visor10.3-11
Removal and Refitting of Front Door Outside Handle10.1-	Removal and Refitting of Sunroof Glass10.3-13
Removal and Refitting of Front Door Inside	10.4 Exteriors and Interiors
Handle 10.1-	
Removal and Refitting of Front Door Lock	Precautions for service10.4-3
Body	
Rear Door Lock	
Removal and Refitting of Rear Door Outside Handle10.1-	Service Data and Specifications10.4-5
Removal and Refitting of Rear Door Inside	rechnical Parameters10.4-5
Handle	Trunk adjustment clearance10.4-6
Removal and Refitting of Rear Door Lock	Tightening Torque10.4-6
Body 10.1-	System overview10.4-7
Door Lock Catch10.1-	Structure and Features10.4-7
Removal and Refitting of Door Lock Catch 10.1-	Troubleshooting
10.2 Glass, Window System and Rearview Mirror	Common fault troubleshooting10.4-16
Preparations	Front bumper
Precautions for service	Kemovai and Kentting of Front Bumper10.4-17
Special tools	FTOTIL grille10.4-23
Tightening Torque10.2	Nemoval and Nemung of Front Offic10.4-25
System overview	1 GIUGI10.4-27
Structure and Features	Removal and Relitting of Fender10.4-27
Troubleshooting	Real bulliper
Common Fault Diagnosis	Removal and Relitting of Rear Bumper10.4-33
Front windshield	1 61061
Removal and Refitting of Front Windshield 10.2	Removal and Remaing of Front Writer
Rear Windshield	3 · · · · · · · · · · · · · · · · · · ·
Removal and Refitting of Rear Windshield 10.2-	rtomovar and rtomang or rtoar rimos.
Front door window regulator10.2-	
Door Window Initialization 10.2-	14 Removal and Refitting of Front Door Inner
Removal and Refitting of Front Door Window 10.2-	15 Protective Plate10.4-46
Removal and Refitting of Front Door Window	Removal and Refitting of Rear Door Inner
Regulator10.2-	19 Protective Plate
Rear door window regulator 10.2-	Door Window Cover Strip10.4-55
Removal and Refitting of Rear Door Window 10.2-	
Removal and Refitting of Rear Door Window Regulator10.2-	Strip10.4-55 25
Exterior Rearview Mirror	27
Removal and Refitting of Exterior Rearview Mirror10.2-	27
Door Electric Switch	29
Removal and Refitting of Door Electric Main Switch	29
10.2	

Removal and Refitting of Rear Door Window	Removal and Refitting of Front Passenger's	10 6 10
Inner Cover Strip		
Removal and Refitting of Front Door Window Outer Cover Strip10.4-57	Rear seats Removal and Refitting of Rear Seat	
Removal and Refitting of Rear Door Window Outer Weatherstrip10.4-59	10.7 Rody Check	10.0 12
•	D 1 01 1	BC-3
Door Guard Strip		
Removal and Refitting of Door Guard Strip 10.4-61	Dealer Frank Deak and Cide Well Masserment	
Outer Body Kit		
Removal and Refitting of Body Kit	-	
Roof Trim Strip		
Removal and Refitting of Roof Trim Strip 10.4-66		BD-3
Body Side Wall Inner Trim Panel	Safety Precautions for Body Maintenance	BD-3
Removal and Refitting of Body Side Wall	Basic Knowledge of Welding	BD-4
Inner Trim Plate	Spot Weiding Conditions	BD-4
Rear Spacer Plate		BD-6
Removal and Refitting of Rear Partition		BD-7
Roof Inner Trim Panel	Plug Welding	BD-8
Removal and Refitting of Roof Inner Trim	Fillet Welding	
Panel	Overview	
Trunk Lid Inner Protective Plate	Symbolic Signs	
Removal and Refitting of Trunk Lid Inner Protective Plate		
	Repair	BD-18
10.5 Instrument Panel	Panel Assembly	BD-20
Preparations10.5-3	Identification of Body Structure Spare Parts	BD-20
Precautions10.5-3	11. A/C system	
Special tools10.5-3		44.0
Tightening Torque10.5-3	Precautions	
System overview 10.5-4	Precautions for Use of R-134a	
Structure and Features 10.5-4	General Precautions for Refrigerant	
Troubleshooting10.5-7	Precautions for Cooling Joints	11-3
Common Fault Diagnosis 10.5-7	Precautions for Replacing or Cleaning	11 1
Instrument Panel10.5-8	Refrigerant Recycling Components	
Removal and Refitting of Instrument Panel	inspection of Reingerant Leakage	11-4
Assembly 10.5-8	Leak Detector	11-4
Console	Inspection of System Leakage by Fluorescent	
Removal and Refitting of Console Assembly 1	Leak Detector	11-4
	Preparations	11-5
Removal and Refitting of Console Assembly 2	Special tools	11-5
	General Tools	11-5
10.6 Seat	Service Data and Specifications	11-6
Precautions 10.6-3	Technical Parameters	11-6
Precautions	Recommended balance value for refrigeration	
Preparations10.6-4	oil replacement of A/C components	11-6
Special tools10.6-4	Tightening Torque	11-6
Tightening Torque10.6-4	System overview	11-7
System Overview	Electric A/C	11-7
Structure and Features		
Troubleshooting10.6-7		
Common fault troubleshooting		
Front Seat 10.6-8		
Removal and Refitting of Driver's Seat 10.6-8		

Troubleshooting11-9	A/C Heater	11-89
AC (Air Conditioning Control) DTCs11-9	Removal and Refitting of A/C Heater	11-89
Data Flow11-10	A/C Heater Water Pump	11-95
Common Fault Diagnosis11-11	Removal and Refitting of A/C Heater Water	
Refrigeration Oil11-15	Pump	
Refrigeration oil charging11-15	A/C Heater Pipe Assembly	11-99
Recovery/Vacuuming/Pressurizing/Charging/Leak Detection of Refrigerant11-16	Removal and Refitting of A/C Heater Pipe Assembly	11-99
Operating Instructions of Freon-free	A/C assembly	
Refrigerant (R-134a) Handling Machine 11-16	Removal and Refitting of A/C Assembly	11-106
Inspection of A/C Refrigerant11-17	·	1-118
Recovery/Vacuuming/Pressurizing/Charging of Refrigerant (by Refrigerant Handling Machine)11-20	Removal and Refitting of Evaporator and Evaporator Temperature Sensor	
Leak Detection of A/C System11-25		11-12/
A/C control panel 11-27	r torrio var arra r torriur g or r to r roato.	11-127
Removal and Refitting of A/C Control Panel 1 11-27		
Removal and Refitting of A/C Control Panel 2 11-27		11-134
Air Pipe/Air Outlet		11-134
Removal and Refitting of Side Air Outlet11-36		
Removal and Refitting of Rear Central Air Outlet11-38	Removal and Refitting of Side Air Outlet	
Removal and Refitting of Air Vent Pipe11-40		
A/C Servo Motor	Management Cystem)	11-144
Removal and Refitting of Temperature Servo	Change of Heating System Coolant	11-144
Motor11-44	Replacement of Heating System Expansion	
Removal and Refitting of Internal and External	Tank	11-147
Circulation Servo Motor	Expansion Tank water Inlet Pipe	11-152
motor	Removal and Refitting of Heating System	
A/C blower11-55	Expansion Tank water Outlet Pipe	
Removal and Refitting of A/C Fan11-55	Removal and Refitting of Heater Water Pump .	11-161
Removal and Refitting of Blower Motor Speed Control Module11-59	Removal and Refitting of PTC Heater Water Inlet Pipe	11-164
A/C filter	Removal and Refitting of PTC Heater Water Outlet Pipe	11-167
Functions of A/C Filter11-61	Removal and Refitting of PTC Heater	
Removal and Refitting of A/C Filter11-61	Removal and Refitting of Heater Water Tank	- /
A/C pipeline	Water Inlet Pipe	11-175
Removal and Refitting of Compressor High-pressure Pipe11-64	Removal and Refitting of Heater Water Tank	
Removal and Refitting of A/C High/Low Pressure Pipe11-67	Removal and Refitting of Three-way Water	
A/C pressure switch11-72	Removal and Refitting of Three-way Water	
Removal and Refitting of A/C Pressure Switch11-72	Valve Through Plate Heat Exchanger Water	11-185
A/C Expansion Valve11-75		
Removal and Refitting of A/C Expansion	Plate Heat Exchanger Water Pipe	
Valve	9 1	11-193
A/C compressor		44 40-
Removal and Refitting of Compressor	Description of Defitting of A/O Through Dista	11-197
A/C Condenser	Hoot Evolunger High proceure Dine	11-202
Removal and Refitting of Condenser 11-85	Removal and Refitting of A/C Through Plate Heat Exchanger Low-pressure Pipe	
	rical Exchanger Low-pressure ripe	11-200







1. Overview	1 Overview	1
2.New Vehicle Preparation	2 New Vehicle Preparation	2
3.Maintenance	3 Maintenance	3
4.Roll powertrain off line	4.1 Motor Makeup	
	4.2 Motor Cooling System	4
	4.3 Motor Control System	4
	4.4 Transmission Makeup	
5.Energy Storage and Power Supply	5.1 Traction battery	
	5.2 Starting and Charging System	5
	5.3 High voltage distribution box	
6.Axle and Suspension	6.1 Front Axle and Front Suspension	
	6.2 Rear Axle and Rear Suspension	6
	6.3 Wheel	
7.Brake	7.1 Brake System	
	7.2 Parking Brake System	7
	7.3 Brake Control System	
8.Steering	8.1 Power Steering System	8
	0.0 Ctanning Control Cyatama	O
	8.2 Steering Control System	
9.Restraint System	9.1 Seat Belt	a
9.Restraint System		9
9.Restraint System 10.Body	9.1 Seat Belt	9
	9.1 Seat Belt 9.2 Supplemental Restraint System	9
	9.1 Seat Belt9.2 Supplemental Restraint System10.1 Closures	9
	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror	
	 9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 	9
	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors	
	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel	
	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats	
	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check	
10.Body	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check 10.8 Body Structure	10
10.Body 11.Air-conditioner	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check 10.8 Body Structure 11 A/C system	10
10.Body 11.Air-conditioner	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check 10.8 Body Structure 11 A/C system 12.1 Lighting System	10
10.Body 11.Air-conditioner	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check 10.8 Body Structure 11 A/C system 12.1 Lighting System 12.2 Instrument cluster	10
10.Body 11.Air-conditioner	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check 10.8 Body Structure 11 A/C system 12.1 Lighting System 12.2 Instrument cluster 12.3 Wiper, Washer and Horn	10
10.Body 11.Air-conditioner	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check 10.8 Body Structure 11 A/C system 12.1 Lighting System 12.2 Instrument cluster 12.3 Wiper, Washer and Horn 12.4 Passive Entry & Passive Start	10
10.Body 11.Air-conditioner	9.1 Seat Belt 9.2 Supplemental Restraint System 10.1 Closures 10.2 Glass, Window and Rearview Mirror 10.3 Roof 10.4 Exteriors and Interiors 10.5 Instrument Panel 10.6 Seats 10.7 Body Check 10.8 Body Structure 11 A/C system 12.1 Lighting System 12.2 Instrument cluster 12.3 Wiper, Washer and Horn 12.4 Passive Entry & Passive Start 12.5 Body and Vehicle Control System	10

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company After-sales Service Technical Document





8.Steering

8.1 Power Steering System

Steering Control System

c

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company After-sales Service Technical Document

8.1

Power Steering System

Contents

Precautions	8.1-3
Precautions for Servicing SRS (Supplemental Restraint System)	8.1-3
Precautions for Steering System	8.1-3
Preparations	8.1-4
Special tools	8.1-4
Service Data and Specifications	8.1-5
Service parameters	8.1-5
Tightening Torque	8.1-5
System overview	8.1-6
Structure and Features	8.1-6
System Overview of EPS	8.1-9
Troubleshooting	8.1-10
Troubleshooting of Power Steering System	8.1-10
Steering Angle of Front Wheels	8.1-11
Check steering angle of front wheels	8.1-11
Steering wheel assembly	8.1-12
Removal and Refitting of Steering Wheel	8.1-12
Replacement of Steering Wheel Buttons Assembly	8.1-15
Rotary Switches and Combination switches	8.1-18
Steering column assembly	8.1-23
Removal and Refitting of Steering Column Assembly	8.1-23
Steering Lock Assembly	8.1-30
Removal and Refitting of Steering Wheel Lock	8.1-30
Steering gear assembly	8.1-32
Removal and Refitting of Tie Rod Outer Ball Joint	8.1-32
Removal and Refitting of Steering Gear Dust Cover	8.1-35
Removal and Refitting of Tie Rod Inner Ball Joint	8.1-38
Removal and Refitting of Steering Gear Assembly	8.1-41



Precautions for Servicing SRS (Supplemental Restraint System)

- Before servicing of SRS, turn the ignition switch to "OFF" position, disconnect battery positive and negative cables, and wait at least 3 min. That is because, within about 3 min after battery positive and negative cables are disconnected, the airbag and seat belt pretensioner may still deploy. Therefore, no work related with SRS connector and circuit should be performed within 3 min.
- Carefully place the airbag. Place the driver's airbag always with the front surface upward.

Precautions for Steering System

- Do not use non-reusable parts repeatedly.
- After the servicing of steering system is done, drive the vehicle on the four-wheel aligner, conduct final tightening of bolts on the chassis, and check the toe-in of wheels.

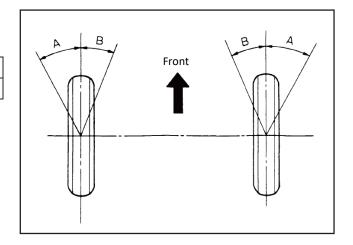
Special tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing vehicle interior trim
A600804A/B	Steering tie rod removal tool	3	For removing tie rod inner ball joint
AX70802	Steering tie rod outer ball joint removal tool		For removing the tie rod outer ball pin
BF0504	Pull rod	o o o o o o o o o o o o o o o o o o o	For removing the triangular arm

Service parameters

Max. steering angle of front turning wheels

Inner wheel (angle: A)	38.7°
Outer wheel (angle: B)	32.5°

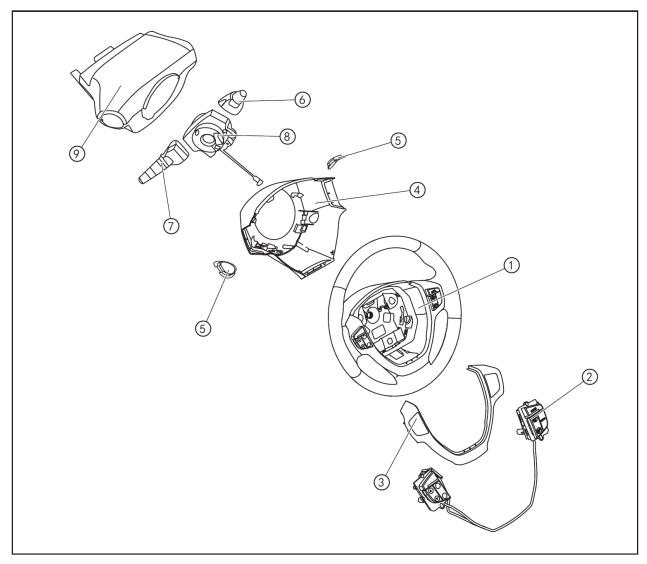


Tightening Torque

S/N	Item	Torque (N⋅m)
1	Triangular arm & steering knuckle connecting bolt	55
2	Tie rod ball pin & steering knuckle fixing bolt	63.2
3	Front stabilizer bar link fixing nuts	34.4
4	Stabilizer bar rubber bush cover plate fixing bolt	28
5	Steering knuckle & shock absorber connecting bolt 165	
6	Front hub fixing bolt 94	
7	Triangular arm front fixing bolt	119
8	Triangular arm rear fixing bolt	112.5
9	Front shock absorber fixing bolt	15.5
10	10 Propeller shaft fixing bracket offset bolt/nut	
11	Front axle shaft locking nut	90±15

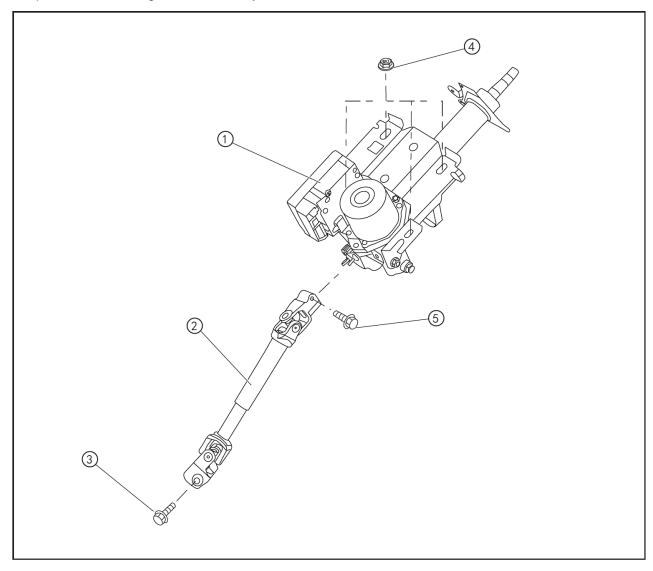
Structure and Features

Components of steering wheel assembly



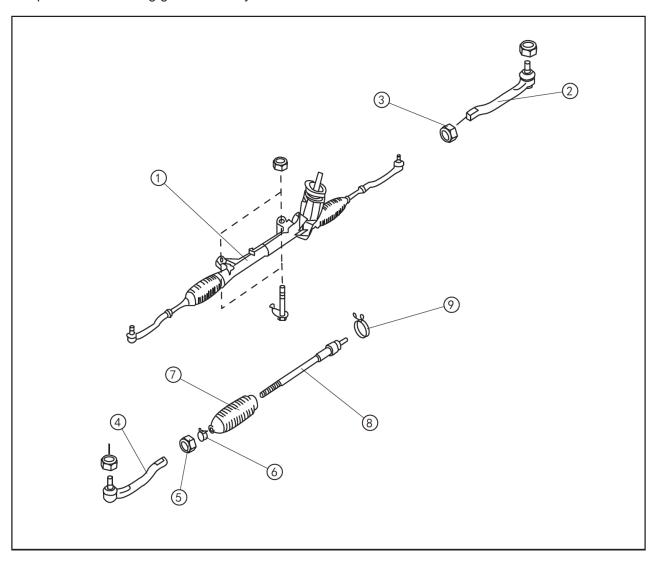
1	Steering wheel	4.	Steering wheel rear cover	7.	Light combination switch
2.	Steering wheel buttons	5.	Blanking cover	8.	Rotary connector
3.	Garnish	6.	Wiper combination switch	9.	Steering column shroud

Components of steering wheel assembly



1.	Upper steering column	3.	Bolt	5.	Bolt
2.	Lower steering column	4.	Nut		

Components of steering gear assembly



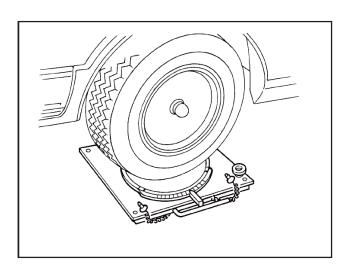
1.	Steering gear assembly	4.	Tie rod outer ball joint (RH)	7.	Steering gear dust cover
2.	Tie rod outer ball joint (LH)	5.	Nut	8.	Tie rod inner ball joint
3.	Nut	6.	Clamp	9.	Clamp

System Overview of EPS

- Electric Power Steering (EPS) System is a power steering system of which the auxiliary torque is directly provided by the motor. It has many advantages compared with the traditional Hydraulic Power Steering (HPS). EPS is primarily composed of torque sensor, vehicle speed sensor, motor, reducing mechanism and electronic control unit (ECU), etc. When the driver is operating the steering wheel for turning, the torque sensor would detect turning and torque of the steering wheel, and transmit the voltage signal to the ECU. ECU will send commands to the motor control unit based on the torque voltage signal, rotation direction and vehicle speed signal, etc. detected by the torque sensor, so that motor will, to a certain extent, output steering power torque in a direction, thus generating auxiliary power. In case of no steering, no command would be sent to motor control unit by ECU, so the motor does not work.
- Advantages of EPS system:
 - reducing energy consumption;
 - strengthening tracking performance;
 - improving steering return-to-center performance;
 - improving handling stability;
 - providing variable steering power;
 - saving energy and protecting environment;
 - simple system structure, little space occupation, convenient layout and high performance.

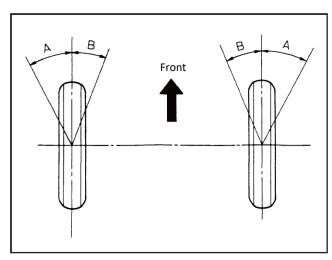
Troubleshooting of Power Steering System

Fault symptom:	Possible cause	Troubleshooting methods		
	Starved tire inflation	Tire inflation		
	Steering power system fault	Check for troubleshooting.		
	Seizure of tie rod outer ball pin or front suspension triangular arm ball pin	Replace the tie rod outer ball pin or front suspension triangular arm.		
Hard steering	Inaccurate front wheel alignment	Check and adjust the front wheel alignment.		
	Steering column seizure	Repair or replace		
	Steering system circuit failure	Check steering system		
	Damaged motor	Replace motor		
	Worn wheel bearing	Replacement		
	Looseness of steering gear housing bolts	Tighten		
Too be a second	Too large clearance between rack and pinion	Check and adjust the running torque of ra and pinion.		
Too large steering free travel	Worn front suspension triangular arm ball joint	Replace the front suspension arm.		
	Worn tie rod outer or inner ball joint	Replace the tie rod outer or inner ball joint.		
	Worn steering lower shaft ball joint	Replace the steering lower shaft.		
	Steering power system fault	Check for troubleshooting.		
	Too tight tie rod outer and inner ball joints	Replace tie rod outer and inner ball joints.		
	Too tight ball joint of front suspension triangular arm	Replace the front suspension triangular arm.		
	Too tight steering column	Repair or replace		
Unsmooth return	Incorrect front wheel alignment	Check and adjust the front wheel alignment.		
	Starved tire inflation	Tire inflation		
	Steering power system fault	Check for troubleshooting.		
	Poor adjustment of rack and pinion	Check and adjust the running torque of rack and pinion.		
	Looseness of steering gear housing bolts	Tighten		
Pinion and rack noises (click or titter)	Worn rack bush	Replace the steering gear assembly.		
,	Steering power system fault	Check for troubleshooting.		
	Mismatched tires or uneven inflation	Replace or inflate tires.		
	Looseness of tie rod inner and outer ball joint	Replace the triangular arm or tie rod outer a inner ball joints.		
	Incorrect installation of front shock absorber strut	Replace the front shock absorber or repair the assembly		
Deviation or poor steering stability	Stabilizer bar looseness	Tighten or replace the stabilizer bar or bush.		
	Spring breakage or failure	Replace the spring.		
	Inaccurate front wheel alignment	Check and adjust the front wheel alignment.		
	Steering power system fault	Check for troubleshooting.		
	Braking drag of individual driving wheel	Repair the brake system		
	Worn wheel bearing	Replacement		
	Breakage or failure of front shock absorber spring	Replace the front shock absorber spring		
	Uneven tire inflation	Inflate tires.		
	Inaccurate front wheel alignment	Check and adjust the front wheel alignment.		
Brake deviation	Inconsistent operation of all brakes	Check Brake System		
	Leakage of seizure of wheel brake cylinder	Repair or replace the wheel brake cylinder o caliper		
	Brake disc warping	Replace the brake disc.		
	Severe wear of brake pad	Replace brake pad		
	Non-conformed wheel brake cylinder	Replace or repair the wheel brake cylinder.		



Check steering angle of front wheels

- Check the wheel toe-in. (Refer to "Inspection of Wheel Toe-in" in "Suspension System")
- Place front wheels on a turning radius gauge and rear wheels on the bracket to keep the vehicle horizontal. Check the maximum steering angles of inner and outer wheels of left and right wheels.
- Turn the steering wheel rightward and leftward to measure steering angles.



Inner wheel (angle: A)	38.7°
Outer wheel (angle: B)	32.5°



Removal and Refitting of Steering Wheel

1 - Protection

Place protective pads at following locations:

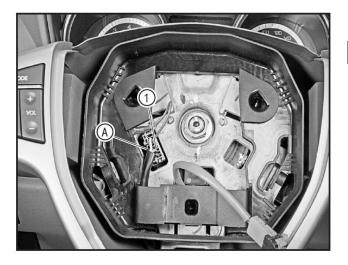
- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

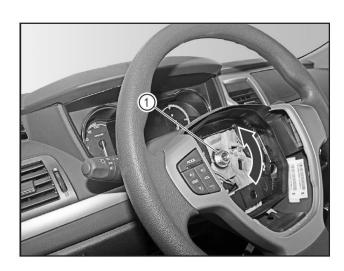
2 - Removal

- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Remove the driver's airbag. (Refer to "Removal and Refitting of Driver's Airbag" in "Supplemental Restraint System").
- Keep the vehicle moving straight forward and lock the steering wheel, and depress the brake pedal.
- Pry open the connector clip A, and detach the horn and A/C control switch upwards.



 Do not apply any force to the wire harness and connector when disconnecting the connector (1). Otherwise, the connector may break.

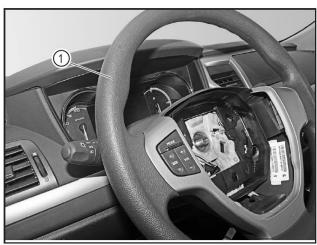




• Use the 19mm socket to remove the steering wheel lock nuts (1).

A WARNING

• To facilitate refitting, make a positioning mark "A" on the steering wheel and steering shaft.



 Gently shake the steering wheel (1) rightward and leftward to take it out.

A WARNING

Don't knock the bottom of steering shaft to avoid damage to the steering column assembly.



3- Refitting

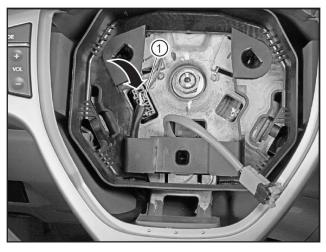
Align the mark on steering wheel with the mark on steering column, and install steering wheel (1) to the steering column.



 Use the 19mm socket to tighten the steering wheel lock nuts (1) to 33N·m.

A CAUTION

The steering wheel lock nut is disposable, and shall be replaced after each removal.



 Refit the horn, audio/video system control switch and cruise control connector (1).

- Refit the driver's airbag. (Refer to "Removal and Refitting of Driver's Airbag" in section of "Supplemental Restraint System").
- Connect the battery negative cable.

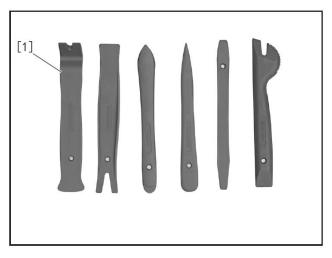


Replacement of Steering Wheel Buttons Assembly

1 - Protection

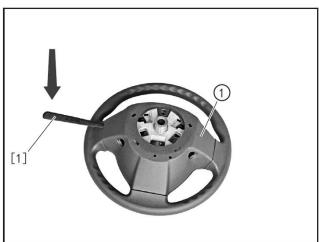
Place protective pads at following locations:

- Front fender;
- Driver's seat;
- Carpet (on driver's side);
- Parking brake lever;
- Shift lever.



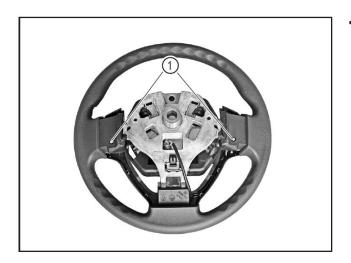
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

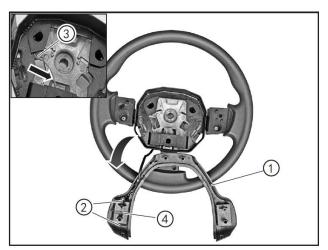


3 - Removal

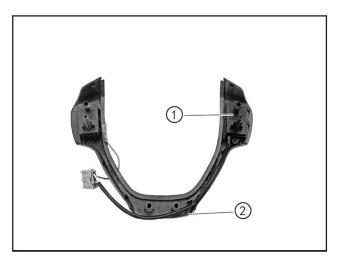
- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Remove the steering wheel. (Refer to "Removal and Refitting of Steering Wheel" in "Power Steering System")
- Remove the steering wheel rear cover (1) with the interior trim removal tool (BF1102) [1].



Remove 2 fixing screws (1) from steering wheel buttons assembly with the Phillips screwdriver.



- Turn over the garnish (1), and remove 2 fixing screws
 (2) from steering wheel buttons with the Phillips screwdriver.
- Pull out the horn connector (3).
- Remove steering wheel buttons assembly (4).



4- Refitting

 Install the steering wheel buttons assembly (1) onto the garnish (2), and then install the fixing screw of the steering wheel buttons assembly with the Phillips screwdriver.



 Install the garnish onto the steering wheel and insert the horn connector (1) in the direction as indicate by the arrow.



• Refit the 2 fixing screws (1) of the garnish.



- Press the steering wheel rear cover (1) in the direction as indicated by the arrow.
- Refit the steering wheel on the steering column. (Refer to "Removal and Refitting of Steering Wheel" in "Power Steering System")
- Connect the battery negative cable.

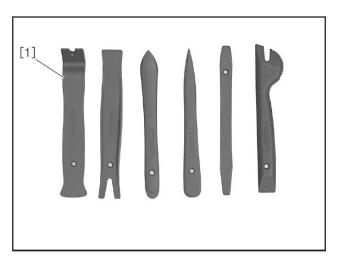


Rotary Switches and Combination switches

1 - Protection

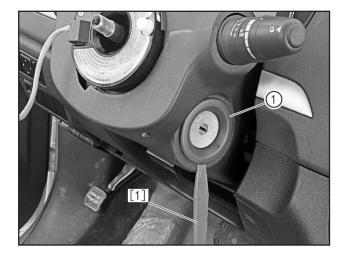
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2- Recommended tools

• Interior trim removal tool (BF1102) [1].



3 - Removal

- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Remove the steering wheel. (Refer to "Removal and Refitting of Steering Wheel" in "Power Steering System")
- Remove the ignition switch outer cover (1) with the interior trim removal tool (BF1102)[1].



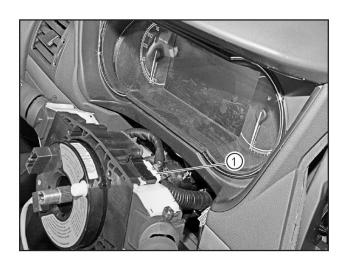
Remove 3 fixing bolts (1) for lower shroud of steering column with the Phillips screwdriver.



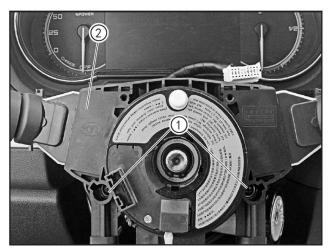
 Pry open the upper shroud (1) and lower shroud (2) from the steering column by using the interior trim removal tool (BF1102) [1].



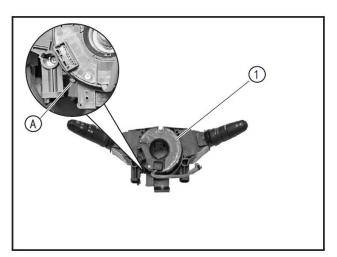
 Disconnect the airbag connector (1) and horn connector (2) below the rotary switch and combination switch assembly.



 Disconnect the combination switch connector (1) above the rotary switch and combination switch assembly.

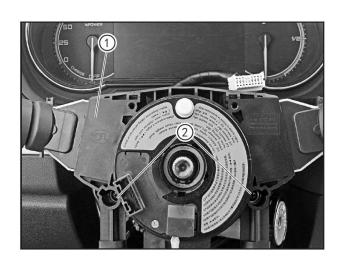


- Remove the 2 fixing screws (1) of the rotary switch and combination switch assembly with the Phillips screwdriver.
- Remove the rotary switch and combination switch assembly (2).



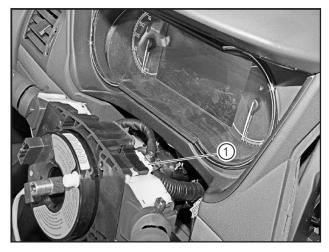
4 - Check

- Rotate the rotary switch (1) clockwise gently until it is not able to be rotated.
- Rotate the rotary switch counterclockwise for 2.7 turns from the position where the rotary switch stops rotating to the position where the mark "A" is aligned.
- Check the rotary switch wire harness for scorch, melt or other damages; If any, replace it immediately.

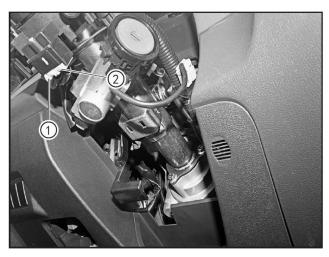


5- Refitting

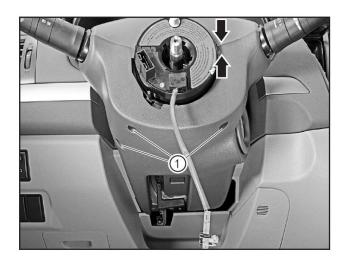
- Refit the rotary switch and combination switch assembly (1) onto the steering column after alignment.
- Refit the 2 fixing screws (2) of the rotary switch and combination switch assembly with the Phillips screwdriver.



Refit the combination switch connector (1) above the rotary switch and combination switch assembly.



 Refit the airbag connector (1) and horn connector (2) below the rotary switch and combination switch assembly.



- Refit the upper shroud and lower shroud of the steering column after alignment, and check if they are fitted in place.
- Refit the 3 fixing bolts (1) for lower shroud of steering column with the Phillips screwdriver.

- Refit the ignition switch cover.
- Refit the steering wheel. (Refer to "Removal and Refitting of Steering Wheel" in "Power Steering System")
- Connect the battery negative cable.

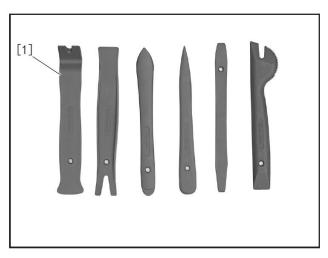


Removal and Refitting of Steering Column Assembly

1 - Protection

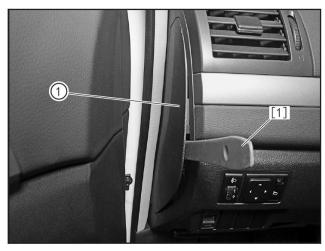
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



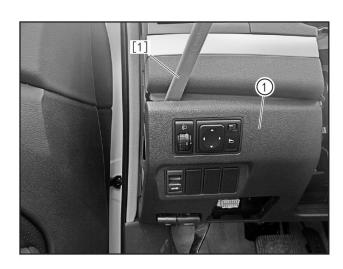
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

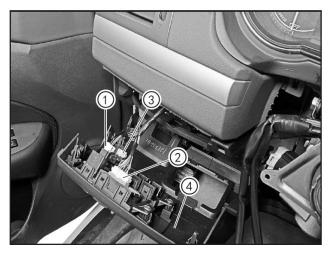


3 - Removal

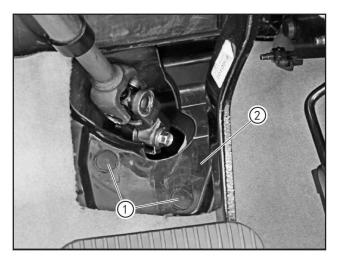
- Turn off the ignition switch, and disconnect battery negative cable.
- Remove the steering wheel. (Refer to "Removal and Refitting of Steering Wheel" in "Power Steering System")
- Remove the rotary switch and combination switch assembly. (Refer to "Removal and Refitting of Rotary Switch and Combination Switch Assembly' in "Power Steering System")
- Remove left end plate (1) with the interior trim removal tool BF1102[1] by levering along the junction of edge of left end plate and instrument panel lower body.



Pry open the instrument panel lower trim panel (1) with the interior trim removal tool (BF1102) [1].



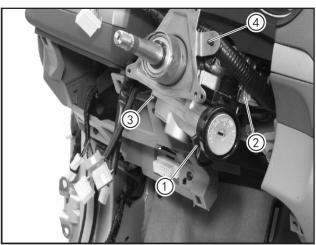
- Press down the connector clip with the slotted screwdriver, and disconnect the headlamp leveling motor connector (1), rearview mirror regulating motor connector (2) and trunk lid unlocking switch connector (3).
- Remove the left lower trim panel (4).



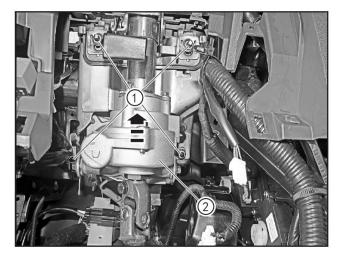
• Pry the 2 clips (1) of the steering column shroud, and then remove the steering column shroud (2).



- Remove the connecting bolt (1) between the lower steering column and steering gear with the 12mm socket.
- Detach the upper steering column from the lower steering column upwards.



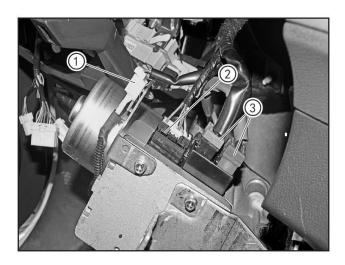
- Press the connector middle bayonet, disconnect the encrypted anti-theft antenna connector (1), encrypted anti-theft recognition output signal connector (2) and ignition switch connector (3).
- Disconnect the wire harness clip (4) of the combination switch.



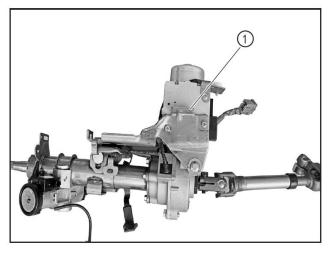
- Remove the 4 fixing nuts (1) of the upper steering column with the 12mm socket wrench.
- Shake the steering column assembly (2) as indicated by the arrow, and then detach the steering column assembly from the instrument panel cross member.

A CAUTION

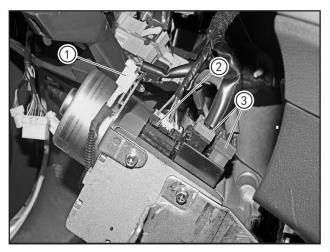
Be careful not to break the wire harness when detaching the steering column.



- Press the central clip of the connector, and disconnect torque sensor connector (1).
- Press the clip on the edge of the connector, and disconnect the connectors (2) and (3) of the EPS ECU.

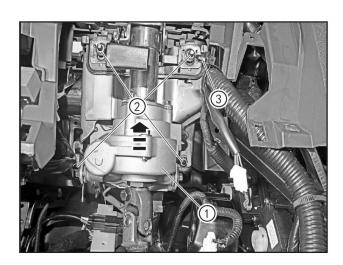


Remove the steering column assembly (1).

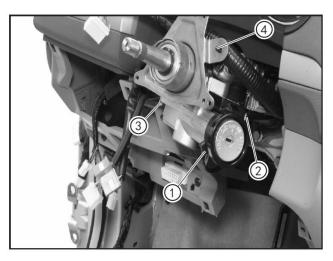


4- Refitting

Connect the torque sensor connector (1) and the connectors (2) and (3) of the EPS ECU.



- Refit the steering column assembly (1) onto the instrument panel beam.
- Tighten 4 fixing nuts (2) of upper steering column to 16.7N·m with the 12mm socket.
- Refit the wire harness clip (3) of the combination switch.



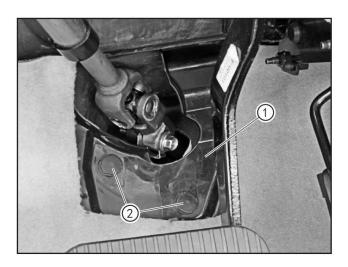
 Refit the encrypted anti-theft antenna connector (1), encrypted anti-theft recognition output signal connector (2), ignition switch connector (3) and wire harness clip (4).



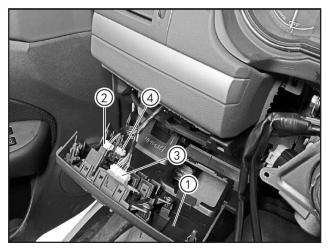
 Tighten the connecting bolt (1) between lower steering column and steering gear with the 12mm socket to 35.8N·m. Check for missed installation of lock washer.

A CAUTION

 Check for missed installation of lock washer before installing the connecting bolt.



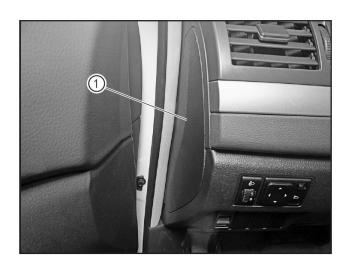
Refit he steering column shroud (1), and clamp the 2 clips (2) of the steering column shroud.



- Refit the left lower trim panel (1).
- Refit the headlamp leveling motor connector (2), rearview mirror regulating motor connector (3) and trunk lid unlocking switch connector (4).



• Refit the left lower trim panel (1) .



- Refit the left end plate (1).
- Refit the rotary connector and combination switch assembly. (Refer to "Removal and Refitting of Rotary Connector and Combination Switch Assembly")
- Refit the steering wheel. (Refer to "Removal and Refitting of Steering Wheel")
- Connect the battery negative cable.

A CAUTION

It is required to perform four-wheel alignment after refitting.

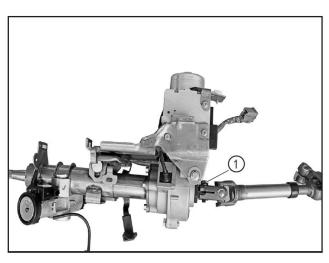


Removal and Refitting of Steering Wheel Lock

1 - Protection

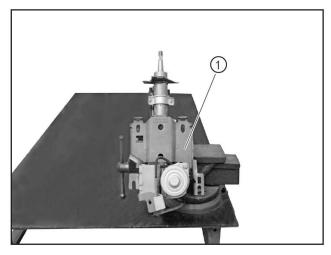
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

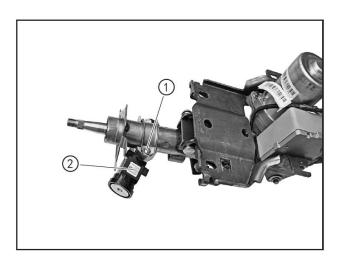


2 - Removal

- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Remove the steering column assembly. (Refer to "Removal and Refitting of Steering Column Assembly")
- Remove fixing bolts (1) of upper and lower steering columns with the 13mm socket.



• Remove the upper steering column, and secure the upper steering column (1) to the vise.



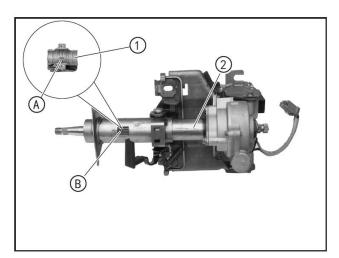
- Punch the center of the steering lock tamper-resistant bolt (1) by an electric drill to remove the bolt head, and then take off the fixing cover.
- Dismount the steering lock (2) and screw out the remaining bolts from the steering lock with vice.

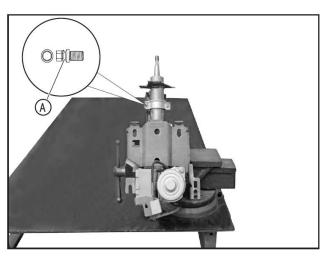
A CAUTION

- Ensure that the steering column is subject to external force when fixing it to the bench vice, so as to avoid damage to motor, EPS ECU, etc.
- Be careful when using the electric drill, and do not damage the aluminum part of the steering lock cylinder.
- Clear the scrap iron from drilling to avoid parts damage due to contamination.



 Align the boss A on the steering lock with the mounting hole B on the steering column, and refit the steering lock (1) onto the steering column (2).





- Insert the key before the hexagon head A is broken. Confirm that the key can rotate freely to each position, and can be turned to LOCK position to lock the steering shaft before breaking the hexagon head. After breaking the hexagon head, check if the key can be turned to and from position "LOCK". If the key incurs seizure, do refitting.
- Refit the steering column assembly. (Refer to "Removal and Refitting of Steering Column Assembly")
- Connect the battery negative cable.
- Check if the steering lock works normally and if the ignition switch can be turned freely.

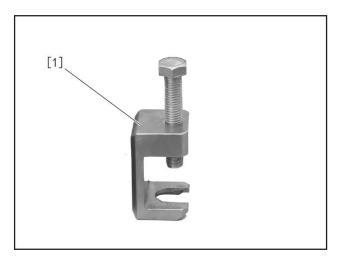


Removal and Refitting of Tie Rod Outer Ball Joint

1 - Protection

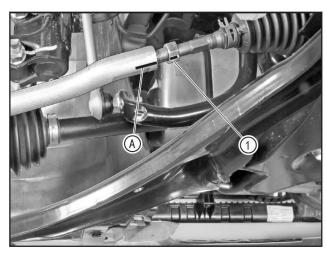
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Special tools

Steering tie rod ball pin removal tool (AX70802) [1].

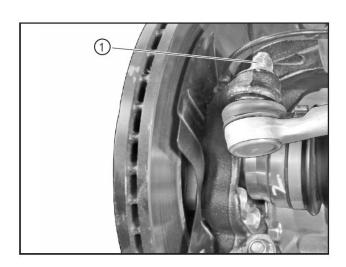


3 - Removal

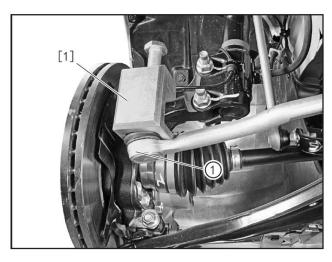
- Lift the vehicle as appropriate, and remove the front wheels. (Refer to "Removal and Refitting of Front Wheels")
- Unscrew the lock nut (1) with the 17mm wrench.

A CAUTION

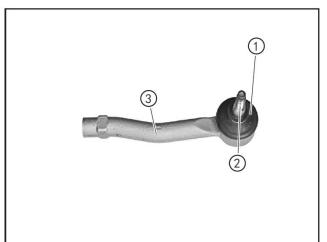
 Mark "A" on the junction of tie rod outer and inner ball joints to facilitate alignment for installation.



 Remove the fixing nut (1) from tie rod ball pin with the 14mm socket.



 Disconnect the tie rod ball pin from hub with the steering tie rod ball pin removal tool [1], and counterclockwise rotate the tie rod outer ball pin assembly (1) to remove it.



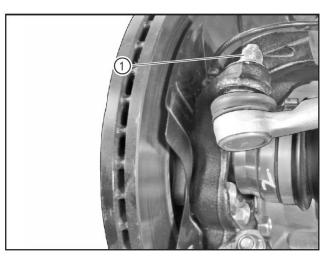
4 - Check

 Check the dust cover (1) of tie rod ball pin assembly for damage, crack or corrosion; check the tie rod ball pin (2) for looseness, the ball pin conical area for damage and out-of-round, or the steering knuckle arm conical hole for elliptical wear; if any, replace the tie rod outer ball joint assembly (3) or the steering knuckle.



5- Refitting

 Refit the steering tie rod ball joint to the tie rod inner ball joint, and screw it into position "A".



• Tighten the fixing nut (1) of tie rod ball pin to 41.7N·m with the 14mm socket.

A CAUTION

The fixing nut of tie rod is disposable and shall be replaced with a new one after each removal.

- Refit front wheels, lower the vehicle and do four-wheel alignment.
- After adjustment, tighten the lock nut of tie rod outer ball joint to 34.4N•m.

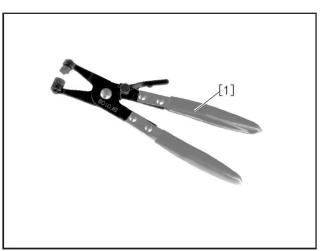


Removal and Refitting of Steering Gear Dust Cover

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



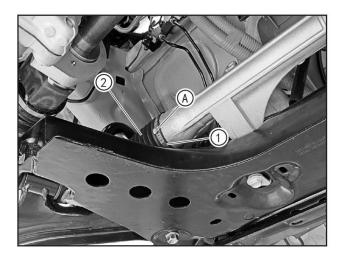
2 - Special tools

 Water hose clamp removal and refitting pliers (BF0109) [1].

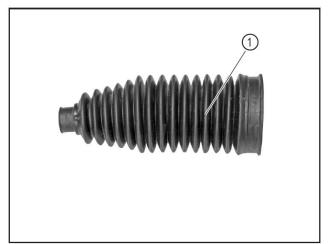


3 - Removal

- Remove tie rod outer ball joint (refer to "Removal and Refitting of Tie Rod Outer Ball Joint").
- Remove the lock nut (1).
- Remove the fixing clamp (2) from the steering gear dust cover with the water hose clamp removal and refitting pliers (BF0109).

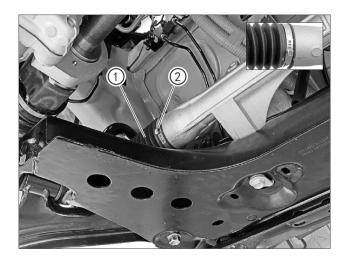


- Pry position A with a slotted screwdriver to loosen the clamp, and remove the fixing clamp (1) of the dust cover at one end of steering gear housing.
- Remove the steering gear dust cover (2).



4 - Check

Check the steering gear dust cover (1) for damage, crack or aging; if any, replace it.

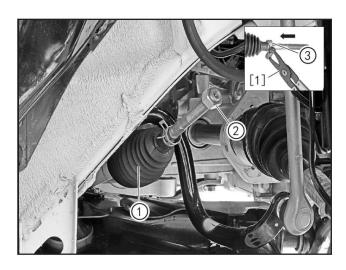


5- Refitting

 Refit the steering gear cover (1), and then refit the clamp (2).

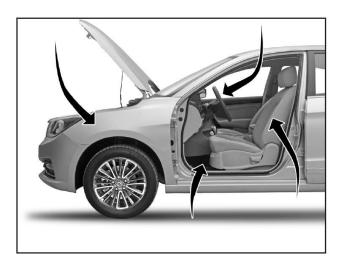
A CAUTION

 The clamp is disposable, and shall be replaced after each removal.



- Refit the steering gear dust cover (1) onto the steering gear, place the clamp on the steering gear, and install the fixing nut (2).
- Use the hose clamp removal pliers (BF0109) [1] to refit the clamp (3) in place.

- Refit the tie rod outer ball joint. (Refer to "Removal and Refitting of Tie Rod Outer Ball Joint")
- Conduct the wheel alignment, and check and adjust the front wheel alignment parameter to the specified value.

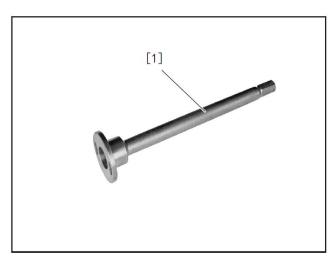


Removal and Refitting of Tie Rod Inner Ball Joint

1 - Protection

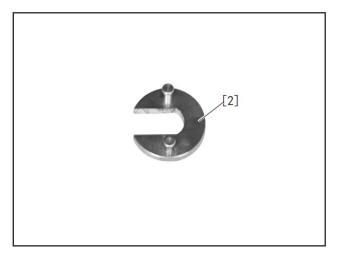
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

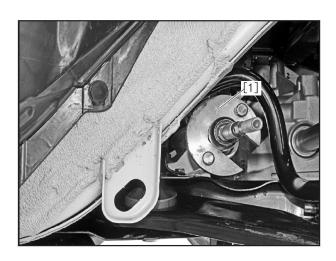


2 - Special tools

 Steering tie rod inner ball joint removal tool (A600804B) [1].

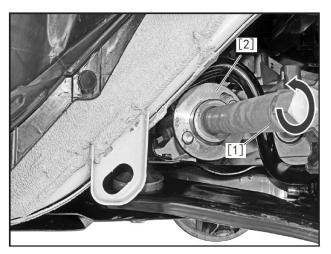


• Steering tie rod inner ball joint removal tool (A600804A) [2].

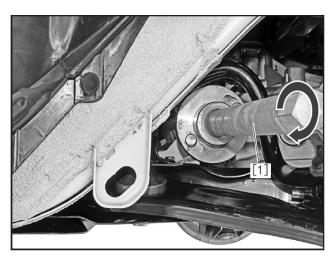


3 - Removal

- Remove steering gear dust cover (refer to "Removal and Refitting of Steering Gear Dust Cover"), and then take off the fixing nut.
- Install the steering tie rod removal tool [1] onto tie rod inner ball joint with the tool slot aligned with the ball joint flat notch.



- Install the steering tie rod removal tool [1] onto the steering tie rod removal tool [2].
- Remove tie rod inner ball joint by counterclockwise rotating the tie rod removal tool [1] with the 24 mm socket and torque wrench.



4- Refitting

 Rotate the tie rod removal tool [1] clockwise with the 24 mm socket and torque wrench to refit the tie rod inner ball joint.

- Take off the steering tie rod removal tools [A600804B] and (A600804A).
- Refit the dust cover. (Refer to "Removal and Refitting of Steering Gear Dust Cover")
- Refit the tie rod outer ball joint. (Refer to "Removal and Refitting of Tie Rod Outer Ball Joint")
- After refitting, adjust the wheel alignment, check the front wheel alignment parameters and adjust them to the specification value.

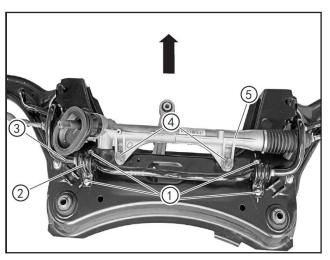


Removal and Refitting of Steering Gear Assembly

1 - Protection

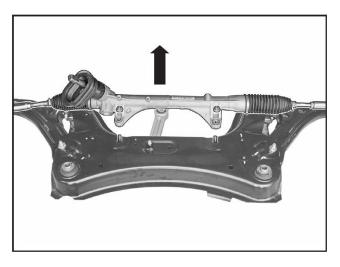
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



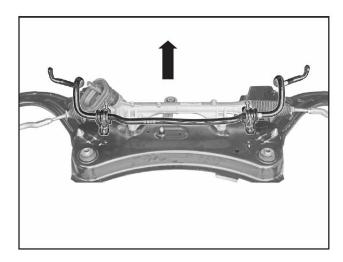
2 - Removal

- Remove the front bracket assembly. (Refer to "Removal and Refitting of Front Bracket Assembly") (the direction indicated by the arrow is the forward direction)
- Remove the 4 fixing bolts (1) (M8X32) of stabilizer bar rubber bush cover plate with the 12mm socket.
- Remove the stabilizer bar rubber bush, cover plate
 (2) and stabilizer bar (3).
- Remove the 2 fixing bolts and nuts (4) (M12X80) of the steering gear with the 17mm socket.
- Remove the steering gear assembly (5).



3- Refitting

 Refit the fixing bolts and nuts of steering gear with a tightening torque of 94N·m. (the direction indicated by the arrow is the forward direction)



- Refit the stabilizer bar rubber bush cover plate with bolt holes aligned. The tightening torque is 28N·m.
- Refit the front bracket assembly. (Refer to "Removal and Refitting of Front Bracket Assembly") (the direction indicated by the arrow is the forward direction)

A CAUTION

- While refitting fixing nuts between ball pin and steering joint, lubricant may be applied on threads to facilitate installation.
- Confirm that the steering wheel angle is correct.
- The four-wheel alignment is required after completion of refitting.





8.Steering

Power Steering System

8.2 Steering Control System

c

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

8.2

Steering Control System

Contents

Precautions	. 8.2-3
Precautions on Service of EPS	. 8.2-3
Service Data and Specifications	. 8.2-4
Technical Parameters	. 8.2-4
Tightening Torque	. 8.2-4
System overview	. 8.2-5
Function Description for Control System Components	. 8.2-5
Location	. 8.2-7
Troubleshooting	. 8.2-8
Definitions of EPS ECU Pins	. 8.2-8
EPS Common Fault Troubleshooting Table	. 8.2-9
Data Flow	. 8.2-9
EPS	8.2-10
Removal and Refitting of Steering Control Unit	8.2-10
EPS Motor Inspection	8.2-12

Precautions for Service of EPS

Check or confirm the following items during fault diagnosis:

- If a fault occurs, check possible causes of such fault as lighting of EPS warning lamp, according to the condition of part sent for repair by the customer.
- Check whether tire pressure and dimension are appropriate and whether the specified parts, such as steering wheel and control unit, are original genuine ones.
- Check whether steering column assembly and steering gear assembly are properly connected (without bolt looseness, damages of control lever, dust cover and sealant, grease leakage, etc.)
- Check whether wheel alignment is proper.
- Check whether each connecting rod and suspension are properly installed.
- Check whether battery voltage is normal.
- Before connecting or disconnecting the steering controller wire harness connector, turn off the ignition switch and disconnect the battery negative cable.

Technical Parameters

Steering controller	Rated voltage	12V
	Rated current	65A
	Output power	420W
	Ambient temperature	-40℃~+58℃

Tightening Torque

S/N	Name	Torque (N⋅m)
1	Steering controller fixing bolts	9.5

Function Description for Control System Components

Components	Function
	It sends the optimum auxiliary torque signal to the EPS motor.
Steering controller	It reduces signal sent to the EPS motor in case of continuous overuse of power steering, to protect the EPS motor and steering controller.
	Through "Safety - failure" mode function, it will stop sending signal to the EPS motor and enable manual steering mode once EPS system fault is detected.
EPS motor	It generates auxiliary torque based on the control signal sent by the steering controller.
Torque sensor	It monitors the steering force of steering wheel and sends the sensor signal to the steering controller.
Reduction gear	It increases auxiliary torque generated by the motor through the worm gear and transmits it to the steering column.
EPS warning lamp	It will light up when the electrical system of EPS is found to be faulty.
ABS Hydraulic Unit	It sends following signals to the steering controller through CAN communication: Vehicle speed signal
Instrument Cluster	It sends following signals to the steering controller through CAN communication: Vehicle speed signal

Reduction gear

• It increases auxiliary torque generated by the EPS motor through the reduction gear and outputs it to the steering column shaft.

EPS warning lamp

- It will light up when the EPS is faulty. This shows that "Safety failure" mode and manual steering mode have been enabled (greater steering force for controlling the steering wheel is required).
- It will also light up when the ignition switch is turned to "ON" in order to check malfunction indicator lamp. If the system works normally, it will go out when the vehicle is started.

EPS warning lamp indication

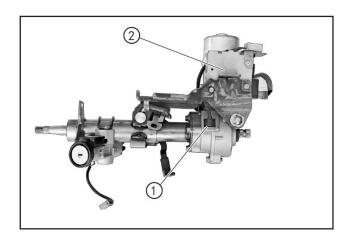
Status	EPS warning lamp
Inspection of EPS warning lamp	It goes on when the ignition switch is turned to ON, and goes off after the vehicle is started.
EPS fault	ON
Except for cases mentioned above (system works normally)	OFF

EPS motor

• It generates EPS motor auxiliary torque based on the control signal sent by the steering controller.

Torque sensor

• Torque sensor (1) detects steering torque and sends signal to the steering controller (2).

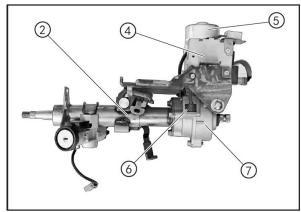


"Safety-failure" Mode Function

- Any system fault will be detected by the control unit, and meanwhile, EPS warning lamp on the instrument cluster will go on to indicate the fault.
- When EPS warning lamp goes on, manual steering mode will be enabled. (greater steering force is required to control the steering wheel in this case.)



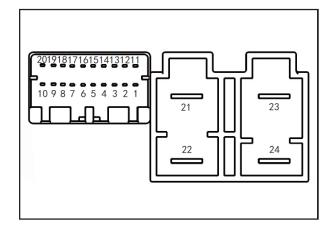




1. Instrument cluster	4. Steering controller	7. Reduction gear
Steering controller and motor assembly Steering controller and motor assembly		
3. EPS warning lamp	6. Torque sensor	

Definitions of EPS control unit pins





Terminal No.	Terminal name	Terminal definition
1	NC	#
2	E2	Sensor GND
3	VCC1	Sensor power supply +5V (reserved)
4	NC	#
5	TS	Sensor auxiliary circuit signal
6	DNL	Diagnostic output (reserved)
7	SPD	Vehicle speed signal (reserved)
8	DNS	Diagnostic switch (reserved)
9	NC	#
10	IG1	Ignition signal
11	VCC2	Sensor power supply +5V
12	SG	Housing GND
13	TM	Sensor main circuit signal
14	CAN-G	CAN shield ground (reserved)
15	CAN-H	CAN-H
16	CAN-L	CAN-L
17	NC	#
18	NC	#
19	IGP	
20	SDL	K-line (reserved)
21	+BB	Power supply 12V
22	E1	GND
23	MR	Motor output (M-)
24	MB	Motor output (M+)

Table for EPS Common Faults Diagnosis

DTC	Description	Set condition	Fault causes
C1011	Power supply abnormality	Battery voltage ≥ 17V or battery voltage ≤ 9V	Power supply abnormality
U0001	Abnormal CAN communication	CAN failing to receive message continuously, or bus abnormality	CAN communication I/F fault
C1013	Abnormal IG power	IG voltage ≥ 23V or IG voltage ≤ 3V when CAN receives vehicle speed signal continuously	IG-I/F fault
C1014	Torque sensor abnormality	Torque signal ≥ 4.7V or torque signal ≤ 0.3V	Torque signal I/F fault
C1015	Abnormality of motor terminal	ECU internal fault	Motor terminal abnormality Voltage I/F fault
C1016	Motor position sensor abnormality	ECU internal fault	I/F fault of motor position signal
C1017	Motor disconnection	ECU internal fault	Motor terminal voltage I/F fault Motor relay ECU motor poor connection
C1021	Temperature sensor fault	ECU internal fault	Temperature sensor fault
C1022	CPU fault	ECU internal fault	CPU fault
C1023	Interruption means fault	ECU internal fault	Power supply relay fault Motor relay
C1024	Other ECU internal faults	ECU internal fault	ECU internal power fault
C1025	CPU fault	ECU internal fault	CPU fault
C1026	EEPROM fault	ECU internal fault	EEPROM fault
C1027	EEPROM fault	ECU internal fault	EEPROM fault
C1028	ECU internal power fault	ECU internal fault	ECU internal power fault
C1031	Overcurrent	ECU internal fault	Current detection failure Drive axle fault ECU motor poor connection
C1236	Vehicle speed signal failure	CAN message loss	Failure of four wheel speed sensors
U0121	Abnormal CAN communication	CAN message loss	CAN signal loss
U0293	Abnormal CAN communication	CAN message loss	CAN signal loss

Data Flow

Name of data flow	Value	Units
Battery voltage	0 ~ 25	V
Torque sensor power supply voltage	0 ~ 25	V
Main circuit voltage of torque sensor	0 ~ 5.1	V
Torque sensor auxiliary circuit voltage	0 ~ 5.1	V
Assist motor current	-127 ~ 127	A
Vehicle speed	0 ~ 254	Km/h
Rotation speed	0 ~ 1	Rpm

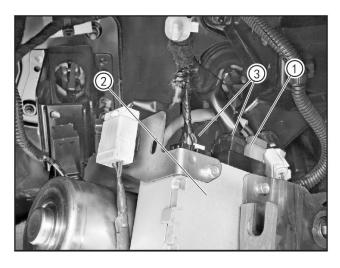


Removal and Refitting of Steering Control Unit

1 - Protection

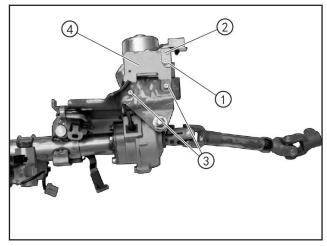
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

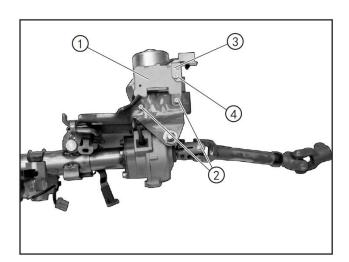


2 - Removal

- Remove the steering column assembly.
- Press the central clip of the connector, and disconnect the EPS motor connector (1) and 2 connectors (3) of steering controller (2).

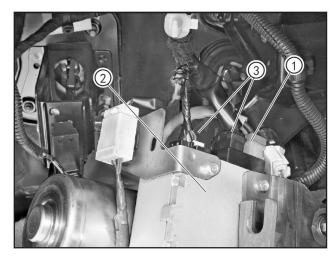


- Remove the fixing bolt (1) (M5×10) of the torque sensor connector mounting bracket with the 8mm socket.
- Move away the mounting bracket (2) of the torque sensor connector.
- Remove the 2 fixing bolts (3) (M5x14) of steering controller.
- Remove the steering controller (4).

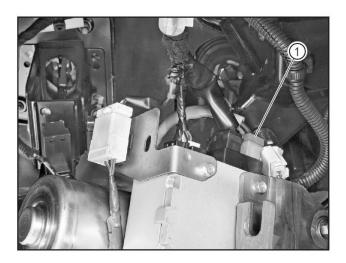


3- Refitting

- Refit the steering controller (1) with bolt holes aligned, and install the bolts (2) (M5X14) with a tightening torque of 9.5N·m.
- Align the bracket (3) with the bolt hole, and install the fixing bolt (4) (M5X10) of the torque sensor connector bracket.

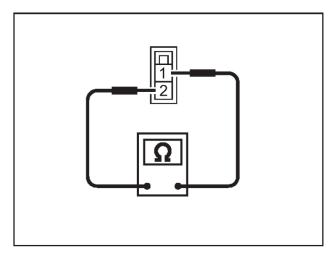


• Refit the EPS motor connector (1) and 2 connectors (3) of the steering controller (2).



EPS Motor Inspection

- Turn off the ignition switch, and disconnect battery negative cable.
- Press the central clip of connector, and disconnect the EPS motor connector (1).



- Measure the resistance between terminals of EPS motor connector with an ohmmeter.
- Standard resistances: ≤ 0.1Ω
- In case of any abnormality, replace the steering column assembly.





9.Restraint System

9.1 Seat Belt

Supplemental Restraint System

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company After-sales Service Technical Document

9.1

Seat Belt

Contents

Precautions	9.1-3
Precautions for Servicing Seat Belt	9.1-3
Precautions after Collision	9.1-3
Preparations	9.1-4
Special tools	9.1-4
System Overview	9.1-5
Structure and Features	9.1-5
Front Seat Belt	9.1-7
Removal and Refitting of Driver's Seat Belt	9.1-7
Removal and Refitting of Front Passenger's Seat Belt	9.1-14
Rear Seat Belt	9.1-20
Removal and Refitting of Rear Seat Belt	9.1-20
Removal and Refitting of Child Safety Seat Anchorage	9.1-24

Precautions for Servicing Seat Belt

- Before removing front seat belt retractor assembly, turn off the ignition switch, disconnect battery cables, and wait for at least 3 min.
- Do not use the electric testing equipment to check the front seat belt retractor.
- Do not use the buckle or seat belt assembly which is damaged during disassembly.
- Replace the seat belt fixing bolt if deformed or worn.
- Do not lubricate the latch plate and buckle.
- Replace the seat belt assembly rather than repairing it if its any part is faulty. if any part of it is faulty.
- Replace the seat belt assembly if the seat belt is broken, worn or damaged.
- Replace with original Dongfeng seat belt assembly.

Precautions after Collision

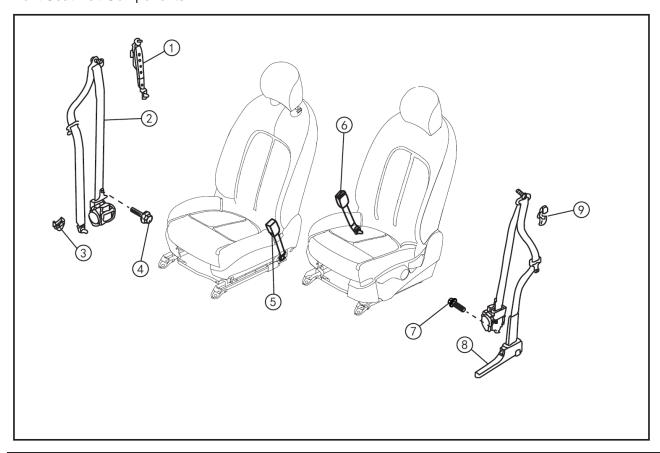
- After any collision, check all seat belt assemblies, including seat belt retractors and other metal parts.
- If the seat belt is intact and works well after a slight collision, it is also recommended to replace those seat belt assemblies used when the collision occurs. Or, serious personal injury may be caused by an accident. The belt damaged or functions improperly shall also be replaced even though it is not used in the collision. If a front collision resulting in airbag deployment happens, even if the seat belt is not used when the collision happens, the seat belt assembly with pretentioner shall also be replaced.
- In following cases, please replace the seat belt assembly (including its fixing bolts):
 - Seat belt is being used when the collision happens (except that the collision is very slight, and the seat belt, retractor and buckle can well, not to mention any damage).
 - The seat belt is damaged during the accident. (That is to say, the belt is damaged, and the retractor or guider is bent.)
 - Seat belt anchorage is damaged during accident. Before installing a new seat belt assembly, check the seat belt anchorage for damage or deformation, and repair it when necessary.
 - Replace the seat belt fixing bolt if deformed or worn.
 - If a collision resulting in airbag deployment happens, even if the seat belt is not used when the collision happens, the seat belt assembly shall also be replaced.

Special tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing interior trims

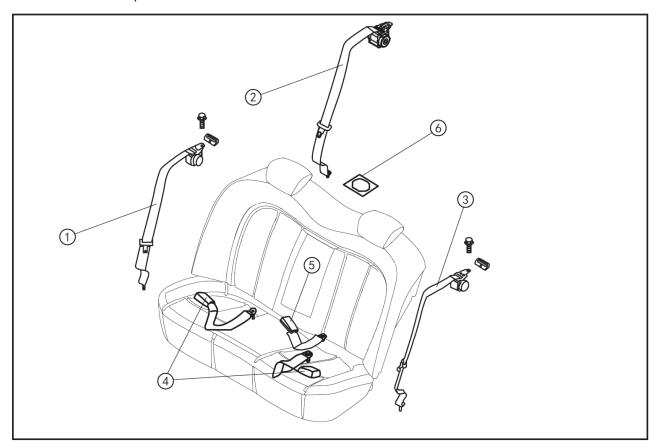
Structure and Features

Front Seat Belt Components

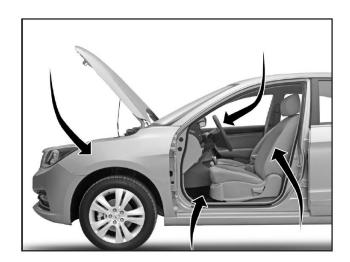


Seat belt fixing adjuster	4.Bolt	7.Bolt
2. Right seat belt retractor assembly	5. Right buckle assembly	8. Left seat belt retractor assembly
3. Bolt cover	6. Left buckle assembly	9. Guide ring cover

Rear Seat Belt Components



1. Right rear seat belt	3. Left rear seat belt	5. Rear middle buckle assembly
2. Rear middle seat belt	4. Rear buckle assembly	6. Seat belt retractor damping pad

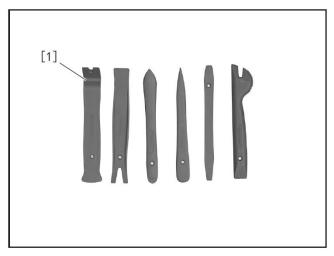


Removal and Refitting of Driver's Seat Belt

1 - Protection

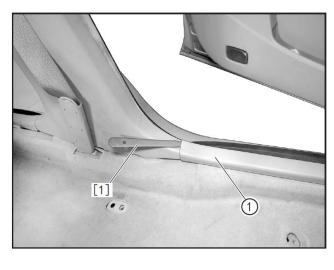
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Recommended tools

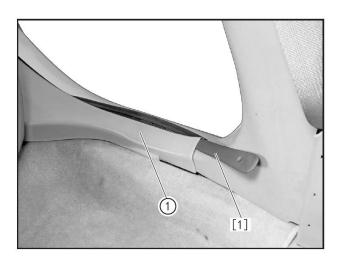
Interior trim removal tool (BF1102) [1].



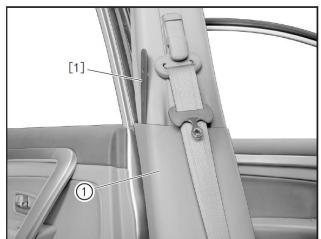
3 - Removal

A CAUTION

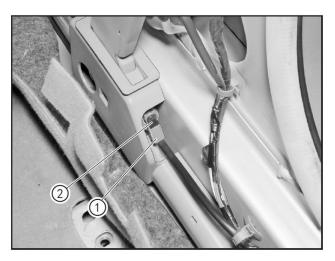
- Keep seat belt retractor clean during its removal.
- Use the scan tool to check the restraint system for DTCs, and if any, clear it first.
- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Move the driver's seat forward to the utmost position for easy removal of the seat belt.
- Remove the front door sill inner protective plate (1) with the interior trim removal tool (BF1102) [1].



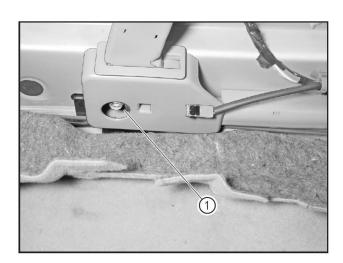
Remove the rear door sill inner protective plate (1) with the interior trim removal tool (BF1102) [1].



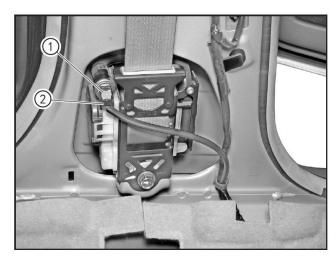
Remove the middle pillar lower protective plate (1) with the interior trim removal tool (BF1102) [1].



• Lift the carpet to expose the connector (1), pry up the lock lever (2) in the connector with the small slotted screwdriver to unlock the connector, and then disconnect the pretentioner connector (1) at the end of seat belt.



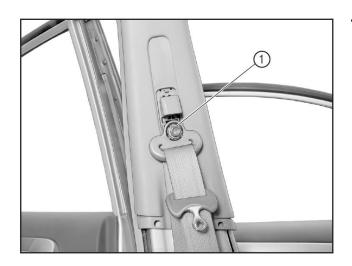
Remove the fixing bolt (1) of the pretensioner with the 14mm socket, and then take down the pretensioner horizontally.



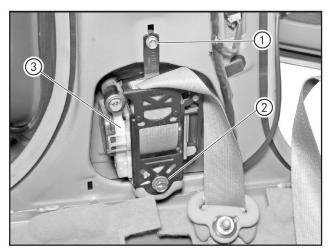
• Pry up the lock lever (1) in the connector with the small slotted screwdriver to unlock the connector, and then disconnect the pretentioner connector (2) in the seat belt retractor.



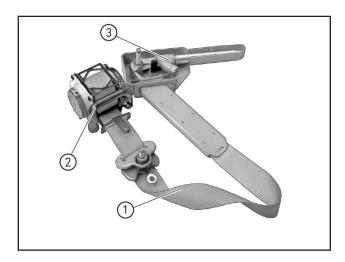
Pry up the shoulder belt fixing guide ring cover (1) with the interior trim removal tool (BF1102).



 Remove the upper fixing bolts (1) of the seat belt retractor assembly with the 14 mm socket.



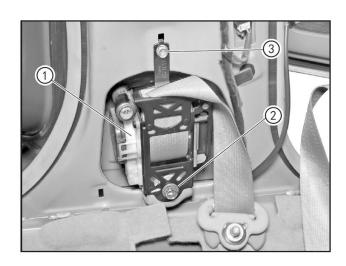
- Remove the upper fixing bolt (1) (M6×15) of retractor with the 10mm socket.
- Remove the lower fixing bolt (2) (M10×25) of retractor with the 14mm socket.
- Take out the retractor (3) horizontally.



4 - Check

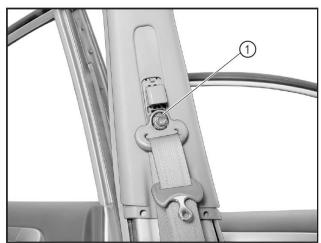
A CAUTION

- Neither repair or disassemble the seat belt retractor (retractor components), nor measure its resistance.
- Replace the seat belt retractor (retractor assembly) if it falls from a high place.
- Check the seat belt webbing (1) for damage, and replace it if any.
- Retract the seat belt into the retractor (2) along the outlet without any deviation angle, and ensure that the retracting is smooth and that the retractor (2) is able to lock the seat belt when the webbing is pulled forcibly.
- Visually check the appearance of the seat belt retractor assembly (2). Check if the pretensioner in the retractor has been activated, and if the retractor (2) is found cracked, damaged or impacted strongly, and replace it if yes.
- Visually check if the pretensioner (3) at the end of seat belt has been activated, and if it is cracked, damaged or impacted strongly, and replace it if yes.

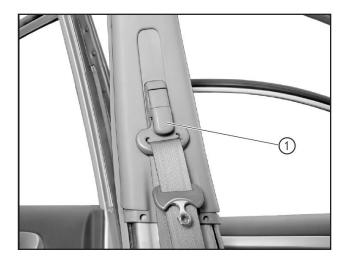


5- Refitting

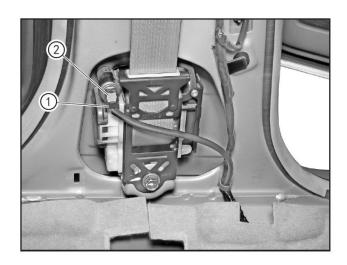
- Refit the retractor (1) into the mounting hole.
- Tighten the lower fixing bolt (2) (M10×25) of retractor with the 14mm socket to 49N·m.
- Tighten the upper fixing bolt (3) (M6×15) of retractor with the 10mm socket to 49N⋅m.
- Replace the fixing bolt if it is deformed or worn.



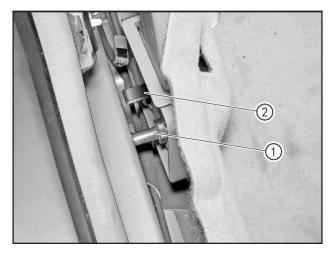
- Move the height regulator to the bottom, and then remove the upper fixing bolts (1) of the seat belt retractor assembly with the 14 mm socket.
- Check if the guide of the seat belt upper anchorage can rotate around the fixing bolt freely.



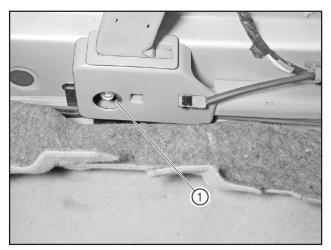
 Refit the upper fixing guide ring cover (1) of the seat belt.



• Connect the seat belt retractor connector (1) and press the lock lever (2).



• Insert the bolts (1) and dowel pins (2) of the pretensioner at the end of seat belt into the body mounting holes, and tighten the pretensioner at the end of seat belt horizontally.



- Tighten the fixing bolt (1) of pretentioner at the end of seat belt to 49N·m with the 14mm socket.
- Replace the fixing bolt if it is deformed or worn.



- Connect the connector of the pretensioner (1) at the end of seat belt, and press the lock lever.
- Refit the front/rear door sill inner protective plates and the center pillar lower protective plate.
- Check the system for DTCs after refitting, and if any, find out the causes and clear the DTCs.

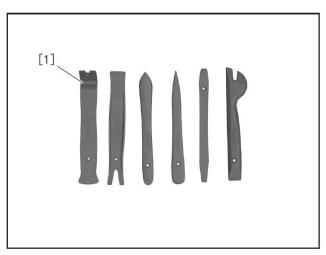


Removal and Refitting of Front Passenger's Seat Belt

1 - Protection

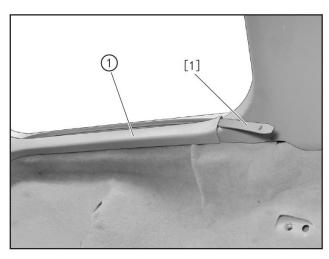
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



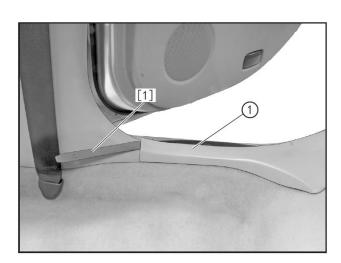
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

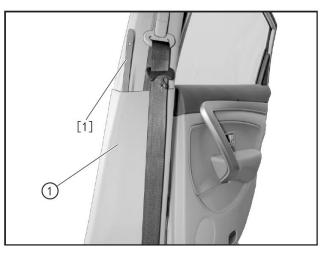


3 - Removal

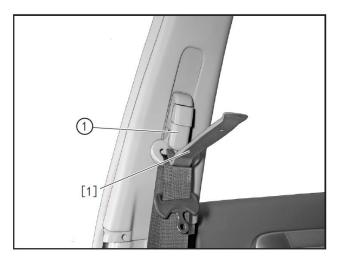
- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Move the front passenger's seat forward to the utmost position for easy removal of the seat belt.
- Remove the front door sill inner protective plate (1) with the interior trim removal tool (BF1102) [1].



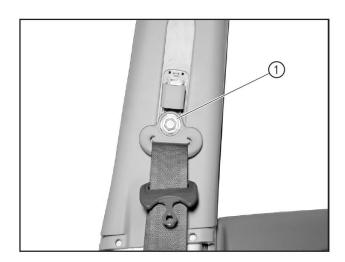
Remove the rear door sill inner protective plate (1) with the interior trim removal tool (BF1102) [1].



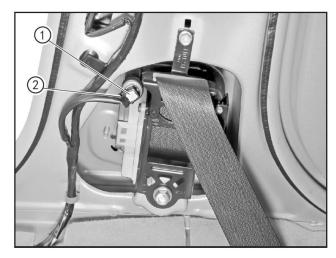
Remove the middle pillar lower protective plate (1) with the interior trim removal tool (BF1102) [1].



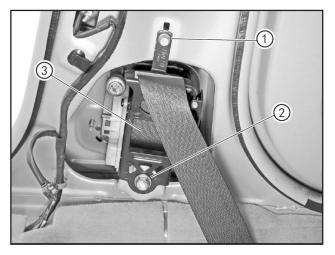
Pry up the shoulder belt upper fixing guide ring cover (1) with the interior trim removal tool (BF1102) [1], and then take it down.



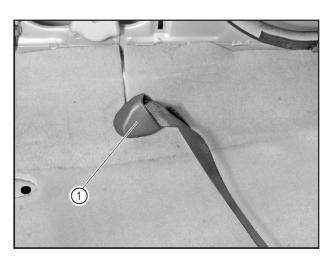
Remove the upper fixing bolts (1) of the seat belt retractor assembly with the 14 mm socket.



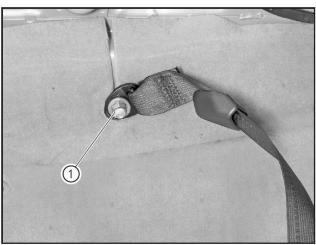
 Pry up the lock lever (1) on the connector with the small slotted screwdriver to unlock the connector, and then disconnect the pretentioner connector (2) in the seat belt retractor.



- Remove the upper fixing bolt (1) (M6x15) of retractor with the 10mm socket.
- Remove the lower fixing bolt (2) (M10×25) of retractor with the 14mm socket.
- Take out the retractor (3) horizontally.



Detach the fixing bolt cap (1) from the lower part of the seat belt along the seat belt.

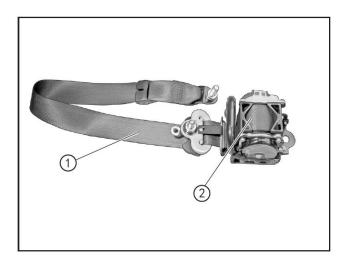


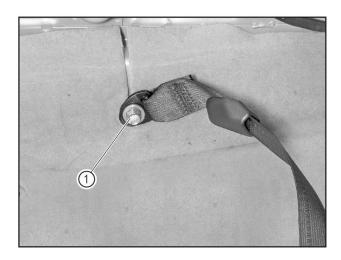
- Remove the lower fixing bolts (1) of the seat belt with the 14mm socket, and take it down.
- Take out the seat belt retractor assembly.



A CAUTION

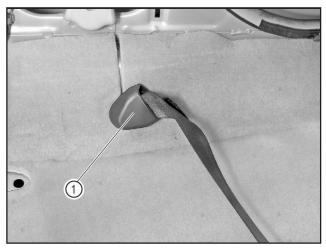
- Neither repair or disassemble the seat belt retractor (retractor components), nor measure its resistance.
- Replace the seat belt retractor (retractor assembly) if it falls from a high place.
- Check the seat belt webbing (1) for damage, and replace it if any.
- Retract the seat belt into the retractor (2) along the outlet without any deviation angle, and ensure that the retracting is smooth and that the retractor (2) is able to lock the seat belt when the webbing is pulled forcibly.
- Visually check the appearance of the seat belt retractor assembly (2). Check if the pretensioner in the retractor has been activated, and if the retractor (2) is found cracked, damaged or impacted strongly, and replace it if yes.



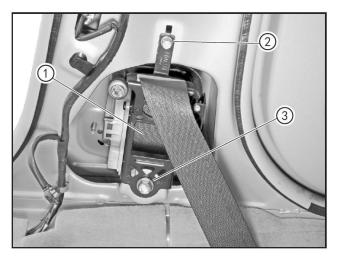


5- Refitting

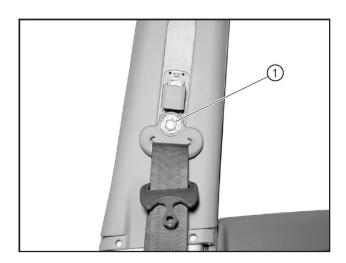
- Tighten the fixing bolt (1) of seat belt lower anchorage to 49N·m with the 14mm socket.
- Check that the lower connecting plate of the seat belt can rotate around the fixing bolt.



Refit the fixing bolt caps (1) of the seat belt lower anchorage along the seat belt downwards.

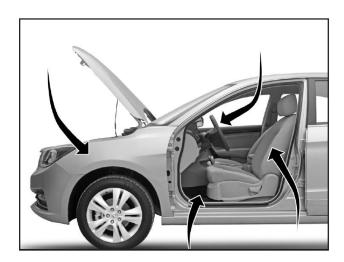


- Refit the retractor (1) with mounting holes aligned.
- Tighten the upper fixing bolt (2) (M6x15) of retractor with the 10mm socket to 49N·m.
- Tighten the lower fixing bolt (3) (M10×25) of retractor with the 14mm socket to 49N·m.
- Replace the fixing bolt if it is deformed or worn.



- Move the height regulator to the bottom, and then tighten the upper fixing bolts (1) of the seat belt retractor assembly with the 14 mm socket.
- After tightening, check that the upper anchorage of the seat belt can move freely on the height regulator. Check if the guide of the seat belt upper anchorage can rotate around the fixing bolt freely.

- Refit the seat belt upper guide ring cover, and the front/rear door sill inner protective plates and the center pillar lower protective plate.
- Check the system for DTCs after refitting, and if any, find out the causes and clear the DTCs.



Removal and Refitting of Rear Seat Belt

1 - Protection

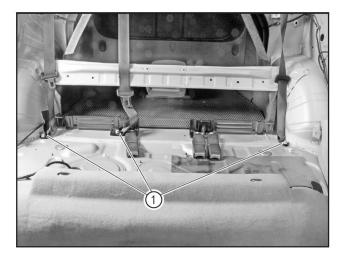
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



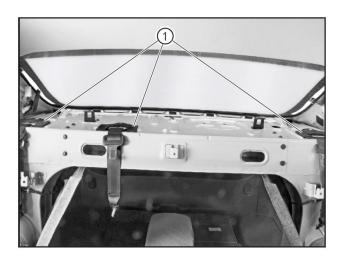
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

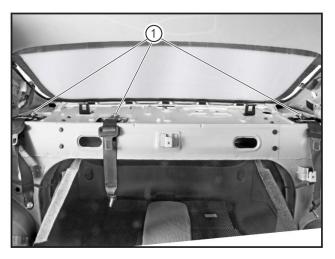


3 - Removal

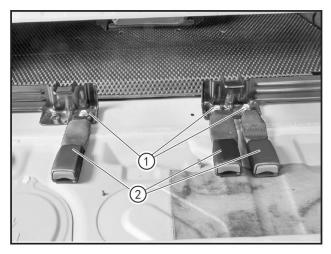
- Remove the rear seat. (Refer to "Removal and Refitting of Rear Seats" in "Seat").
- Remove rear partition protective plate. (Refer to "Removal and Refitting of Rear Partition" in "Interiors and Exteriors").
- Remove the seat belt upper fixing bolts (1) with the 14mm socket.



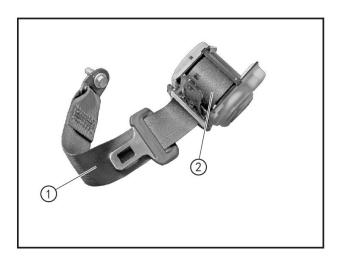
Remove the seat belt retractor damping pad (1).

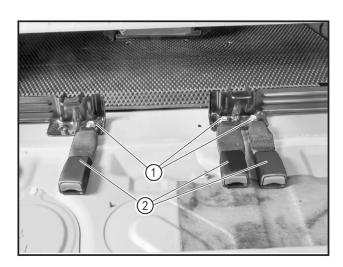


- Remove the fixing bolts (1) (M10X25) of the seat belt retractor with the 14mm socket and take it down.
- Take down the seat belt assembly.



- Remove the fixing bolts (1) (M10X25) of the rear middle seat belt buckle assembly with the 14mm socket.
- Take down the buckle assembly (2).





4 - Check

A CAUTION

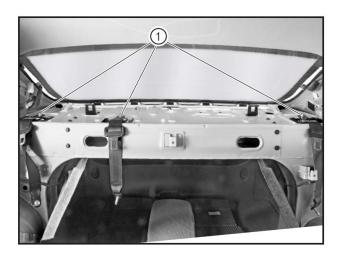
- Replace the seat belt retractor (retractor assembly) if it falls from a high place.
- Check the seat belt webbing (1) for damage, and replace it if any.
- Retract the seat belt into the retractor (2), and ensure that the retracting is smooth and that the retractor (2) is able to lock the seat belt when the webbing is pulled forcibly.
- Visually check the appearance of the seat belt retractor assembly (2). Check if the retractor (2) is cracked, damaged or impacted strongly, and replace it if yes.
- Check if the seat belt auto lock function is normal. If not, replace it.

5- Refitting

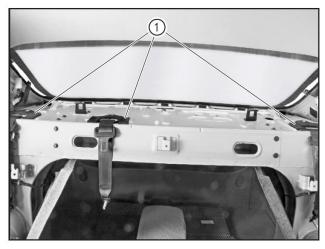
- Refit the buckle assembly (1) with mounting holes aligned.
- Tighten the fixing bolt (1) (M10×25) of rear center seat belt buckle with the 14mm socket to 49N·m.

A CAUTION

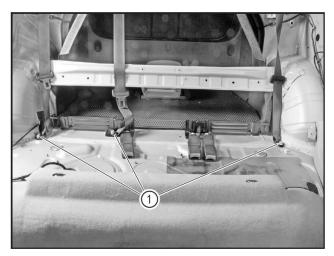
- Make sure that the center buckle is marked with "CENTER" during installation.
- After tightening the bolts, the buckle should face the front of the vehicle.



- Refit the seat belt assembly with mounting holes aligned.
- Tighten the fixing bolt (1) (M10×25) of seat belt retractor with the 14mm socket to 49N·m.
- Before installation, confirm if the mounting position of the seat belt is correct. Do not install the seat belt of the center seat on either side.



• Refit the seat belt retractor damping pad (1).



- Before installing the bolt (1), make sure that the seat belt is smooth without twisting, and then tighten the lower fixing bolt (1) of the seat belt with the 14mm socket to 49N·m.
- Refit rear partition protective plate. (Refer to "Removal and Refitting of Rear Partition" in "Interiors and Exteriors").
- Refit the rear seat. (Refer to "Removal and Refitting of Rear Seats" in "Seat").

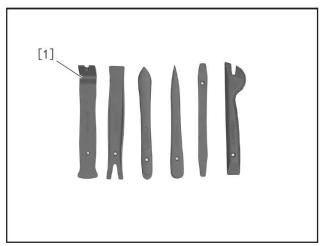


Removal and Refitting of Child Safety Seat Anchorage

1 - Protection

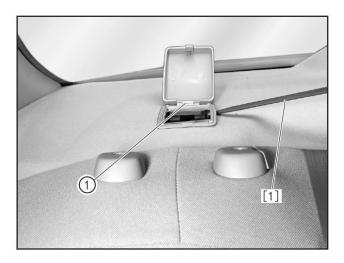
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



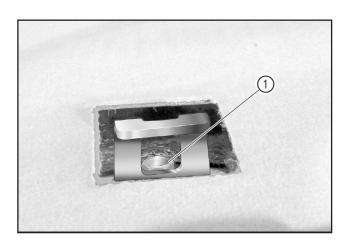
2 - Recommended tools

• Interior trim removal tool (BF1102) [1].

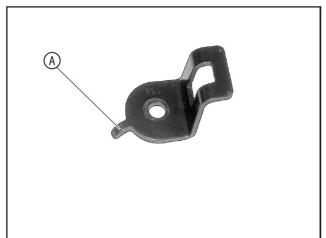


3 - Removal

 Open child seat buckle trim cover (1), and remove the trim cover (1) by the interior trim removal tool (BF1102) [1] (1 pcs on each side).

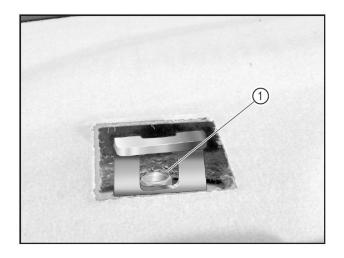


Remove the bracket fixing bolts (1) (M10X25) of the child safety seat anchorage with the 14 mm socket wrench, and take it down.



4- Refitting

 Tighten the dowel pin (A) for the child safety seat anchorage bracket into the mounting hole on the body after alignment.



- Tighten the bracket fixing bolts (1) (M10X25) of the child safety seat anchorage with the 14 mm socket to 49N·m.
- Refit the trim cover.





9.Restraint System

9.1 Seat Bel

9.2 Supplemental Restraint System

c

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

9.2

Supplemental Restraint System

Contents

Precautions	9.2-3
Precautions for Servicing SRS (Supplemental Restraint System)	9.2-3
Preparations	9.2-4
Special tools	9.2-4
Troubleshooting	9.2-5
ACU DTCs	9.2-5
Data Flow	9.2-6
System overview	9.2-7
Structure and Features	9.2-7
Frontal Airbag	9.2-8
Removal and Refitting of Driver's Airbag	9.2-8
Removal and Refitting of Front Passenger's Airbag	9.2-12
Airbag Control Unit (ACU)	9.2-17
Removal and Refitting of ACU	9.2-17

Precautions for Servicing SRS (Supplemental Restraint System)

- Never use an electric testing equipment to check the SRS circuit unless stated in this manual.
- Wait for 3 min at least before disconnecting the negative cable of the battery. That is because, within about 3 min after the cable is removed, the airbag and seat belt pretensioner may still deploy. Therefore, no work related with SRS connector and circuit should be performed within this 3min.
- It is prohibited to knock the steering column when removing the driver's airbag; otherwise, it may cause deployment or damage of the driver's airbag.
- Be careful when operating the airbag. Place the driver's airbag always with the front surface upward.
- Do self-diagnosis after any component is replaced, so as to check if SRS functions well.
- After the airbag deploys, if the front instrument panel assembly is damaged, replace it.
- After the front passenger's airbag deploys, replace the instrument panel.
- After replacing the ACU, connect the scan tool and change the function mode of ACU from factory mode to normal mode.

Preparations

Special tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing interior trims

ACU DTCs

• Use a special scan tool to perform fault diagnosis.

DTC	Fault description	Recommended countermeasures
B1012	Internal module fault	Replace ACU.
B1013	ECU's allowable reusing times exceeded	Replace ACU.
B1014	Impact data stored in the memory	Replace ACU.
B1015	Incomplete event data record	Replace ECU
B1018	No VIN	Write VIN
B1097	High battery voltage	Check the battery voltage.
B1098	Low battery voltage	Check the battery voltage.
B1017	Short circuit between ignition tubes	Check all wire harnesses and connectors of airbags/pretensioners.
B1021	Driver's airbag (loop 1) circuit high resistance	
B1022	Driver's airbag (loop 1) circuit low resistance	
B1023	Driver's airbag (loop 1) circuit short to ground	
B1024	Driver's airbag (loop 1) circuit short to power	
B1029	Driver's pretensioner (loop 3) high resistance	
B102A	Driver's pretensioner (loop 3) low resistance	
B102B	Driver's pretensioner (loop 3) circuit short to ground	
B102C	Driver's pretensioner (loop 3) circuit short to power circuit	
B1031	Front passenger's airbag module (loop 2) circuit high resistance	1. Visually check the connection condition of wire
B1032	Front passenger's airbag module (loop 2) circuit low resistance	harness.
B1033	Front passenger's airbag module (loop 2) circuit short to ground	 2. If any damage is found, replace the wire harness.
B1034	Front passenger's airbag module (loop 1) circuit short to power	3.Replace relevant wire harnesses.
B1039	Passenger's pretensioner (loop 4) high resistance	
B103A	Passenger's pretensioner (loop 4) low resistance	
B103B	Passenger's pretensioner (loop 4) circuit short to ground	
B103C	Front passenger's pretensioner (loop 4) circuit short to power	
B10B100	Driver's anchorage bar pretensioner (loop 9) high resistance	
B10B200	Driver's anchorage bar pretensioner (loop 9) low resistance	
B10B300	Driver's anchorage bar pretensioner (loop 9) circuit short to ground	
B10B400	Driver's anchorage bar pretensioner (loop 9) circuit short to power	
B1061	Front impact sensor short to ground	Check the seat belt and replace the impact sensor
B1063	Internal fault of front impact sensor	Replace impact sensor
B1064	No communication of front impact sensor	Check the seat belt and replace the impact sensor
B1065	Communication error of front impact sensor	Check the seat belt and replace the impact sensor
B107100	Front driver's side satellite sensor circuit short to ground	Check the seat belt and replace the impact sensor
B107300	Internal fault of driver's side impact sensor	Replace impact sensor
B107400	No communication of driver's side satellite sensor	Check the seat belt and replace the impact sensor
B107500	Communication error of driver's side impact sensor	Check the seat belt and replace the impact sensor
B108100	Front passenger's side impact sensor circuit short to ground	Check the seat belt and replace the impact sensor
B108300	Internal fault of front passenger's side impact sensor	Replace impact sensor
B108400	No communication of front passenger's side impact sensor	Check the seat belt and replace the impact sensor
B108500	Communication error of front passenger's side impact sensor	Check the seat belt and replace the impact sensor
B1091	MIL- RIL (output 1) short to power	Check the seat belt.
B1092	MIL- RIL open circuit or short to ground	Check the seat belt.
B1096	ENS short to power	Check the seat belt.
B1095	ENS (output 2) open circuit or short to ground	Check the seat belt.
	(1 · · / · 1 · · · · · · · · · · · · · ·	

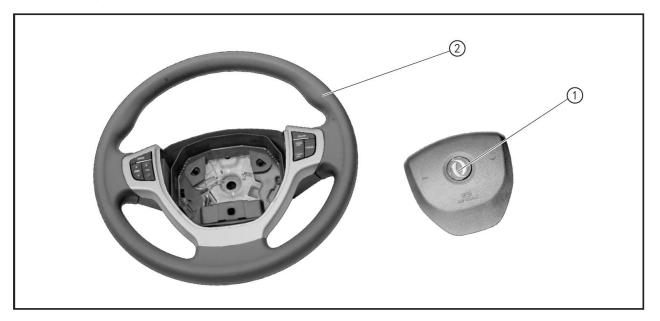
Troubleshooting

Data Flow

Name of data flow	Value	Units
Seat belt buckle switch (input 1)	Locked or unlocked	-
SRS indicator - RIL (output 1)	On or Off	-
Time notification signal -ENS (output 2)	200ms	-
Driver's airbag circuit 1 resistance	2.1-4.5	Ω
Front passenger's airbag loop 2 resistance	1.7-3.3	Ω
Driver's pretensioner (loop 3) resistance	1.7-3.3	Ω
Front passenger's pretensioner loop 4 resistance	1.7-3.3	Ω
Driver side airbag loop 5 resistance	1.7-3.3	Ω
Front passenger side airbag loop 6 resistance	1.7-3.3	Ω
Driver head air curtain loop 7 resistance	1.7-3.3	Ω
Front passenger head air curtain loop 8 resistance	1.7-3.3	Ω
Driver's pretentioner loop 9 resistance	1.7-3.3	Ω
ACU working status	On or Off	-
(Hardwire) speed	0-185	Km/h
Number of collisions	1	

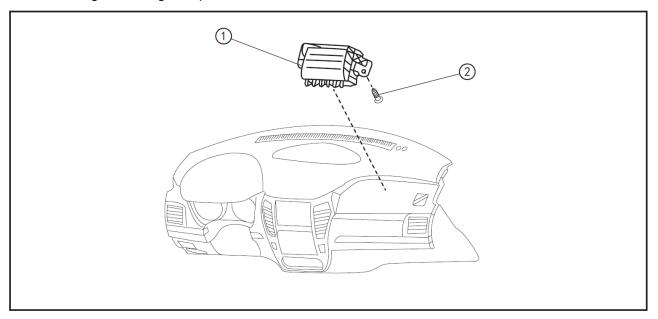
Structure and Features

Driver's Airbag Components



Driver's airbag
 Steering wheel

Front Passenger's Airbag Components



Front passenger's airbag
 2. Fixing bolt

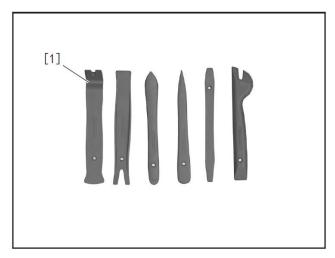


Removal and Refitting of Driver's Airbag

1 - Protection

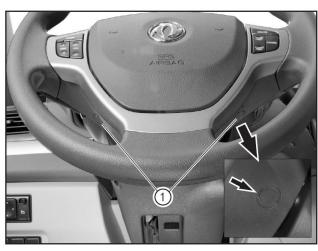
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



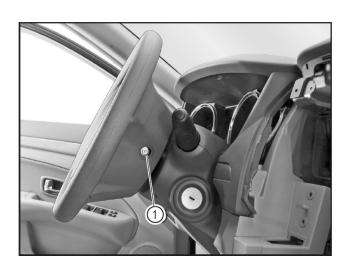
2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

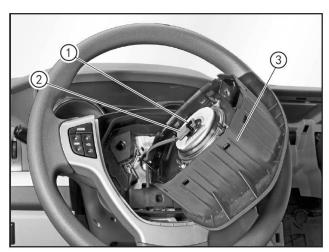
- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Remove the screw trim cap (1) under the steering wheel (1 for each side).



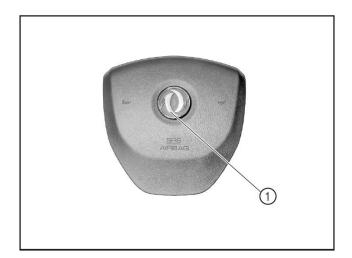
Remove the 2 airbag fixing bolts (1) under the steering wheel (1 for each side) with the T30 screwdriver bit.



Pry open the driver's airbag (1) with the interior trim removal tool [1].



- Turn over the driver's airbag, pry up the lock lever (1) on the connector with the small slotted screwdriver to unlock the connector, and then disconnect the airbag connector (2).
- Take off the driver's airbag (3).

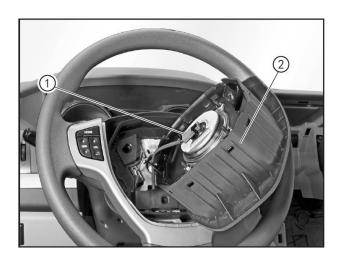


 Remove the driver's airbag (1) and place it up as shown.

4 - Check

A CAUTION

- Do not attempt to disassemble or repair the driver's airbag. If any abnormality occurs, replace the whole assembly with a new one.
- Neither measure the resistance of the driver's airbag nor disassemble it; otherwise, the airbag may deploy to cause personal injury.
- If the airbag falls from a high place, replace it for the sake of safety.
- Visually check if the airbag has been deployed, if the trim cover suffers cracks, and if the inflator shell is damaged or impacted strongly (such as drop). If any, replace with new ones.



5- Refitting

- Connect the airbag connector (1).
- Refit the driver's airbag (2) in such a way that the gap between the airbag and the steering wheel is uniform.



Tighten the 2 airbag fixing bolts (1) under the steering wheel (1 for each side) with the T30 screwdriver bit to 10N·m.



- Refit the 2 screw trim caps (1) at the lower part of steering wheel (1 for each side).
- Check the system for DTCs after refitting, and if any, find out the causes and clear the DTC.

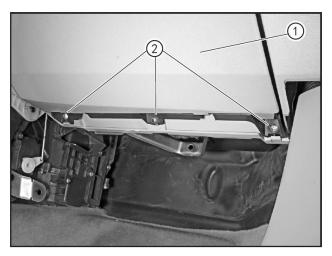


Removal and Refitting of Front Passenger's Airbag

1 - Protection

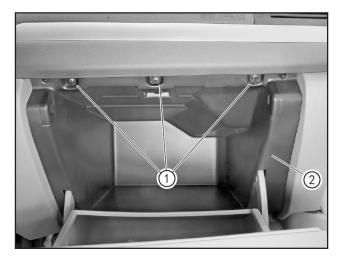
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Removal

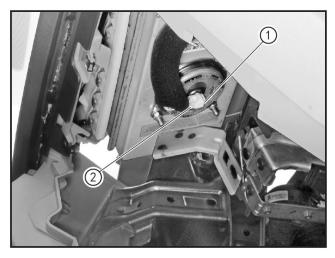
- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Remove 3 fixing screws (2) at the lower part of glove box (1) with the Phillips screwdriver.



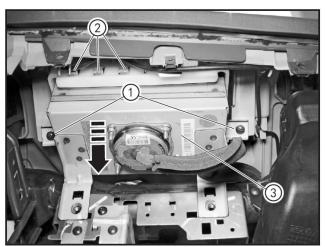
 Open the glove box and remove the 3 upper fixing screws (1) of the glove box assembly, and shake the glove box (2) gently to remove it.



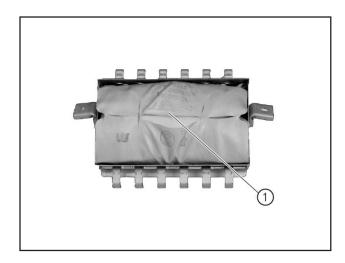
 Remove the 2 lower fixing bolts (1) (M8X20) of the front passenger's airbag with the 12mm socket, and take the airbag down.



 Pry up the lock lever (1) on the front passenger's airbag connector with the small slotted screwdriver to unlock the connector, and then disconnect the airbag connector (2).



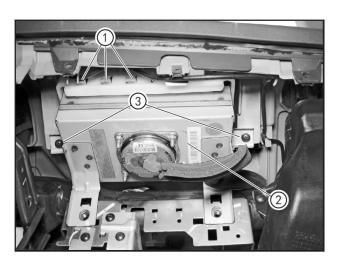
- Remove the 2 upper fixing screw (1) of the front passenger's airbag with the Phillips screwdriver.
- First gently push the front passenger's airbag inward and disconnect the internal claw of the airbag; disconnect the external claw (2) downward and remove the front passenger's airbag (3).



3 - Check

A CAUTION

- Do not attempt to disassemble or repair the front passenger's airbag. If any abnormality occurs, replace the whole assembly with a new one.
- Neither measure the resistance of the front passenger's airbag nor disassemble it; otherwise, the airbag may deploy to cause personal injury.
- If the airbag falls from a high place, replace it for the sake of safety.
- Visually check if the airbag (1) suffers cracks, and if the inflator shell is damaged or impacted strongly (such as drop). If any, replace with new ones.



4- Refitting

- Refit the front passenger's airbag (2) with the mounting hole and external claw (1) aligned, and gently push the front passenger's airbag inward to install the airbag internal jaw in place.
- Tighten the 2 upper fixing screw (3) of the front passenger's airbag with the Phillips screwdriver.



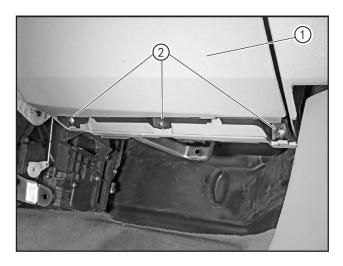
Connect the airbag connector (1) and confirm that it is locked effectively.



Tighten the 2 lower fixing bolts (1) (M8×20) of the front passenger's airbag with the 12mm socket to 24.5N⋅m.



• Refit the glove box assembly (1), and tighten the 3 fixing screws (2) of the glove box assembly .



- Remove 3 fixing screws (2) at the lower part of glove box (1) with the Phillips screwdriver.
- Check the system for DTCs after refitting, and if any, find out the causes and clear the DTC.

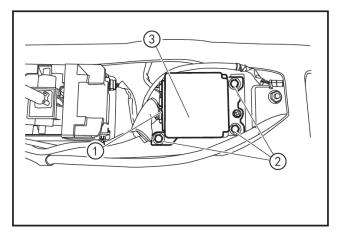


Removal and Refitting of ACU

1 - Protection

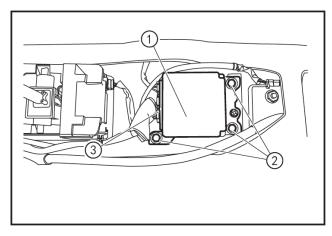
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Removal

- Turn off the ignition switch, disconnect the battery negative cable, and wait at least 3 min.
- Remove the console. (Refer to "Removal and Refitting of Console")
- Press the clip of the ACU connector (1) with the small slotted screwdriver, move the lock lever outward and then disconnect the connector (1).
- Remove the 3 fixing bolts (2) of the ACU with the 10mm socket, and then take out the ACU (3).



3- Refitting

- Refit the ACU (1) with the mounting holes aligned.
- Tighten the 3 fixing bolts (2) of the ACU with the 10mm socket to 24.5N·m.
- Connect the ACU connector (3).
- Check the system for DTCs after refitting, and if any, find out the causes and clear the DTC.

A CAUTION

 After replacing the ACU, connect the scan tool and change the function mode of ACU from factory mode to user mode.





10.Body	10.1	Closures
	10.2	Glass, Window and Rearview Mirror
	10.3	Roof
	10.4	Exteriors and Interiors
	10.5	Instrument Panel
	10.6	Seats
	10.7	Body Check
	10.8	Body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company After-sales Service Technical Document 10

10.1

Body and Door Locks

Contents

Precautions	10.1-3
Precautions for Service	10.1-3
Special Tools	10.1-3
Service Data and Specifications	10.1-4
Technical Parameters	10.1-4
Tightening Torque	10.1-5
Troubleshooting	10.1-6
BCM Data Stream	10.1-6
Hood	10.1-7
Removal and Refitting of Hood	10.1-7
Removal and Refitting of Hood Hinge	10.1-9
Hood Lock	10.1-10
Removal and Refitting of Hood Lock	10.1-10
Doors	10.1-13
Removal and Refitting of Front Door Assembly	10.1-13
Removal and Refitting of Rear Door Assembly	10.1-16
Removal and Refitting of Front Door Sealing Strip	10.1-19
Removal and Refitting of Rear Door Sealing Strip	10.1-21
Front Door Lock	10.1-24
Removal and Refitting of Front Door Lock Cylinder	10.1-24
Removal and Refitting of Front Door Outside Handle	10.1-28
Removal and Refitting of Front Door Inside Handle	10.1-31
Removal and Refitting of Front Door Lock Body	10.1-33
Rear Door Lock	10.1-36
Removal and Refitting of Rear Door Outside Handle	10.1-36
Removal and Refitting of Rear Door Inside Handle	10.1-42
Removal and Refitting of Rear Door Lock Body	10.1-44
Door Lock Catch	
Removal and Refitting of Door Lock Catch	10.1-47

Trunk lid	10.1-49
Removal and Refitting of Trunk Lid	10.1-49
Removal and Refitting of Trunk Lid Lock	10.1-52
Trunk Lid Hinge Torsion Bar	10.1-55
Removal and Refitting of Trunk Hinge Torsion Bar	10.1-55

Precautions for Service

- After removing or refitting the closures, be sure to adjust the fitting gap and check the opening and closing conditions.
- Check the lubrication of all parts and the damage and wear condition of all parts, apply grease or replace if necessary.

Special Tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing interior trim, clips, etc.
BF0512	Removal and refitting tool of trunk lid torsion bar		For assisting in removal of trunk lid hinge torsion bar

Parameters of coupling rod

Adjusted Gap of Hood



Part	Position	Clearance
Front bumper - front grille	A-A	0.2mm-2.2mm
Front bumper - headlamp	B-B	0.3mm-3.0mm
Front bumper - headlamp	C-C	0.3mm-3.0mm
Front bumper - front fender	D-D	0.0mm-0.7mm
Front bumper - hood	E-E	4.0mm-8.4mm
Front bumper - front grille	F-F	0.3mm-3.3mm

Trunk adjustment clearance



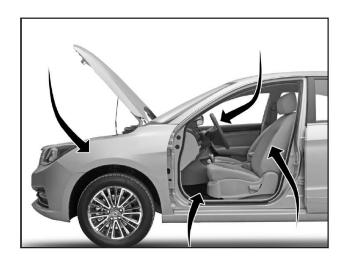
Part Pos		Clearance
Rear bumper - trunk lid	G-G	5.0mm-9.0mm
Rear bumper - rear combination lamp	H-H	0.2mm-3.0mm
Rear bumper - rear fender	I-I	0.0mm-0.7mm
Rear bumper - trunk lid	J-J	2.4mm-6.0mm

Tightening Torque

S/N	Name	Torque (N·m)
1	Hood hinge fixing nut	12.7
2	Hood lock fixing bolt	21.1
3	Door hinge fixing nuts	20.6
4	Door lock body assembly fixing bolts	5.8
5	Front door lock cylinder fixing bolts	5.1
6	Door buckle fixing bolts	16.7
7	Trunk lid hinge fixing nuts	5.5
8	Trunk lock fixing bolts	5.5

Data stream BCM

Name of data flow	Value	Unit
Speed-sensitive automatic locking	"0-disable	
Speed-Sensitive automatic locking	1-enable"	-
Body anti-theft alarm function	_	<u> </u>
Emergency brake double-flash function	_	<u> </u>
Hazard warning lamp switch	_	_
Trunk status switch	"0-Not Ajar 1-Ajar"	_
Left front door status switch	"0-Not Ajar 1-Ajar"	_
Right front door status switch	"0-Not Ajar 1-Ajar"	_
Left rear door status switch	"0-Not Ajar 1-Ajar"	_
Right rear door status switch	"0-Not Ajar 1-Ajar"	_
Trunk lid unlock switch	"0-Not Ajar 1-Ajar"	_
Door lock status switch	0-Unlock, 1-Lock	_
Rear wiper stop switch input status	_	_
Front wiper stop switch input status	0-Off, 1-On	_
Ignition 2	0-Off, 1-On	_
Ignition 1	0-Off, 1-On	_
Key detection switch	0-Off, 1-On	_
ACC	0-Off, 1-On	_
Left hazard warning lamp overload - overload counter	0-1000	_
Left hazard warning lamp overload - overload flag	"0 - no overload flag 1 - overload flag present"	_
Front fog lamp overload - overload counter	0-1000	_
Front fog lamp overload - overload flag	"0 - no overload flag 1 - overload flag present"	_
Position lamp overload - overload counter	0-1000	_
Position lamp overload - overload flag	"0 - no overload flag 1 - overload flag present"	_
Low beam overload - overload counter	0-1000	
Low beam overload - overload flag	"0 - no overload flag 1 - overload flag present"	_
High beam overload - overload counter	0-1000	_
High beam overload - overload flag	"0 - no overload flag 1 - overload flag present"	
PWL enable relay overload - overload counter	0-1000	_
PWL enable relay overload - overload flag	"0 - no overload flag 1 - overload flag present"	_



Removal and Refitting of Hood

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

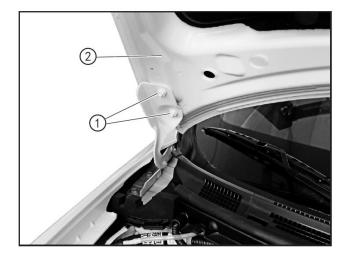
2 - Removal

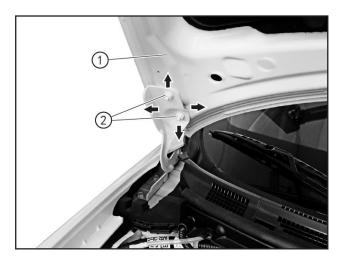
A CAUTION

- Two maintenance technicians are required for removing the hood as it is heavy and features instability of position in case of removal, so as to avoid falling and damaging the front windshield; Be careful not to scratch the vehicle body when carrying down the hood.
- When remove the connecting nut for connecting the hood and the hinge, pay attention that the reaction force of the hood stay bar will increase the instability of the hood.
- Open the hood and loosen its fixing nut (1) with the 13mm socket. (2 respectively on the left and right sides)
- One person supports the hood and the other person removes the hood fixing nuts, and then they carry down hood assembly (2).

A CAUTION

 When carrying down the hood assembly, avoid colliding with the body to avoid damaging the parts or body paint.





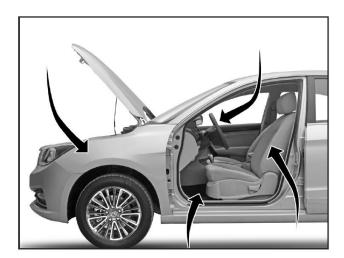


3- Refitting

- 2 workers are required for cooperation: align the fixing screw hole of hood (1) with the stud on hinge and then install in place, and then screw the fixing nut (2) of hood onto stud without tightening.
- Adjust the plane position of the hood by shaking the hood leftward, rightward, upward and downward, and after adjustment, tighten the fixing nut (2) of hood with the 13mm socket.

A CAUTION

- After the installation is completed, apply an appropriate amount of anti-corrosive coating to the fixing nut of hood.
- The longitudinal position of the hood can be adjusted by turning the cushion rubber plug (1).

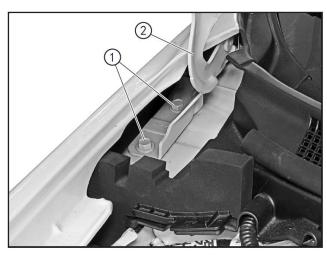


Removal and Refitting of Hood Hinge

1 - Protection

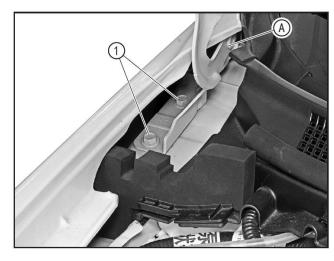
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- · Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Removal

- Remove the hood. (Refer to "Removal and Refitting of Hood" in this section)
- Remove the fixing bolt (1) of the hood hinge with the 13mm socket.
- Remove the hood hinge (2).

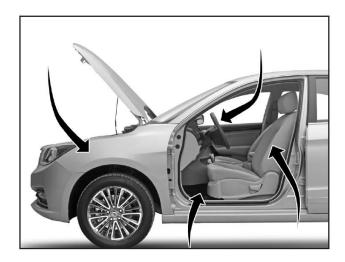


3- Refitting

- Apply a few of grease to the position A of hood hinge.
- Install the hood on the mounting surface, and tighten the fixing bolt (1) of the hood hinge with the 13mm socket.

A CAUTION

- After the installation is completed, apply an appropriate amount of anti-corrosive coating to the fixing bolt of hood hinge.
- Refit the hood. (Refer to "Removal and Refitting of Hood")

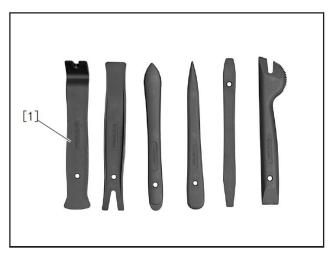


Removal and Refitting of Hood Lock

1 - Protection

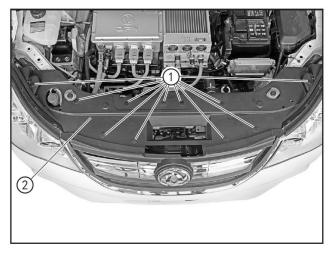
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



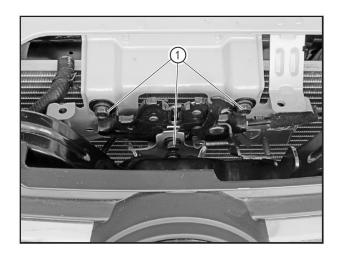
2- Recommended tools

Interior trim removal tool (BF1102) [1].

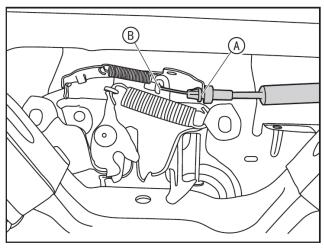


3 - Removal

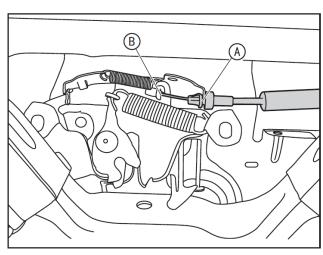
- Remove the fixing clip (1) on the front bumper upper cover plate with the interior trim removal tool (BF1102).
- Take down the front bumper upper cover plate (2).



Remove the fixing bolt (1) of the hood lock with the 13mm socket.

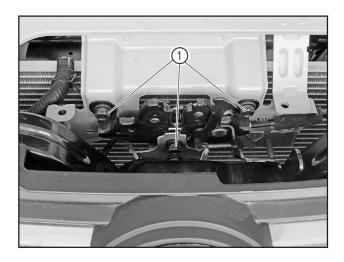


- Turn over the hood lock to make the cable of hood lock fully exposed, and detach the cable end of hood lock from the fixing ends (A) and (B) of the hood lock.
- · Remove the hood lock assembly.
- Check the components of hood lock assembly such as cable and spring for damage, and do cleaning.



4- Refitting

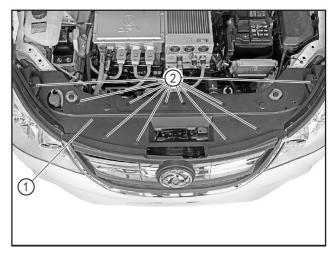
 Turn over the hood lock to make the cable of hood lock fully exposed, and fix the cable end of hood lock to the fixing ends (A) and (B) of the hood lock.



 Tighten the fixing bolt (1) of the hood lock with the 13mm socket.

A CAUTION

After the installation is completed, apply a few of grease to the locking portion of the hood lock assembly.



- Place the front bumper upper protective plate (1) on the mounting face.
- Clamp the retaining clip (2) of front bumper lower protective plate in place.

10.1



Removal and Refitting of Front Door Assembly

1 - Protection

Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

2 - Removal

♠ NOTE

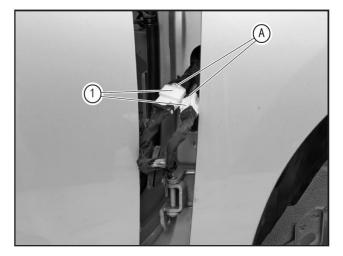
- Check the hinge shaft and hole for excessive wear before removal. Check the door hinge moving track and the door opening/closing boundary condition for variation or abnormality before removal, and if any, do not loosen the fixing bolt of the door hinge.
- Lower the door window to the bottom.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Open the front door to the full width, and remove the fixing bolt (1) of door stopper with the 10mm socket.
- Support the door under it with the wooden block or other objects.

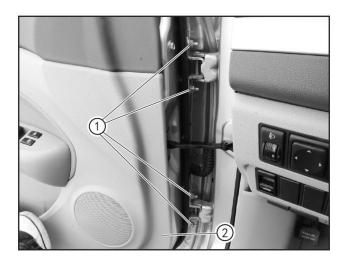


Tear off the sealing film of the door wire harness on the door post, pull the door wire harness connector out of the door post, and press the connector clip A, and disconnect the door connector (1).

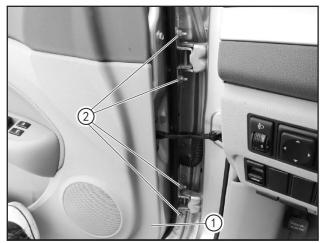
A CAUTION

Fasten the connector in the door post with a flexible cord to prevent it from retracting into the door post after disconnection.



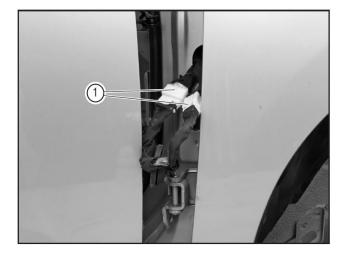


Hold the door assembly, remove the fixing nut (1) of door with the 12mm socket, and then carry down the door assembly (2).



3- Refitting

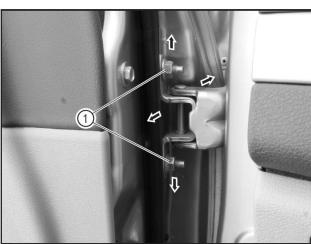
- Install the door assembly (1) in place with the bolts thereon aligned with the threaded holes on the door hinge.
- Hold the door assembly, screw in the fixing nut (2) of door, and then tighten the fixing bolt of door with the 12mm socket.



- Connect the door connector (1) in place.
- Insert the door connector into the door housing and install the wire harness plug properly.

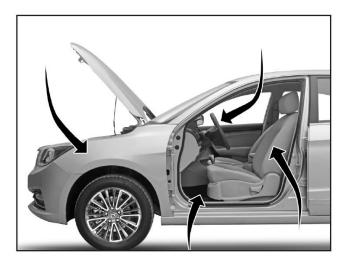


Tighten the fixing bolt (1) of the door stopper with the 10mm socket.



A CAUTION

- To adjust the fitting gap of door, loosen the fixing nut (1) of the door and adjust the door position leftward, rightward, upward or downward. For the specified value of fitting gap, refer to "Technical Parameters" in this section.
- After the installation and adjustment, apply an appropriate amount of anti-corrosive coating at each fixed point.
- After the installation and adjustment, apply a small amount of grease to each hinge.



Removal and Refitting of Rear Door Assembly

1 - Protection

Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Removal

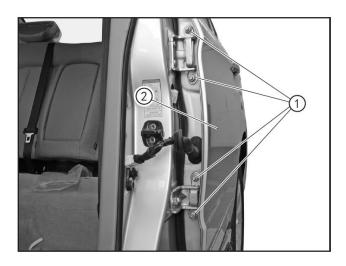
▲ NOTE

- Check the hinge shaft and hole for excessive wear before removal. Check the door hinge moving track and the door opening/closing boundary condition for variation or abnormality before removal, and if any, do not loosen the fixing bolt of the door hinge.
- · Lower the door window to the bottom.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Open the rear door to the full width, and remove the fixing bolt (1) of door stopper with the 10mm socket.
- Support the door under it with the wooden block or other objects.
- Remove the wire harness plug (1) outwards, press the connector clip A, and then disconnect the rear door wire harness connector (2).

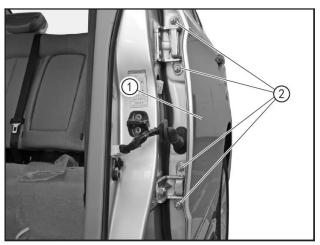


 Fasten the connector in the door post with a flexible cord to prevent it from retracting into the door post after disconnection.



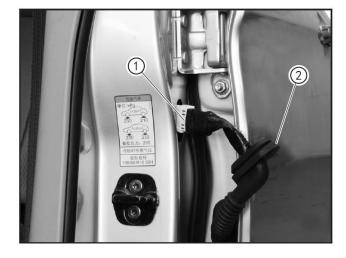


- One person holds the rear door assembly and the other removes the fixing nut (1) of rear door with the 12mm socket.
- Carry down the rear door assembly (2) with two workers work together.

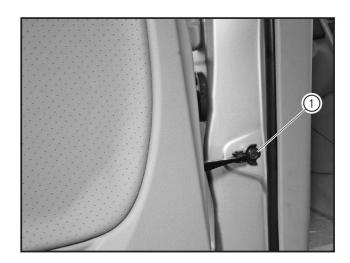


3- Refitting

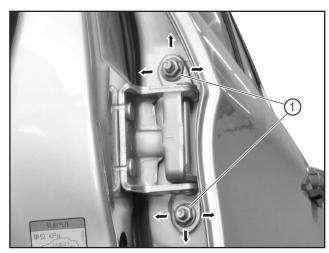
- Install the door assembly (1) in place with the bolts thereon aligned with the threaded holes on the door hinge.
- Hold the door assembly, screw in the fixing nut (2) of door, and then tighten the fixing bolt of door with the 12mm socket to 20.6N·m.



- Connect the rear door wire harness connector (1) in place.
- Refit the wire harness plug (2) in place.

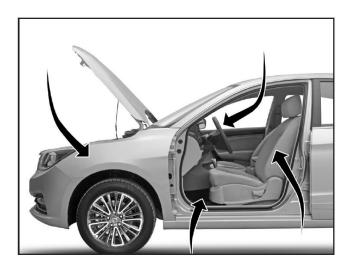


Tighten the fixing bolt (1) of the door stopper with the 10mm socket.



A CAUTION

- To adjust the fitting gap of door, loosen the fixing nut (1) of the door and adjust the door position leftward, rightward, upward or downward. For the specified value of fitting gap, refer to "Technical Parameters" in this section.
- After the installation and adjustment, apply an appropriate amount of anti-corrosive coating at each fixed point.
- After the installation and adjustment, apply a small amount of grease to each hinge.

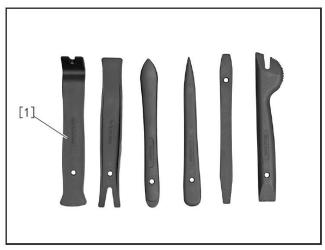


Removal and Refitting of Front Door Sealing Strip

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



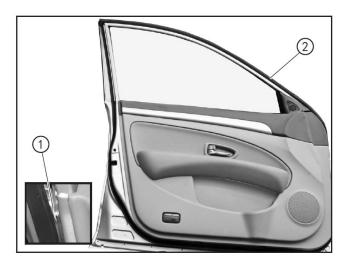
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

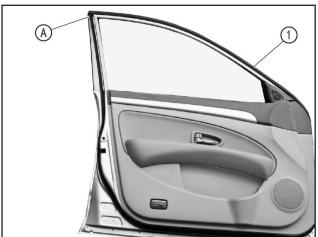


3 - Removal

 Open the front door to the full width, and remove the fixing bolt (1) (M6x25) of door stopper with the 10mm socket.



- Gently pull the door sealing strip outward to make the clip of sealing strip visible. Remove the clips (1) from the front door sealing strip with the interior trim removal tool (BF1102).
- Remove the front door sealing strip (2).



4- Refitting

 Install the front door sealing strip with the point A towards the upper side of rear edge of the door, and then clamp the clip of sealing strip (1) into the door securely

A CAUTION

Replace with a new fixing clip.



 Tighten the fixing bolt (1) of the door stopper with the 10mm socket.

A CAUTION

 After the installation is completed, place a dry paper strip on the edge of the sealing strip, and spray water to check the water tightness of the door sealing strip, and if the paper strip is not wet, it suggests that the sealing strip has a good water tightness without leakage.

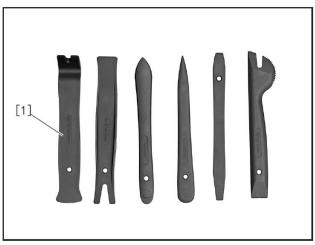


Removal and Refitting of Rear Door Sealing Strip

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



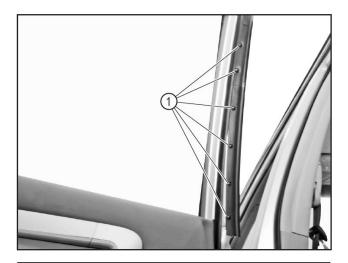
2 - Recommended tools

Interior trim removal tool (BF1102) [1].



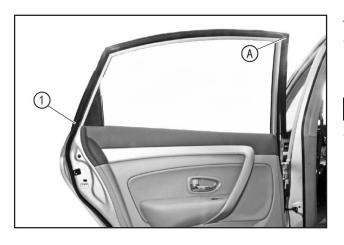
3 - Removal

• Open the rear door to the full width, and remove the fixing bolt (1) (M6×25) of door stopper with the 10mm socket.



- Detach the rear door sealing strip clip (1) with the interior trim removal tool (BF1102).
- Remove the rear door sealing sleeve (2).





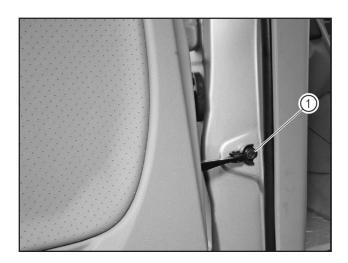
4- Refitting

Install the rear door sealing strip with the point A (with sharp angle) towards the upper side of front edge of the door, and then clamp the clip of sealing strip (1) into the door securely.

A CAUTION

Replace with a new fixing clip (A).

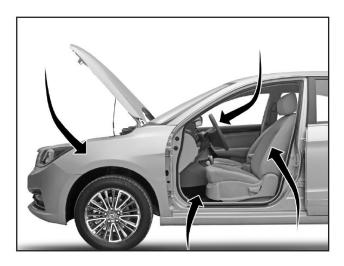
10.1



 Tighten the fixing bolt (1) of the door stopper with the 10mm socket.

A CAUTION

After the installation is completed, place a dry paper strip on the edge of the sealing strip, and spray water to check the water tightness of the door sealing strip, and if the paper strip is not wet, it suggests that the sealing strip has a good water tightness without leakage.

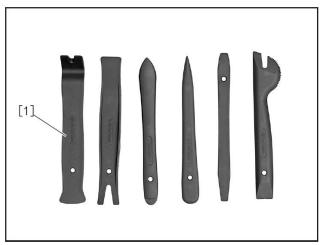


Removal and Refitting of Front Door Lock Cylinder

1 - Protection

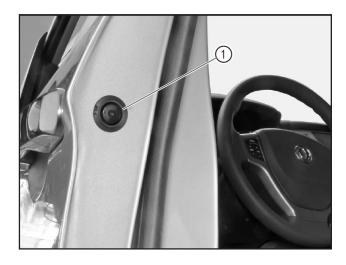
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



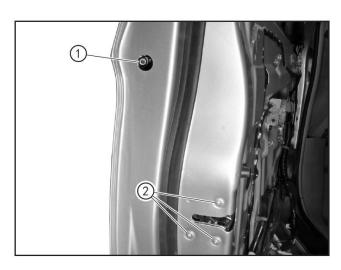
2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

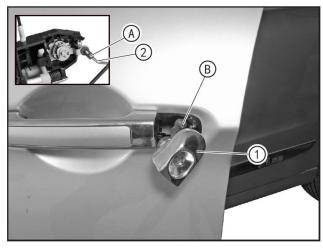
- Turn off the start switch and disconnect the battery negative cable.
- Remove the front door inner protective panel. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")
- Remove the waterproof sealing film of the door.
- Remove the fixing bolt plug (1) of the front door lock cylinder with the interior trim removal tool (BF1102).



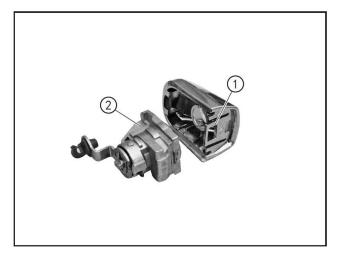
- Remove the fixing screw (1) of the front door lock cylinder with the T30 screwdriver bit.
- Remove the fixing screw (2) of the front door lock body with the T30 screwdriver bit.

A CAUTION

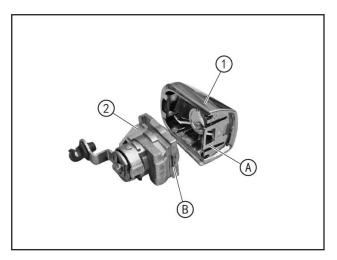
Remove the fixing nut (1) of front door lock cylinder for easy removal of door lock cylinder assembly.



- Pull out the front door lock cylinder assembly (1) outward, and disconnect the front door lock link (2) from the fixed end A of the lock cylinder.
- Disconnect the front door lock cylinder fixed end B with link (2), and then take down the front door lock cylinder (1).

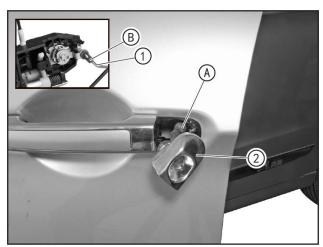


 Move the clip (1) of front door lock cylinder trim cover outward, and detach the trim cover from the front door lock cylinder (2).



4- Refitting

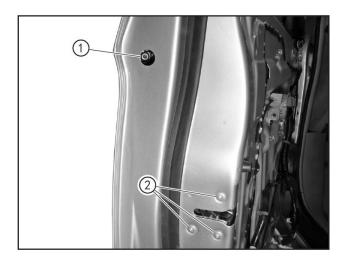
 Assemble the front door lock cylinder trim cover (1) to the front door lock cylinder (2), and clamp the clip A on front door lock cylinder trim cover and the clip B on front door lock cylinder securely.



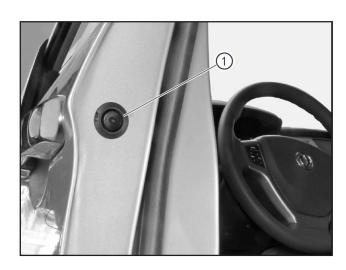
- Clamp the end of the front door lock link (1) into the fixed end A of the front door lock cylinder (2).
- Clamp the front door lock cylinder link into the fixed end B of the front door lock cylinder.
- Install the sub-assembled front door lock cylinder (2) onto the mounting surface.

CAUTION

Apply an appropriate amount of grease to the fixed end of the lock link.



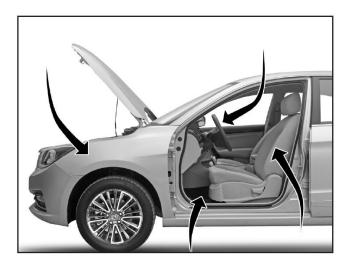
- Tighten the fixing screw (1) of the front door lock cylinder with the T30 screwdriver bit.
- Tighten the fixing screw (2) of the front door lock body with the T30 screwdriver bit.



- Refit the fixing screw cap (1) of the front door lock cylinder in place.
- Refit the front door inner protective plate. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")

A CAUTION

After the installation is completed, turn the ignition key to ON and operate the door outside handle, checking that the door lock functions normally.

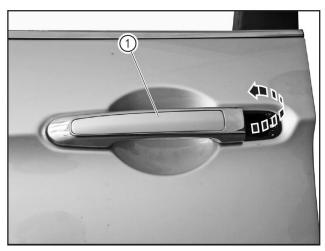


Removal and Refitting of Front Door Outside Handle

1 - Protection

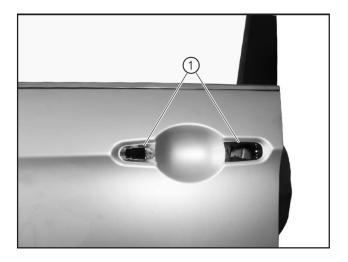
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

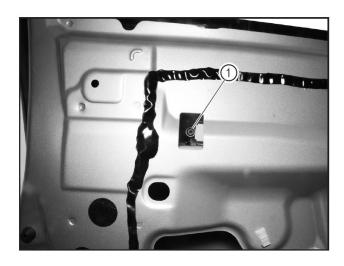


2 - Removal

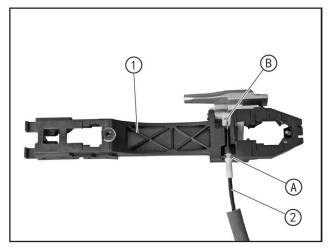
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the front door lock cylinder. (Refer to "Removal and Refitting of Front Door Lock Cylinder" in this section)
- Hold the door outside handle (1), and move the outside handle (1) rightwards and upwards to take it down.



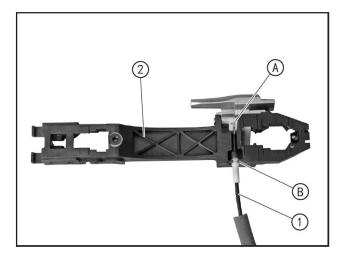
Remove the gasket (1) of front door outside handle.



 Remove the fixing screw (1) of front door outside handle mount with the T30 screwdriver bit.

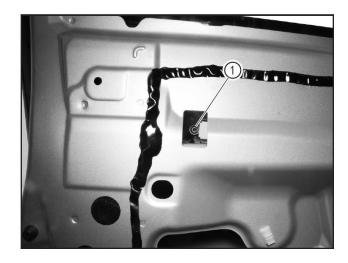


- Remove the outside handle bracket (1) from the door frame, and disconnect the outside handle cable from the fixed end A.
- Flip the cable (2) upwards to disconnect the fixed point B of outside handle cable from the mount.
- Take off the outside handle mount (1).

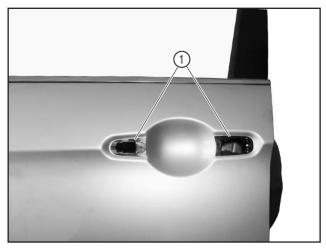


3- Refitting

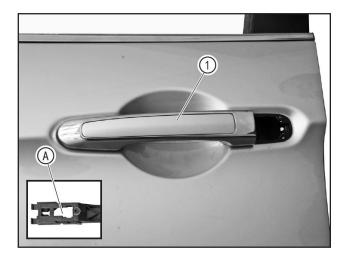
- Clamp the fixed end A and fixing point B of the outside handle cable (1) into the fixing points on the outside handle mount.
- Refit the outside handle mount (2) on the mounting surface.



Tighten the fixing screw (1) of front door outside handle mount with the T30 screwdriver bit.



Replace with a new gasket (1) for the front door outside handle and install it on the mounting surface.



- Hold the door outside handle (1), first clamp the rear end of the handle into the hole A on the outside handle mount.
- Refit the front door lock cylinder. (Refer to "Removal and Refitting of Front Door Lock Cylinder" in this section)

A CAUTION

After the installation is completed, turn the ignition key to ON and operate the door inside handle, checking that the door lock functions normally.



Removal and Refitting of Front Door Inside Handle

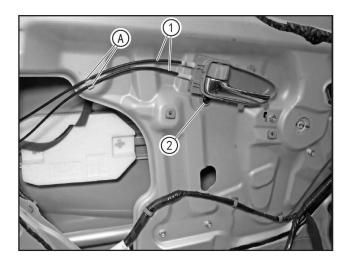
1 - Protection

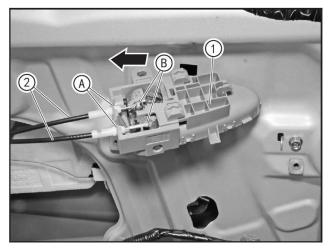
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

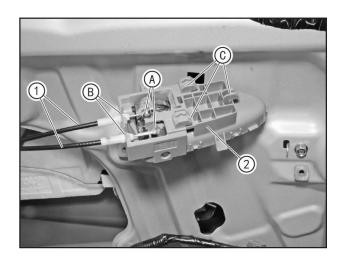
2 - Removal

- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the front door inner protective panel. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")
- Remove the door sealing film.
- Disconnect the door inside handle cable (1) from the fixed end A of the door body.
- Remove the door inner handle fixing screw (2) with a Phillips screwdriver.



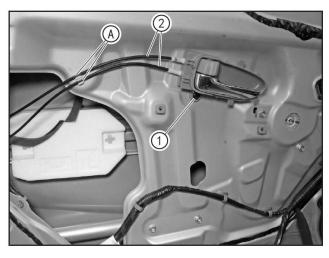


- Detach the clip on the inside handle from the door body backwards, and then turn over the inside handle (1).
- Disconnect the inside handle cable (2) from the fixing points A and B of inside handle.
- Take off the inside handle (1).



3- Refitting

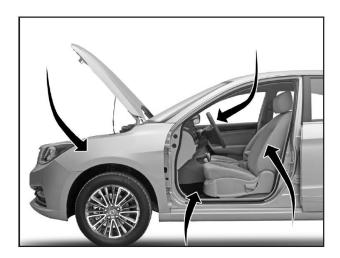
- Clamp the fixing points A and B of inside handle cable (1) into the fixed end of inside handle (2).
- Clamp the clip C on the inside handle into the door body.



- Tighten the door inner handle fixing screw (1) with a Phillips screwdriver.
- Clamp the door inside handle cable (2) to the fixed end A of the door body
- Install the door sealing film.
- Refit the front door inner protective plate. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")

A CAUTION

 After the installation is completed, turn the ignition key to ON and operate the door inside handle and outside handle, checking that the door lock functions normally.

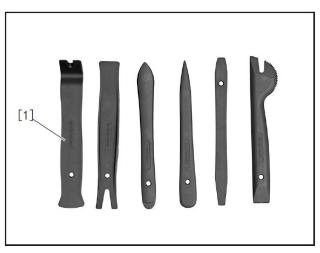


Removal and Refitting of Front Door Lock Body

1 - Protection

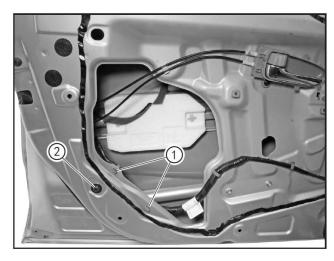
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- · Shift lever.



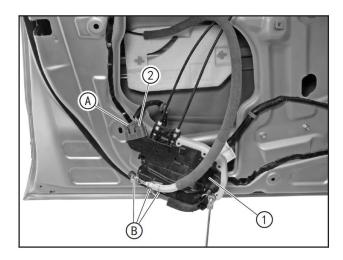
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

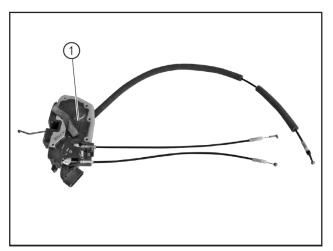


3 - Removal

- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the front door inner protective panel. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in this section).
- · Remove the waterproof sealing film of the door.
- Remove the front door cylinder assembly. (Refer to "Removal and Refitting of Front Door Lock Cylinder" in this section)
- Remove the front door inside handle. (Refer to "Removal and Refitting of Front Door Inside Handle" in "Interiors and Exteriors")
- Detach the front door wire harness fixing clip (1) with the interior trim removal tool (BF1102).
- Remove the fixing bolt (2) of the front door window rail with the 10mm socket, and take the front door window rail out of the door panel.



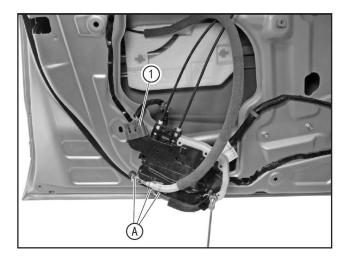
- Remove the front door lock body assembly (1) from the front door panel.
- Press the front door lock connector clip A, and disconnect the front door lock connector (2).
- Disconnect the front door outside handle cable from the fixed end B of the lock body.



Take off the front door lock body assembly (1).

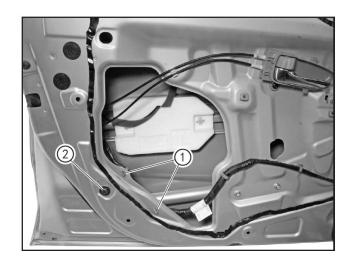
A CAUTION

- Check the cable connector for wear and looseness, if any, replace with a new one.
- Check if the lock body clipper is flexible, and clear old grease and dirt thereon, and apply new grease.



4- Refitting

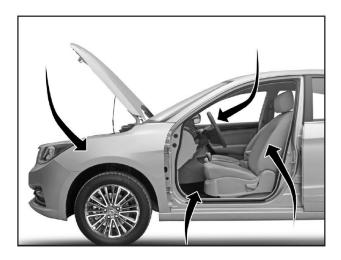
- Connect the front door lock connector (1) into place.
- Clamp the front door outside handle cable into the fixed end B of the lock body.



- Place the front door lock body on the mounting surface in the front door panel.
- Clamp the front door wire harness fixing clip (1) in place.
- Place the front door window rail on the door panel mounting surface, and tighten the fixing bolt (2) of front door window rail with the 10mm socket.
- Refit the front door inside handle. (Refer to "Removal and Refitting of Front Door Inside Handle" in this section).
- Refit the front door lock cylinder assembly. (Refer to "Removal and Refitting of Front Door Lock Cylinder" in this section)
- · Refit the door waterproof sealing film.
- Refit the front door inner protective plate. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")

A CAUTION

 After the installation is completed, turn the ignition key to ON and operate the door outside handle, checking that the door lock functions normally.

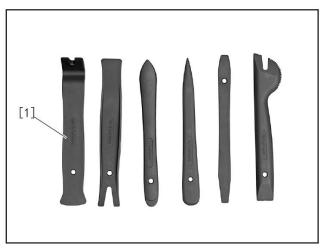


Removal and Refitting of Rear Door Outside Handle

1 - Protection

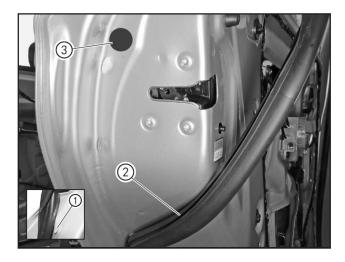
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- · Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

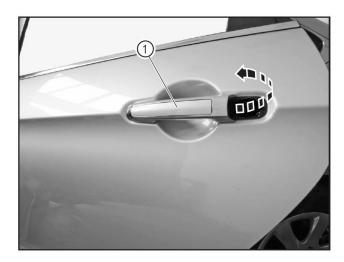
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove rear door inner protective panel. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate" in "Interiors and Exteriors")
- Remove the door sealing film.
- Remove the clip (1) of the sealing strip at the rear end of the door with the interior trim removal tool (BF1102), and then remove partial sealing strip (2) at the rear end of the door.
- Tear off the fixing screw cap (3) of the rear cover outside handle trim cover.



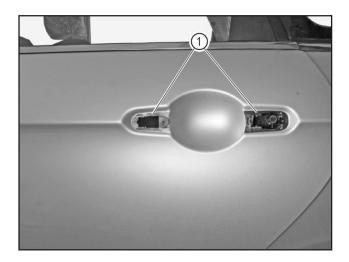
Remove the fixing screw (1) of the outside handle trim cover with the T30 screwdriver bit.



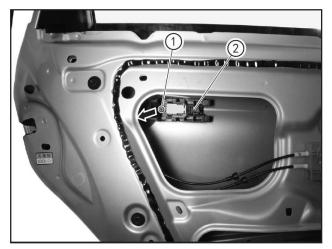
Remove the outside handle trim cover (1).



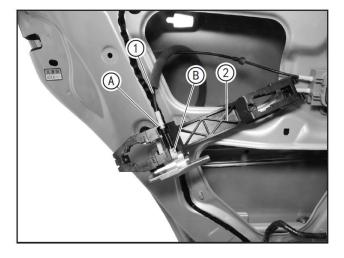
Hold the door outside handle (1), and move the outside handle rightwards and upwards to take it down.



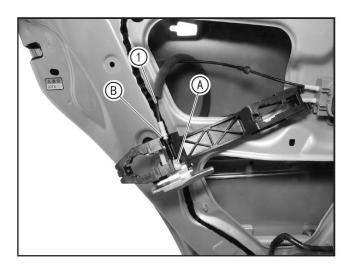
Remove the gasket (1) of outside handle.



- Remove the fixing screw (1) of outside handle mount with the T30 screwdriver bit.
- Remove the outside handle mount (2) out of the rear door panel.



- Disconnect the outside handle cable (1) from the fixing point A of mount, and turn over the cable to disconnect it from the fixing point B of mount.
- Take off the outside handle cable mount (2).

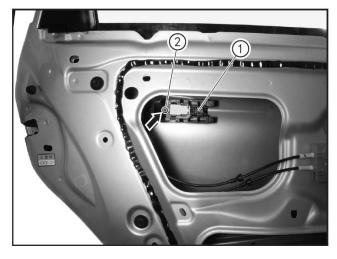


4- Refitting

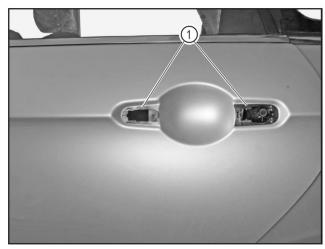
 Clamp the outside handle cable (1) to the fixing point A of mount, and then clamp the fixing point B of outside handle cable to the fixing point of mount.

A CAUTION

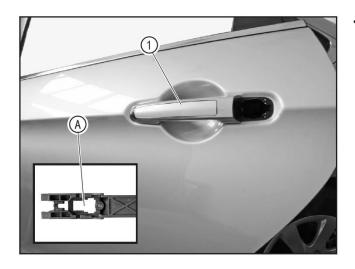
 Apply a proper amount of grease to the fixed end of the outside handle cable.



- Attach the rear door outside handle mount (1) to the mounting surface on the door panel.
- Tighten the fixing screw (2) of the outside handle cable mount with the T30 screwdriver bit.



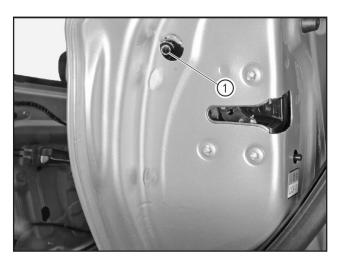
Replace with a new gasket (1) for the outside handle.



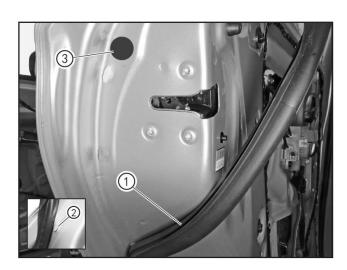
Hold the door outside handle (1), first clamp the rear end of the handle into the hole A on the outside handle mount.



Refit the outside handle trim cover (1).



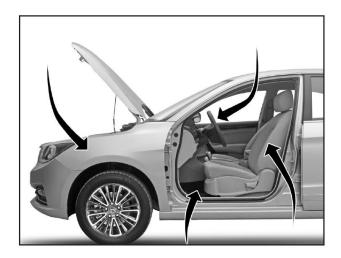
 Tighten the fixing screw (1) of the outside handle trim cover with the T30 screwdriver bit.

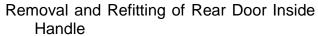


- Clamp the clip (2) of the door sealing strip (1) into the door securely.
- Replace with a new screw trim cap (3).
- Refit the front door inner protective plate. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")

A CAUTION

After the installation is completed, turn the ignition key to ON and operate the door outside handle, checking that the door lock functions normally.

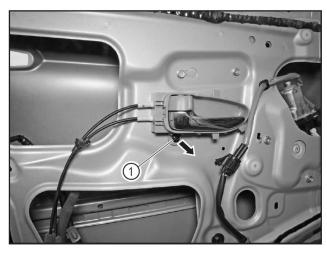




1 - Protection

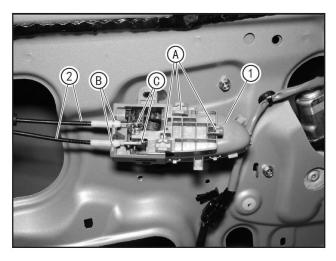
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Removal

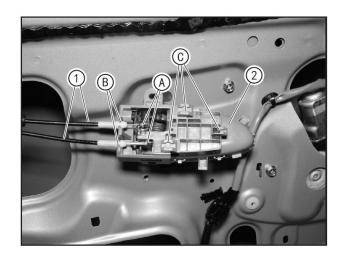
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove rear door inner protective panel. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate" in "Interiors and Exteriors")
- Remove the door sealing film.
- Remove the door inner handle fixing screw (1) with a Phillips screwdriver.



- Detach the clip A on the inside handle backwards from the door panel, and then turn over the inside handle (1).
- Detach the inside handle cable (2) from the fixing points B and C of inside handle.
- Take off the rear door inside handle (1).

A CAUTION

Apply a proper amount of grease to the fixed ends of the inside handle cable.



3- Refitting

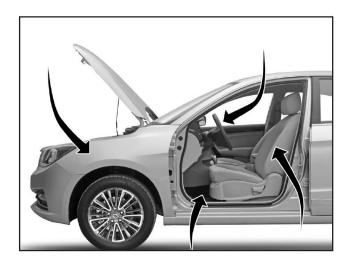
- Clamp the fixing points A and B of inside handle cable (1) into the fixed end of inside handle (2).
- Clamp the clip C on the inside handle to the corresponding fixing point on door panel.



- Tighten the door inner handle fixing screw (1) with a Phillips screwdriver.
- Install the door sealing film.
- Refit the rear door inner protective plate. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate" in "Interiors and Exteriors")

A CAUTION

After the installation is completed, turn the ignition key to ON and operate the door outside handle, checking that the door lock functions normally.

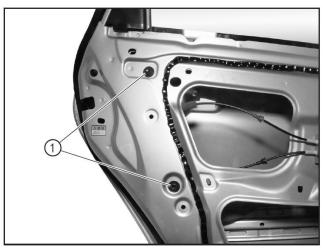


Removal and Refitting of Rear Door Lock Body

1 - Protection

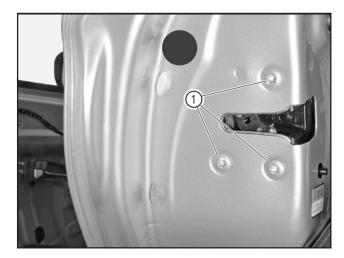
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

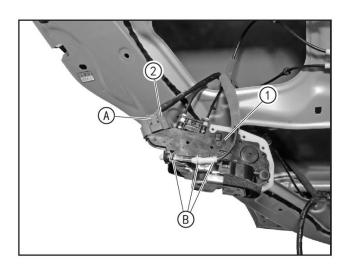


2 - Removal

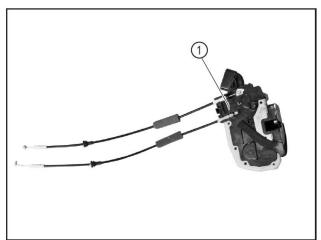
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove rear door inner protective panel. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate" in "Interiors and Exteriors")
- Remove the waterproof sealing film of the door.
- Remove the rear door inner handle. (Refer to "Removal and Refitting of Rear Door Inside Handle" in "Interiors and Exteriors")
- Remove the fixing bolt (1) of the rear door window rail with the 10mm socket, and take the rear door window rail out of the door panel.



 Remove the fixing screw (1) of the rear door lock body with the T30 screwdriver bit.



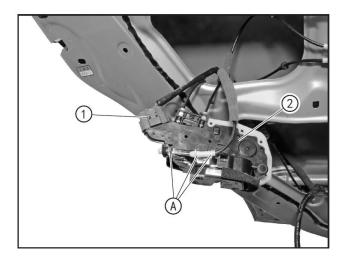
- Take out the rear door lock body assembly (1) from the door panel.
- Press the clip A of rear door lock body wire harness connector to disengage the rear door connector (2).
- Disconnect the outside handle cable from the fixed end B.



Take off the rear door lock body assembly (1).

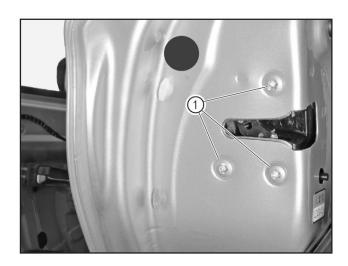
A CAUTION

- Check the cable connector for wear and looseness, if any, replace with a new one.
- Check if the lock body clipper is flexible, and clear old grease and dirt thereon, and apply new grease.

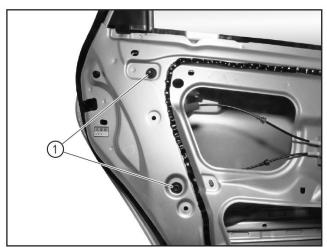


3- Refitting

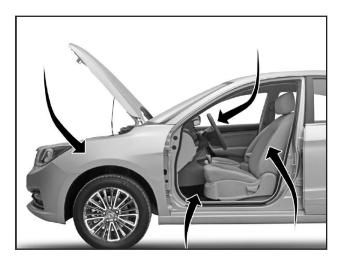
- Connect the rear door lock body wire harness connector (1) in place.
- Clamp the outside handle cable to the fixing point A.
- Refit the door lock body assembly (2) into the door panel in place.



Tighten the fixing screw (1) of the rear door lock body assembly with the T30 screwdriver bit.



- Place the rear door window rail on the door panel mounting surface, and tighten the fixing bolt (1) of rear door window rail with the 10mm socket.
- Refit the rear door inside handle. (Refer to "Removal and Refitting of Rear Door Inside Handle" in "Interiors and Exteriors")
- Refit the door waterproof sealing film.
- Refit the rear door inner protective plate. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate" in "Interiors and Exteriors")



Removal and Refitting of Door Lock Catch

Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



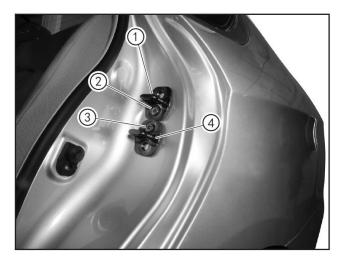
2 - Removal

A CAUTION

- Do not remove the 2 fixing screws of the door latch at the same time, so as to prevent that the mount of door lock catch in the body falls off and causes inconvenience to maintenance.
- Remove the fixing screw (1) of the rear door lock catch with the T30 screwdriver bit.

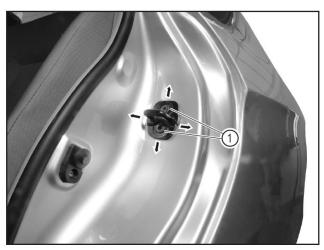


 Loosen the fixing screw (1) of the rear door lock catch with the T30 screwdriver bit, and then rotate the rear door lock catch (2) downwards.



3- Refitting

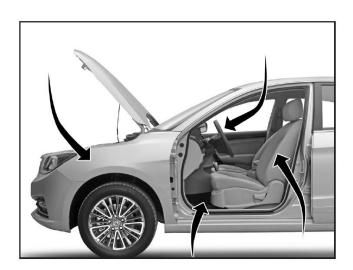
- Install a new door lock catch (1) on the mounting surface, and screw the fixing screw (2) without tightening using the T30 screwdriver bit.
- Remove the fixing screw (3) of the lock catch to be replaced with the T30 screwdriver bit, and then take down the door lock catch (4) to be replaced.



- Adjust the mounting direction of the lock catch horizontally and longitudinally to make the lock catch in line with the lock.
- Tighten the fixing screw (1) of rear door lock catch with the T30 screwdriver bit to 16.7N·m.

A CAUTION

 After the installation is completed, open and close the door, checking that the door lock functions normally.

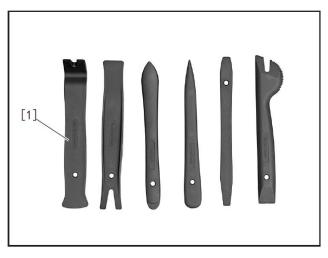


Removal and Refitting of Trunk Lid

1 - Protection

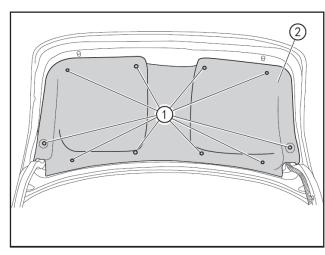
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Recommended tools

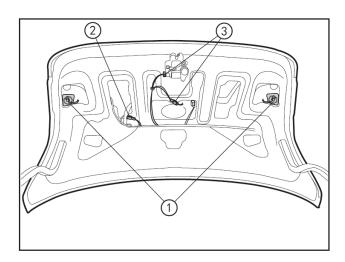
Interior trim removal tool (BF1102) [1].



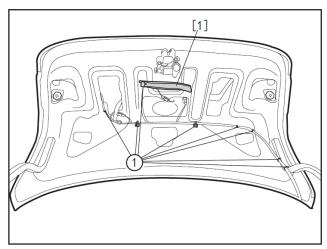
3 - Removal

A CAUTION

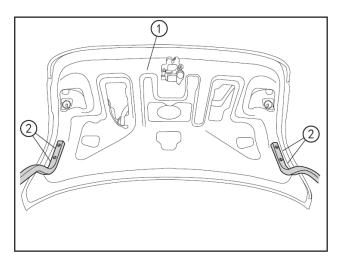
- Two or more workers are required for the removal of the trunk lid assembly, otherwise damage to the maintenance personnel or body parts may occur.
- Remove the fixing clip (1) of trunk lid inner protective plate with the interior trim removal tool (BF1102).
- Take off the trunk lid inner protective plate (2).



Press the connector clip, and disconnect the inner tail lamp connector (1), license plate lamp connector (2) and trunk lid lock connector (3).



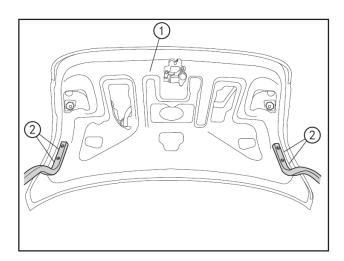
Remove the clip (1) of trunk wire harness with the interior trim removal tool (BF1102) [1].



- One person holds the trunk lid assembly (1), and the other person removes the fixing bolt (2) of the trunk lid with the 10mm socket.
- Two operators are required to cooperate to carry off the trunk lid assembly (1).

▲ CAUTION

While carrying down the trunk lid assembly, avoid collision with the body, otherwise the parts may be damaged.

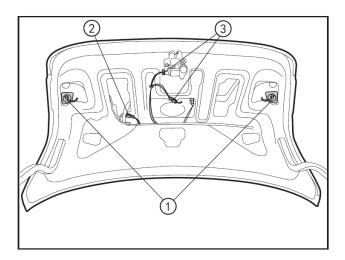


4- Refitting

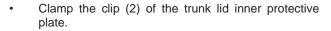
- Two operators are required to cooperate to refit the trunk lid (1) on the mounting surface, and then one person holds the trunk lid, and the person screws in the fixing bolt (2) of the trunk lid.
- Hold the trunk lid and tighten the fixing bolt (2) of the trunk lid with the 10mm socket.

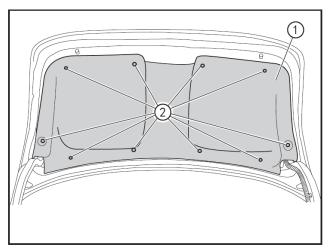
A CAUTION

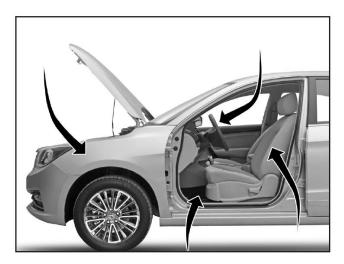
- While installing the trunk lid onto the body, avoid collision with the body, otherwise the body parts may be damaged.
- During the installation, do not tighten the hinge bolt completely; place down the trunk lid slowly, check its fitting gap in the perimeter and adjust it to the designed value. For the designed value of fitting gap, refer to "Technical Parameters" of this section. Confirm that the trunk lid can be opened normally by all the available means, and then tighten the hinge bolt to the specified torque. After this, repeat the above checks until the requirements are satisfied.
- Connect the inner tail lamp connector (1), license plate lamp connector (2) and the trunk lid lock connector (3).









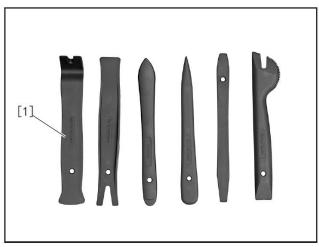


Removal and Refitting of Trunk Lid Lock

1 - Protection

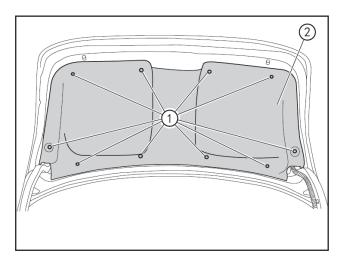
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



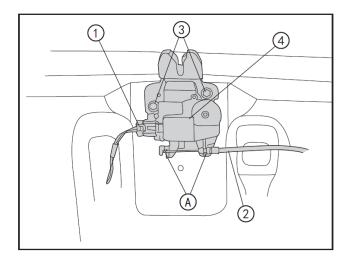
2 - Recommended tools

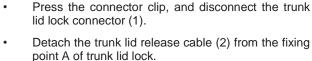
Interior trim removal tool (BF1102) [1].



3 - Removal

- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the fixing clip (1) of the trunk lid inner protective plate with the interior trim removal tool (BF1102).
- Take off the trunk lid inner protective plate (2).

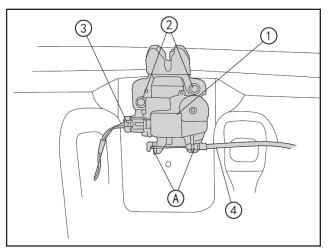




- Remove the fixing bolts (3) from the trunk lid lock with the 10mm socket.
- Take off the trunk lid lock (4).

A CAUTION

- Check the cable connector for wear and looseness, if any, replace with a new one.
- Check if the lock body clipper is flexible, and clear old grease and dirt thereon, and apply new grease.

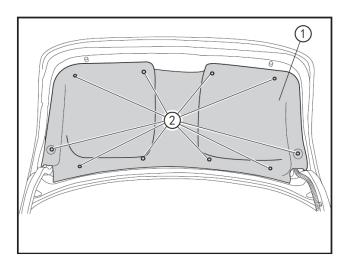


4- Refitting

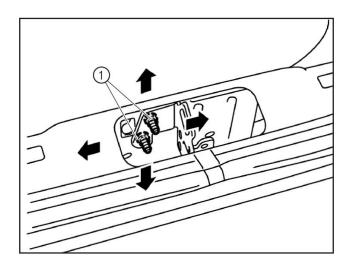
- Place the trunk lid lock (1) at the mounting position on the trunk lid, and tighten the fixing bolt (2) of trunk lid lock with the 10mm socket.
- Connect the trunk lid lock connector (3) in place.
- Clamp the trunk lid release cable (4) into the fixing point A of trunk lid lock.

A CAUTION

 After refitting, connect the battery negative cable, and operate the trunk lid unlock switch, checking if the trunk lid lock functions normally.



- Refit the trunk lid inner protective plate (1) to the mounting surface on the trunk lid.
- Clamp the fixing clips (2) of trunk lid inner protective plate in place.

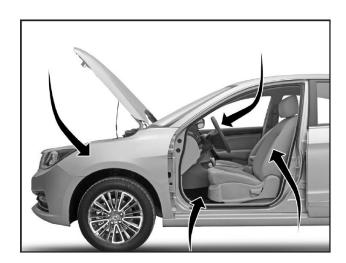


5- Adjustment

- Remove the trunk lid lock trim cover with the interior trim removal tool (BF1102).
 - Loosen the fixing bolt (1) of the trunk lid lock catch with the 10mm socket. Adjust the lock catch mounting point upward, downward, leftward or rightward so that the trunk lid can be opened and closed smoothly, and then tighten the fixing bolt of the trunk lid lock catch.

A CAUTION

- During the installation, do not tighten the fixing bolt of trunk lid lock catch completely; place down the trunk lid slowly, check its fitting gap in the perimeter and adjust it to the designed value. For the designed value of fitting gap, refer to "Technical Parameters" of this section. Confirm that the trunk lid can be opened normally by all the available means, and then tighten the fixing bolt of trunk lid lock catch to the specified torque. After this, repeat the above checks until the requirements are satisfied.
- After the adjustment is done, apply a proper amount of grease to the trunk lid lock catch.

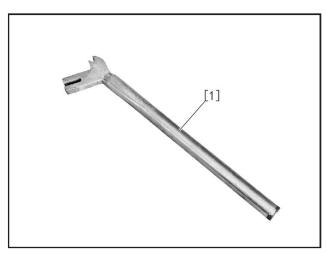


Removal and refitting of trunk lid hinge torsion bar

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

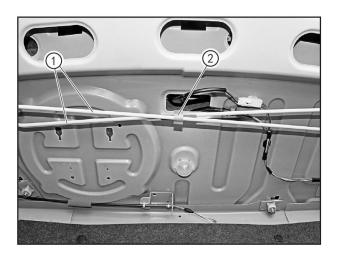


2 - Recommended tools

Trunk lid hinge torsion bar removal and refitting tool (BF0512) [1].

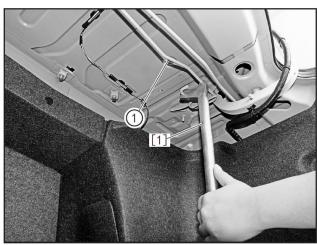
3 - Check

- Check if the trunk lid can automatically bounce up. If not, replace the trunk lid hinge torsion bar.
- Check if there is any obstruction when opening and closing the trunk lid. If so, apply suitable amount of lubrication grease at the contact positions on the hinge.



4 - Removal

- Turn off the ignition switch and apply the parking brake.
- Open the trunk Lid.
- Detach the 2 trunk lid hinge torsion bars (1) from the torsion bar bracket (2).

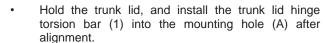


- · Have an assistant hold the trunk lid.
- Install the trunk lid hinge torsion bar removal and refitting tool (BF0512) [1] in place as shown, press down the trunk lid hinge torsion bar removal and refitting tool (BF0512)[1] with care to detach the trunk lid hinge torsion bar (1) from the bracket, and then take down the trunk lid hinge torsion bar.
- Remove the other trunk lid torsion bar following the same method.

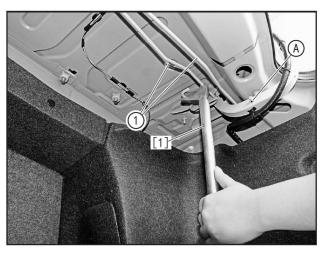
A CAUTION

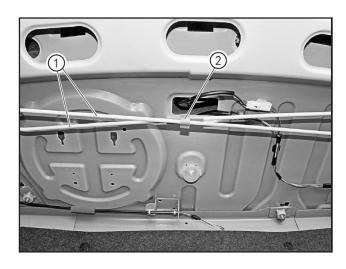
The torsion bar is a flexible part, and thus must be secured properly on the special tool during the removal and refitting, so as to prevent unnecessary personal injury when the spring force is released suddenly.





- Install the trunk lid hinge torsion bar removal and refitting tool (BF0512) [1] in place as shown, press up the trunk lid hinge torsion bar removal and refitting tool (BF0512)[1] with care to clamp the trunk lid hinge torsion bar (1) into the mounting point.
- Refit the other trunk lid torsion bar following the same method.





• Clamp the 2 trunk lid hinge torsion bars (1) into the torsion bar bracket (2).

A CAUTION

After the installation is completed, check that the trunk lid can pop up automatically when the trunk lid unlock switch is operated.





10.Body	10.1	Closures
	10.2	Glass, Window and Rearview Mirror
	10.3	Roof
	10.4	Exteriors and Interiors
	10.5	Instrument Panel
	10.6	Seats
	10.7	Body Check
	10.8	Body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company After-sales Service Technical Document 10

10.2

Glass, Window and Rearview Mirror

Contents

Preparations	10.2-3
Precautions for Service	10.2-3
Special Tools	10.2-3
Tightening Torque	10.2-3
System Overview	10.2-4
Structure and Features	10.2-4
Troubleshooting	10.2-7
Common Fault Troubleshooting	10.2-7
Front Windshield	10.2-8
Removal and Refitting of Front Windshield	10.2-8
Rear Windshield	10.2-12
Removal and Refitting of Rear Windshield	10.2-12
Front door window regulator	10.2-14
Door Window Initialization	10.2-14
Removal and Refitting of Front Door Windows	10.2-15
Removal and Refitting of Front Door Window Regulator	10.2-19
Rear door window regulator	10.2-21
Removal and Refitting of Rear Door Window	10.2-21
Removal and Refitting of Rear Door Window Regulator	10.2-25
Exterior Rearview Mirror	10.2-27
Removal and Refitting of Exterior Rearview Mirror	10.2-27
Door Electric Switch	10.2-29
Removal and Refitting of Door Electric Main Switch	10.2-29
Removal and Refitting of Door Electric Auxiliary Switch	10.2-33

10.2

Precautions for service

- Do not use the glass adhesive out of the shelf life.
- Two workers are required for the installation and adjustment of front and rear windshields.
- When installing the glass, prevent the cushion pad from sticking to the glass adhesive, and check if the adhesive in the perimeter of the glass is bounded firmly.
- Always install the glass within 5min after the adhesive is applied, so as to avoid curing of adhesive.
- Press the glass contour with a proper force using the sucker to make the adhesive bounded firmly, especially the four corners.
- Do not tap or move the windshield after installation, so as to avoid change of windshield opening gap.

Special tools

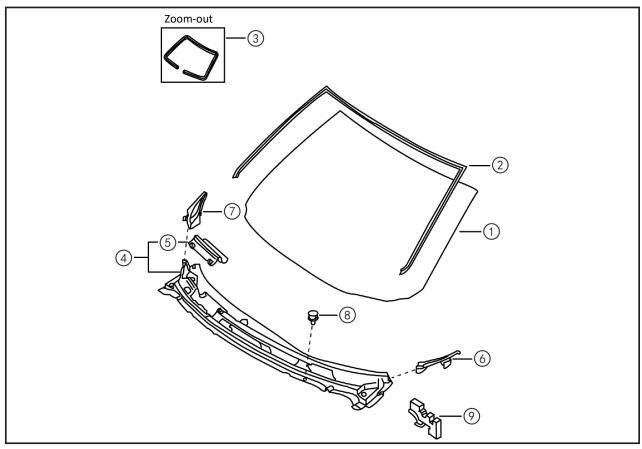
Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing interior trim, clips, etc.

Tightening Torque

S/N	Name	Torque (N⋅m)
1	Steering wheel fixing nut	33

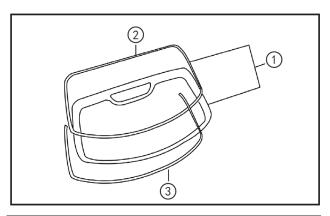
Structure and Features

Front windshield



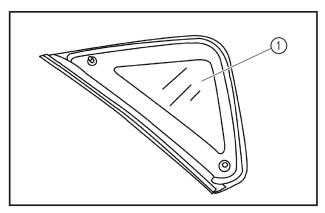
1. Front windshield	4. Front windshield lower trim panel	7. Front windshield right lower cover
2. Front windshield trim strip	5. Lower trim panel blanking cover	8. Snap fastener
3. Sealing strip	6. Front windshield left lower cover	9. Front windshield sealing strip

Rear Windshield



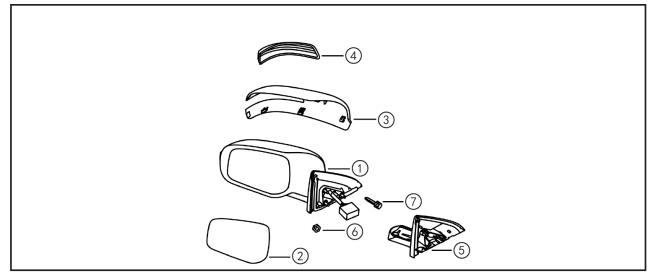
1.Rear	2.	Rear	windshield	3. Sealing
windshield	seali	ng strip		strip

Rear side window



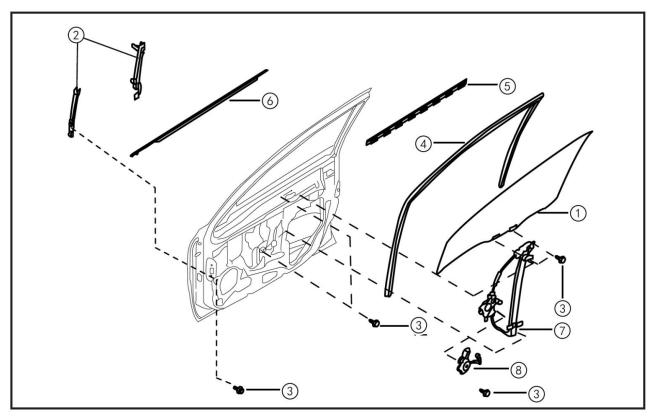
1. Rear Triangle window assembly

Rearview mirror



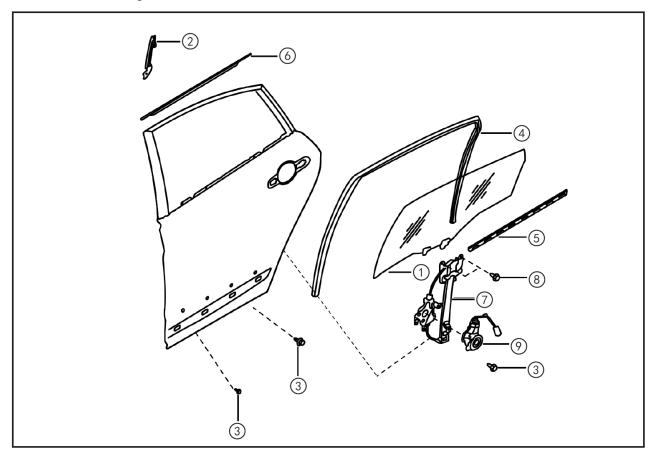
Rearview mirror assembly	4.Rearview mirror turn signal lamp components	7. Bolt
2. Rearview mirror lens	5. Rearview mirror mounting plate	
3. Rearview mirror trim cover	6. Nut	

Front door window regulator



1. Front door window	4. Front door	window	channel		7. Front door window regulator
2. Front door window rail	5. Front weatherstrip	door	window	inner	8. Front door window regulator motor
3. Screw	6. Front weatherstrip	door	window	outer	

Rear door window regulator



1.Rear door window	4.Rear door window channel	7.Rear door window regulator
2.Rear door window rail	5.Rear door window inner weatherstrip	8.Bolt
3.Bolt	6.Rear door window outer weatherstrip	9.Rear Front Door Window Regulator Motor

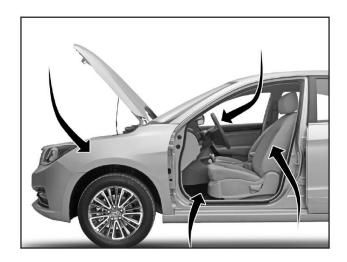
Common Fault Diagnosis

Unable to lift or lower the window

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check the instrument panel relay box to see whether the fuse is blown	Go to step 1	Fuse blowout	Replace the fuse
1	Check the window regulator switch	ОК	Faulty	Operation method
	Check whether the window regulator switch is damaged	Go to step 2	The window regulator switch is damaged	Replace the window regulator switch
2	Check the window regulator control unit	OK	Faulty	Operation method
	Check whether the window regulator control unit is damaged	Go to step 3	The window regulator control unit is damaged	Replace the window regulator control unit
3	Check the window regulator motor plug	ОК	Faulty	Operation method
	Check whether the window regulator motor plug is burnt or corroded	Go to step 4	The window regulator motor plug is burnt or corroded	Replace the window regulator motor plug
4	Check the window regulator motor	ОК	Faulty	Operation method
	Check whether the window regulator motor is damaged	Go to step 5	The window regulator motor is damaged	Replace the window regulator motor
5	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after proper operation	Diagnosis end	Fault still exists.	Find out the cause from other symptoms

Unable to lift or lower the window

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check if the door glass sealing strip is aged, causing lifting/lowering of window to slow down.	Go to step 1	Door glass seal strip is aged	Replace the door glass sealing strip
1	Check the window regulator switch contact	ОК	Faulty	Operation method
	Check if the window regulator switch contact is ablated, obstructing part of the current to pass through	Go to step 2	Ablation of window regulator switch contact	Replace the window regulator switch
2	Check the window regulator motor plug	ОК	Faulty	Operation method
	Check if the window regulator motor plug is ablated, obstructing part of the current to pass through	Go to step 3	The window regulator motor plug is burnt or corroded	Replace the window regulator motor plug
3	Check the window regulator rail	ОК	Faulty	Operation method
	Check if the window regulator rail has insufficient lubrication grease	Go to step 4	The window regulator rail has insufficient lubrication grease.	Add lubricating grease
4	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after proper operation	Diagnosis end	Fault still exists.	Find out the cause from other symptoms

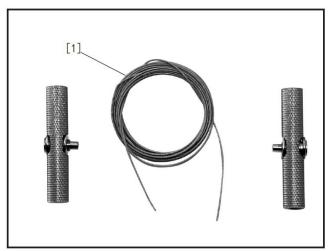


Removal and Refitting of Front Windshield

1 - Protection

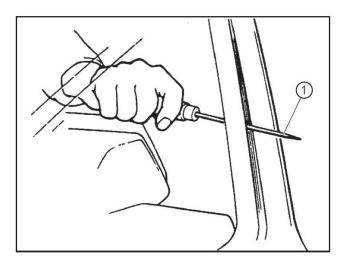
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- · Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



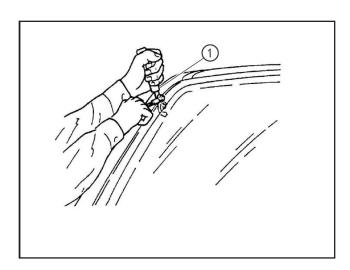
2 - Recommended tools

Glass removal tool (BF1105) [1].



3 - Removal

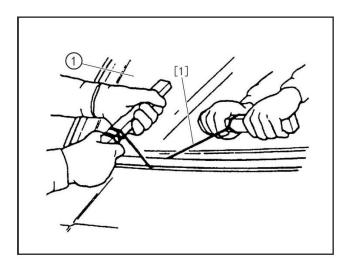
- Clean the inside, outside and perimeter of the glass.
- · Remove wiper arm and decoration parts
- Remove the roof inner trim panel (Refer to "Removal and Refitting of Roof Inner Trim Panel" in "Interiors and Exteriors")
- Remove the front pillar upper trim panel. (Refer to "Removal and Refitting of Front Pillar Upper Trim Panel" in "Interiors and Exteriors")
- Remove (or cut) the sealing strip on the perimeter of the windshield.
- Mask the vehicle body around the perimeter of window with the tape to avoid damage to the vehicle body.
- Use an awl (1) to drill a hole through the adhesive, and thread the glass removal tool through the hole.

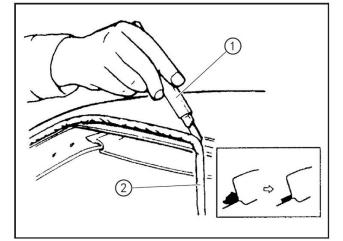


- Use the glass removal tool BF1105 to cut the adhesive on the left and right of the glass.
- Be careful not to damage the windshield when using the special knife (1).

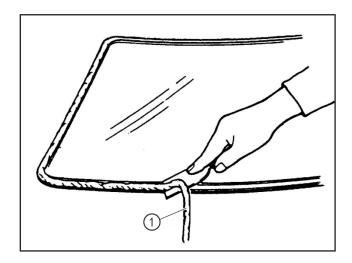
A CAUTION

- Always wear goggles and thick gloves when removing glasses from the vehicle, so as to prevent the glass from splashing into eyes or cutting the hands.
- Do not use a cutting knife or motor-driven cutting tool if planning to reuse the back door windshield.
- Be careful not to scratch the glass during removal.
- Do not allow the window to stand vertically with its edge touching the ground. Any minor damage may result in crack of the glass.
- Use the glass removal tool BF1105 [1] to cut off the lower portion of the windshield (1).
- Remove the front windshield assembly.

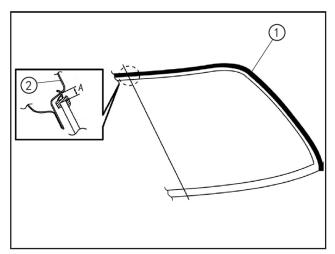




 Thoroughly clean the residual adhesive (2) from the bonding position of vehicle body with a small knife (1).

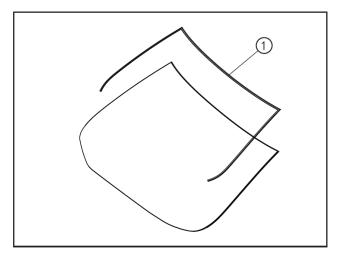


 Prior to refitting the windshield, clean the old adhesive (1) on it, and be careful not to scratch the painted surface.

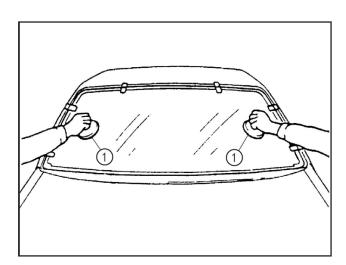


4- Refitting

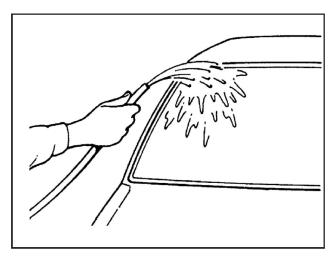
• To find out the correct installation position of the windshield (1) on the vehicle body (2), place the glass near the vehicle body so that the upper end of the glass is 5mm from the vehicle body, and distances on both sides are even. Mark at the position at the mating position between the glass and the vehicle body. Spacing between the glass upper portion and the vehicle body can be adjusted by adjusting the 5mm wide position limiter (the distance A between the windshield glass and the vehicle body is approximately 5 mm).



- Install new trim strip (1) on the glass.
- Wipe the bonding position with a clean cloth. If cleaning agent is used, wait 10 minutes or more for drying. (Keep (30-50) mm away from the edge of glass or sealing strip when cleaning the windshield)



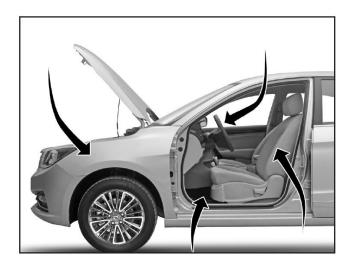
- Evenly apply glass adhesive along the body and glass bonding surfaces.
- Attach the rubber sucker (1) onto the windshield, hold the sucker, and insert the upper dowel pins of the glass into the corresponding holes of the vehicle body.



 Use the hose to sprinkle water on the window to check for seepage. If a leak is discovered, dry the glass and apply sealant at the leaking position. If the leak persists, remove the glass and install again as described above.

A CAUTION

- Do not use high-pressure water for seepage test.
- Do not blow the area coated with sealant with compressed air while it is still drying.
- Do not use infrared ray or similar manners for drying.
- If the sealing strip is not completely adhered, use the tape to press the loose position until firmly adhered.
- Each type of sealant has its own curing time. Be sure to read the manufacturer's instructions, check the curing time of the sealant used, and follow all precautions before using.
- In order to ensure thorough curing, driving is prohibited before the sealant coated positions are fully cured.

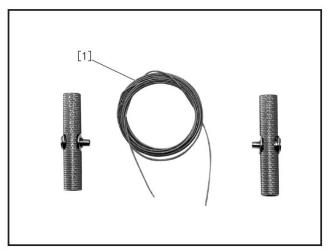


Removal and Refitting of Rear Windshield

1 - Protection

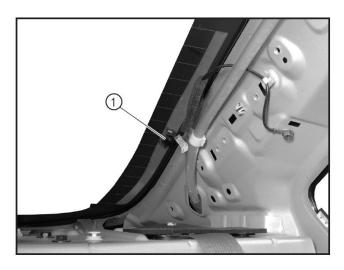
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



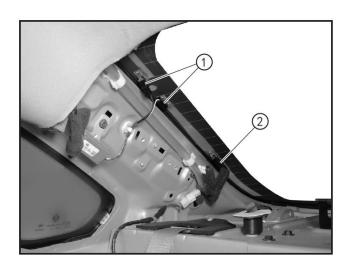
2 - Recommended tools

Glass removal tool (BF1105) [1].



3 - Removal

- Remove the rear partition. (Refer to "Removal and Refitting of Rear Partition" in "Exteriors and interiors")
- Remove the roof inner trim panel (Refer to "Removal and Refitting of Roof Inner Trim Panel" in "Interiors and Exteriors")
- Detach the negative pole ground circuit connector (1) to the right of the rear windshield.



 Disconnect the radio antenna connector (1) and the rear windshield heater strip connector (2).

A CAUTION

- Always wear goggles and thick gloves when removing glasses from the vehicle, so as to prevent the glass from splashing into eyes or cutting the hands.
- Be careful not to scratch the glass during removal.
- Do not allow the window to stand vertically with its edge touching the ground. Any minor damage may result in crack of the glass.
- For specific operation methods, please refer to "Removal and Refitting of Front Windshield".

♠ CAUTION

After the installation is done, pay attention to the following matters:

- If the sealing strip is not completely adhered, use the tape to press the loose position until firmly adhered.
- Each type of sealant has its own curing time. Be sure to read the manufacturer's instructions, check the curing time of the sealant used, and follow all precautions before using.
- In order to ensure thorough curing, driving is prohibited before the sealant coated positions are fully cured.
- Prevent scratching the heater strip on the glass during installation, so as to avoid affecting windshield heating function.

Door Window Initialization

A CAUTION

If any of the following occurs, perform system initialization.

- Fuse blowout or disconnection of battery cable, etc.
- Removal and refitting of regulator assembly.
- Removal and refitting of regulator motor.
- Removal and refitting of power window switch wire harness connector.
- Handle the regular assembly as a whole.
- Removal and refitting door window.
- Removal and refitting of door window rail.

Initialization

Perform the following procedures after all components are refitted to the car.

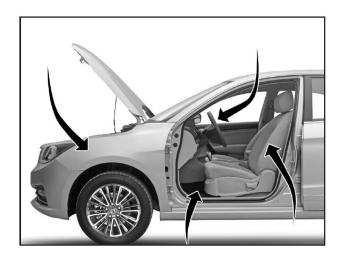
- First keep the window stop at a position more than half of its ascending travel, and then press and hold the switch to lower the window to the limit for 5s.
- Pull up the switch to lift the window to the limit and keep it for 5s; afterwards, the initialization is completed.

Inspection of Anti-pinch System

- · Open the door window fully.
- Place a colorless soft object (book, plush toy, etc.) near the fully closed position.
- Press and hold AUTO UP switch and close the window fully.
 - Check if the window moves back after contacting with the obstacle, and stops after lowering for about 2s or 150mm.
 - Operating the power window main switch shall not lift the window when the window is lowering.

A CAUTION

- Do not check the anti-pinch function by using body parts (e.g. hand, etc.) for fear of personal injury.
- After the system initialization is completed, check that the automatic lifting and anti-pinch function are normal.
- When the automatic anti-pinch function is in failure, it may be caused by battery disconnection and re-initialization has to be performed in this case.



Removal and Refitting of Front Door Window

1 - Protection

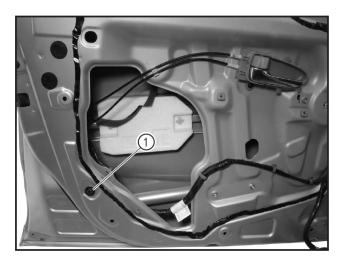
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- · Shift lever.



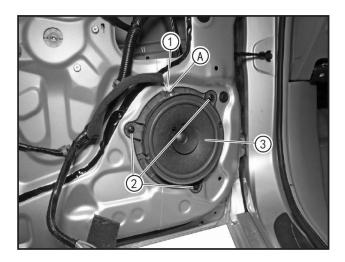
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

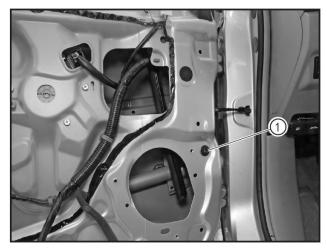


3 - Removal

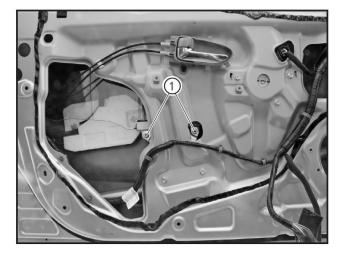
- Raise the door to the uppermost position.
- Remove the front door inner protective panel. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")
- Remove the door sealing film.
- Remove the fixing bolts (1) of the left window rail with the 10mm socket.
- Take out the window rail from the door panel.



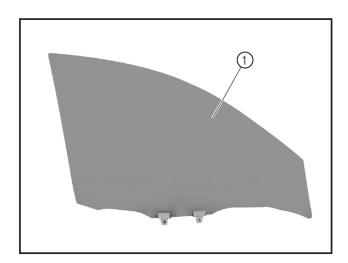
- Press and hold the locking clip A of the front door speaker connector, and disconnect the front door speaker connector (1).
- Use the Phillips screwdriver to remove the fixing screws (2) of the front door speaker.
- Remove the front door speaker (3).



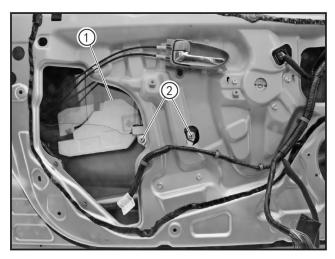
- Remove the fixing bolt (1) of the front door window right rail with the 10mm socket.
- Take out the front door window rail from the door panel.



- Lower the window till the 2 fixing bolts (1) are exposed.
- Remove the fixing bolt (1) of the door window with the 10mm socket.



 Slowly take off the door window (1) from the door panel, be careful not to contact the door, or the window might break; and do not leave the window with its edge on the ground.

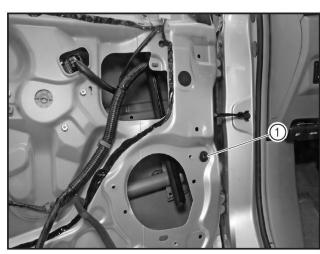


4- Refitting

- Carefully place the door window from the upper opening of the door inner and outer panels into the door cavity, and position it at the connection of window regulator.
- Install the door window (1) on the mounting surface in the door panel.
- Tighten the fixing bolt (2) of the door window with the 10mm socket.

A CAUTION

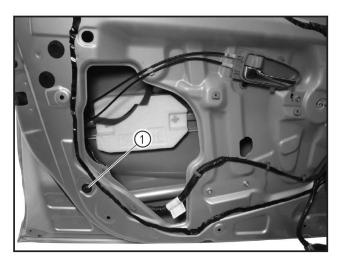
Refit the door window with its right end embedded into the door cavity first.



- Connect the window regulator switch, connect the battery negative cable, and operate the window regulator switch to raise the front door window to the uppermost position.
- Refit the front door window rail into the door panel.
- Tighten the fixing bolt (1) of the front door window right rail with the 10mm socket.

A CAUTION

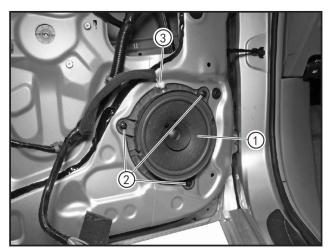
When installing the window channel, ensure that window is clamped securely in the channel.



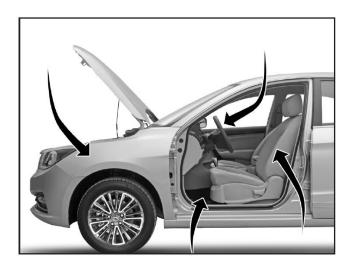
- Refit the front door window rail into the door panel.
- Tighten the fixing bolt (1) of the front door window left rail with the 10mm socket.

A CAUTION

- When installing the window channel, ensure that window is clamped securely in the channel.
- Operate the window regulator, checking that the window can ascend and descend normally without blockage.



- Refit the front door speaker (1) on the mounting hole.
- Use the Phillips screwdriver to tighten the fixing screws (2) of the front door speaker.
- Connect the front door speaker connector (3) in place.
- Install the front door sealing film.
- Refit the front door inner protective plate. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")

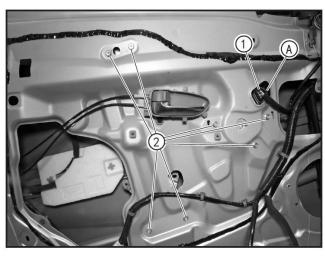


Removal and Refitting of Front Door Window Regulator

1 - Protection

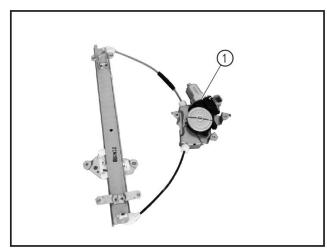
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Removal

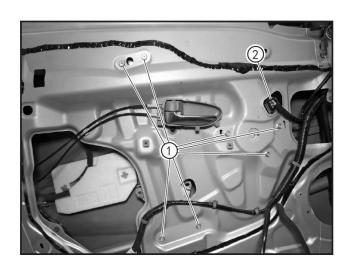
- Remove the front door window. (Refer to "Removal and Refitting of Front Door Window" in "Interiors and Exteriors")
- Press the clip A of the window regulator connector, and disconnect the window regulator connector (1).
- Remove the fixing bolt (2) from the window regulator with the Phillips screwdriver or the 10mm socket.



 Take away the window regulator assembly (1) from the door panel assembly.

A CAUTION

- After removing the window regulator, check if the window regulator cable is damaged, and if yes, replace the window regulator assembly.
- Clean the removed window regulator, and apply appropriate grease to its linkage.

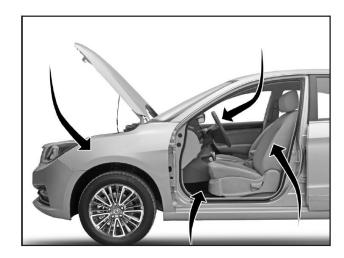


3- Refitting

- Refit the front door window regulator into the door panel.
- Tighten the fixing bolt (1) from the window regulator with the Phillips screwdriver or the 10mm socket.
- Connect the window regulator connector (2) in place.
- Refit the front door window. (Refer to "Removal and Refitting of Front Door Window" in "Interiors and Exteriors")

A CAUTION

 Operate the window regulator, checking that the window can ascend and descend normally.

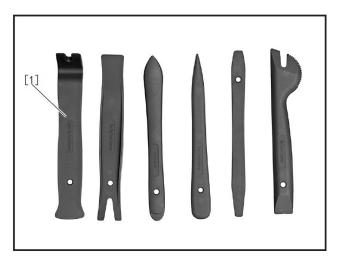


Removal and Refitting of Rear Door Window

1 - Protection

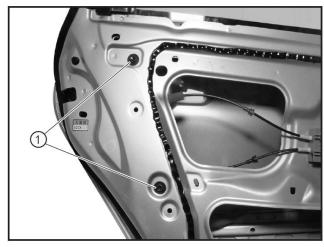
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



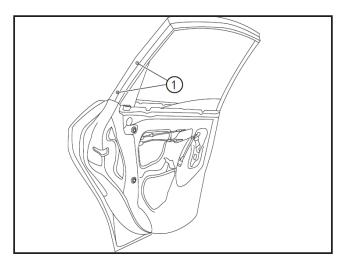
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

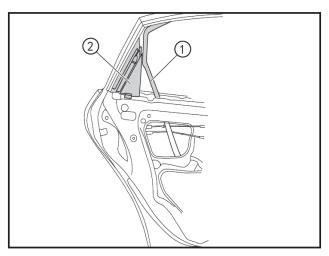


3 - Removal

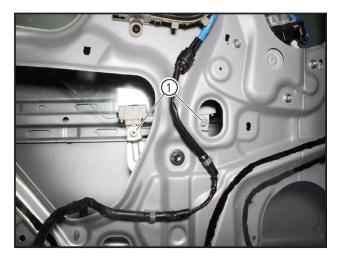
- Raise the door to the uppermost position.
- Remove rear door inner protective panel. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate" in "Interiors and Exteriors")
- Remove the door sealing film.
- Remove the fixing bolt (1) of the window rail with the 10mm socket.
- Take out the window rail from the door panel.



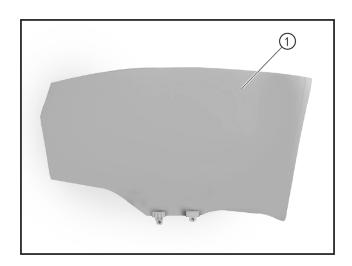
- Remove the sealing strip at the rear door triangle trim panel side to expose 2 fixing screws (1) of the rear door triangle trim panel.
- Remove the fixing screws (1) of the rear door triangle trim panel with the Phillips screwdriver.



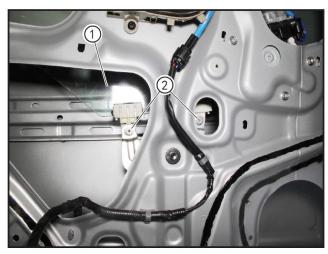
- Gently pull the window rail sealing strip (1) inward to disengage it.
- Remove the rear door triangle trim panel (2).



- Connect the window regulator switch, connect the battery negative cable, and operate the window regulator switch to lower the window until the 2 fixing bolts (1) of the window are exposed.
- Remove the 2 fixing bolts (1) of the window with the Phillips screwdriver or 10mm socket.



 Slowly take off the door window (1) from the door panel, be careful not to contact the door, or the window might break; and do not leave the window with its edge on the ground.

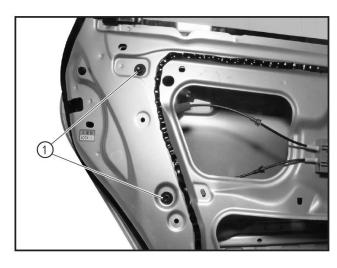


4- Refitting

- Carefully place the door window from the upper opening of the door inner and outer panels into the door cavity, and position it at the connection of window regulator.
- Install the door window (1) on the mounting surface of the window panel.
- Tighten the 2 fixing bolts (2) of the window with the Phillips screwdriver or 10mm socket.

A CAUTION

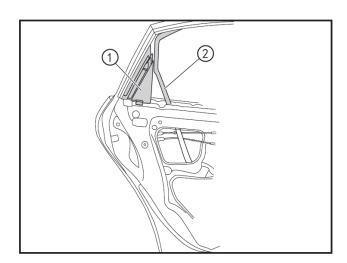
Refit the door window with its rear end embedded into the door cavity first.



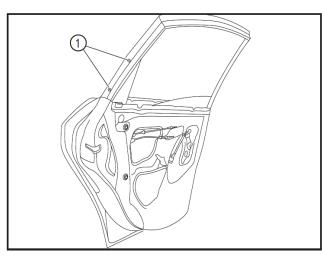
- Connect the window regulator switch, connect the battery negative cable, and operate the window regulator switch to raise the rear door window to the uppermost position.
- Refit the window rail into the door panel.
- Tighten the fixing bolt (1) of the window rail with the 10mm socket.

A CAUTION

When installing the window channel, ensure that window is clamped securely in the channel.



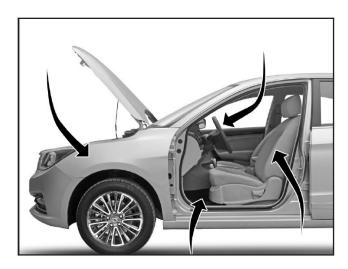
- Refit the rear door triangle trim panel (1) in place.
- Connect the window rail sealing strip (2) in place.



- Tighten the fixing screw (1) of the rear door triangle trim panel with the Phillips screwdriver.
- Refit the sealing strip at the rear door triangle trim panel side in place.

A CAUTION

- Operate the window regulator, checking that the window can ascend and descend normally without blockage.
- Install the rear door sealing film.
- Refit the rear door inner protective plate. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate" in "Interiors and Exteriors")

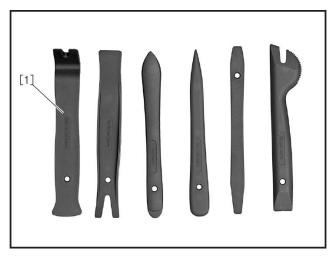


Removal and Refitting of Rear Door Window Regulator

1 - Protection

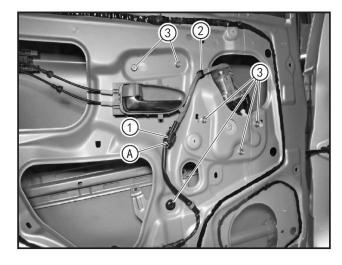
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



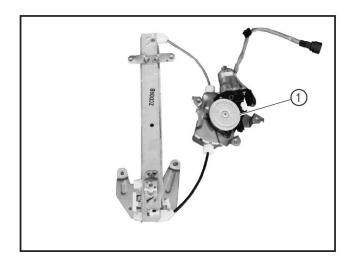
2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

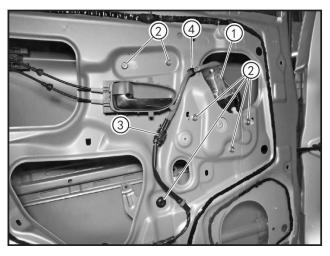
- Remove the rear door window. (Refer to "Removal and Refitting of Front Door Window" in "Interiors and Exteriors")
- Press the connector clip A, and disconnect the window regulator connector (1); then, detach the wire harness connector from the door panel.
- Pry the wire harness clips (2) with the interior trim removal tool (BF1102).
- Remove the fixing bolts (3) from the window regulator with the 10 mm socket.



 Take away the window regulator (1) from the door panel assembly.

A CAUTION

- After removing the window regulator, check if the window regulator cable is damaged, and if yes, replace the window regulator assembly.
- Clean the removed window regulator, and apply appropriate grease to its linkage.

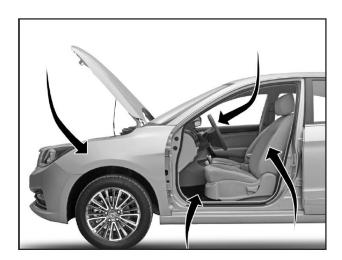


4- Refitting

- Install the window regulator (1) on the mounting surface of the window panel.
- Tighten the fixing bolt (2) of the window regulator with the 10 mm socket.
- Clamp the window regulator connector (3) into the fixing point on the door panel, and then connect it in place.
- Clamp the window regulator wire harness clip (4) into position.
- Refit the rear door window. (refer to "Removal and Refitting of Front Door Window").

A CAUTION

 Operate the window regulator after installation, checking that the window can ascend and descend normally.

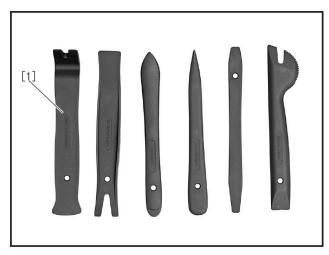


Removal and Refitting of Exterior Rearview Mirror

1 - Protection

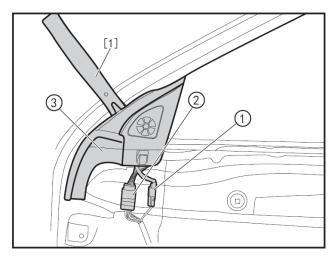
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



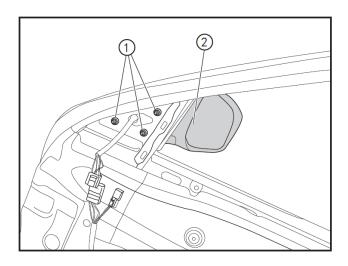
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

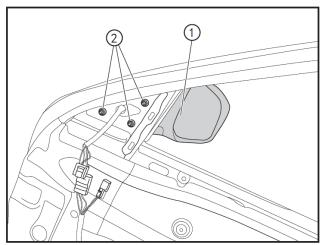


3 - Removal

- Remove the front door inner protective panel. (Refer to "Removal and Refitting of Front Door Inner Protective Plate").
- Press the connector clip, and disconnect the high-frequency speaker connector (1).
- Press the connector clip, and disconnect the rearview mirror wire harness connector (2).
- Remove the front door triangle trim panel (3) with the interior trim removal tool (BF1102) [1].

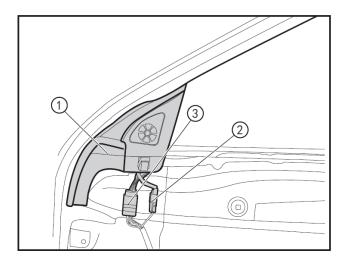


- Remove the fixing nut (1) of the exterior rearview mirror with the 10 mm socket.
- Remove the exterior rearview mirror assembly (2).



4- Refitting

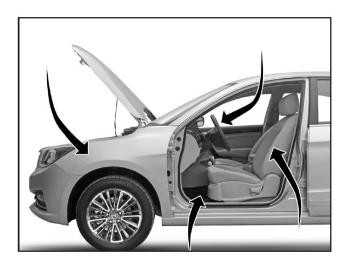
- Refit the exterior rearview mirror assembly (1) to the mounting surface on the door panel
- Tighten the fixing nut (2) of the exterior rearview mirror with the 10 mm socket.



- Press the front door triangle trim panel (1) into the mounting hole properly.
- Connect the high-frequency speaker connector (2) and exterior rearview mirror wire harness connector (3) of front door in place.

A CAUTION

- After refitting, check if all the functions are normal.
- Refit the front door inner protective plate. (refer to "Removal and Refitting of Front Door Inner Protective Plate").



Removal and Refitting of Door Electric Main Switch

1 - Protection

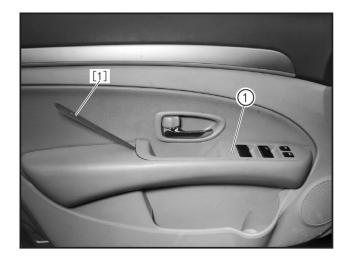
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



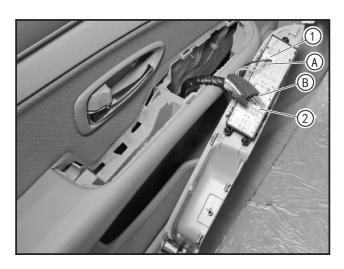
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

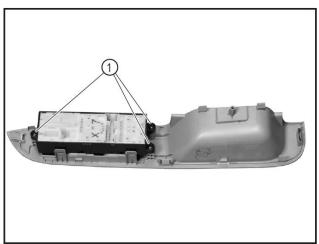


3 - Removal

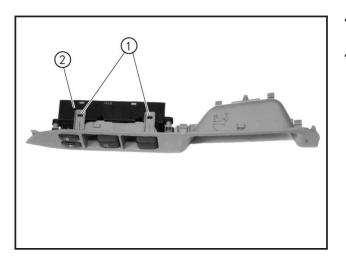
 Pry the door electric main switch panel (1) at the rear end with the interior trim removal tool (BF1102) [1].



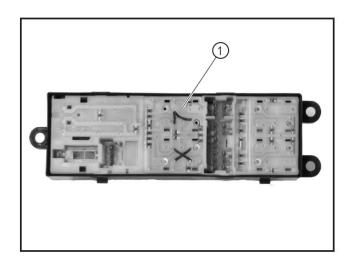
Press the connector clips A and B respectively, and disconnect the central locking connector (1) and power window switch connector (2).



Use the Phillips screwdriver to remove the fixing screw (1) of electric main switch.

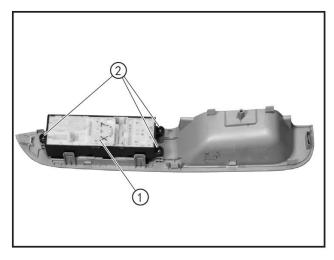


- Unlock the clip (1) of the electric main switch. (2 for left and right sides respectively)
- Detach the electric main switch (2) from the trim panel.



4 - Check

- Check the terminal of the electric main switch (1) for breakage or damage, and if any, replace the electric main switch.
- Check the terminal for metal discoloration, and plastic burning or deformation, and if any, describe that the relevant parts may be seized or deformed and needs troubleshooting.



5- Refitting

- Snap the clip on the electric main switch (1) into the electric switch panel after alignment.
- Use the Phillips screwdriver to tighten the fixing screw (2) of electric main switch.



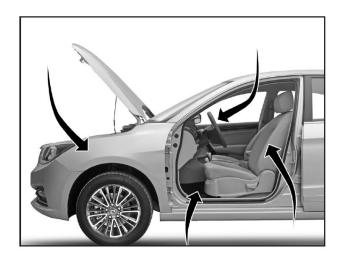
• Connect the central locking connector (1) and the power window switch connector (2) into position.



Install the front end of the door electric main switch panel (1) into the door protective plate first, and then press the door electric main switch panel into position.

▲ CAUTION

After the installation is completed, operate the electric main switch, checking that the window regulation and central locking function are normal.

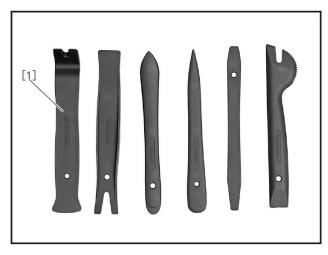


Removal and Refitting of Door Electric Auxiliary Switch

1 - Protection

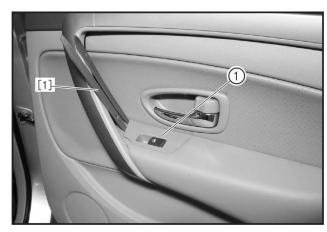
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



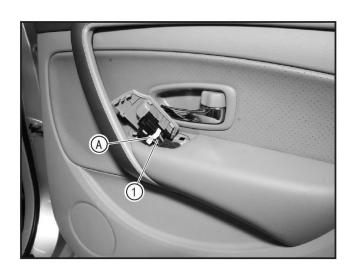
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

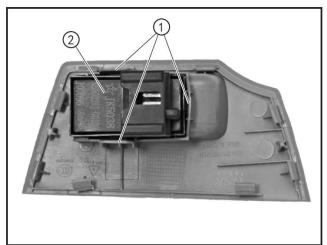


3 - Removal

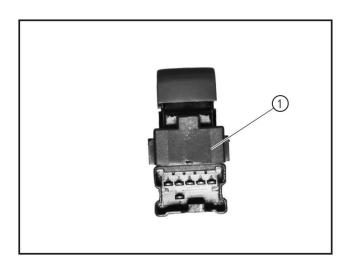
 Pry up the electric auxiliary switch panel (1) with 2 interior trim removal tools (BF1102) [1].



 Press the clip A of electric auxiliary switch connector, and then disconnect the electric auxiliary switch connector (1).

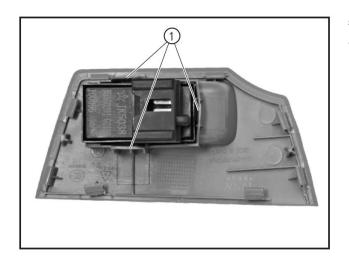


- Unlock the clip (1) of electric auxiliary switch outward.
- Remove the electric auxiliary switch (2).



4 - Check

- Check the terminal of the electric auxiliary switch connector (1) for breakage or damage, and if any, replace the electric auxiliary switch.
- Check the terminal for metal discoloration, and plastic burning or deformation, and if any, describe that the relevant parts may be seized or deformed and needs troubleshooting.



5- Refitting

Snap the clip (1) of the electric auxiliary switch into the electric auxiliary switch panel.



- Connect the electric auxiliary switch connector (1) in place.
- Clamp the electric auxiliary switch (2) into the door protective plate with the mounting holes aligned.

A CAUTION

After the installation is completed, operate the electric auxiliary switch, checking that the corresponding window can ascend and descend normally.





10.Body	10.1	Closures
	10.2	Glass, Window and Rearview Mirror
	10.3	Roof
	10.4	Exteriors and Interiors
	10.5	Instrument Panel
	10.6	Seats
	10.7	Body Check
	10.8	Body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company After-sales Service Technical Document 10

10.3

Roof

Contents

Contents	
Preparations	10.3-3
Precautions	10.3-3
Special tools	10.3-3
Tightening Torque	10.3-3
System Overview	10.3-4
Structure and Features	10.3-4
Troubleshooting	10.3-5
Common fault troubleshooting	10.3-5
Sunroof	10.3-6
Removal and Refitting of Sunroof Assembly	10.3-6
Removal and Refitting of Sunroof Visor	10.3-11
Removal and Refitting of Sunroof Glass	10.3-13

Precautions

- Be sure to check if there are any foreign matters around the sunroof before removal.
- Be careful not to damage the sunroof glass during removal and not to scratch the body paint when taking down the sunroof assembly.
- Do not incline the sunroof assembly during refitting to avoid sunroof seizure during operation.
- Perform sunroof initialization after refitting, and check if the fully closed sunroof fits with the roof completely.

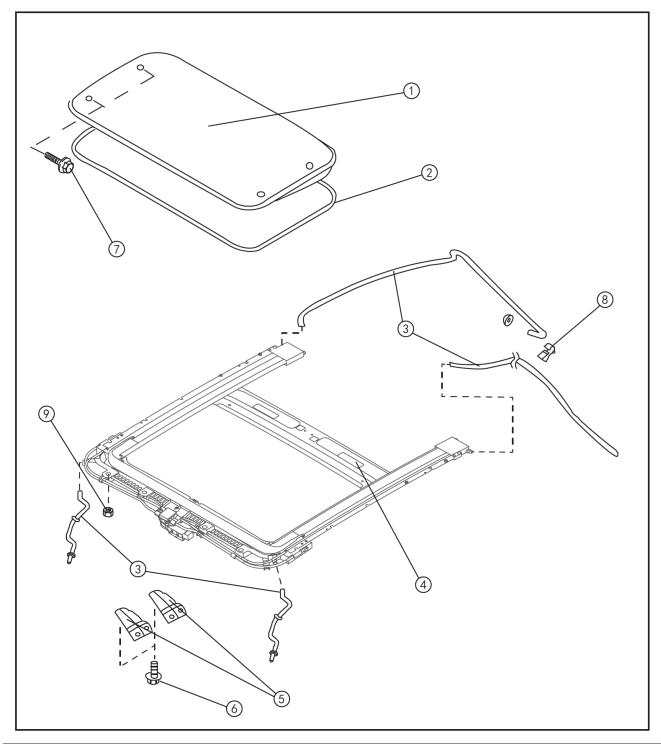
Special tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing clamps, pawls and metal clips.

Tightening Torque

Sequence number	Name	Torque (N⋅m)
1	Sunroof bracket fixing bolt	13.5
2	Sunroof assembly fixing nut	13.5
3	Sunroof glass fixing nut	10

Structure and Features



1. Sunroof glass	4. Sunroof assembly	7. Sunroof glass fixing bolt
2. Sunroof glass sealing strip	5. Sunroof fixing bracket	8. Water drain pipe clip
3. Sunroof water drain pipe	6. Sunroof bracket fixing bolt	9. Sunroof assembly fixing nut

Common fault troubleshooting

Sunroof glass seizure

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check external surface for foreign matters	Go to step 1	Blocked by foreign matters	Clear foreign matters
1	Check motor gear	OK	Faulty	Operation method
	Check motor gear for damage	Go to step 2	Motor gear damaged	Replace sunroof motor
2	Check internal cable	OK	Faulty	Operation method
	Check internal cable for damage	Go to step 3	Internal cable damaged	Replace sunroof frame
3	Check guide rail and slider	OK	Faulty	Operation method
	Check if there is any foreign matter blocked between rail and slider	Go to step 4	Foreign matters exist	Clear foreign matters
4	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after proper operation	Diagnosis end	Fault still exists.	Find out the cause from other symptoms

Water leakage of sunroof

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check if drain pipe is blocked	Go to step 1	Drain pipe blocked	Dredge drain pipe and replace it if necessary
1	Check sunroof glass sealing strip	OK	Faulty	Operation method
	Check if there is no clearance between sunroof glass sealing strip and roof panel	Go to step 2	Clearance exists	Adjust the sunroof glass
2	Check sunroof glass drain groove	OK	Faulty	Operation method
	Check sunroof glass drain groove for defect or improper installation	Go to step 3	Defect or improper installation exists	Install and adjust
3	Check drain sealing strip	OK	Faulty	Operation method
	Check if there is excessive clearance between drain sealing strip and roof panel	Go to step 4	Excessive clearance	Replace sunroof frame
4	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after proper operation	Diagnosis end	Fault still exists.	Find out the cause from other symptoms

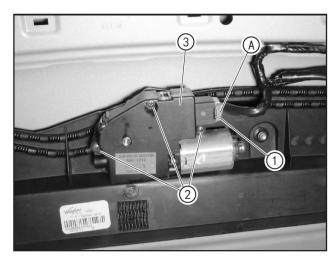


Removal and Refitting of Sunroof Assembly

1 - Protection

Place protective pads at following locations:

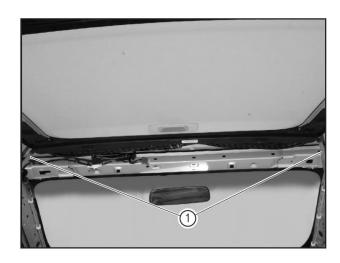
- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



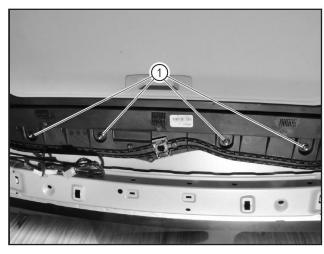
2 - Removal

A CAUTION

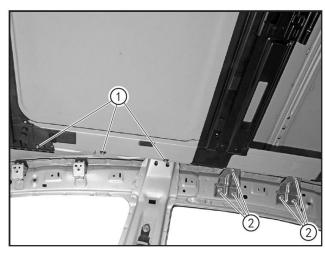
- Check if there is any obstacles around the sunroof before removal, and then close the sunroof.
- Keep the two front wheel straight forward, turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the roof inner trim panel. (Refer to "Removal and Refitting of Roof Inner Trim Panel" in "Interiors and Exteriors")
- Press and hold the locking clip (A) of the connector, and disconnect the sunroof motor connector (1).
- Remove the 3 fixing screws (2) of the sunroof motor with the Phillips screwdriver.
- Take down the sunroof motor (3).



Disconnect the 4 drain pipes (1) at 4 corners of sunroof assembly.



Remove the 4 fixing nuts (1) at the front part of sunroof assembly with the 10mm socket.



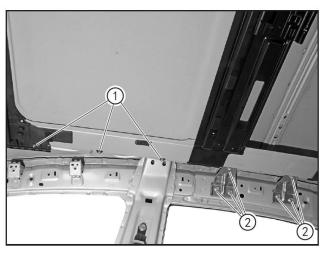
- Remove the 6 fixing nuts (1) on both sides of sunroof with the 10 mm socket.
- Remove the 12 bolts (2) on both sides of the sunroof bracket with the 10mm socket.



• Two operators are required to cooperate to lift off the sunroof assembly (1).

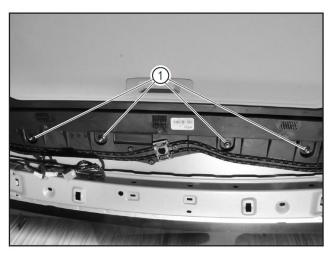
A CAUTION

 When carrying down the sunroof, avoid collision, so as to prevent damaging the sunroof glass or other parts.

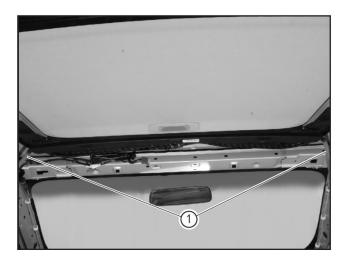


3- Refitting

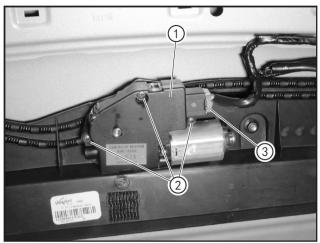
- Put the sunroof assembly onto the mounting surface in place after alignment. Two workers are required for such operation.
- Tighten the fixing bolts (1) on both sides of the sunroof assembly with the 10mm socket to 13.5N·m.
- Tighten the fixing bolts (2) of left and right brackets of the sunroof with the 10mm socket to 13.5N·m.



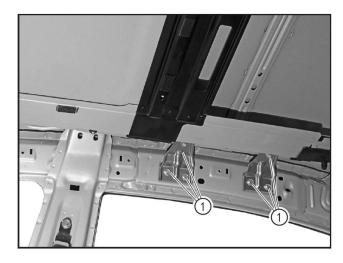
 Tighten the 4 fixing nuts (1) at the front part of sunroof assembly with the 10mm socket to 13.5N·m.



Connect the 4 drain pipes (1) at 4 corners of sunroof assembly to the fixing ends on sunroof after alignment, and secure them firmly.



- Refit the sunroof motor (1) to the mounting surface in place after alignment.
- Tighten the 3 fixing screws (2) of the sunroof motor with the Phillips screwdriver.
- Connect the sunroof motor connector (3) in place.



▲ CAUTION

- Adjust the position of sunroof bracket to flush the sunroof assembly with the outer edge of roof, and then tighten the sunroof bracket fixing bolt (1).
- Refit the roof inner trim panel. (Refer to "Removal and Refitting of Roof Inner Trim Panel" in "Interiors and Exteriors")

- 4- Inspection after Refitting
- Operate the sunroof to check for seizure and abnormal sound during the full open & close operation of sunroof glass.
- Check if the sunroof assembly is inclined after refitting.
- With the sunroof fully closed, spray water to the junction of sunroof and roof, and then check if the sunroof leaks.

5- Initialization

System initialization shall be carried out in case of the following conditions:

- When the battery cable is disconnected or the battery runs out, provided that the sunroof is being operated or within 5 s since its shutdown.
- When the sunroof motor is being replaced.
- · When the sunroof cannot work normally.

Initialization procedures:

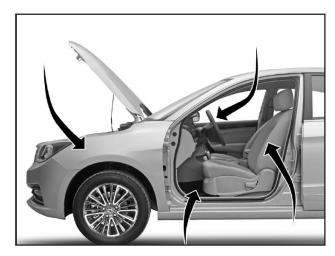
- Press the UPTILT switch to start uptilting.
- Release the UPTILT switch, and then press and hold the switch until the cover tilts closed.
- Press the switch to tilt open the sunroof, and then the sunroof glass will tilt up to open and then stop mechanically, and then automatically close completely.
- Release the switch again, and press the UPTILT switch within 10s. (press and hold the switch)
- 4s later, the glass will automatically operate in the sequence of Sliding opening Uptilting -Downtilting. Release the switch within 0.5s after the glass cover stops. (keep holding the switch during this operation)
- Initialization is deemed to be completed when the sliding switch can work normally.

6- Inspection of anti-pinch system

- · Open the sunroof completely.
- Place a piece of wood (wood hammer handle, etc.) near the fully closed position.
- Press and hold AUTO OFF switch to close the sunroof fully.
- Check if the sunroof moves back without pinching the wood after contacting with it.
- When the sunroof moves back, operating the sunroof switch will not close the sunroof.

A CAUTION

- Do not check the anti-pinch function by using body parts (e.g. hand, etc.) for fear of personal injury.
- After system initialization is done, make sure that AUTO OFF function is normal prior to inspection.
- When the automatic anti-pinch and AUTO-OFF or AUTO-ON function is in failure, it may be caused by battery disconnection and module re-initialization has to be performed in this case.

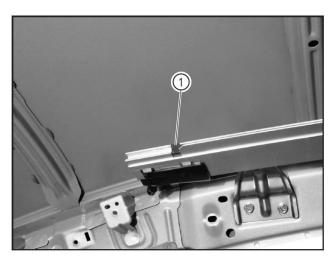


Removal and Refitting of Sunroof Visor

1 - Protection

Place protective pads at following locations:

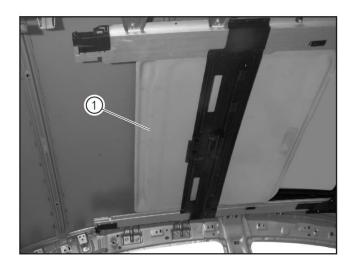
- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- · Shift lever.



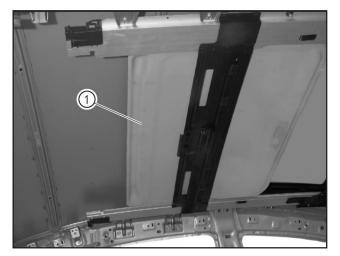
2 - Removal

A CAUTION

- Check if there is any obstacles around the sunroof before removal, and then close the sunroof.
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the roof inner trim panel. (Refer to "Removal and Refitting of Roof Inner Trim Panel" in "Interiors and Exteriors")
- Pull out the sunshade stopper (1) from the sunroof assembly channel with the small screwdriver. (1 pcs on each side)



 Pull out the sunroof sunshade (1) backward with a gentle force along the sunroof assembly channel.

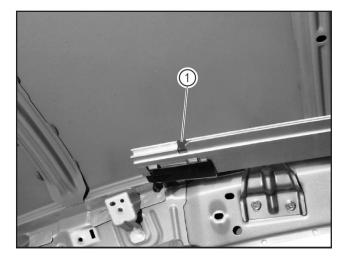


3- Refitting

 After aligning the sunshade (1) with the sunroof assembly channel, slide the sunshade into the sunroof assembly slightly.

A CAUTION

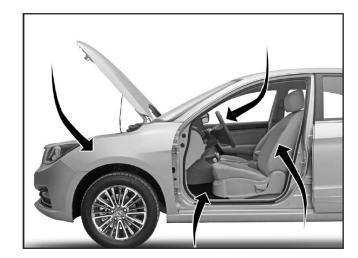
- Do not bend the visor during refitting.
- Keep the surface of sunroof visor clean.



 Refit the sunshade stopper (1) onto the sunroof assembly channel. (1 pcs on each side)

A CAUTION

 Open the sunshade completely, and ensure that the rear ends on both left and right sides contact the stopper simultaneously so as to avoid inclination of the sunshade.



Removal and Refitting of Sunroof Glass

1 - Protection

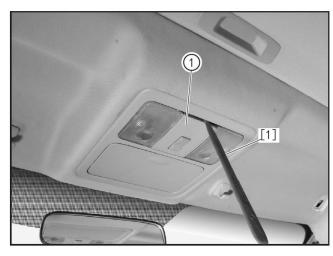
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



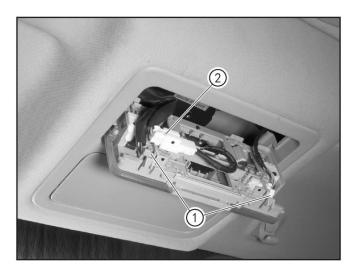
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

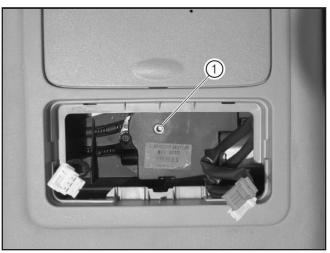


3 - Removal

- Use the sunroof electric switch to tilt to open the sunroof.
- If the above operation fails, open the sunroof mechanically by the sunroof emergency mode.
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Pry out the front ceiling lamp (1) with the interior trim removal tool (BF1102) [1].



- Press the front ceiling lamp connector clip, and disconnect the front ceiling lamp connector (1).
- Press the sunroof switch connector clip, and disconnect the sunroof switch connector (2).
- Remove the front ceiling lamp panel.



A CAUTION

- To open the sunroof mechanically when the battery runs out or is removed, first check if there is any foreign matter around the sunroof glass.
- Rotate the bolt (1) counterclockwise with the 4mm Allen wrench to slowly tilt open the sunroof glass.



- Open the sunroof to completely expose the 4 fixing bolts (1) on both sides.
- Remove the 4 fixing bolts (1) of the sunroof glass with the T20 screwdriver bit. (2 pcs on each side)



 Hold the sunroof glass (1) by one hand, and hold the rear part of sunroof glass by the other hand, and then turn over the sunroof glass slowly to make it pass through the sunroof frame opening carefully.



• Remove the sunroof glass (1).

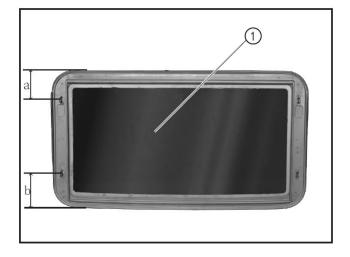
A CAUTION

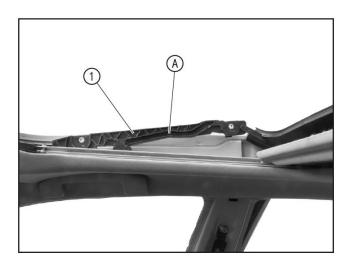
Do not lean the removed sunroof glass against the wall. And instead, place it horizontally on the carrier, with no stress exerted on rubber sealing strips on its edges.



A CAUTION

- Never install the sunroof glass (1) reversely, and the distances between the sunroof glass and the end a and the end b should be 95 mm and 120 mm respectively.
- Refit the sunroof glass with the end b of the sunroof towards the front of vehicle body.

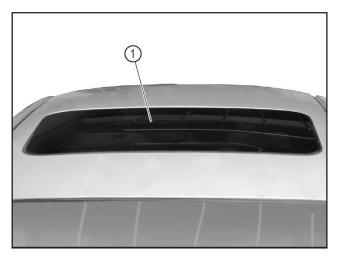




- Clear any debris and dust thoroughly on the sunroof rail (1).
- Apply an appropriate amount of grease to channel A on sunroof rail.



- Appropriately adjust the mounting position of sunroof glass (1) relative to the sunroof rail.
- Insert 4 fixing bolts, secure the sunroof glass, tighten the fixing bolts (2) to the specified torque of 10N·m.



- Close the sunroof (1) and check if the sunroof sealing strip fits with the roof completely without any cracks.
- With the sunroof fully closed, spray water to the junction of sunroof and roof, and then check if the sunroof leaks. Readjust or reinstall it if any.





10.1 Closures

10.2 Glass, Window System and Rearview Mirror

10.3 Roof

10.4 Exteriors and Interiors

10.5 Instrument Panel

10.6 Seat

10.7 Body Check

10.8 body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company After-sales Service Technical Document 10

10.4

Exteriors and Interiors

Contents

Precautions	10.4-3
Precautions for service	10.4-3
Preparations	10.4-4
Special tools	10.4-4
Service Data and Specifications	10.4-5
Technical Parameters	10.4-5
Trunk Adjustment Clearance	10.4-6
Tightening Torque	10.4-6
System Overview	10.4-7
Structure and features	10.4-7
Troubleshooting	10.4-16
Common fault troubleshooting	10.4-16
Front Bumper	10.4-17
Removal and Refitting of Front Bumper	10.4-17
Front grille	10.4-23
Removal and Refitting of Front Grille	10.4-23
Fender	10.4-27
Removal and Refitting of Fender	10.4-27
Rear bumper	10.4-35
Removal and Refitting of Rear Bumper	10.4-35
Fender	10.4-41
Removal and Refitting of Front Wheel Housing Fender	10.4-41
Removal and Refitting of Rear Wheel Housing Fender	10.4-44
Door Inner Protective Plate	10.4-46
Removal and Refitting of Front Door Inner Protective Plate	10.4-46
Removal and Refitting of Rear Door Inner Protective Plate	10.4-50
Door Window Cover Strip	10.4-55
Removal and Refitting of Glass Inner Cover Strip	10.4-55
Removal and Refitting of Rear Door Window Inner Cover Strip	10.4-56
Removal and Refitting of Front Door Window Outer Cover Strip	10.4-57
Removal and Refitting of Rear Door Window Outer Weatherstrip	10.4-59

Door Guard Strip	10.4-61
Removal and Refitting of Door Guard Strip	10.4-61
Outer Body Kit	10.4-63
Removal and Refitting of Body Kit	10.4-63
Roof Trim Strip	10.4-66
Removal and Refitting of Roof Trim Strip	10.4-66
Body Side Wall Inner Trim Panel	10.4-68
Removal and Refitting of Body Side Wall Inner Trim Plate	10.4-68
Rear Spacer Plate	10.4-75
Removal and Refitting of Rear Partition	10.4-75
Roof Inner Trim Panel	10.4-79
Removal and Refitting of Roof Inner Trim Panel	10.4-79
Trunk Lid Inner Protective Plate	10.4-88
Removal and Refitting of Trunk Lid Inner Protective Plate	10.4-88

10.4

Precautions for service

- Before maintenance, cover the components (such as fender, seat, etc.) prone to scratch with protection pads.
- As the fastener is a quite important connecting component, the fastener of the same number shall
 be used in case of replacement, otherwise, fasteners of the same size and strength may be used.
 Failure to observe the above requirements may damage the main components, impair performance
 of the system, or result in increased repair charge. Never use inferior or modified fastener. Be sure
 to tighten the fastener to specified torque during refitting and make sure these fastener are intact.
- For vehicles equipped with airbag system, remove and properly store the components that may collide with airbag system components when repairing the body in advance.
- After removal and refitting of bumper is done, adjust the clearance to specified value.

Preparations

Special tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing interior trims

Technical Parameters

Adjusted Gap of Hood



Part	Position	Clearance
Front bumper - front grille	A-A	0.2mm-2.2mm
Front bumper - headlamp	B-B	0.3mm-3.0mm
Front bumper - headlamp	C-C	0.3mm-3.0mm
Front bumper - front fender	D-D	0.0mm-0.7mm
Front bumper - hood	E-E	4.0mm-8.4mm
Front bumper - front grille	F-F	0.3mm-3.3mm

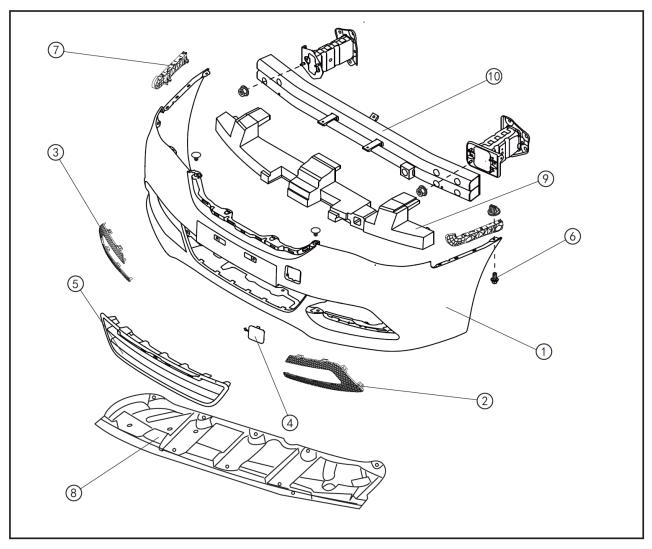
Trunk Adjustment Clearance



Part	Position	Clearance
Rear bumper - trunk lid	G-G	5.0mm-9.0mm
Rear bumper - rear combination lamp	H-H	0.2mm-3.0mm
Rear bumper - rear fender	I-I	0.0mm-0.7mm
Rear bumper - trunk lid	J-J	2.4mm-6.0mm

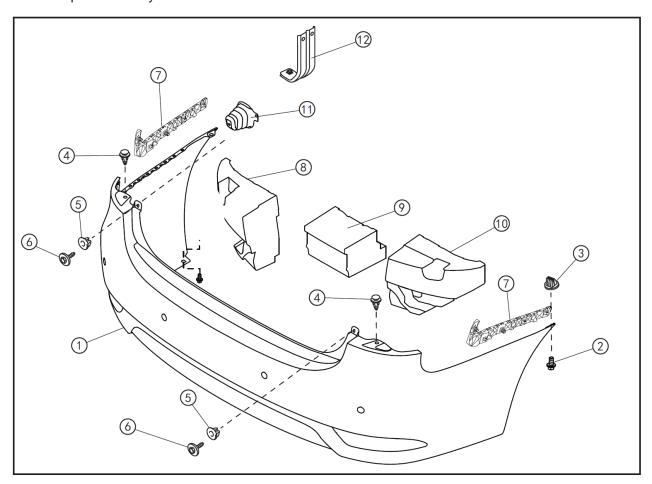
Structure and features

Front Bumper Assembly



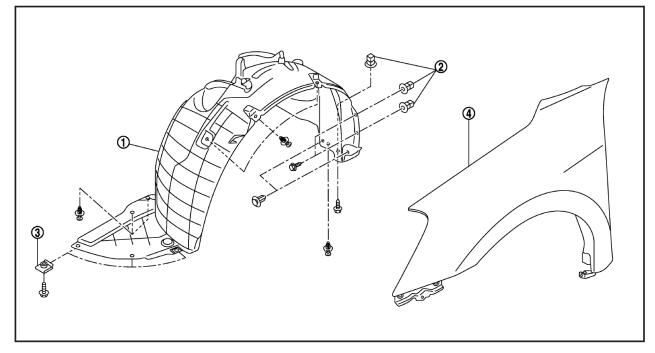
1. Front bumper	5. Front bumper lower grille	9. Front bumper energy absorption block
2. Left front fog lamp trim panel	6.Bolt	10. Front bumper frame
3. Right front fog lamp trim panel	7. Front bumper mounting seat	
4. Front towing hook plug	8. Front bumper lower protective plate	

Rear Bumper Assembly



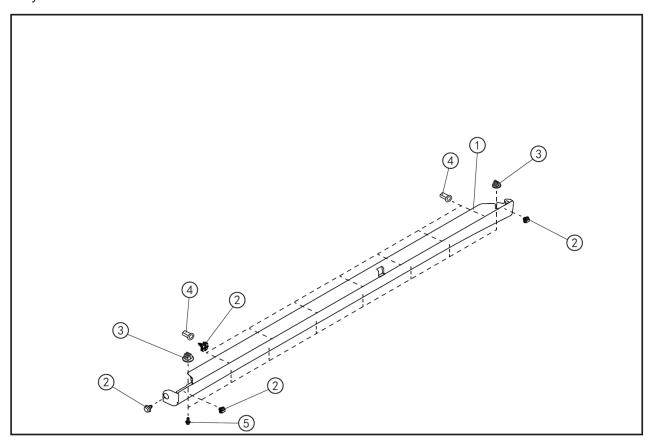
1. Rear bumper	5. Screw mount	Rear bumper middle energy absorption block
2.Screw	6.Screw	10. Rear bumper right energy absorption block
3. Screw mount	7. Rear bumper mounting seat	11. Rear bumper support
4. Clip	8. Rear bumper left energy absorption block	12. Rear bumper left lower bracket

Fender Assembly



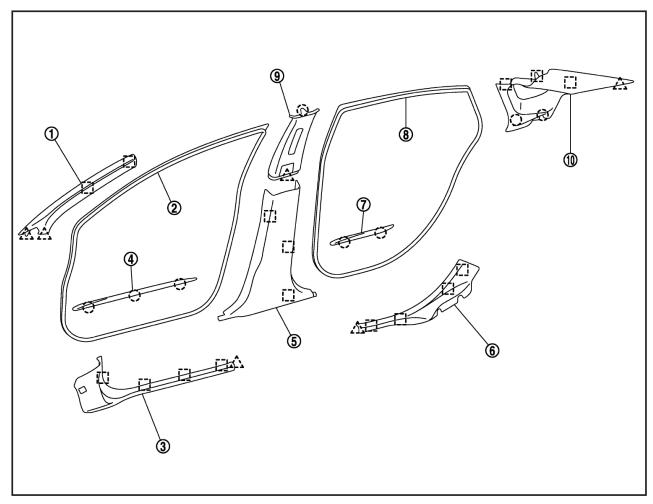
1. Front wheel housing fender	3. Reed nut
2. Screw mount	4. Fender assembly

Body Protective Parts



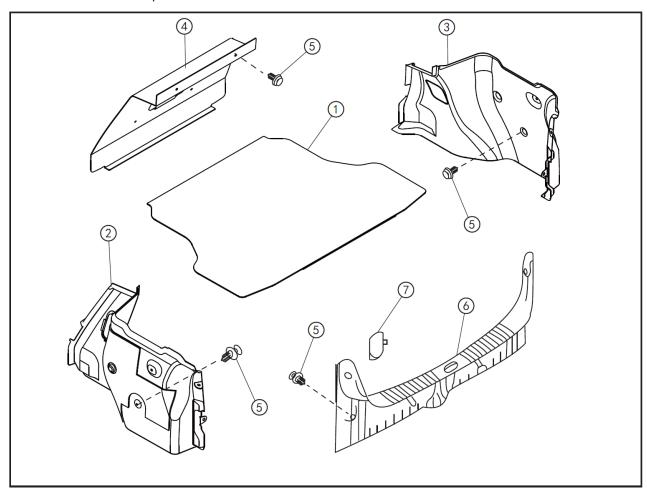
1. Left side outer body kit	3. Screw mount	5.Screw
2. Clip	4. Clip mount	

Body Side Wall Inner Trim Panel Assembly



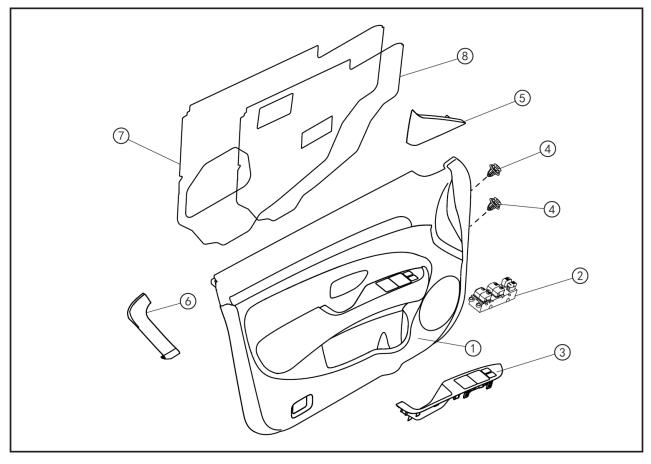
1. Front pillar upper protective plate	5. Middle pillar lower protective plate	9. Middle pillar upper protective plate
2. Front door frame sealing strip	6. Rear door sill protective plate	10. Rear pillar upper protective plate
3. Front door sill protective plate	7. Rear door step	다: clip
4. Front door step	8. Rear door frame weather strip	A □ : pawl

Trunk Interior Trim Components



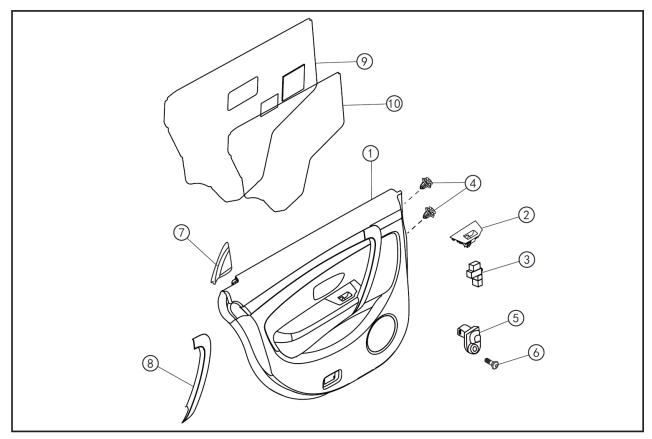
1. Trunk carpet	4. Trunk front protective plate	7. Trunk lock catch access cover
2. Trunk left protective plate	5. Clip	
3. Trunk right protective plate	6. Trunk sill clipper	

Front Door Inner Protective Plate



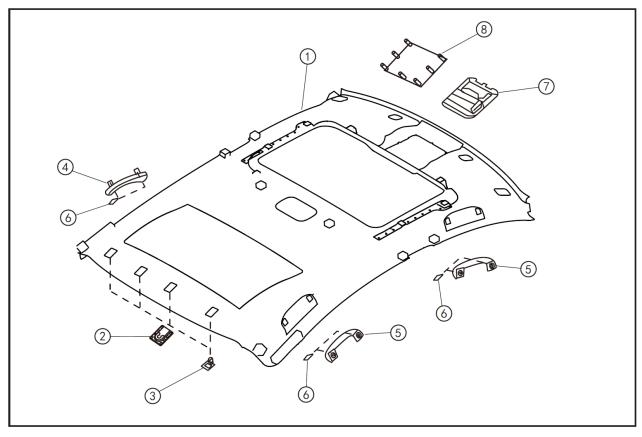
Left front door inner protective plate assembly	4. Clip	7. Front door waterproof membrane
2. Window regulator switch	5. Front door triangle trim panel	8. Butyl tape
3. Left front door electric switch panel	6. Right front door handle cover plate	

Rear Door Inner Protective Plate



Rear door inner protective plate assembly	5. Door switch	9. Rear door waterproof membrane
2. Rear door electric switch panel	6.Screw	10. Butyl tape
3. Window regulator switch	7. Rear door triangle trim panel	
4. Clip	8. Rear door handle cover plate	

Roof Inner Trim Panel Components

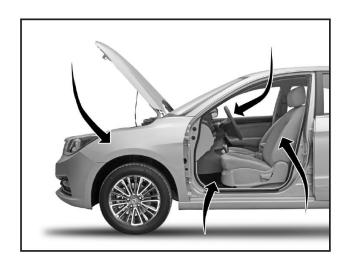


1. Roof inner trim panel	4. Left handle	7. Spectacle case
2. Clip mount	5. Right handle	8. Washer
3. Clip	6. Handle trim panel	

Troubleshooting

Common fault troubleshooting

Fault symptom:	Possible cause	Troubleshooting methods
Abnormal noise heard in cab	The interior trim clip is broken or loosened, so that the interiors may collide with surrounding parts during driving and unusual noise may be caused in this case, especially when driving on a bumpy road.	Replace the interior trim involving unusual noise.
Excessive clearance at mounting position of interiors or exteriors	The clearance of exteriors is inconsistent with specified value, or exterior or interior trim clip is broken or loosened.	Readjust the mounting clearance or replace the faulty component

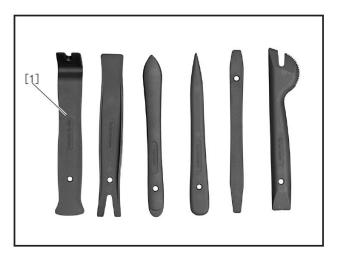


Removal and Refitting of Front Bumper

1 - Protection

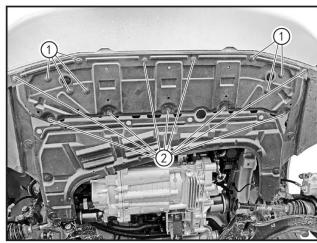
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



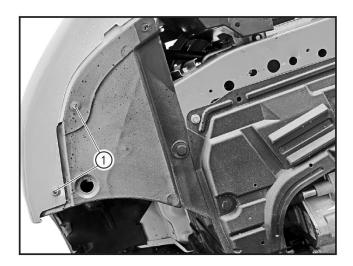
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

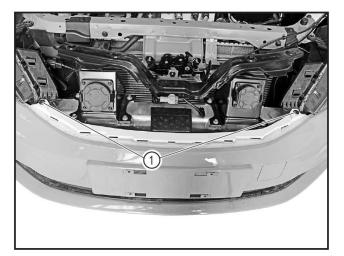


3 - Removal

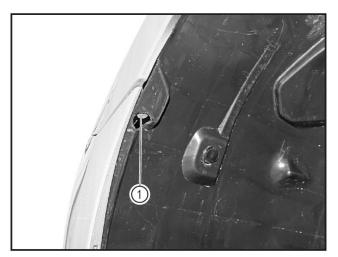
- Use a lift to lift the vehicle as appropriate, and use the interior trim removal tool (BF1102) to remove 7 clips (1) from the front bumper lower protective plate.
- Remove the 9 fixing bolts (2) (M6X19) from the front bumper lower protective plate with the 10mm socket.
- Remove the front bumper lower protective plate.



 Remove the 2 fixing bolts (1) (M6X19) from the lower part of front bumper fender with the 10mm socket. (2 pcs on each side)



- Lower the vehicle as appropriate.
- Remove the front grille. (Refer to "Removal and Refitting of Front Grille" in "Interiors and Exteriors")
- Use the small slotted screwdriver to remove the fixing clip (1) from front bumper.



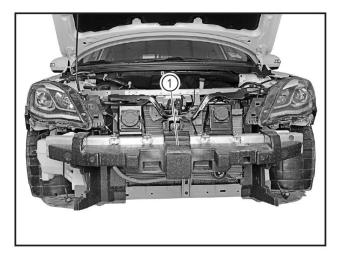
• Remove the fixing screw (1) on the front bumper fender with the 10mm socket. (1 pcs on each side)



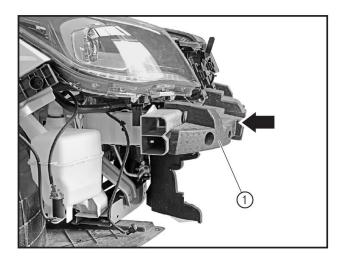
Lift the side of front bumper and pull it outward gently at position (A) so as to separate the side from the bracket pawl, and take the bumper (1) off the body.



- Unlock the clip A of front fog lamp connector (1), and disconnect the front fog lamp connector (1).
- Remove the front bumper.



Take off the front bumper energy absorption block (1).



4- Refitting

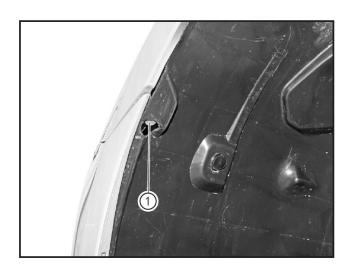
 Align the front bumper energy absorption block with the mounting hole, and install the energy absorption block (1) in place.



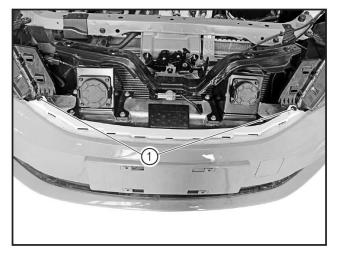
Refit the front fog lamp connector (1) with the jack aligned.



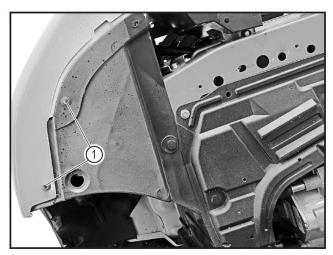
 Two workers are required for cooperation: align the front bumper bracket pawl with the hole, and install the front bumper properly.



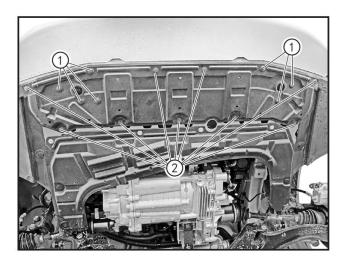
 Refit the fixing screw (1) on the front bumper fender with the 10mm socket. (1 pcs on each side)



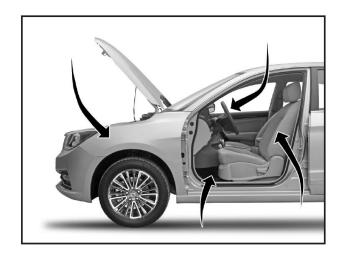
- Lower the vehicle as appropriate.
- Refit the clips (1) at the upper part of the front bumper.
- Refit the front grille. (Refer to "Removal and Refitting of Front Grille" in "Interiors and Exteriors")



 Refit the 2 fixing bolts (1) (M6X19) at the lower part of front bumper fender with the 10mm socket. (2 pcs on each side)



- Lift the vehicle as appropriate, and refit the 7 clips (1) of the front bumper lower protective plate.
- Refit the 9 fixing bolts (2) (M6X19) of the front bumper lower protective plate with the 10mm socket.
- Check if clearance meets the specified value for the front bumper after refitting. If the fitting gap is unsatisfactory, adjust the rear bumper accordingly until the specification is met. (Refer to "Service Data and Specification" in this section)



Removal and Refitting of Front Grille

1 - Protection

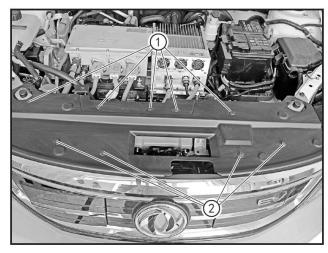
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



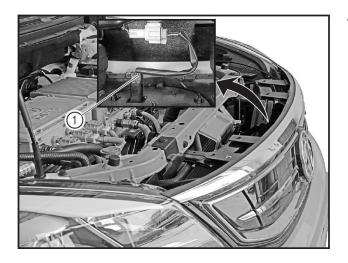
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

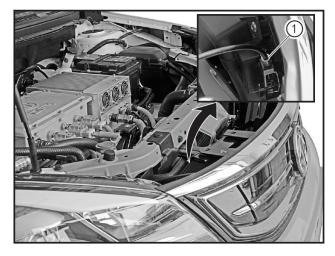


3 - Removal

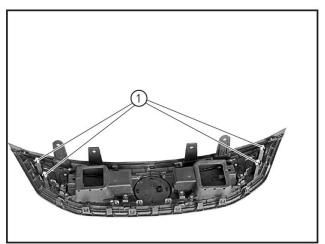
- Open the hood, and remove the 5 fixing clips (1) from the front bumper upper protective plate with the interior trim removal tool (BF1102).
- Remove the 4 fixing bolts (2) (M6X19) from the front grille upper protective plate with the 10mm socket.



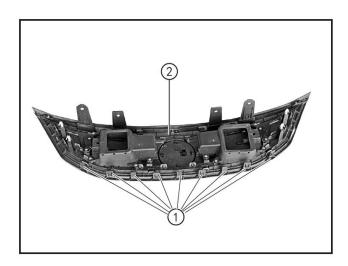
Pry up the logo shadow light connector clip, and disconnect the logo shadow light connector (1).



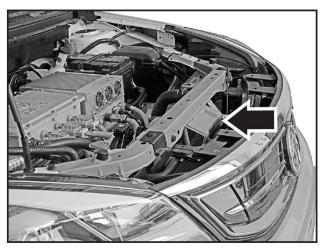
Disconnect the charging port cover switch cable (1).



 Press the clips (1) on both sides of front grille in the motor compartment, and detach the 4 clips (1).

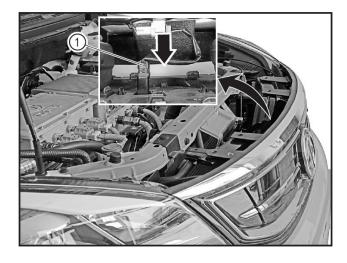


- Press the 9 internal clips (1) under the front grille.
- Take off the front grille (2).

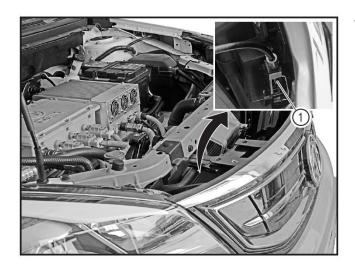


4- Refitting

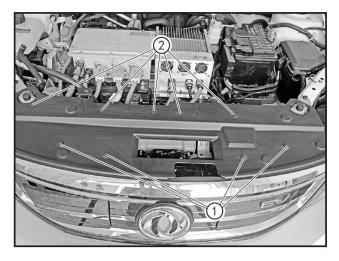
 First get the 9 bayonets at the lower part of the front grille aligned, push the front grille as indicated by the arrow until the 9 clips at the lower part of the front grille is clamped into the bayonets, and then check if the front grille is installed firmly.



 Refit the logo shadow light connector (1) with the jack aligned, and check that the connector is installed in place.

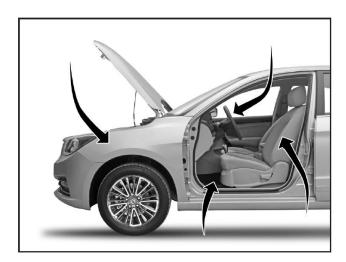


Refit the cable (1) with the clip hole aligned.



- Refit the front grille upper protective plate, and install the 4 fixing bolts (1) (M6X19) of the front grille upper protective plate with the 10mm socket.
- Refit the 5 clips (2) of the front grille upper protective plate.

10.4



Removal and Refitting of Fender

1 - Protection

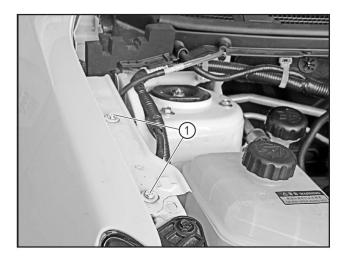
Place protective pads at following locations:

- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].

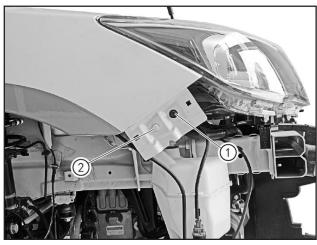


3 - Removal

- Remove the front bumper. (Refer to "Removal and Refitting of Front Bumper" in "Interiors and Exteriors")
- Remove the front fender. (Refer to "Removal and Refitting of Front Fender" in "Interiors and Exteriors")
- Remove the upper fixing bolts (1) (M6X14) from the fender with the 10mm socket.



Remove the fixing screw (1) of the front bumper bracket with the 10mm socket.

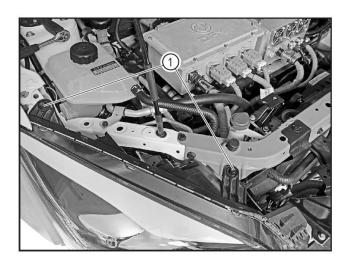


Remove the fixing bolt (1) (M6X23) and fixing bolt (2) (M6X16) of the fender with the 10mm socket.

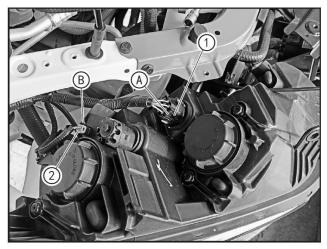


 Remove the fixing bolt (1) (M6X20) of headlamp assembly bracket with the 10mm socket.

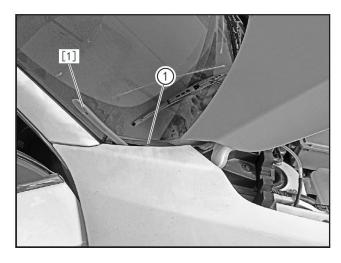
10.4



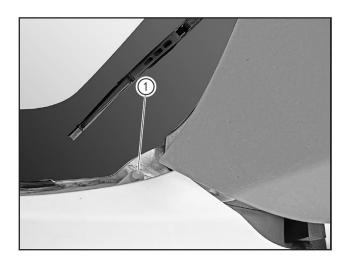
Remove the fixing bolt (1) (M6X20) of headlamp assembly with the 10mm socket.



- Unlock the clip A of headlamp connector (1), and disconnect the headlamp connector (1).
- Press the locking block B of headlamp dimming motor connector (2), and disconnect the right headlamp dimming motor connector (2) outwards.



 Pry the front windshield weatherstrip (1) with the interior trim removal tool (BF1102) [1].



Remove the upper fixing bolts (1) (M6X16) from the fender with the 10mm socket.



- Remove the front door. (Refer to "Removal and Refitting of Front Doors" in "Door Lock" section.)
- Remove the fixing bolts (1) (M6X15) on the side of fender with the 10mm socket.



- Remove the outer body kit. (Refer to "Removal and Refitting of Outer Body Kit" in "Interiors and Exteriors")
- Remove the fixing bolt (1) at the lower part of the fender with the 10mm socket.



• Slowly remove the fender along the edge (A).

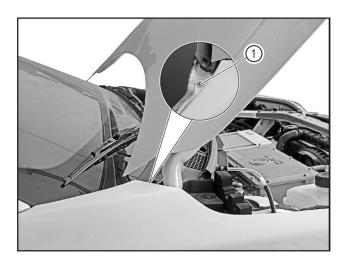


4- Refitting

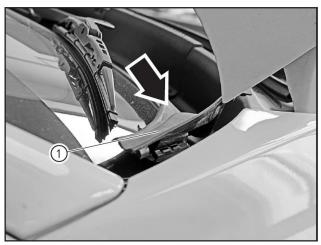
- Install the fender to the body.
- Align the bolt holes (1) at the lower part of the fender and install the fixing bolts (M6X16).



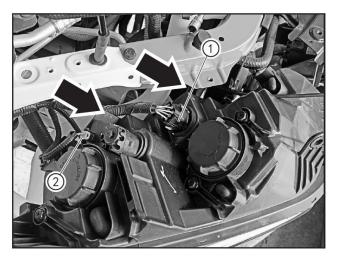
• Align the bolt holes (1) and install the fender fixing bolts (M6X15).



Align the bolt holes (1) and install the fixing bolts (M6X16) at the upper part of the fender.



Press the front windshield weatherstrip (1) inward until it is installed in place.



- Install the headlamp connector (1) in the direction as indicated by the arrow.
- Install the right headlamp dimming motor connector (2) in the direction as indicated by the arrow.

10.4





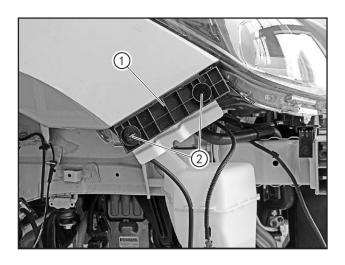
Align the bolt holes (1) on the upper part of headlamp, and install the 2 upper fixing bolts (M6X20) of the headlamp.



 Align the bolt holes (1), install the headlamp assembly bracket on the body, and then install the fixing bolts (M6X20) of headlamp assembly bracket.



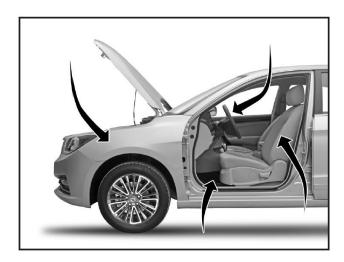
- Align the fender bolt holes (1), and then install the fixing bolts (M6X23) (black) of the fender with the 10mm socket.
- Align the fender bolt holes (2), and then install the fixing bolts (M6X16) (white) of the fender with the 10mm socket.



- Align the clip holes and install the front bumper bracket (1).
- Align the screw holes (2) and install the fixing screws of front bumper bracket with the 10mm socket.



- Align the bolt holes (1) at the upper part of the fender, and install the fixing bolts (M6X14) at the upper part of the fender with the 10mm socket.
- Install the front fender. (Refer to "Removal and Refitting of Front Fender" in "Interiors and Exteriors")
- Refit the front bumper. (Refer to "Removal and Refitting of Front Bumper" in "Interiors and Exteriors")
- Check if clearance between fender and front bumper meets the specified value for the front bumper after refitting. If the fitting gap is unsatisfactory, adjust the fender and rear bumper accordingly until the specification is met. (Refer to "Service Data and Specification" in this section)

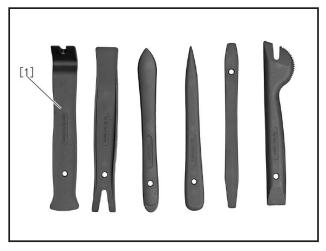


Removal and Refitting of Rear Bumper

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



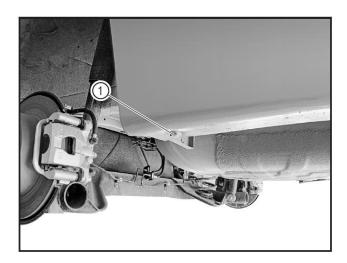
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

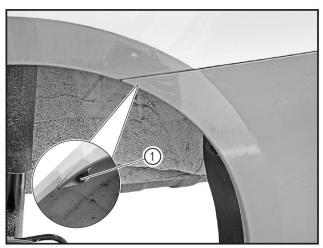


3 - Removal

- Remove the external tail lamp. (Refer to "Removal and Refitting of Tail Lamp Components" in "Lighting System".)
- Pry the 2 clips (1) at the lower part of the rear bumper with the interior trim removal tool, and then take it down.



Remove the fixing bolt (1) (M6X14) at the lower part of rear bumper with the 10mm socket. (1 pcs on each side)



Remove the fixing screw (1) of the rear bumper with the 10mm socket. (1 pcs on each side)



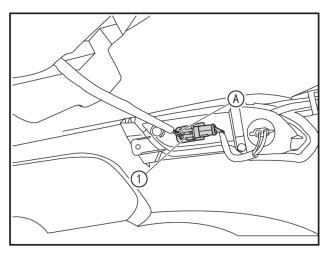
- Remove the fixing bolt (1) (M6X14) at the upper part of rear bumper with the 10mm socket. (1 pcs on each side)
- Remove the clips (2) at the upper part of rear bumper with the interior trim removal tool (BF1102). (1 pcs on each side)



 Hold up the wheel arch part of rear bumper (1) and pull it outward gently so as to separate it from the pawl of rear bumper side bracket.

A CAUTION

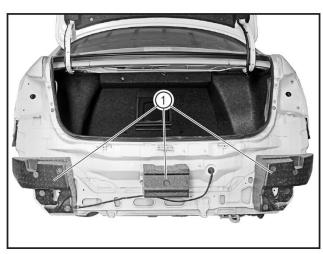
- During operation, avoid contact with oil and vinegar substances, so as to prevent damage.
- The removal of rear bumper should be carried out by two persons cooperatively to prevent falling.



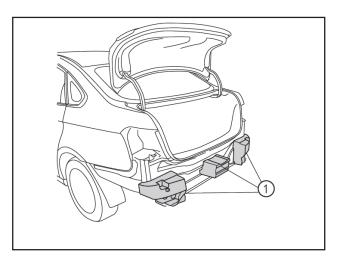
- Lift up the bumper with two workers cooperating with each other to detach it from the clamping hook.
- Pull up the rear fog lamp connector clip (A), disconnect the fog lamp connector (1) in the direction as indicated by the arrow, and remove the rear bumper.

A CAUTION

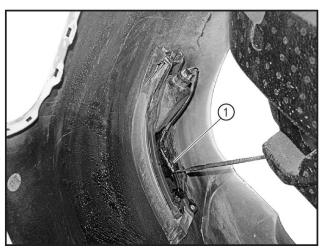
For vehicles equipped with parking sensor system, the parking sensor connector should be disconnected.



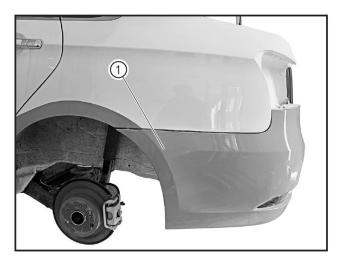
• Remove the rear bumper energy absorber (1).



- 4- Refitting
- Refit the rear bumper energy absorber (1).



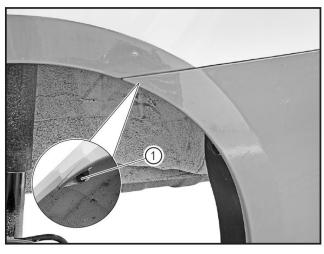
Refit the fog lamp connector (1) with the jack aligned, and check that the connector is installed in place.



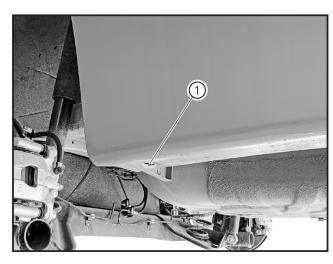
 Two workers are required to cooperate with each other: lift the bumper (1), align the hook, and press the hook to install the rear bumper in place.



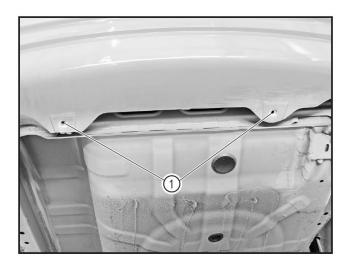
- Align the bolt holes (1) at the upper part of the rear bumper and install the fixing bolts (M6X14). (1 pcs on each side)
- Align the clip holes (2) at the upper part of the rear bumper and install the upper clips. (1 pcs on each side)



• Install the fixing screw (1) of the rear bumper with the 10mm socket. (1 pcs on each side)



 Align the bolt holes (1) and install the fixing bolts (M6X14) at the lower part of the rear bumper with the 10mm socket.

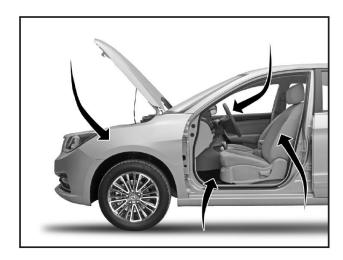


- Align the clip hole (1) and install the clip at the lower part of the rear bumper.
- Install the outer tail lamp. (Refer to "Removal and Refitting of Tail Lamp Components" in "Lighting System".)



 Check whether the gap of the rear bumper with the rear fender and the trunk lid meets the requirements.
 If the fitting gap is unsatisfactory, adjust the rear bumper accordingly until the specification is met. (Refer to "Service Data and Specification" in this section)

10.4

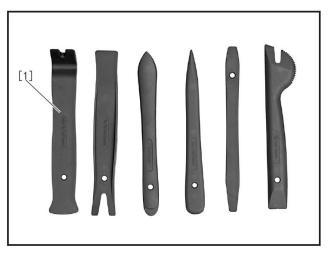


Removal and Refitting of Front Wheel Housing Fender

1 - Protection

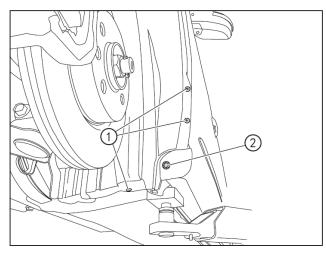
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



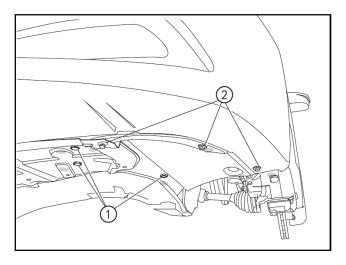
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

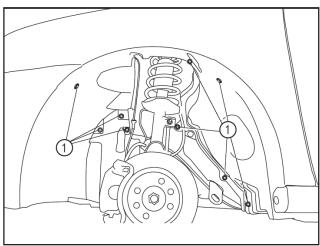


3 - Removal

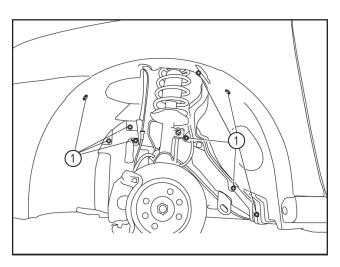
- Lift the vehicle as appropriate, and remove the front wheels. (Refer to "Removal and Refitting of Wheels" in "Wheels")
- Use the Phillips screwdriver to remove the 3 fixing screws (1) at the back of front wheel housing fender.
- Remove the fixing clips (2) at the front end of outer body kit with the interior trim removal tool BF1102.



- Use the interior trim removal tool BF1102 to remove the 3 clips (1) at the front side of front wheel housing fender
- Remove the 3 fixing bolts (2) of the front bumper with the 10mm socket.



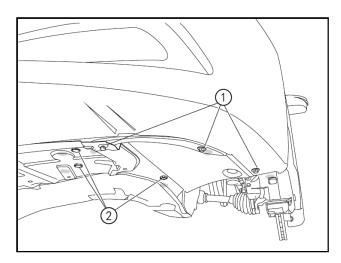
- Use the interior trim removal tool BF1102 to remove the 9 clips (1) on the front wheel housing fender.
- Pull the front wheel housing fender gently to detach it from the body.



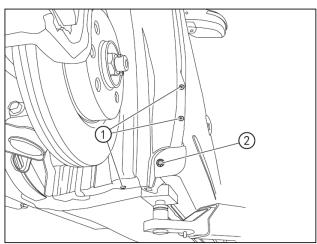
4- Refitting

• Align the clip holes of front wheel housing fender, and install the 9 clips (1).

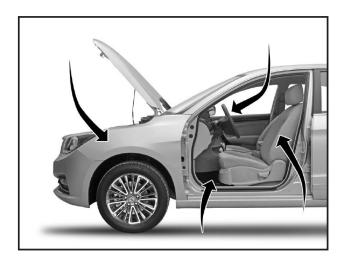
10.4



- Refit the 3 fixing bolts (1) of the front bumper with the 10mm socket.
- Install the 3 clips (2) on the front side of the front wheel housing fender.



- Use the Phillips screwdriver to remove the 3 fixing screws (1) at the back of front wheel housing fender.
- Align the clip holes and install the clips (2) at the front end of outer body kit.
- Lift the vehicle as appropriate, and refit the front wheels. (Refer to "Removal and Refitting of Wheels" in "Wheels")
- Check that all edges of the wheel housing fits well without warp-up, so as to avoid ingress of muddy water.



Removal and Refitting of Rear Wheel Housing Fender

1 - Protection

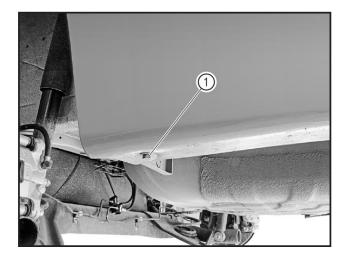
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

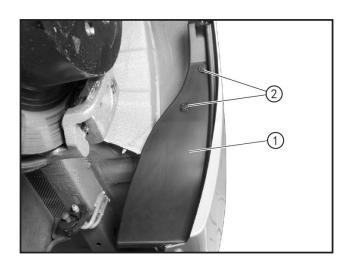
Interior trim removal tool (BF1102) [1].



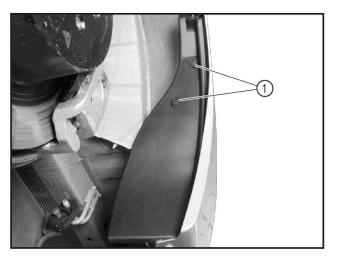
3 - Removal

 Remove the fixing bolt (1) (M6X14) at the lower part of rear bumper with the 10mm socket. (1 pcs on each side)

10.4

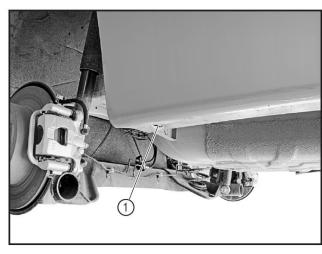


- Remove the 2 clips (2) on the rear wheel housing fender (1) with the interior trim removal tool BF1102.
- Take the rear wheel housing fender (1) off the body.



4- Refitting

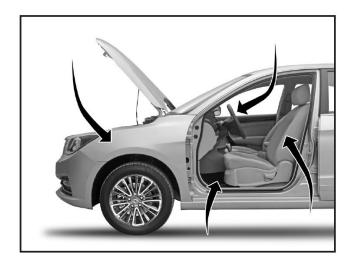
Align the clip holes and install the clips (1) of rear wheel housing fender.



• Align the bolt holes (1) and install the fixing bolts (M6X14) at the lower part of fender.

A CAUTION

- Be careful not to scratch the body.
- During the installation, check the clasps for damaged part or any damage due to heavy load, and replace with new clasps if necessary.
- Push and hold the clasps to fix them in place.



Removal and Refitting of Front Door Inner Protective Plate

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- · Shift lever.



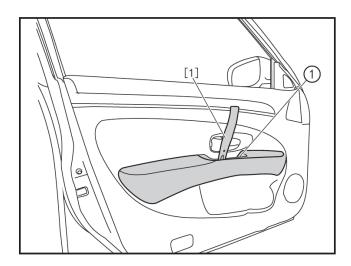
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

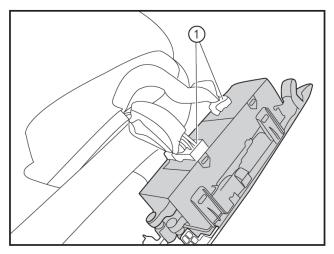


3 - Removal

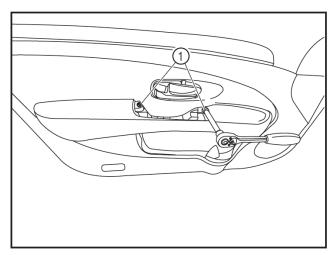
• Gently pry up the door inside handle trim cover (1) with the interior trim removal tool (BF1102) [1].



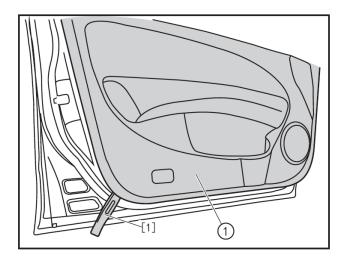
 Gently pry the door electric main switch panel (1) at the rear end with the interior trim removal tool (BF1102) [1].



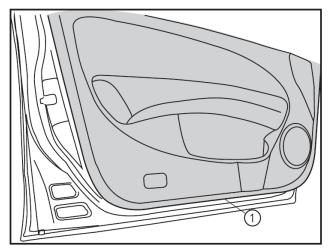
Press the connector clip, and disconnect the door electric main switch connector (1).



• Remove the fixing bolts (1) of door inner protective plate with the 10mm socket.



- Pry the clips of door protective plate along its contour with the interior trim removal tool (BF1102) [1].
- Take off the front door inner protective plate (1).



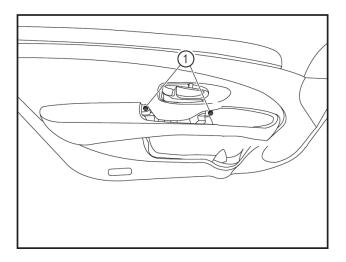
4- Refitting

Align the clips on the front door inner protective plate

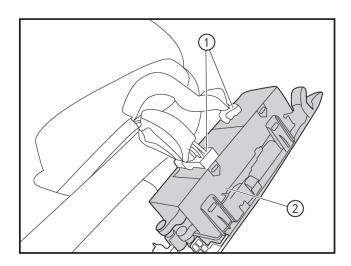
 (1) with the mounting holes on the door, and then press the door inner protective plate in place.

A CAUTION

Replace the damaged clips on the door protective plate.



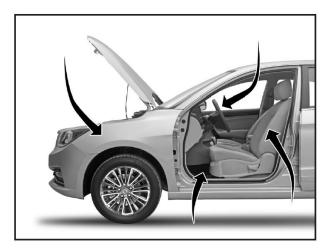
 Tighten the fixing bolts (1) of door inner protective plate with the 10mm socket.



- Connect the door electric main switch connector (1) in place.
- Refit the door electric main switch panel (2) from the front end into the door inner protective plate.



 Clamp the inside handle trim cover (1) to the mounting surface on the door protective plate with the positioning clips aligned.







Removal and Refitting of Rear Door Inner Protective Plate

1 - Protection

Place protective pads at following locations:

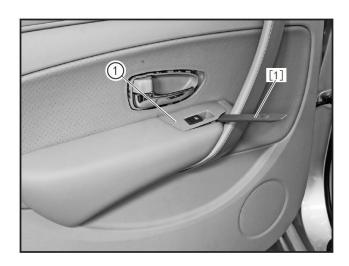
- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

2 - Recommended tools

Interior trim removal tool (BF1102) [1].

3 - Removal

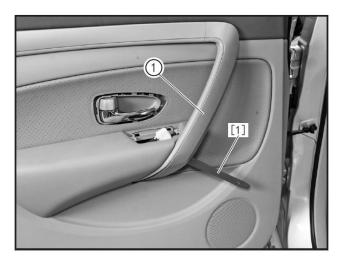
• Gently pry up the door inside handle trim cover (1) with the interior trim removal tool (BF1102) [1].



Gently pry the door electric auxiliary switch panel (1) from the front end with the interior trim removal tool (BF1102) [1].



- Press the clip A of electric auxiliary switch connector, and then disconnect the electric auxiliary switch connector (1).
- Remove the electric auxiliary switch (2).



Gently pry up the rear door handle cover (1) with the interior trim removal tool (BF1102) [1].



Remove the fixing bolts (1) of rear door inner protective plate with the 10mm socket.



- Pry the clips of door protective plate along its contour with the interior trim removal tool (BF1102) [1].
- Take off the rear door inner protective plate (1).



4- Refitting

Align the clips on the rear door inner protective plate (1) with the mounting holes on the door, and then press the door inner protective plate in place.

A CAUTION

Replace the damaged clips on the door protective plate.



Tighten the fixing bolts (1) of rear door inner protective plate with the 10mm socket.



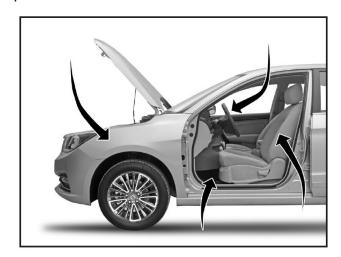
Install the rear door handle cover (1) into the mounting hole after alignment.



- Connect the electric auxiliary switch connector (1) in place.
- Press fit the electric auxiliary switch panel (2) into the mounting hole on the door inner protective plate in place after alignment.



Press fit the inside handle trim cover (1) into the mounting holes on the door inner protective plate in place after alignment.

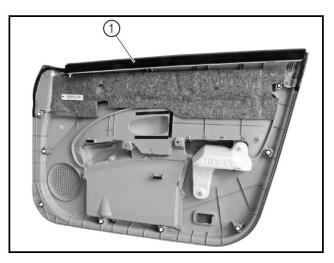


Removal and Refitting of Glass Inner Cover Strip

1 - Protection

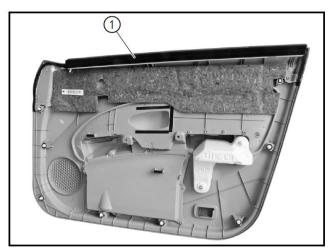
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



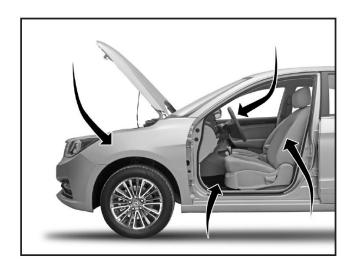
2 - Removal

- Remove the front door inner protective panel. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")
- Take off the window inner weatherstrip (1) from the front door inner protective plate.



3- Refitting

- Press fit the front door window inner weatherstrip (1) onto the door protective plate.
- Refit the front door inner protective plate. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")

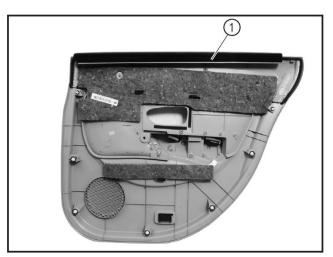


Removal and Refitting of Rear Door Window Inner Cover Strip

1 - Protection

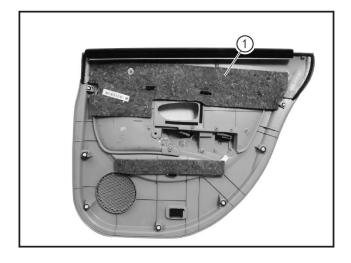
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



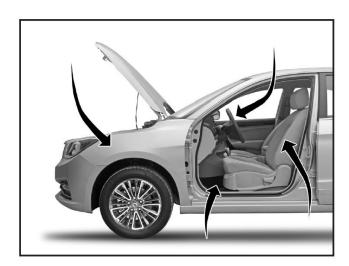
2 - Removal

- Remove rear door inner protective panel. (Refer to "Removal and Refitting of Rear Door Inner Protective Plate").
- Take off the window inner weatherstrip (1) from the rear door inner protective plate.



3- Refitting

- Press fit the rear door window inner weatherstrip (1) onto the door protective plate.
- Refit the front door inner protective plate. (Refer to "Removal and Refitting of Front Door Inner Protective Plate" in "Interiors and Exteriors")

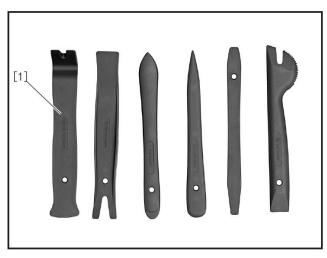


Removal and Refitting of Front Door Window Outer Cover Strip

1 - Protection

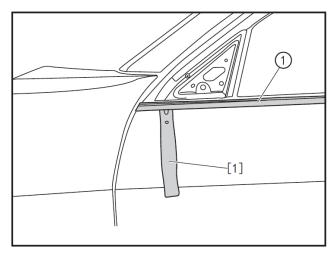
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].

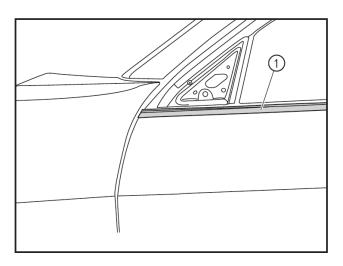


3 - Removal

- Remove the exterior rearview mirror. (Refer to "Removal and Refitting of Exterior Rearview Mirror")
- The two clips on the front window outer weatherstrip are respectively 40 mm from the both ends of the outer weatherstrip. Pry the outer weatherstrip (1) with the interior trim removal tool (BF1102) [1], so as to disengage the pawls of two clips.
- Move upwards to detach the outer weatherstrip from the door panel along the window channel.

A CAUTION

- During the removal, always apply appropriate force, or deformed outer weatherstrip or broken pawls may occur.
- After the removal, visually check the door window outer weatherstrip, and replace the deformed pawls if any.

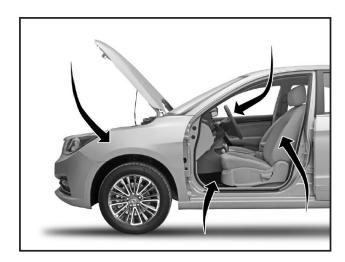


4- Refitting

 Align the clips on the front door window outer weatherstrip (1) with the mounting holes on the door panel, and press fit the front door window outer weatherstrip in place.

A CAUTION

- During the installation, do press-fitting after the clips are aligned with the corresponding holes, so as to avoid the clips on the door window outer weatherstrip damaging the parts.
- Refit the exterior rearview mirror. (Refer to "Removal and Refitting of Exterior Rearview Mirror")

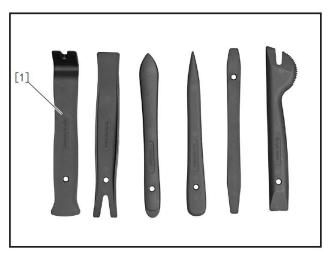


Removal and Refitting of Rear Door Window Outer Weatherstrip

1 - Protection

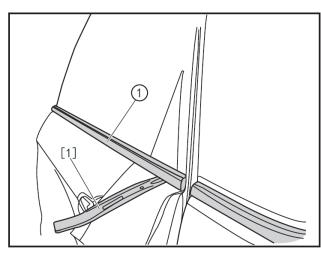
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].

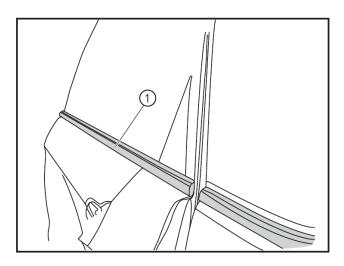


3 - Removal

- · Open the rear door.
- Pry the clips (1) along the window outer weatherstrip with the interior trim removal tool (BF1102).
- Remove the door window outer weatherstrip (1) upwards.

A CAUTION

- During the removal, always apply appropriate force, or deformed outer weatherstrip or broken pawls may occur.
- After the removal, visually check the door window outer weatherstrip, and replace the deformed pawls if any.



4- Refitting

 Align the clips on the rear door window outer weatherstrip (1) with the mounting holes on the door panel, and press fit the rear door window outer weatherstrip in place.

A CAUTION

 During the installation, do press-fitting after the clips are aligned with the corresponding holes, so as to avoid the clips on the door window outer weatherstrip damaging the parts.

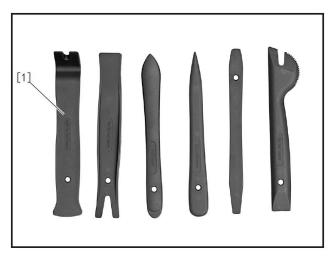


Removal and Refitting of Door Guard Strip

1 - Protection

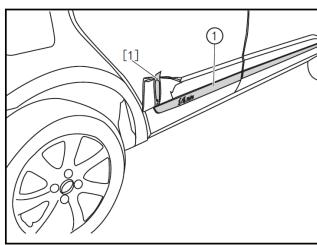
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- · Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].

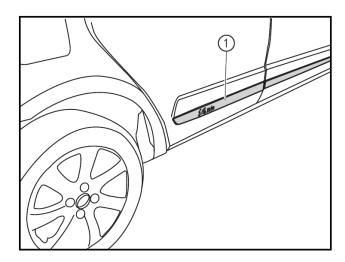


3 - Removal

 Wrap the interior trim removal tool (BF1102) [1] with a piece of cloth, and use the interior trim removal tool (BF1102) [1] to pry the door guard strip (1) along its edge.

A CAUTION

 Use the newspaper to cushion the removal tool where the force is applied to avoid scratching the paint.

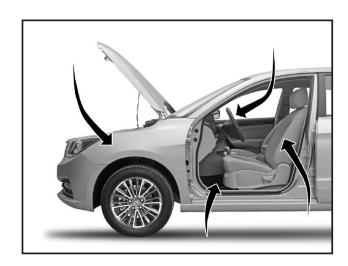


4- Refitting

- Clean the mounting surface of door guard strip.
- Replace with a new double-sided tape, align the clips on the door guard strip (1) with the mounting holes on the door, and then press fit the door guard strip in place.

A CAUTION

 Do not wash the vehicle within 24 hours after installation, so as to avoid the guard strips from falling off.

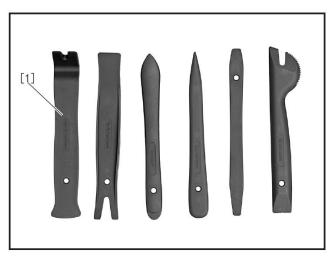


Removal and Refitting of Body Kit

1 - Protection

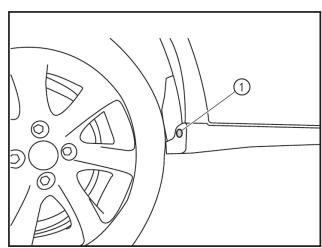
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



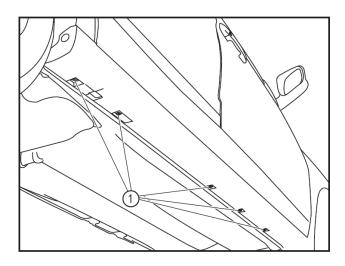
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

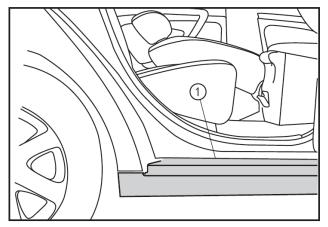


3 - Removal

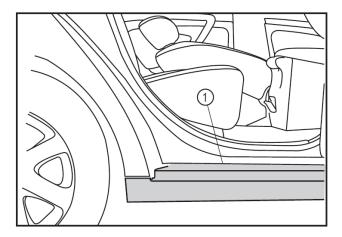
 Remove the clip (1) of outer body kit with the interior trim removal tool (BF1102). (1 pcs for front and rear ends respectively)



- Lift the vehicle as appropriate.
- Remove the fixing bolt (1) of outer body kit with the 10mm socket.

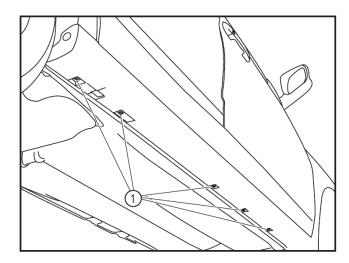


- Open the front and rear doors, and pry the clips along the outer body kit (1) with the interior trim removal tool (BF1102).
- Remove the outer body kit (1).

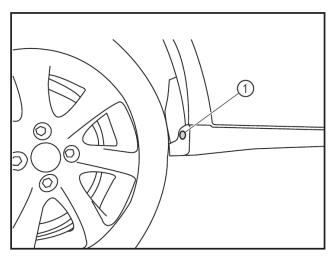


4- Refitting

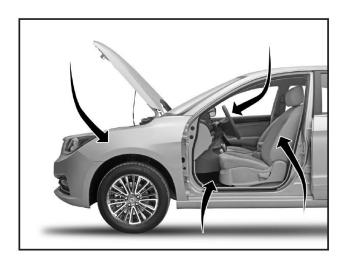
Press fit the outer body kit (1) in place with the clips thereon aligned with the mounting holes on the body.



• Tighten the fixing bolt (1) of outer body kit with the 10mm socket.



 Clamp the clips (1) of outer body kit into the mounting holes on the body. (1 pcs for front and rear ends respectively)



Removal and Refitting of Roof Trim Strip

1 - Protection

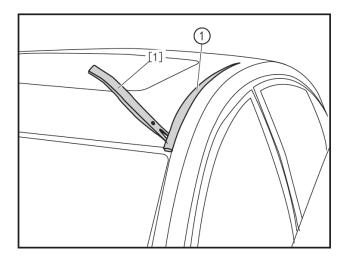
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



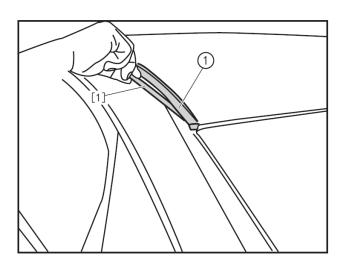
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

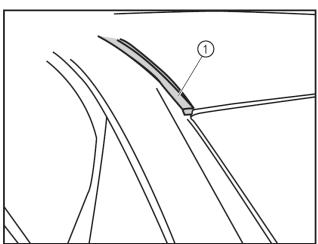


3 - Removal

Pry the clips at the rear end of roof trim strip (1) with the interior trim removal tool (BF1102) [1], and detach the roof trim strip from the mounting surface on the roof.

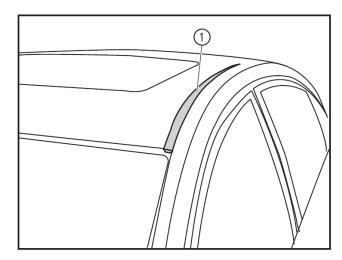


- Pry the clips at the front end of roof trim strip (1) with the interior trim removal tool (BF1102) [1], and detach the roof trim strip from the mounting surface on the roof.
- Remove the roof trim strip (1).



4- Refitting

Press fit the roof trim strip (1) in place with the clips on the roof aligned.



Press fit the roof trim strip (1) in place with the clips on the roof aligned.

▲ CAUTION

 Check that the roof trim strip is securely installed after installation.



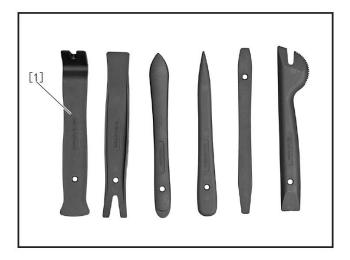


Removal and Refitting of Body Side Wall Inner Trim Plate

1 - Protection

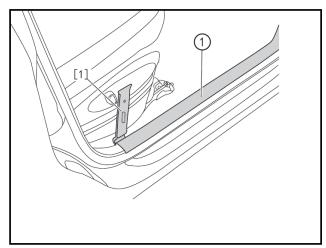
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



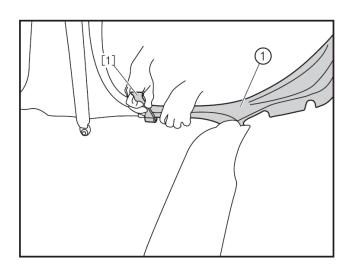
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

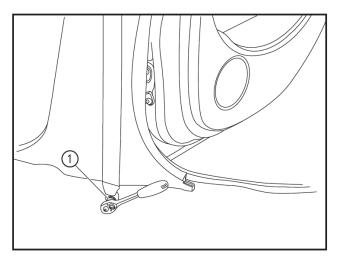


3 - Removal

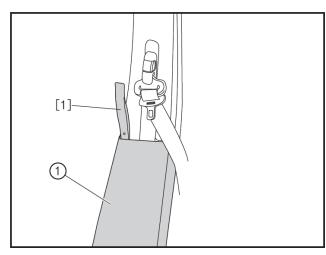
Pry the front door sill inner protective plate (1) with the interior trim removal tool (BF1102) [1].



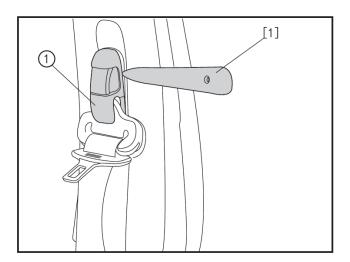
Remove the rear door sill inner protective plate (1) with the interior trim removal tool (BF1102) [1].



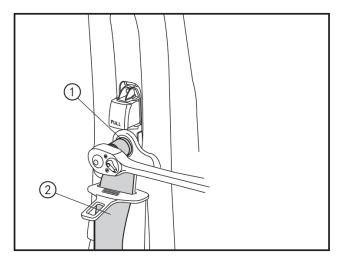
- Remove the seat belt bolt trim cover.
- Remove the fixing bolt (1) of the seat belt with the 14mm socket.



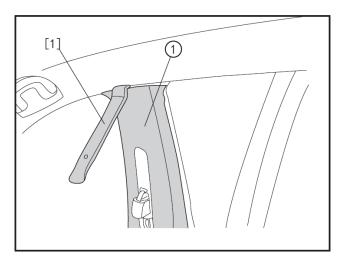
• Remove the B-pillar lower protective plate (1) with the interior trim removal tool (BF1102) [1].



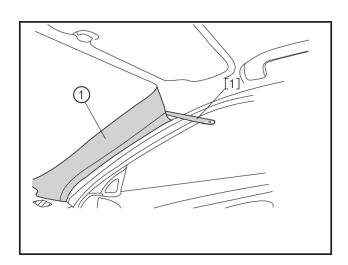
• Remove the seat belt guide cover (1) with the interior trim removal tool (BF1102) [1].



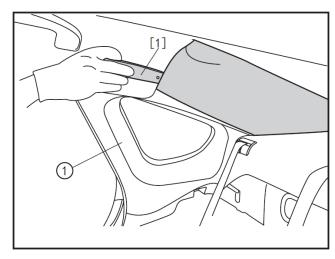
• Remove the fixing bolt (1) of the seat belt with the 14mm socket, and lay down the seat belt (2) gently.



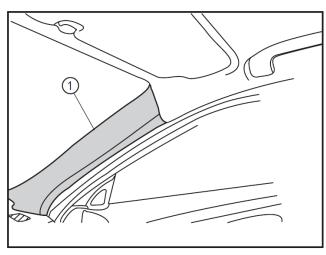
• Remove the B-pillar upper protective plate (1) with the interior trim removal tool (BF1102) [1].



• Remove the A-pillar upper protective plate (1) with the interior trim removal tool (BF1102) [1].



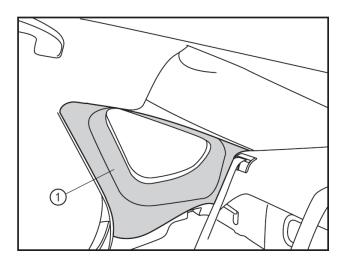
• Remove the C-pillar upper protective plate (1) with the interior trim removal tool (BF1102) [1].



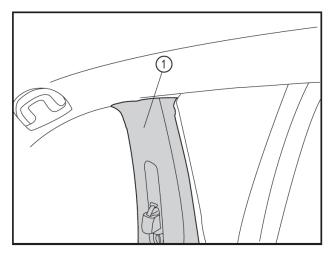
4- Refitting

A CAUTION

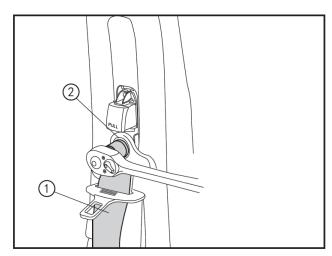
- Remove the damaged clip and replace it with a new one.
- Align the clips on the A-pillar upper protective plate
 (1) with the mounting holes on the body, and then press fit the A-pillar upper protective plate in place.



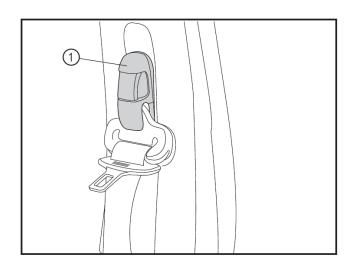
Align the clips on the C-pillar upper protective plate (1) with the mounting holes on the body, and then press fit the C-pillar upper protective plate in place.



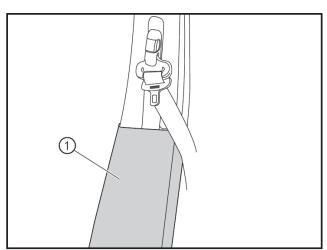
Align the clips on the B-pillar upper protective plate (1) with the mounting holes on the body, and then press fit the C-pillar upper protective plate in place.



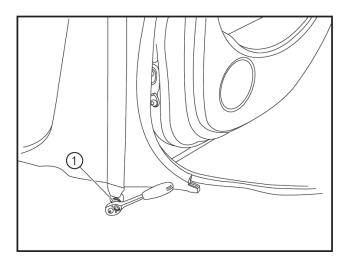
- Move the upper end of the seat belt (1) to the fixing point.
- Tighten the fixing bolt (2) of seat belt to 49N·m with the 14mm socket.



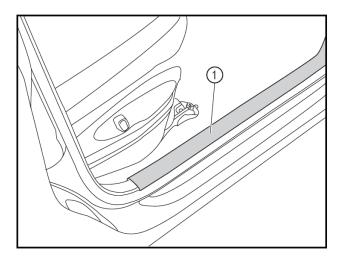
Refit the seat belt guide cover (1) in place.



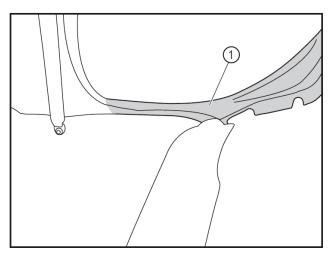
 Align the clips on the B-pillar lower protective plate (1) with the mounting holes on the body, and then press fit the C-pillar upper protective plate in place.



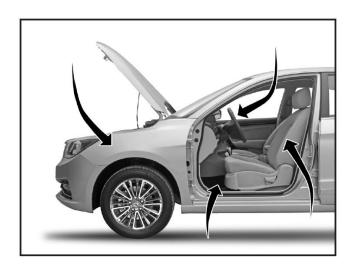
- Remove the lower fixing bolt (1) of seat belt with the 14mm socket.
- Refit the seat belt fixing bolt cap in place.



Align the clips on the front door sill inner protective plate (1) with the mounting holes on the vehicle body, and then press fit the front door sill inner protective plate in place.



 Align the clips on the rear door sill inner protective plate (1) with the mounting holes on the vehicle body, and then press fit the rear door sill inner protective plate in place.

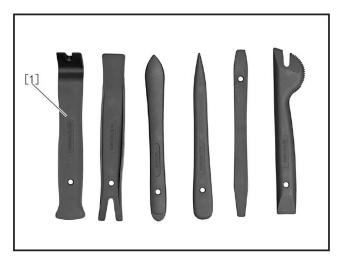


Removal and Refitting of Rear Partition

1 - Protection

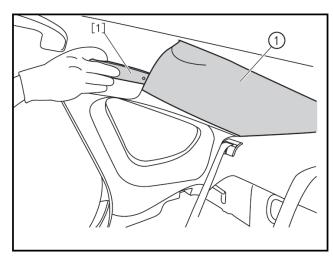
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



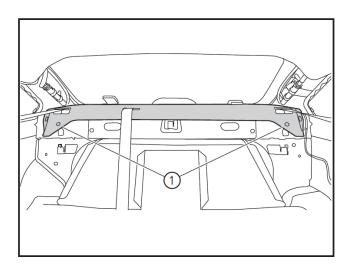
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

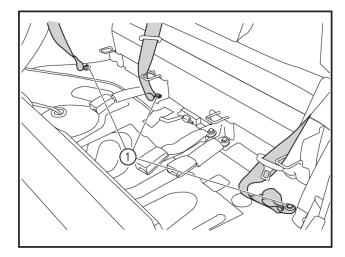


3 - Removal

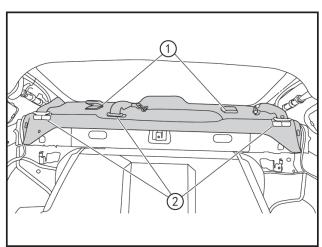
- Remove the rear seat assembly. (Refer to "Removal and Refitting of Rear Seat Assembly" in "Seats")
- Remove C-pillar upper protective plate (1) with the interior trim removal tool (BF1102) [1].



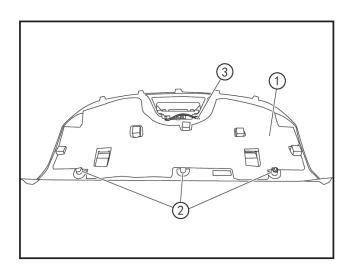
 Remove the clips (1) of rear partition with the interior trim removal tool (BF1102) [1].



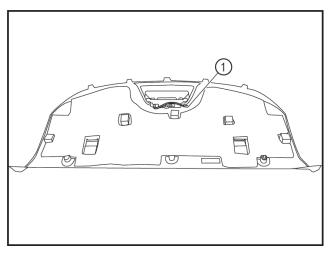
Remove the fixing bolt (1) of rear seat belt with the 14mm socket.



 Remove the child safety seat rim cover (1) and rear seat belt guide cover (2) with the interior trim removal tool (BF1102).

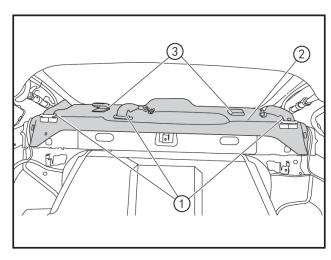


- Lift the rear partition (1) to detach the clips (2) on the rear partition from the fixed end of the vehicle body.
- Press the connector clip, and disconnect the high-mounted brake lamp connector (3).
- Remove the rear partition assembly (1).



4- Refitting

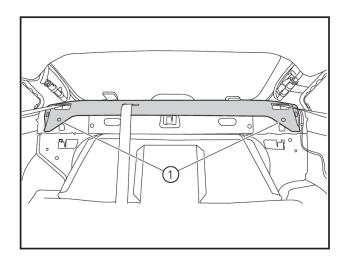
Connect the high-mounted brake lamp connector (1) in place.



- Pass the rear seat belt (1) through the mounting hole on the rear partition, and install the trim cover in place.
- Press fit the rear partition (2) in place after aligning the clips on the rear partition (2) with the mounting holes on the vehicle body.
- Refit the child safety seat trim cover (3) in place, and clamp it securely.

A CAUTION

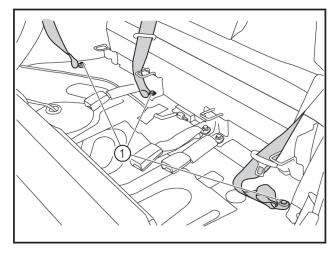
• If the clip is damaged, replace it with a new one.



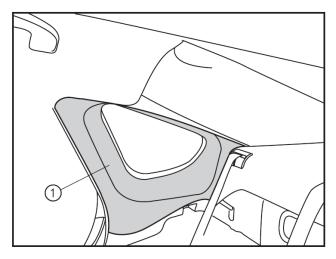
Clamp the rear partition clip (1) in place.

▲ CAUTION

• If the clip is damaged, replace it with a new one.



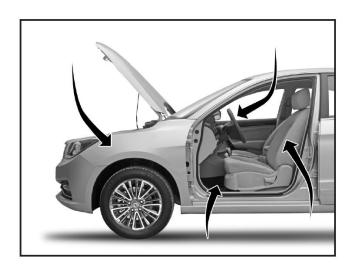
Tighten the fixing bolt (1) of rear seat belt to 49N⋅m with the 14mm socket.



Align the clips on the C-pillar upper protective plate (1) with the mounting holes on the body, and then press fit the C-pillar upper protective plate in place.

A CAUTION

- If the clip is damaged, replace it with a new one.
- Refit rear seat assembly. (Refer to "Removal and Refitting of Rear Seat Assembly" in "Seats")

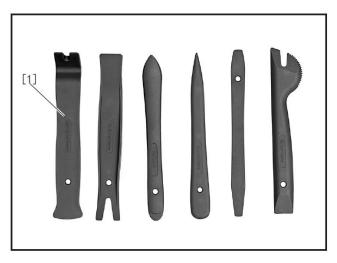


Removal and Refitting of Roof Inner Trim Panel

1 - Protection

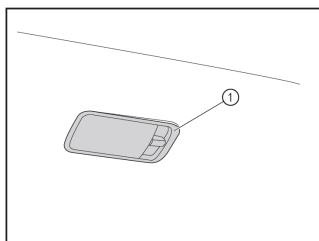
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.



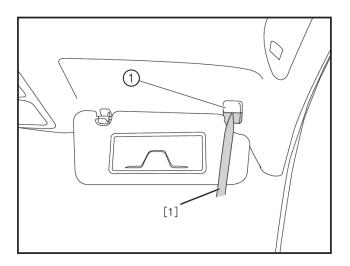
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

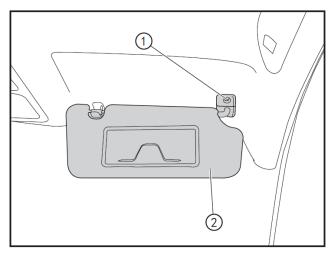


3 - Removal

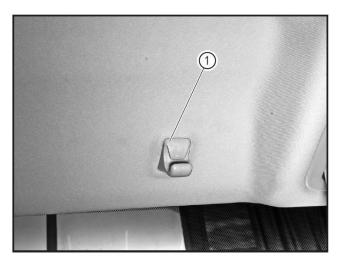
- Remove the inner panel of side wall. (Refer to "Removal and Refitting of Side Wall Inner Trim Panel" in "Interiors and Exteriors")
- Remove the front seat. (Refer to "Removal and Refitting of Seats" in "Seats")
- Remove the rear ceiling lamp (1) with the interior trim removal tool (BF1102), pull off the connector, and take off the rear ceiling lamp (1).



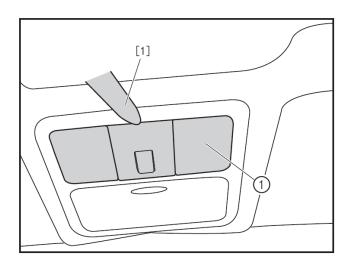
 Remove the fixing bolt trim cap (1) of the sun visor with the interior trim removal tool [1]. (1 pcs on each side)



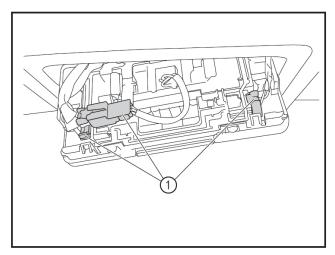
Remove the fixing bolt (1) of sun visor with the T20 screwdriver bit, and take off the sun visor (2). (1 pcs on each side)



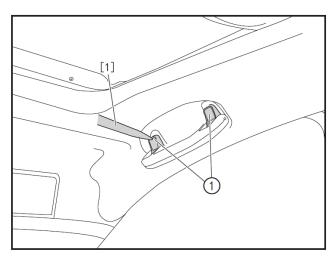
• Rotate the sun visor fixing hook (1) clockwise for 90°, and take it off. (1 pcs on each side)



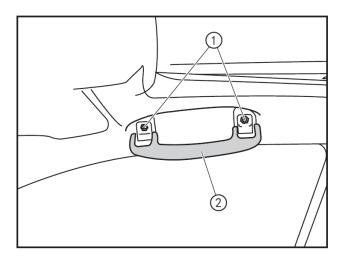
• Remove the front ceiling lamp assembly (1) with the interior trim removal tool [1].



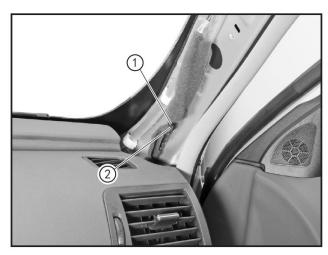
Disconnect the 3 connectors (1) at the back of front ceiling lamp, and take off the front ceiling lamp.



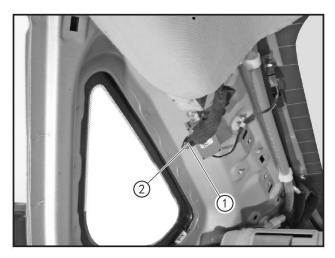
 Remove the 2 fixing bolt trim caps (1) of the handle with the interior trim removal tool [1].



Remove the 2 fixing bolts (1) of the handle with the 10mm socket, and take off the handle (2). (3 pcs on front and rear sides respectively)



Press the lock slide bar (1) on the connector and move it backwards, and disconnect the roof antenna wire harness connector (2). (each at the front and back)



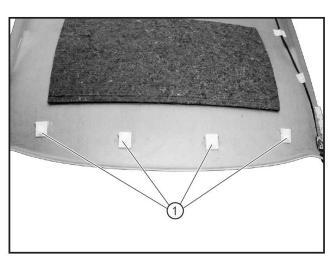


 Gently pull the roof inner trim panel downwards so as to detach it from the rear clips, and take the roof inner trim panel slowly out from the rear door.

A CAUTION

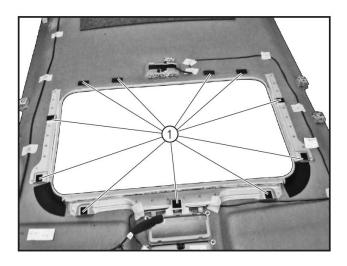
- The removal requires cooperation of two persons (respectively to remove the front and rear roof inner trim panels)
- Cover a piece of cloth on the upper surface of central console trim to avoid any possible damage.
- Do not bend the roof inner trim panels during removal.





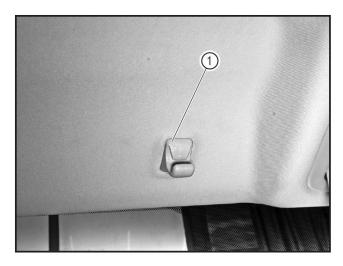
4- Refitting

- Replace with new clamp and clamp base (1), and fix the clamp base with the sealant as shown.
- Place the connectors of both rear and front ceiling lamps to the mounting holes in advance for the convenience of refitting.

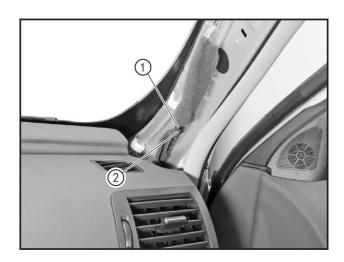


 Align the connector (1) and clamp base at the perimeter of the sunroof with the mounting positions on the roof, and then press in the roof inner trim panel (2) gently.

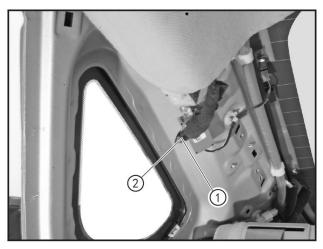


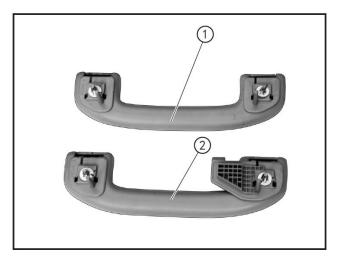


• Fit the sun visor fixing hook (1) to the roof inner trim panel, and rotate by 90° to tighten the roof inner trim panel. (1 pcs on each side)

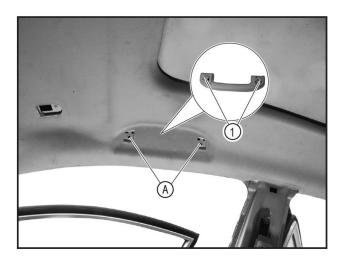


Press the lock slide bar (1) on the connector to move it backwards, and then refit the top wire harness connector (2) until a click is heard, indicating a proper refitting.

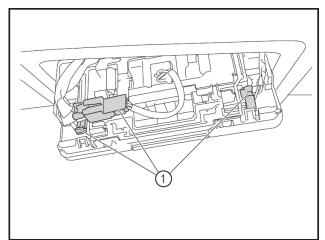




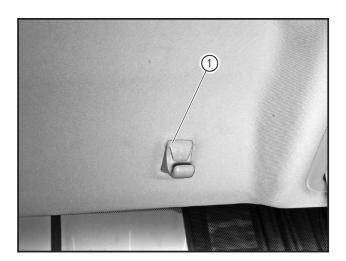
- Refit the handle (1) to the right of the roof inner trim panel. (2 pcs in total)
- Refit the handle (2) to the left of the roof inner trim panel.



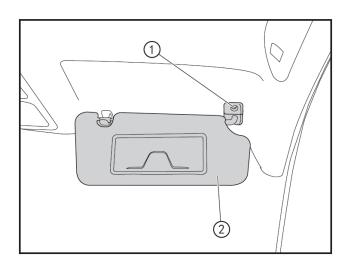
Press the dowel pin (1) on the handle after it is aligned to the locating hole (A) on the body, tighten the fixing bolt of handle with the 10mm socket, and then secure the bolt trim cap.



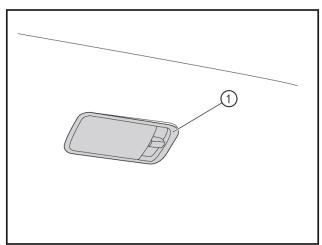
Connect the 3 connectors (1) at the back of front ceiling lamp, and refit the front ceiling lamp.



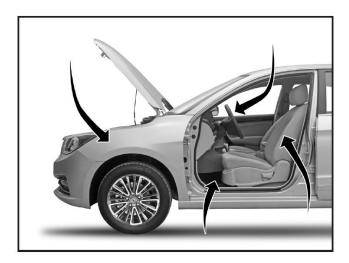
Turn the sun visor fixing hook (1) of sun visor by 90° counterclockwise, and install the sun visor fixing hook (1).



Install the fixing bolts (1) of the right sun visor with the T20 screwdriver bit, install the sun visor (2), and then install the fixing bolt trim cap. (Install the left sun visor in the same way)



- Install the rear ceiling lamp (1).
- Refit the front seats. (Refer to "Removal and Refitting of Seats" in "Seats")
- Install the side wall inner panel. (Refer to "Removal and Refitting of Side Wall Inner Trim Panel" in "Interiors and Exteriors")



Removal and Refitting of Trunk Lid Inner Protective Plate

1 - Protection

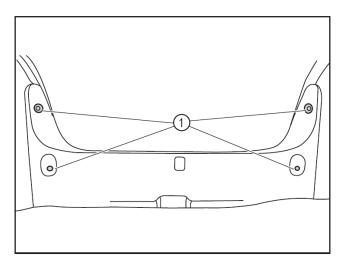
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



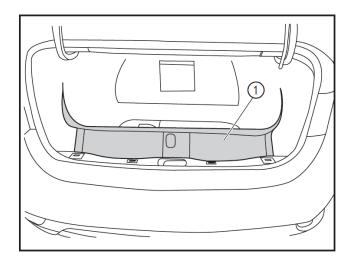
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

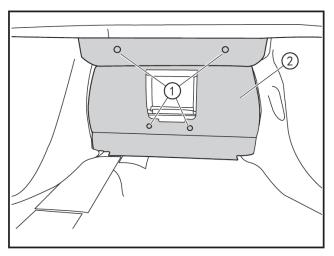


3 - Removal

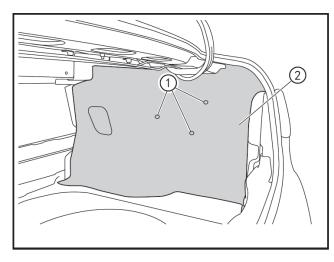
- Open the trunk Lid.
- Remove the trunk sill clips (1) with the interior trim removal tool BF1102.



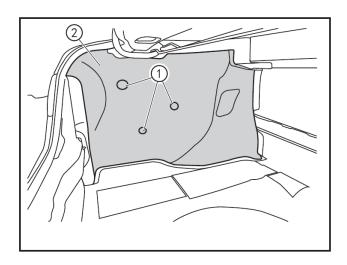
- Remove the trunk sealing strip.
- Detach the clips on the trunk lid sill protective plate
 (1) from the vehicle body with the interior trim removal tool (BF1102).
- Remove the trunk lid sill protective plate (1).



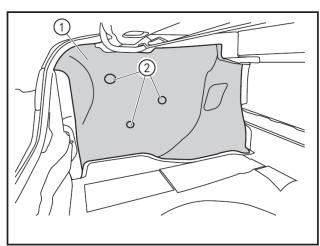
- Remove the fixing clip (1) of trunk front protective plate with the interior trim removal tool (BF1102).
- Take off the trunk lid front protective plate (2).



- Remove the fixing clip (1) of trunk right protective plate with the interior trim removal tool (BF1102).
- Take off the trunk lid right protective plate (2).



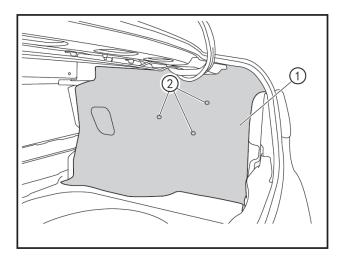
- Remove the fixing clip (1) of trunk left protective plate with the interior trim removal tool (BF1102).
- Take off the trunk lid left protective plate (2).



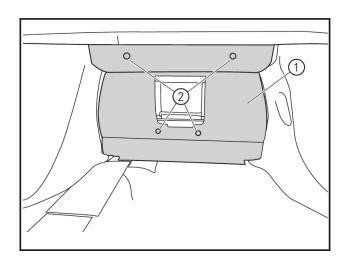
4- Refitting

▲ CAUTION

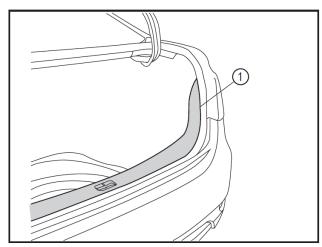
- If the clip is damaged, replace it with a new one.
- Install the left protective plate (1) of the trunk to the mounting surface, and then clamp its clips (2) into position.



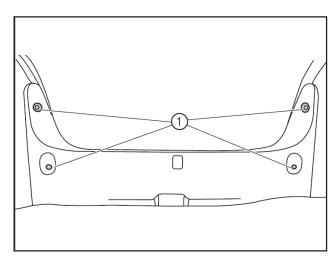
 Install the right protective plate (1) of the trunk to the mounting surface, and then clamp its clips (2) into position.



Install the front protective plate (1) of the trunk to the mounting surface, and then clamp its clips (2) into position.



Align the clips on the trunk lid sill protective plate (1) with the mounting holes on the vehicle body, and then press fit the trunk lid sill protective plate in place.



- Clamp the clips (1) of trunk lid sill protective plate in
- Install the trunk sealing strip in place.





10.Body	10.1	Closures
	10.2	Glass, Window and Rearview Mirror
	10.3	Roof
	10.4	Exteriors and Interiors
	10.5	Instrument Panel
	10.6	Seats
	10.7	Body Check
	10.8	Body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company

After-sales Service Technical Document

0



10.5

Instrument Panel

Contents

Preparations	10.5-3
Precautions	10.5-3
Special Tools	10.5-3
Tightening Torque	10.5-3
System Overview	10.5-4
Structures and Features	10.5-4
Troubleshooting	10.5-7
Common Fault Troubleshooting	10.5-7
Instrument Panel	10.5-8
Removal and Refitting of Instrument Panel Assembly	10.5-8
Console	10.5-33
Removal and Refitting of Console Assembly 1	10.5-33
Removal and Refitting of Console Assembly 2	10.5-42

Precautions

- Power cutoff: be sure to turn off the ignition switch in advance and then disconnect the battery
 negative cable when replacing the components on the instrument panel or removing the instrument
 panel assembly.
- Electrostatic grounding: be sure to connect a ground wire to the body, so as to transfer the electrostatic charge to the ground when servicing the electronic instrument panel, regardless of this operation is performed on the vehicle or platform.
- Preservation of components: the spare parts for instrument panel shall be preserved in nickel-plated packing bags and shall be taken out immediately before they are to be installed. Do not touch the conductive contact during the above operation.
- Cover the instrument panel with protective cover after taking it down to protect it from being scratched.
- Before removing or refitting SRS, turn the ignition switch to "OFF", and disconnect the battery
 negative cable. and wait at least 3min. That is because, within about 3 min after battery positive and
 negative cables are disconnected, the airbag and seat belt pretensioner may still accumulate the
 power supply. Therefore, no work related with SRS connector and circuit should be performed
 within this 3min.
- Take care to operate the airbag module when servicing and removing the airbag, and be sure to place the airbag module upward.
- Be sure to do self-diagnosis to thoroughly check if the airbag system functions normally when replacing any airbag components.
- After the airbag deploys, the damaged front instrument panel assembly must be replaced.
- Never use electrical equipment to preform circuit test on any airbag system component.

Special tools

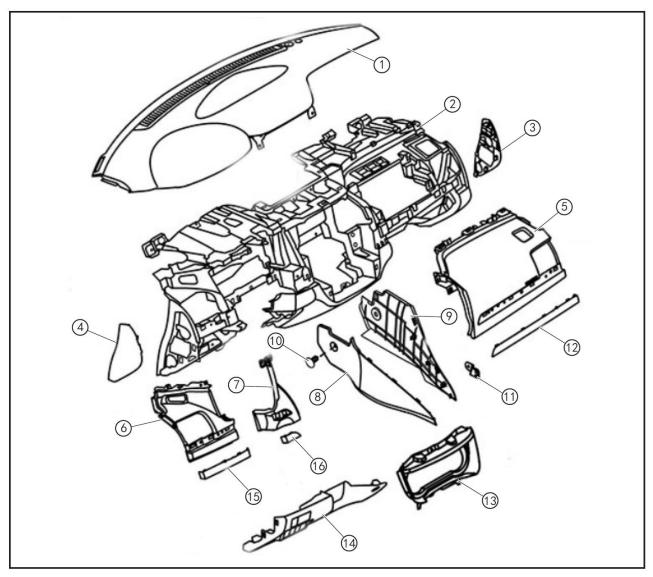
Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing clamps, pawls and metal clips.

Tightening Torque

Sequence number	Name	Torque (N⋅m)
1	Steering wheel fixing nut	35
2	Driver frontal airbag fixing bolt	10.7
3	Fixing screw of upper and lower shrouds of steering column	2.3~2.5
4	Fixing bolt of front passenger frontal airbag	19.6~25

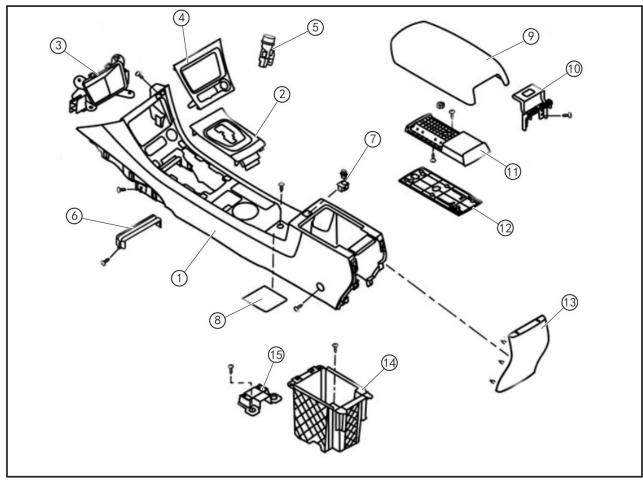
Structure and Features

Instrument panel assembly



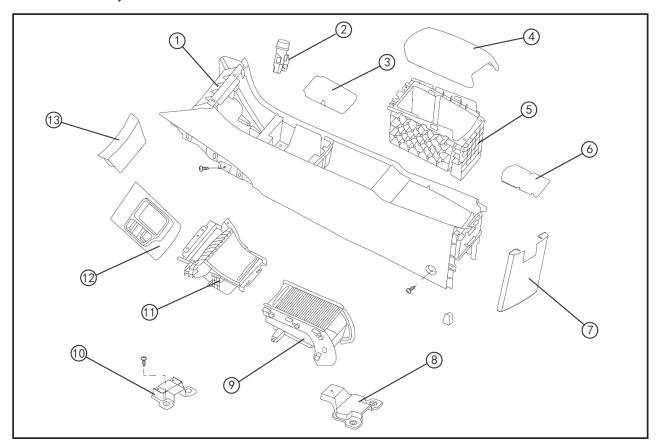
1. Instrument panel upper cover plate	7. Middle protective plate	13. Instrument mask outside frame
2. Instrument panel lower body	8. A/C left protective plate	14. Left lower trim panel
3. Right end plate	9. A/C right protective plate	15. Left garnish
4. Left end plate	10. Clip	16. Middle garnish
5. Right protective plate	11. A/C right protective plate bracket	
6. Left protective plate	12. Right garnish	

Console Assembly 1



1. Console assembly	6. Intermediate bracket	11. Center armrest middle base
2. Shift panel cover	7. Center armrest rubber support	12. Center armrest lower base
3. Front storage box	8. Storage box pad	13. Rear trim panel
4. Front trim panel	9. Center armrest upper base	14. Center armrest box
5. Cigar lighter	10. Center armrest hinge	15. Bracket

Console Assembly 2



1. Console body	6. Rubber pad	11. Front storage box
2. 12V power outlet	7. Rear trim panel	12. Shift control panel
3. Storage box pad	8. Console rear mounting bracket	13. Console front garnish
4. Armrest pillow	9. Cup holder assembly	
5. Console front upper mounting bracket	10. Console upper mounting bracket	

Common Fault Troubleshooting

Fault symptom:	Possible cause	Troubleshooting methods
Abnormal noise of instrument panel assembly	Clips of instrument upper cover plate and left & right end plates are loosened or broken, so that instrument upper cover plate and left & right end plates may collide with surrounding parts during driving and unusual noise may be caused in this case, especially when driving on a bumpy road.	Remove the upper cover plate and left/right end plate of instrument, eliminate interference, and replace the damaged clips.



Removal and Refitting of Instrument Panel Assembly

1 - Protection

Place protective pads at following locations:

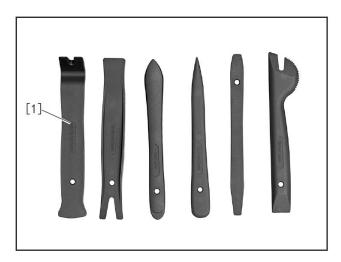
- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

A CAUTION

The inside of the high voltage distribution box is at high voltage. Do not disassemble or repair it by yourself, otherwise electric shock may occur.



Interior trim removal tool (BF1102) [1].





- Keep the two front wheel straight forward, turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the console. (Refer to "Removal and Refitting of Console" in this section.)
- Remove the fixing screw cap (1) of central panel frame with the interior trim removal tool (BF1102) [1].

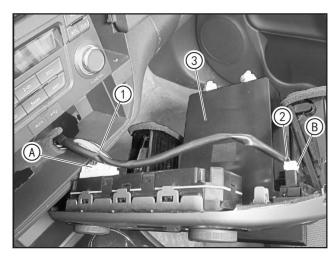




 Remove the fixing screws (1) of the central panel frame with the Phillips screwdriver.



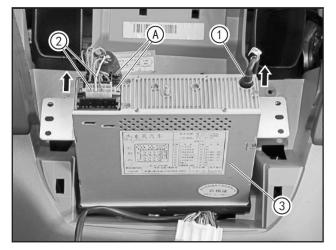
 Remove the central panel frame (1) with the interior trim removal tool (BF1102) [1].



- Press the clip A of the A/C control panel connector, and disconnect the A/C control panel connector (1) outwards.
- Press down hazard warning lamp switch connector locking clip B, and disconnect the hazard warning lamp switch connector (2).
- Remove the central panel frame (3).



 Remove the fixing screw (1) of CD player with the Phillips screwdriver.



- Disconnect the radio antenna connector (1).
- Press the clip A of CD player connector, and disconnect the CD player connector (2).
- Take off the CD player (3).



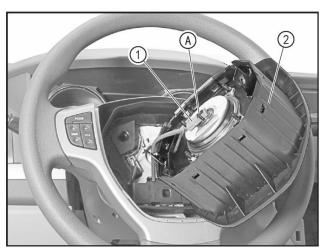
 Remove the airbag fixing screw cap (1) under the steering wheel with the interior trim removal tool (BF1102).



Remove the fixing screw (1) of the driver frontal airbag with the T30 screwdriver bit.



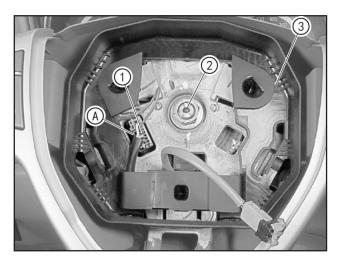
Pry up the driver frontal airbag (1) with the interior trim removal tool (BF1102) [1].



- Pry up the locking block A of driver frontal airbag connector with the small screwdriver, and disconnect the driver frontal airbag connector (1).
- Take off the driver frontal airbag (2).

A CAUTION

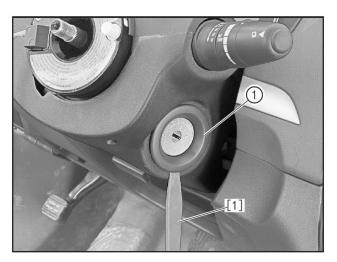
Place the driver frontal airbag with the expansion surface upwards.



- Press the clip A of steering wheel buttons assembly connector, and disconnect the steering wheel buttons assembly connector (1).
- Loosen the fixing nut (2) of steering wheel with the 19mm socket.
- Hold the left and right ends of steering wheel and shake it up and down slightly to loosen it.
- Remove the fixing nut (2) of steering wheel, and then remove the steering wheel (3).



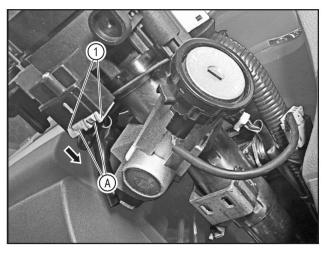
Remove the fixing screws (1) from the upper and lower shrouds of steering column with the Phillips screwdriver.



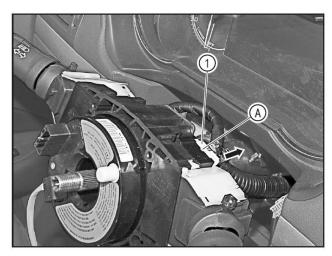
Remove the steering column lock trim cover (1) with the interior trim removal tool (BF1102) [1].



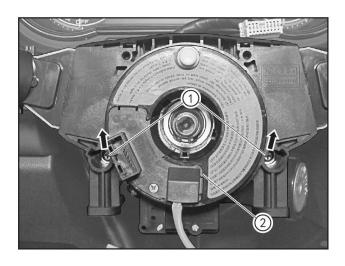
- Pry the upper and lower shrouds of steering column along the gap of combination switch with the interior trim removal tool (BF1102) [1].
- Remove the steering column lower shroud (1) and the steering column upper shroud (2).



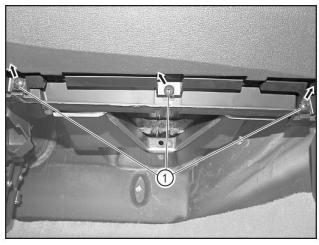
Press the connector clip A, and disconnect the rotary switch connector (1) downwards.



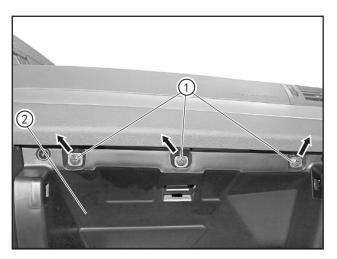
• Press the connector clip A, and disconnect the combination switch connector (1) downwards.



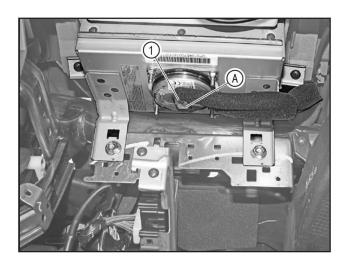
- Remove the rotary switch fixing screw (1) with the Phillips screwdriver.
- Remove the rotary switch and combination switch assembly (2).



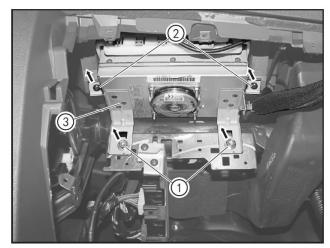
Remove the lower fixing screws (1) of glove box with the Phillips screwdriver.



- Remove the upper fixing screws (1) of glove box with the Phillips screwdriver.
- Take out the glove box (2).



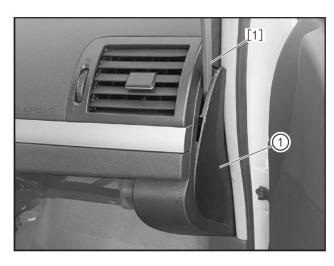
 Pry up the locking block A of front passenger frontal airbag connector with the small screwdriver, and disconnect the front passenger frontal airbag connector (1).



- Remove the fixing bolt (1) (M10x20) of the front passenger frontal airbag with the 12mm socket.
- Remove fixing screw (2) of passenger frontal airbag with the Phillips screwdriver.
- Remove the front passenger frontal airbag (3).

A CAUTION

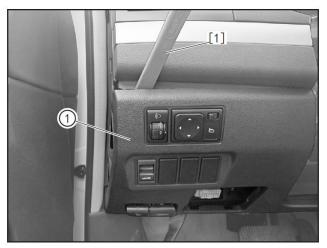
Place the front passenger frontal airbag with the expansion surface upwards.



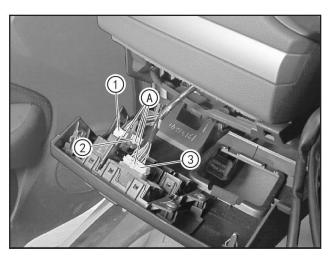
- Remove the instrument panel right end plate (1) with the interior trim removal tool (BF1102) [1].
- Remove the left end plate of instrument panel following the same method.



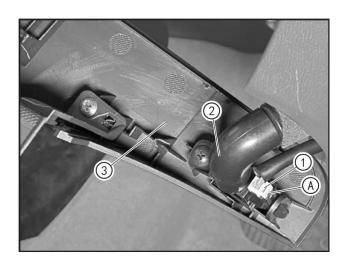
 Remove the instrument panel fixing screw (1) with the Phillips screwdriver. (1 pcs on each side)



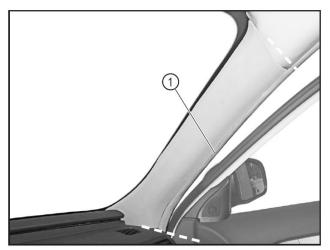
Remove the instrument panel left lower trim panel (1) with the interior trim removal tool (BF1102) [1].



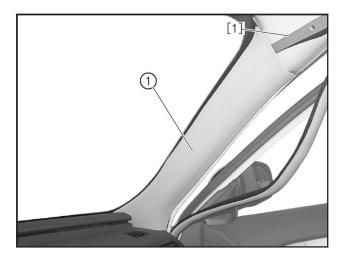
• Press the clip A of left connector of instrument panel left lower trim panel, and disconnect the headlamp leveling connector (1), trunk lid unlock connector (2) and the exterior rearview mirror electric regulator connector (3).



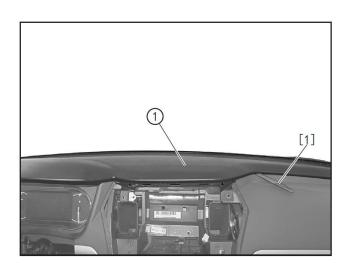
- Press down the connector clip A, and disconnect the indoor temperature sensor connector (1).
- Disconnect the air inlet duct (2).
- Remove the instrument panel left lower trim panel (3).



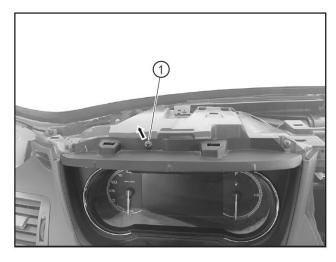
- Open the front door, and remove the door sealing strip (1) outward in the area indicated by the dotted line.
- Remove the door sealing strip on the other side following the same method.



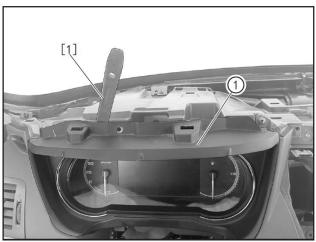
 Remove the front pillar upper trim panel (1) with the interior trim removal tool (BF1102) [1]. (1 pcs on each side)



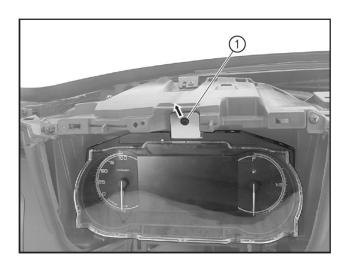
Remove the instrument panel upper cover plate (1) with the interior trim removal tool (BF1102) [1].



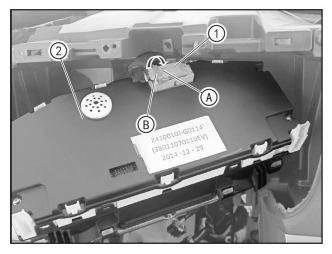
 Remove the fixing screw (1) of instrument cluster trim cover with the Phillips screwdriver.



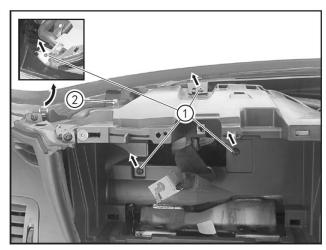
 Remove the instrument cluster trim cover (1) with the interior trim removal tool (BF1102) [1].



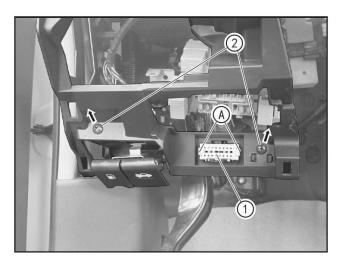
Remove the instrument cluster fixing screw (1) with the Phillips screwdriver.



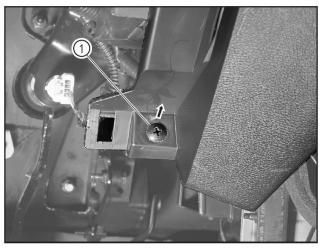
- Press the instrument cluster connector clip A, turn over the clip B, and disconnect the instrument cluster connector (1).
- Remove the instrument cluster (2).



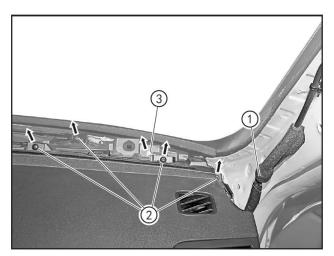
- Remove the fixing screw (1) at the left upper part of instrument panel with the Phillips screwdriver.
- Remove the fixing bolt (2) (M6×15) at the left upper part of the instrument panel with the 10mm socket.



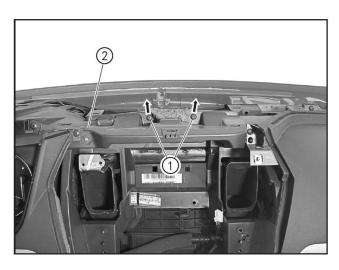
- Press the clip A of data link connector, and disconnect the data link connector (1) from the instrument panel.
- Remove the fixing screw (2) at the left lower part of instrument panel (left side) with the Phillips screwdriver.



Remove the fixing screw (1) at the left lower part of instrument panel (right side) with the Phillips screwdriver.



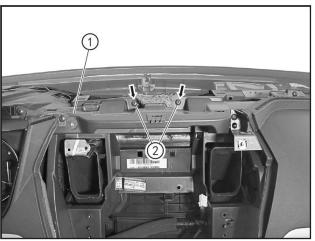
- Disconnect the radio antenna connector (1).
- Remove the fixing screw (2) at the right upper part of instrument panel with the Phillips screwdriver.
- Remove the fixing bolt (3) (M6x15) at the right upper part of the instrument panel with the 10mm socket.



- Remove the fixing screw (1) at the middle of instrument panel with the Phillips screwdriver.
- Carry down the instrument panel assembly (2) with two workers cooperating with each other.

A CAUTION

 When carrying down the instrument panel, avoid collision with vehicle body, so as to prevent damaging the paint or instrument panel surface.

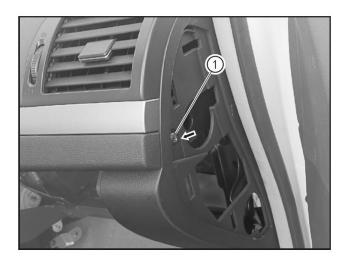


4- Refitting

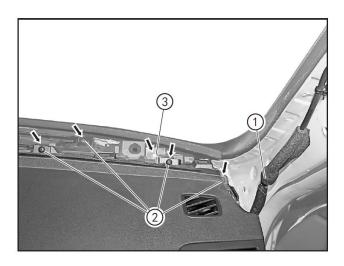
- Pace the instrument panel assembly (1) on the mounting surface with two workers cooperating with each other.
- Tighten the fixing screw (2) at the middle of instrument panel with the Phillips screwdriver.

A CAUTION

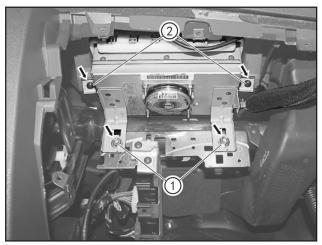
When carrying the instrument panel assembly, avoid collision with vehicle body, so as to prevent damaging the paint or instrument panel surface.



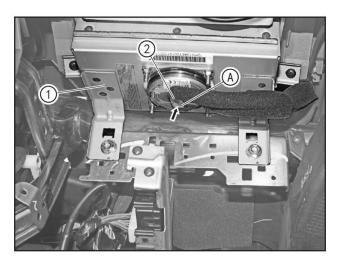
 Tighten the fixing screw (1) at the right end of instrument panel with the Phillips screwdriver. (1 pcs on each side)



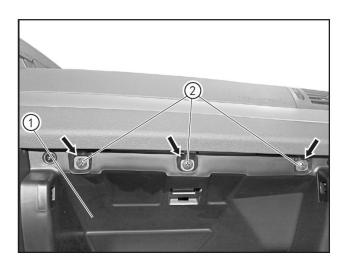
- Connect the radio antenna connector (1) in place.
- Tighten the fixing screw (2) at the right upper part of instrument panel with the Phillips screwdriver.
- Tighten the fixing bolt (3) (M6×15) at the right upper part of the instrument panel with the 10mm socket.



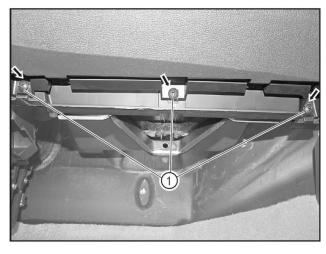
- Tighten the fixing bolt (1) (M10×20) of the front passenger frontal airbag with the 12mm socket to (19.6~25)N·m.
- Tighten the fixing screw (2) of passenger frontal airbag with the Phillips screwdriver.



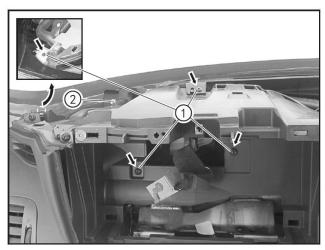
- Place the front passenger frontal airbag (1) on the mounting surface.
- Connect the front passenger frontal airbag connector
 (2) into position, and press up the locking block A of front passenger frontal airbag connector to lock the connector.



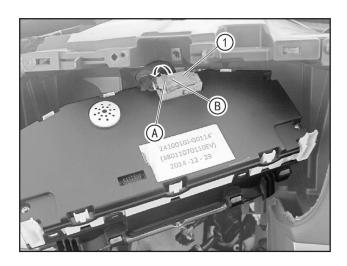
- Place the glove box (1) on the mounting surface.
- Tighten the upper fixing screws (2) of glove box with the Phillips screwdriver.



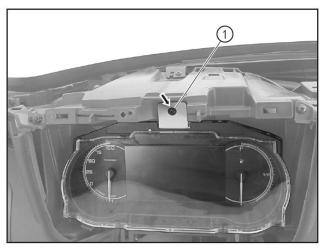
Tighten the lower fixing screws (1) of glove box with the Phillips screwdriver.



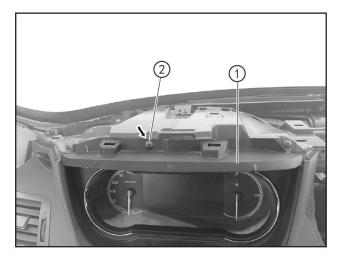
- Tighten the fixing screw (1) at the left upper part of instrument panel with the Phillips screwdriver.
- Tighten the fixing bolt (2) (M6x15) at the left upper part of the instrument panel with the 10mm socket.



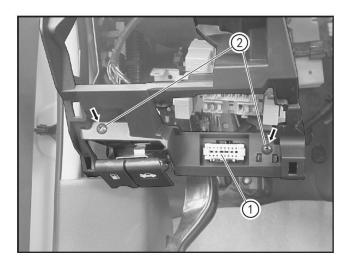
Turn over the clip A to lock the clip A with the clip B of instrument cluster connector, and connect the instrument cluster connector (1) in place.



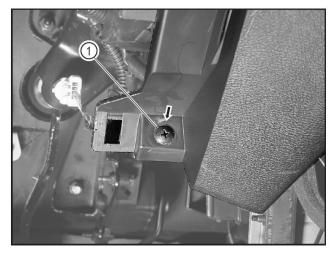
Tighten the instrument cluster fixing screw (1) with the Phillips screwdriver.



- Press fit the instrument cluster trim cover (1) in place after alignment.
- Tighten the fixing screw (2) of instrument cluster trim cover with the Phillips screwdriver.



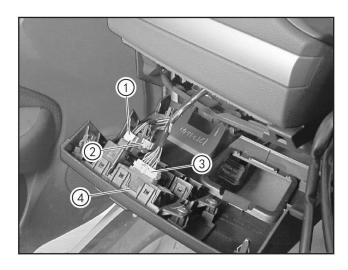
- Install the data link connector (1) into the mounting hole on the instrument panel after alignment.
- Tighten the fixing screw (2) at the left lower part of instrument panel (left side) with the Phillips screwdriver.



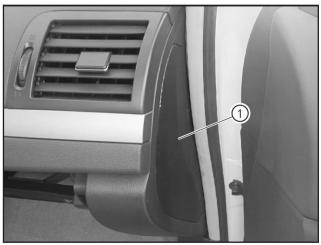
 Tighten the fixing screw (1) at the left lower part of instrument panel (right side) with the Phillips screwdriver.



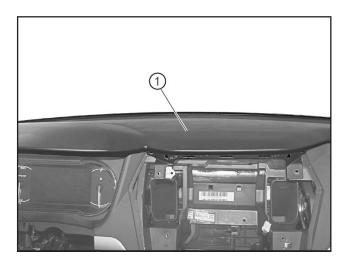
- Connect the indoor temperature sensor (1) in place.
- Connect the inlet duct (2) in place.



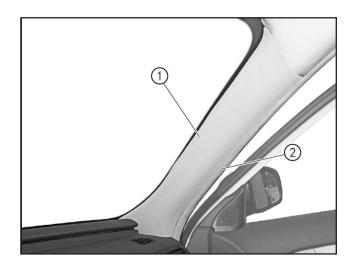
- Connect the headlamp leveling connector (1), trunk lid unlock connector (2) and the exterior rearview mirror electric regulator connector (3) in sequence.
- Press fit the instrument panel lower trim panel (4) in place after aligning the clips thereon with the mounting holes on the instrument panel.



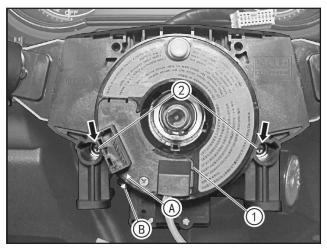
- Install the instrument panel right end plate (1) into the mounting hole after alignment.
- Install the left end plate of instrument panel following the same method.



• Press fit the instrument panel upper cover plate (1) in place after aligning the clips thereon with the fixing points on the instrument panel.



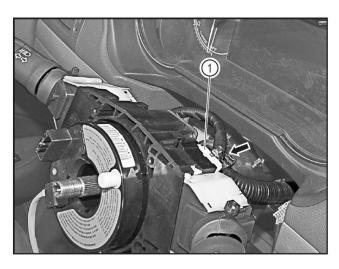
- Press fit the front pillar upper trim panel (1) in place after aligning the clips thereon with the mounting holes on the front pillar. (1 pcs on each side)
- Open the front door, and install the sealing strip in place.

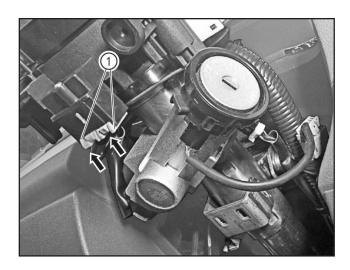


- Refit the rotary switch and combination switch assembly (1) to the mounting surface on the steering column.
- Remove the rotary switch fixing screw (2) with the Phillips screwdriver.

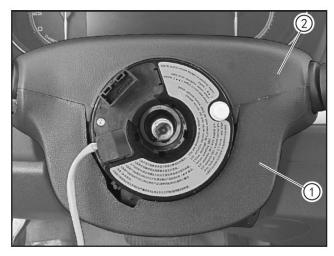
A CAUTION

- If the spiral cable is accidentally turned, please operate as follows:
 - Turn the spiral cable clockwise to the end, then turn it back for 2.5-2.7 turns counterclockwise, aligning the triangle mark A on the spiral cable A with the triangle mark at B.
- Connect the combination switch connector (1) in place.

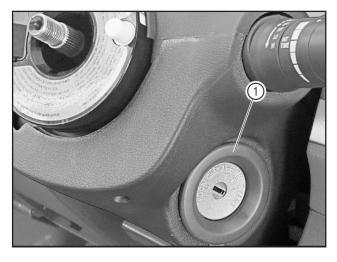




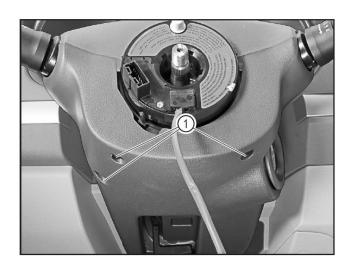
Connect the rotary switch connector (1) in place.



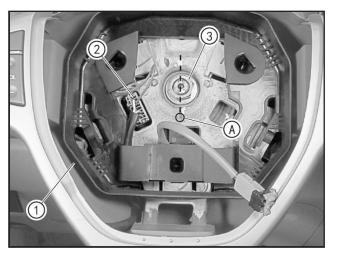
 Refit the steering column lower shroud (1) and the steering column upper shroud (2) on the steering column.



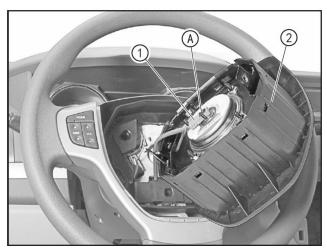
 Refit the steering column lock trim cover (1) to the mounting surface on the steering column lock.



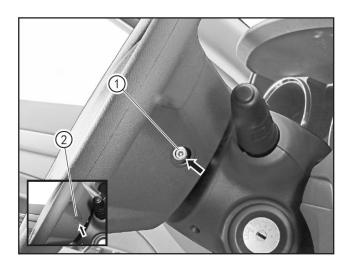
• Tighten the fixing screws (1) of the steering column upper shroud and steering column lower shroud with the Phillips screwdriver to (2.3~2.5)N⋅m.



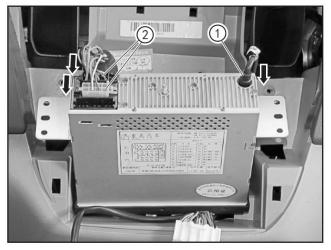
- Refit the steering wheel (1) on the steering column, with the mark A (as indicated by the circle) on the steering wheel facing towards the front side of vehicle.
- Connect the steering wheel buttons assembly connector (2) in place.
- Tighten the fixing nut (3) of steering wheel with the 19mm socket to 35N·m.



- Connect the driver frontal airbag connector (1) in place. Press the locking block A of driver frontal airbag connector to lock the connector
- Install the driver frontal airbag (2) to the mounting surface on the steering wheel in place after alignment.



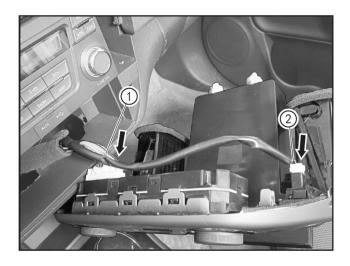
- Tighten the fixing screw (1) of the driver frontal airbag with the T30 screwdriver bit to 10.7N⋅m.
- Refit the fixing screw cap (2) of the driver frontal airbag in place.



- Connect the radio antenna connector (1) in place.
- Connect the CD player connector (2) in place.



 Tighten the fixing screw (1) of CD player with the Phillips screwdriver.



- Connect the A/C control panel connector (1) in place.
- Connect the hazard warning lamp switch connector
 (2) in place.



• Press fit the central panel frame (1) in place after aligning the clips thereon with the fixing points on the instrument panel.



 Tighten the fixing screws (1) of the central panel frame with the Phillips screwdriver.



- Press fit the fixing screw cap (1) of the center panel frame in place.
- Refit the console assembly. (Refer to "Removal and Refitting of Console" in this section.)

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, and check that all functions are normal, and then connect the scan tool to clear DTCs. Carry out a road test to check that there is no unusual noise.

10.5



Removal and Refitting of Console Assembly

1

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- · Shift lever.

A CAUTION

The inside of the high voltage distribution box is at high voltage. Do not disassemble or repair it by yourself, otherwise electric shock may occur.



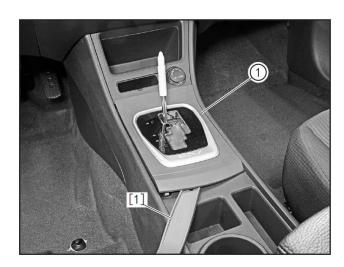
Interior trim removal tool (BF1102) [1].



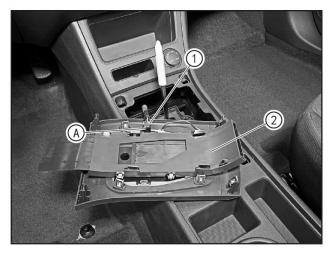


- Pull out the shift lever (1).
- Shift to N gear, apply the parking brake, turn the ignition key to OFF, and disconnect the battery negative cable.





Pry the shift panel (1) with the interior trim removal tool (BF1102) [1].



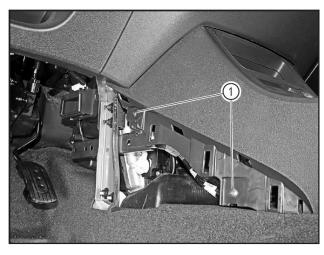
- Press the connector clip (A) with the small screwdriver, and disconnect the gear indicator connector (1).
- Remove the shift panel (2).



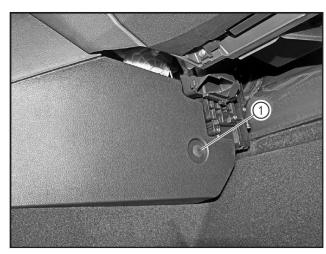
• Remove the fixing clip (1) of console left protective plate with the Phillips screwdriver.



Remove the console left protective plate (1) with the interior trim removal tool (BF1102) [1].



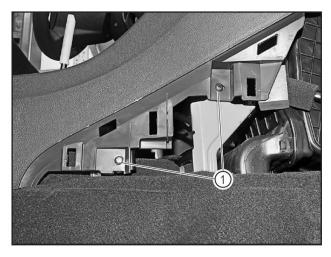
Remove the 2 fixing screws (1) at the left front part of the console with the Phillips screwdriver.



• Remove the clip (1) of the console right protective plate with the Phillips screwdriver.



 Remove the console right protective plate (1) with the interior trim removal tool (BF1102) [1].



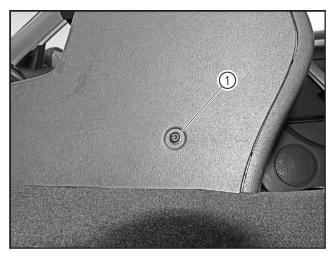
Remove the 2 fixing screws (1) at the right front part of the console with the Phillips screwdriver.



Take out the console storage box mat (1).



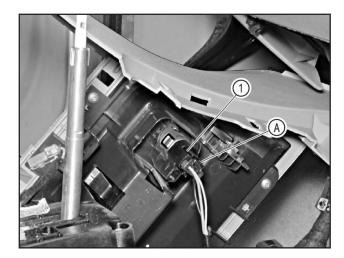
 Remove the 2 fixing screws (1) at the upper part of the console with the Phillips screwdriver.



 Remove the fixing screw (1) at the left/right rear part of the console with the Phillips screwdriver. (1 pcs for left and right sides respectively)



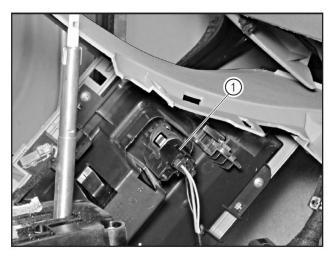
• Remove the 2 fixing screws (1) in the center armrest box with the Phillips screwdriver.



- Press the power outlet connector clip A, and disconnect the power outlet connector (1).
- Take out the console assembly.

A CAUTION

When carrying down the console assembly, avoid collision, so as to prevent damaging the paint or instrument panel surface.

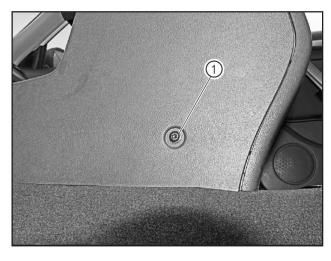


4- Refitting

- Put the console assembly onto the mounting surface in place after alignment.
- Connect the power outlet connector (1) in place, and clip it firmly.

A CAUTION

When placing the console assembly onto the mounting surface, avoid collision, so as to prevent damaging the paint or instrument panel surface.



 Tighten the fixing screw (1) at the left/right rear part of the console with the Phillips screwdriver. (1 pcs for left and right sides respectively)



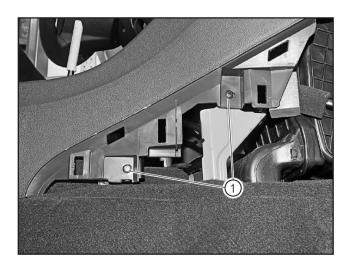
• Tighten the 2 fixing screws (1) in the center armrest box with the Phillips screwdriver.



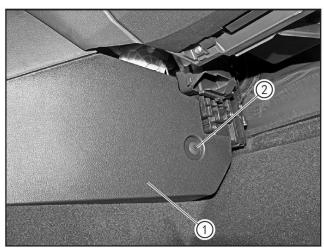
Tighten the 2 fixing screws (1) at the upper part of the console with the Phillips screwdriver.



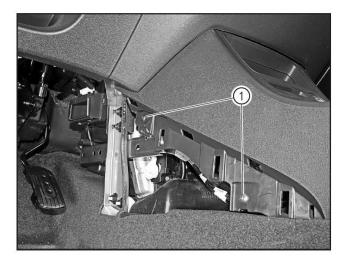
 Place the console storage box mat (1) at the mounting position.



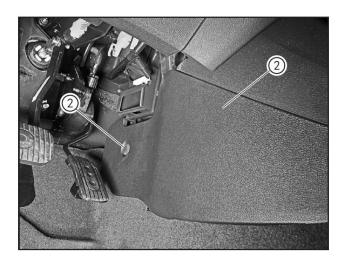
• Tighten the 2 fixing screws (1) at the right front part of the console with the Phillips screwdriver.



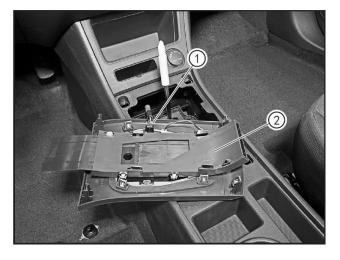
- Refit the console right protective plate (1) onto the mounting surface after alignment.
- Install the clip (2) into the mounting hole after alignment, and then tighten the clip with the Phillips screwdriver.



• Tighten the 2 fixing screws (1) at the left front part of the console with the Phillips screwdriver.



- Refit the console left protective plate (1) onto the mounting surface after alignment.
- Install the clip (2) into the mounting hole after alignment, and then tighten the clip with the Phillips screwdriver.



- Connect the gear indicator connector (1) in place, and clip it firmly.
- Place the shift panel (2) on the mounting surface, align the mounting holes of the clip, and press fit the shift panel in place.



Inset the shift lever (1) into the mounting end with the large end facing forward, and then clip it firmly.



Removal and Refitting of Console Assembly 2

1 - Protection

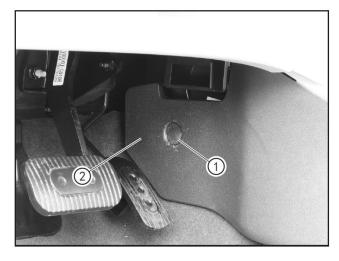
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



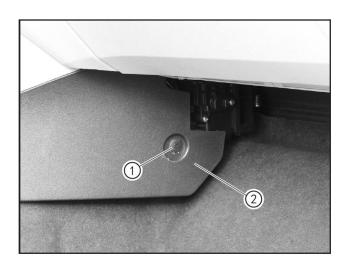
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

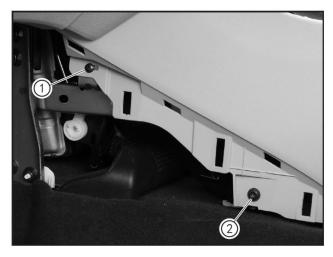


3 - Removal

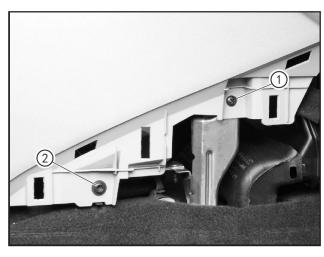
- Remove the shift lever (premium version). (Refer to "Removal and Refitting of Shift Lever (Premium Version)" in "Transmission Makeup")
- Remove the clip (1) of console left protective plate with the Phillips screwdriver, and then take down the console left protective plate (2).



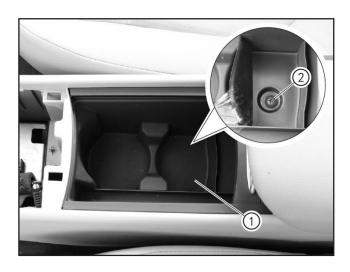
 Remove the clip (1) of console right protective plate with the Phillips screwdriver, and then take down the console right protective plate (2).



- Remove the fixing screw (1) at the left front upper part of console with the Phillips screwdriver.
- Remove the fixing bolt (2) of console bottom bracket with the T30 screwdriver bit.



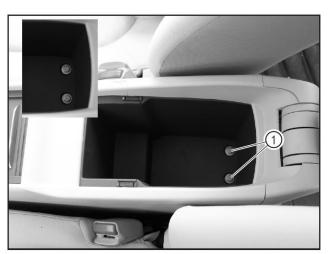
- Remove the fixing screw (1) at the right front upper part of console with the Phillips screwdriver.
- Remove the fixing bolt (2) of console bottom bracket with the T30 screwdriver bit.



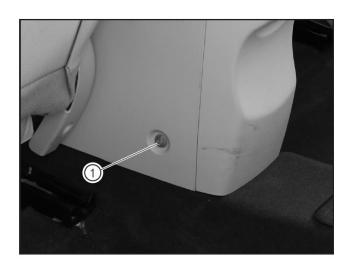
 Lift the cup holder mat (1) on the console, and remove the fixing screw (2) at the upper part of console with the Phillips screwdriver.



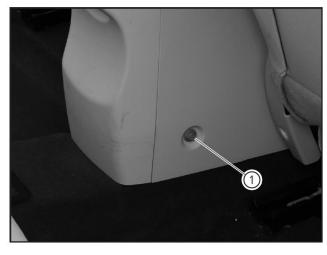
• Open the center armrest, and remove the center armrest pad (1).



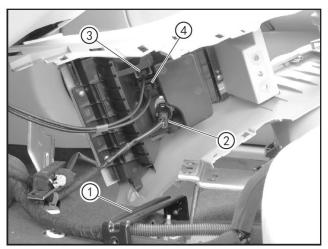
 Remove the 2 fixing bolts (1) at the upper part of center armrest with the 10mm socket.



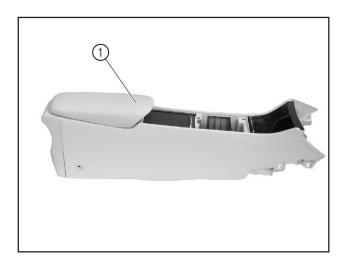
• Remove the fixing bolt (1) (M6×10) at the left rear part of console with the 10mm socket.



• Remove the fixing bolt (1) (M6x10) at the right rear part of console with the 10mm socket.



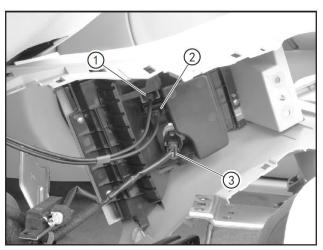
- Remove the bottom bracket (1) of the console.
- Press the connector clip, and disconnect 12V power outlet connector (2).
- Pry the both ends of the USB fixing groove with 2 small slotted screwdrivers, and detach the USB (3) and (4) from the console.



 Remove the console assembly (1) from the inside of the vehicle.

A CAUTION

 When removing the console assembly, avoid collision of console with vehicle body, so as to prevent scratching the console or interior trim.



4- Refitting

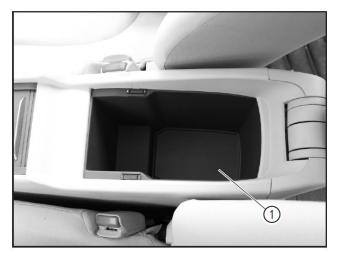
- Insert USB (1) and USB (2), and ensure that the wire harness is securely fixed.
- Connect the 12V power outlet connector (3), and ensure that it is locked reliably.



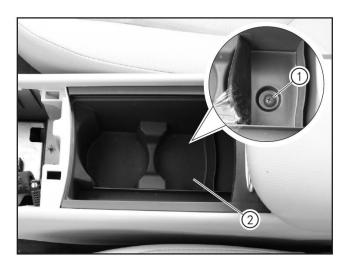
Install the fixing bolts (1), (2) and (3) at the rear part of console. Then, tighten the bolts with the 10mm sockets.



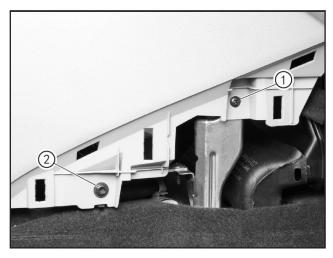




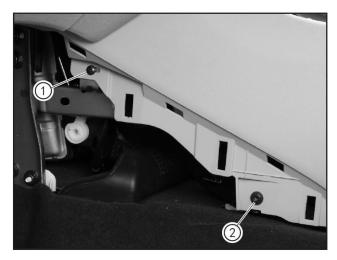
Install the center armrest mat (1).



- Tighten the fixing screw (1) at the upper part of console with the Phillips screwdriver.
- Place the cup holder pad (2) on the console.

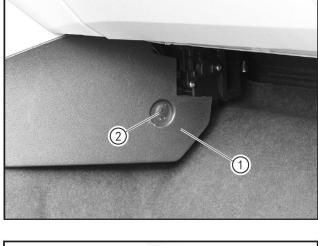


- Tighten the fixing screw (1) at the right front upper part of console with the Phillips screwdriver.
- Tighten the fixing bolt (2) at the right front lower part of console with the T30 screwdriver bit.

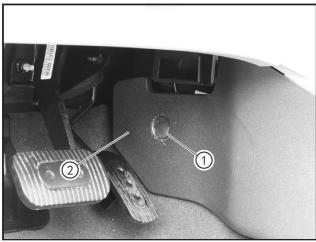


- Tighten the fixing screw (1) at the left front upper part of console with the Phillips screwdriver.
- Tighten the fixing bolt (2) of the console bottom bracket with the T30 screwdriver bit.

10.5



- Refit the console right protective plate (1) onto the mounting surface after alignment.
- Install the clip (2) into the mounting hole after alignment, and then tighten the clip with the Phillips screwdriver.



- Refit the console left protective plate (1) onto the mounting surface after alignment.
- Install the clip (2) into the mounting hole after alignment, and then tighten the clip with the Phillips screwdriver.
- Refit the shift lever (premium version). (Refer to "Removal and Refitting of Shift Lever (Premium Version)" in "Transmission Makeup")





	i i	
10.Body	10.1	Closures
	10.2	Glass, Window and Rearview Mirror
	10.3	Roof
	10.4	Exteriors and Interiors
	10.5	Instrument Panel
	10.6	Seats
	10.7	Body Check
	10.8	Body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company

After-sales Service Technical Document

10.6

Seat

Contents

Contonio	
Precautions	10.6-3
Precautions	10.6-3
Preparations	10.6-4
Special Tools	10.6-4
Tightening Torque	10.6-4
System Overview	10.6-5
Structures and Features	10.6-5
Troubleshooting	10.6-7
Common fault troubleshooting	10.6-7
Front Seat	10.6-8
Removal and Refitting of Driver's Seat	10.6-8
Removal and Refitting of Front Passenger's Seat	10.6-10
Rear Seat	10.6-12
Removal and Refitting of Rear Seat	10.6-12

Precautions

- Be sure to take protective measures on the body and place the protective refitting before removal, so as to avoid scratching the paint when removing or taking off the seats.
- Do not move the seat rail after the seat is removed, so as to avoid refitting problem.
- During refitting, align the dowel pin of seat with the locating hole on body first and then insert the seat fixing bolt.

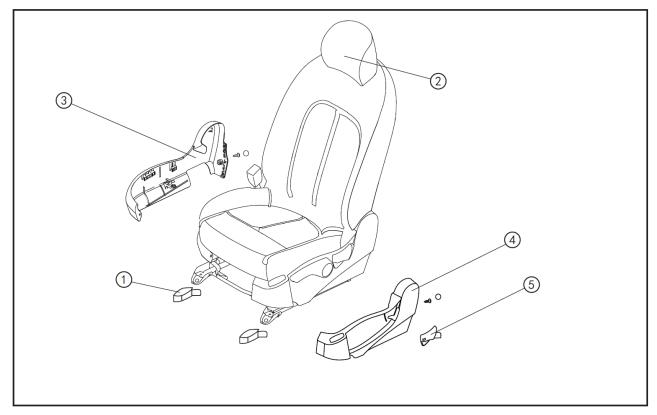
Special tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing clamps, pawls and metal clips.

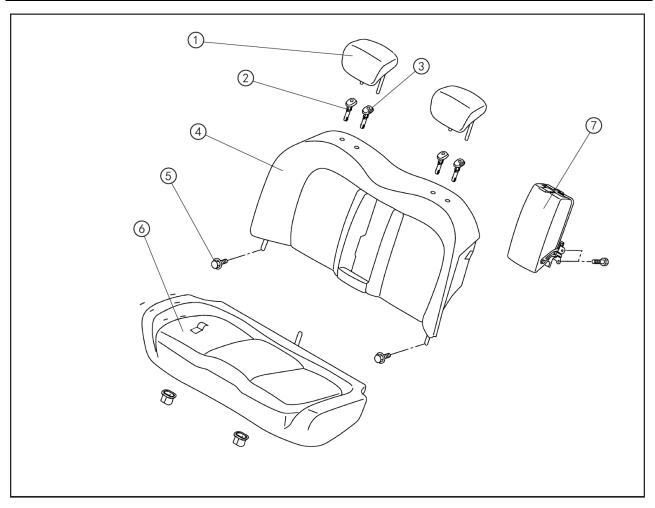
Tightening Torque

Sequence number	Name	Torque (N⋅m)	Remarks
1	Seat fixing bolt	40.0	
2	Rear seat backrest fixing bolt	7.0	

Structure and Features



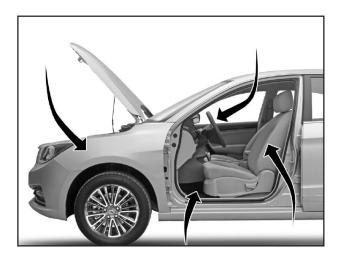
1. Seat rail trim cover	3. Inner protective plate	5. Angle adjusting handle
2. Head restraint	4. Outer protective plate	



Rear head restraint assembly	4. Rear seat back assembly	7. Armrest assembly
2. Smooth head restraint guide sleeve	5. Rear seat back fixing bolt	
Lockable head restraint guide sleeve	6. Rear seat cushion assembly	

Common fault troubleshooting

Fault symptom:	Possible cause	Troubleshooting methods
Abnormal noise of seat	Fixing bolts on both ends of seat back frame and seat cushion frame are loose or the fixing bolts of seat rail and seat cushion frame are loose, so that these components may collide with surrounding parts during driving and unusual noise may be caused in this case.	Replace or tighten the fixing bolt
Seat slider rail seizure	Foreign matters are blocked in seat slide rail, and return spring of seat slide rail locking rod is damaged.	Clear foreign matters or replace return spring
Height and angle of seat cannot be adjusted	Angle adjusting handle spring is damaged or comes off, or angle adjusting handle ratchet is seriously worn, so that adjusting handle cannot work normally.	Replace angle adjusting handle spring or its assembly

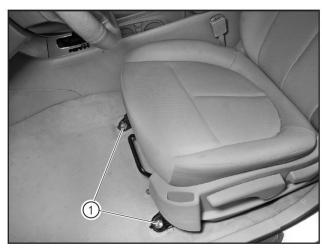


Removal and Refitting of Driver's Seat

1 - Protection

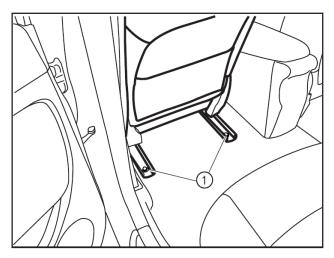
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

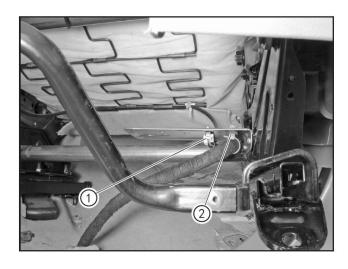


2 - Removal

- Turn off the ignition switch, and disconnect battery negative cable.
- Pull up the seat lock lever, move the seat backward to the utmost position, and remove the seat rail trim cover with the interior trim removal tool BF1102.
- Remove the 2 fixing bolts (M10×25) (1) at the front part of the seat with the T50 screwdriver bit.



 Move the seat forward to the utmost position, and remove the 2 fixing bolts (M10x35) (1) at the rear part of the seat with the T50 screwdriver bit.



- Turn up the seat backwards, and remove the connector (1) and wire harness clip (2) at the bottom of the seat.
- Carefully move the driver's seat out from the front door.

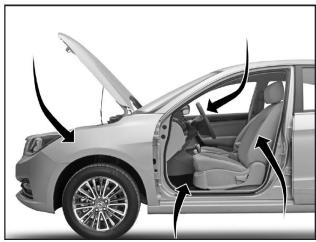
A CAUTION

- Be careful not to scratch the body when taking the seat out.
- Do not move the rails on both sides of seat, otherwise the seat may be hard to be installed if the rails are dislocated,

3- Refitting

A CAUTION

- During refitting, align the dowel pin of seat with the locating hole on body first, and then insert the seat fixing bolt.
- During refitting, pre-tighten the 4 seat fixing bolts first and then tighten them to the standard torque.
- The tightening torque of the seat fixing bolt is 40N·m.



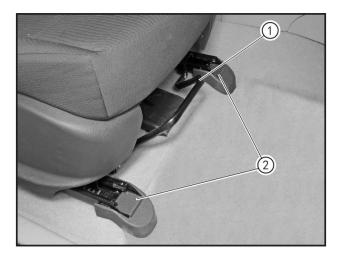


Removal and Refitting of Front Passenger's

1 - Protection

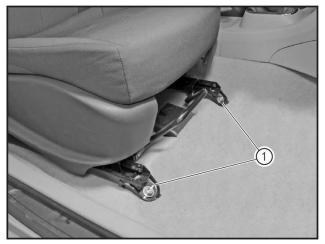
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

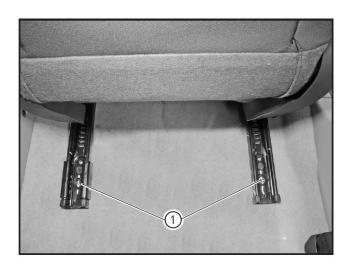


2 - Removal

- Pull up the seat lock lever (1), and move the seat backwards to the utmost position.
- Use the interior trim removal tool (BF1102) to remove the seat rail trim cover (2).



Remove the 2 fixing bolts (M10×25) (1) at the front part of the seat with the T50 screwdriver bit.



- Pull up the seat lock lever, and move the seat forwards to the utmost position.
- Remove the 2 fixing bolts (M10x35) (1) at the rear part of the seat with the T50 screwdriver bit.
- Take the front passenger's seat out from the vehicle.

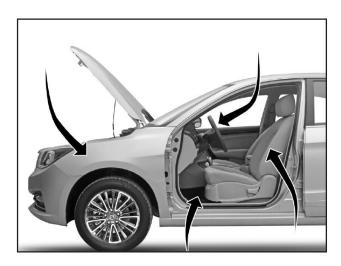
A CAUTION

- Be careful not to scratch the body when taking the seat out.
- Do not move the rails on both sides of seat, otherwise the seat may be hard to be installed if the rails are dislocated,

3- Refitting

A CAUTION

- During refitting, align the dowel pin of seat with the locating hole on body first, and then insert the seat fixing bolt.
- During refitting, pre-tighten the 4 seat fixing bolts first and then tighten them to the standard torque.
- The tightening torque of the seat fixing bolt is 40N·m.

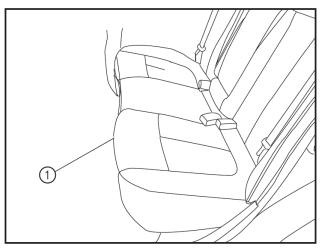


Removal and Refitting of Rear Seat

1 - Protection

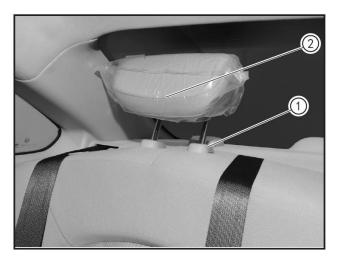
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

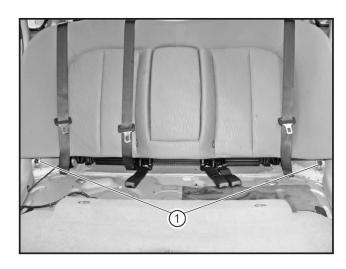


2 - Removal

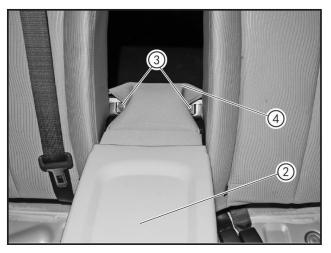
Lift slightly the front end of seat cushion, shake the seat cushion forwards and backwards to loosen the clamping hook, and turn up the rear seat cushion, and then remove the rear seat cushion (1).



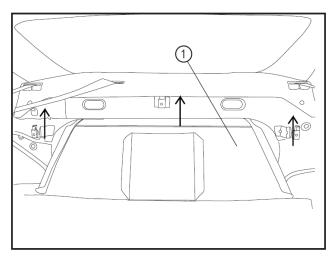
 Press the head restraint bracket lock button (1), and take off the head restraint (2) upwards slowly. (Right and left side each)



 Remove the 2 fixing bolts (1) on both sides of rear seat back with the 10mm socket.



- Unfold the armrest (2) to expose the 2 fixing bolts (3) of rear seat back, and remove the 2 fixing bolts (3) with the 10mm socket.
- Disconnect the rear connector (4) of armrest assembly.



 Lift up the rear seat back (1) so that the 3 hooks are detached from the vehicle body, and then take off the rear seat back (1).

3- Refitting

- The tightening torque of the seat fixing bolt is 40N·m.
- After the refitting, check the seat back lock mechanism for locking.





	1	
10.Body	10.1	Closures
	10.2	Glass, Window and Rearview Mirror
	10.3	Roof
	10.4	Exteriors and Interiors
	10.5	Instrument Panel
	10.6	Seats
	10.7	Body Check
	10.8	Body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company

After-sales Service Technical Document

10

10.7

Body Check

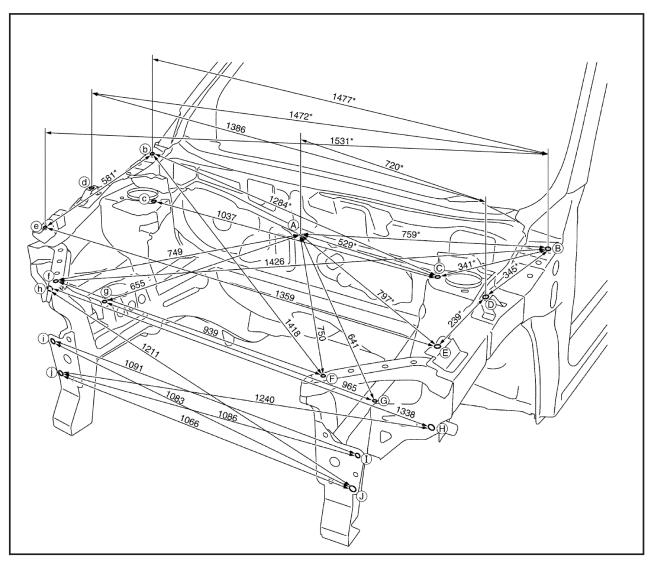
Contents

Во	dy Check	10.7-3
	Motor Compartment Measurement	10.7-3
	Body Front Part and Side Wall Measurement	10.7-5
	Rear Body Measurement	10.7-7



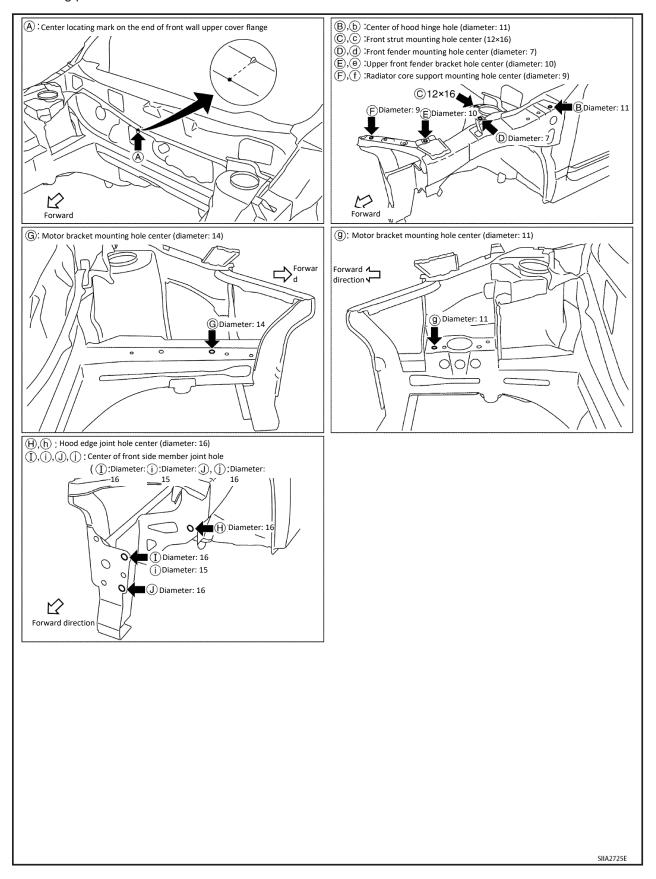
Motor Compartment Measurement

Unit: mm



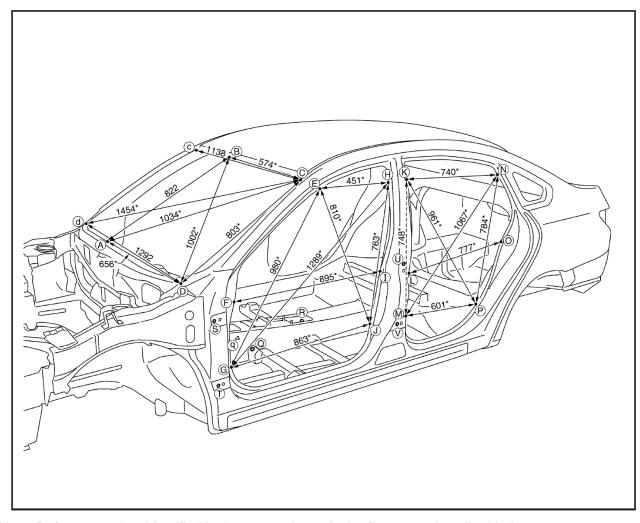
Note: Reference points identified by letters as shown in the figure are described below.

Measuring points



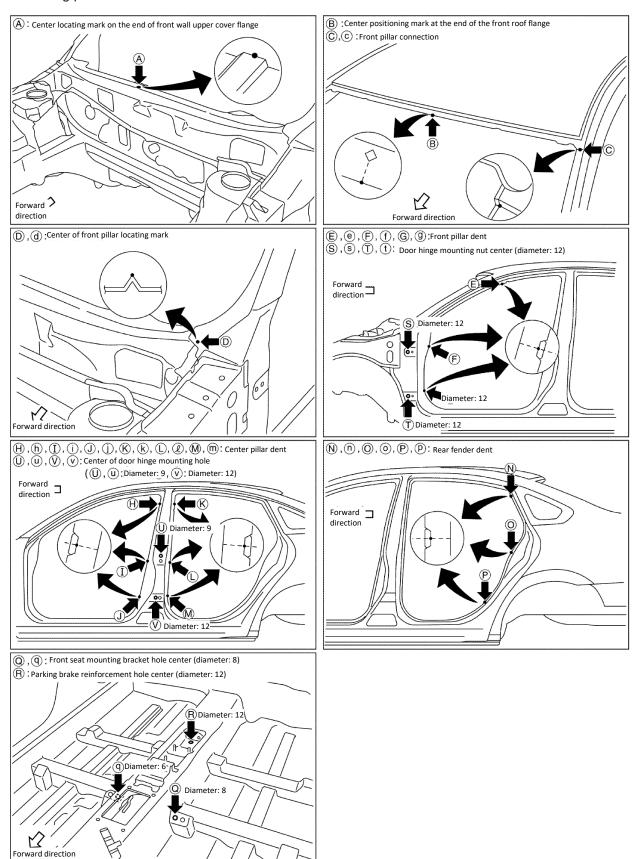
Body Front Part and Side Wall Measurement

Unit: mm



Note: Reference points identified by letters as shown in the figure are described below.

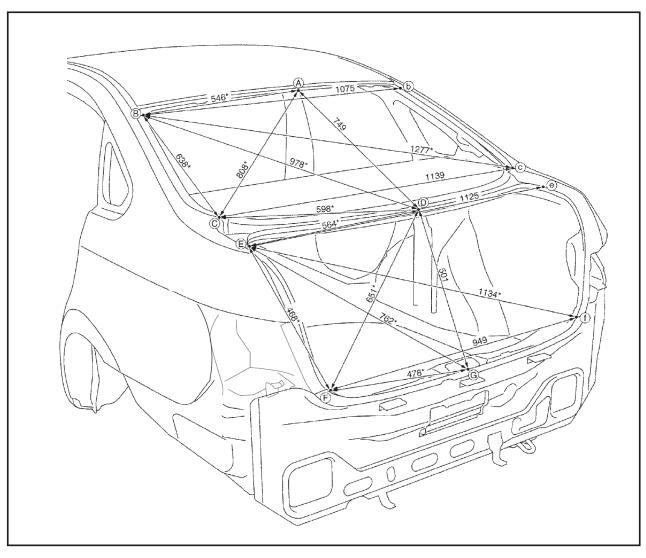
Measuring points



SIIA2729E

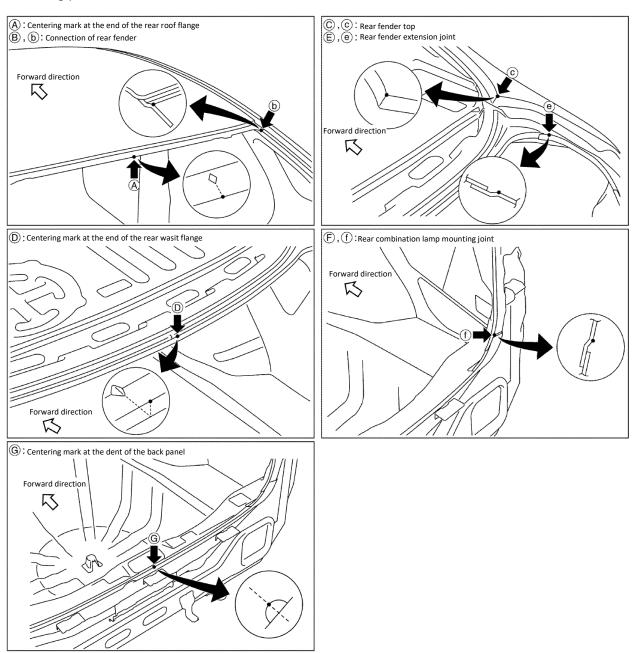
Rear Body Measurement

Unit: mm



Note: Reference points identified by letters as shown in the figure are described below.

Measuring points



SIIA2731E





10.Body	10.1	Closures
	10.2	Glass, Window and Rearview Mirror
	10.3	Roof
	10.4	Exteriors and Interiors
	10.5	Instrument Panel
	10.6	Seats
	10.7	Body Check
	10.8	Body Structure

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

Dongfeng Motor Corporation Passenger Vehicle Company

After-sales Service Technical Document

0

10.8

Body Structure

Contents

Precautions	10.8-3
Safety Precautions for Body Maintenance	10.8-3
Basic Knowledge of Welding	10.8-4
Spot Welding Conditions	10.8-4
MIG Welding Conditions	10.8-6
Precautions for MIG Welding	10.8-7
Plug Welding	10.8-8
Fillet Welding	10.8-15
Overview	10.8-17
Symbolic Signs	10.8-17
Recommended Auxiliary Materials for Body Repair	10.8-18
Panel Assembly	10.8-20
Identification of Body Structure Spare Parts	10.8-20



Safety Precautions for Body Maintenance

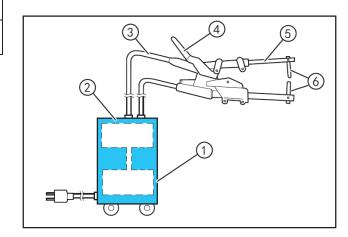
- Read all safety precautions for maintenance beforehand, and make sure that all appropriate tools are prepared and the operators have skills required for safe maintenance.
- Wear work clothes with long sleeves, cap and work shoes before maintenance. Wear appropriate goggles, gloves, earplugs and/or mask based on the type of body work, welding and painting.
- Wear safety glasses, goggles or mask to protect your eyes during beating, drilling, polishing and welding operations or for working around pressure air, liquid, spring and other energy-storage components. In other cases, please wear eye-protective device if the operator's safety cannot be ensured.
- Before touching any hot or sharp objects or others that seem to be likely to cause injury, wear gloves and other labor protection articles such as work shoes and protective clothes, to avoid personal injuries such as serious scalds and cuts etc.
- Paint spraying shall only be performed in an authorized well-ventilated painting work shed.
- Always wear authorized breather, eye-protective device and gloves during paint spraying to prevent from paint and harmful chemicals.
- As electrical conductivity of solvent is poor, static electricity may build up when stirring up the paint
 or diluent in a container, causing the arising of sparks when the critical value of electrostatic
 capacity is reached, and thus igniting the solvent. Wear cotton working clothes with anti-static
 coating rather than working clothes made of synthetic fiber.
- Sprinkle some water on the floor to keep the painting room with proper humidity. Do not place any
 combustibles or employ any electrical devices near painting room and dryer, otherwise explosion
 may occur.
- Do not expose the paint and diluent to direct sunshine or heat source.
- There will be a risk of spontaneous combustion when paint dust, ground polyester putty dust or used cloth are put together, and all of which shall be poured into a container filled with water.
- The contain containing idle paint and diluent must be capped, and the remaining stains on the floor (if any) shall be wiped off with a piece of cloth.

Spot Welding Conditions

Welding equipment

Independent transformer type

1. Transformer	3. Welding gun	5. Arm
2. Timer	4. Pressure handle	6. Center



1. Timer	3. Pressure handle	5. Arm
2. Transformer	4. Welding gun	6. Center

- The spot welding machine consists of welding gun, transformer and timer.
- Common welding machine is a type of welding machine with transformer and welding gun integrated, and another type with independent transformer equipped.
- Most of spot welding machines for body maintenance can be used to adjust the clamping pressure
- and function time of current, but most of them cannot be used for adjusting welding current.

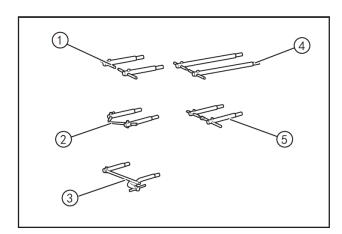
2 4

▲ CAUTION

• Please observe the instructions provided by spot welding machine manufacturer.

Clamp arm type

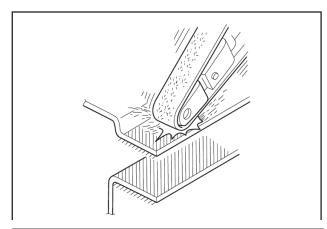
1. Standard clamp arm	3. Wheel housing clamp arm	5. Live center
2. 45° clamp arm	4. Long clamp arm	

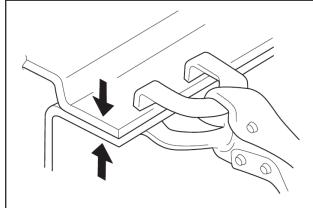


Precautions

A WARNING

- Be sure to wear goggles or safety glasses to avoid eye injuries when polishing.
- If there is any paint film, rust or other foreign matters between the workpiece and the center, the feed current will be insufficient, leading to poor welding. Use a belt sander to clear the paint film, rust or other foreign matters on the surface of workpiece.
- Clamp with a vice chuck key, and make sure that contact surfaces fit with each other closely.

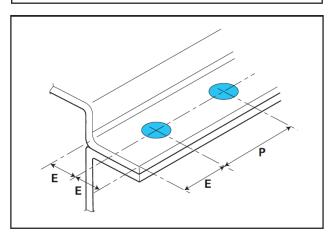




Welding position reference

 Pitch (distance between two welding spots) and edge distance (to the edge of plate) for spot welding have an effect on the overall strength of body, and appropriate pitch and edge distance for welding must be used according to the plate thickness.

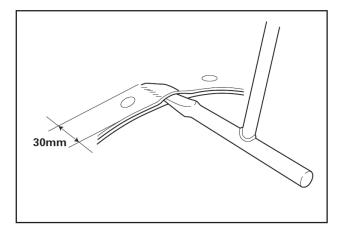
Panel thickness(mm)	Pitch of welding spot (P) (mm)	Edge distance of welding spot (E) (mm)
0.6	11	5
0.8	14	5
1.0	18	6
1.2	22	7
1.6	29	8



Non-destructive test

♠ WARNING

- Be sure to wear gloves when checking the workpiece, to avoid hand injuries.
- After welding, insert the inspection wedge to the place near the solid block (welding position) as shown. If the diameter of solid block is greater than 3 mm, the welding shall be deemed to be correct.

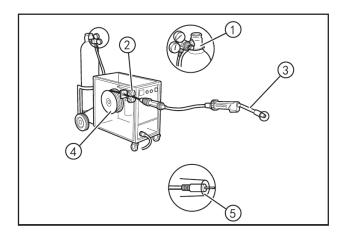


MIG Welding Conditions

Welding equipment

1. Adjuster	2. Driving roller	3. Welding gun
4. Welding electrode	5. Contact tip	

- The welding machine must be capable of providing a maximum current of about 200 A, and allows changing the welding method. It should also allow to weld aluminum alloy and steel by changing the accessories, gas cylinders and resetting control according to the manufacturer's recommendations.
- A skilled welder shall be able to process the plate with a minimum thickness of 1.6-3.0 mm. Some newly developed equipment supports to weld a plate with the minimum thickness of 1 mm.



A CAUTION

 For detailed description of correct welding current and voltage, please refer to relevant suggestions of equipment manufacturer.

Protective gas

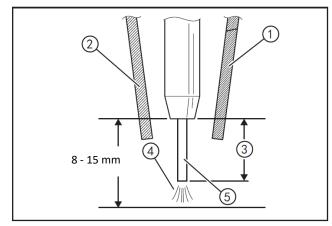
 Argon with the purity no less than 99.999% should be used.

Benchmark data of welding parameters:

Material thickness (mm)	1.6	2.0	2.5	3.1	5.0
Diameter of welding electrode (mm)	0.8	0.9-1.0	0.9-1.2	0.9-1.2	0.9-1.2
Current (A)	50-70	60-110	80-120	100-140	120-170
Voltage (V)	10-11	12-15	13-16	15-18	17-20
Gas flow (L/min) Argon 100%	15-18	15-18	17-20	17-20	10-20

Precautions for MIG Welding

- Compared with steel plate welding, the plate thickness for MIG welding is fairly limited.
- Compared with welding of steel plate, about 50% more protection gas is needed for MIG welding. When inserting the welding electrode into the feeder, clear the burrs at the ends of welding electrode with emery paper and thread the welding electrode through the welding gun by hand.
- Be careful not to damage the internal PTFE cable liner.
- Be sure to adjust the tension of welding wire driving roller until it is less than the tension when steel welding wire is used for welding. Clamp the welding wire tightly at the contact tip, adjust the tension and allow the welding wire at the driving roller to slide when the welding gun switch is turned on. If the tension of driving roller is excessive, the welding wire may be seized; if the tension is insufficient, the feed rate of welding wire will be inconsistent.
- Feed rate of welding wire is usually higher than that during steel plate welding.
- The clearance of electrode and base metal should be identical with that during steel plate welding, but the welding gun should be perpendicular to the workpiece.

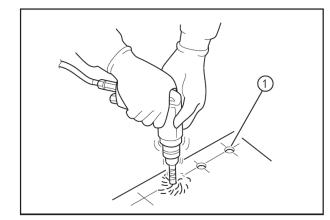


1. Contact tip	2. Nozzle	3. Protruding length of welding wire
4. Arc	5. Welding wire	

Plug Welding

Cleaning and processing of new part

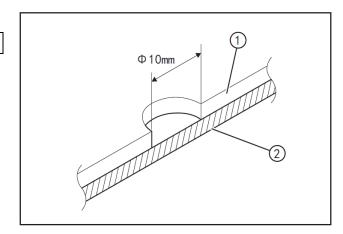
- Use an electric drill equipped with a drill bit of 8 10 mm in diameter to clear the solid blocks at welding spot of new part.
- It is necessary to drill a new plug welding hole (1) with a diameter of 10mm during welding if there is no welding spot hole in the new part.



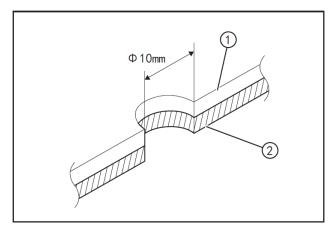
Combination of plate and plug welding hole

1. Upper plate	2. Lower plate
----------------	----------------

Monolayer plug welding hole in two-layer plate.

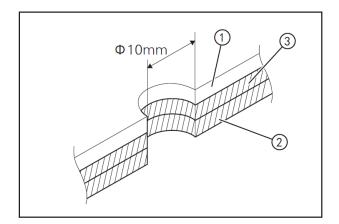


• Plug welding through hole in two-layer plate.



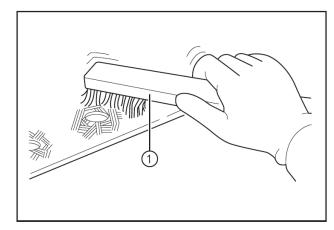
1. Upper plate	2. Lower plate	3. Middle plate

Plug welding through hole in three-layer plate.



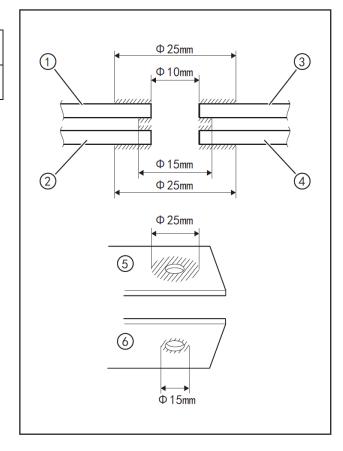
Clearing up of oxide layer

- Clear the dirt on the surface to be welded with the degreasing agent.
- Polish and clean the paint layer with the belt sander (P80).
- Clear the oxide layer at the shaded area with a stainless steel wire brush (1).



Plug welding through hole in two-layer plates:

1. Upper plate	3. Тор	5. Top/bottom of upper/lower plate
2. Lower plate	4. Bottom	6. Bottom/top of upper/lower plate

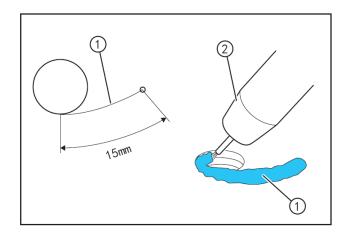


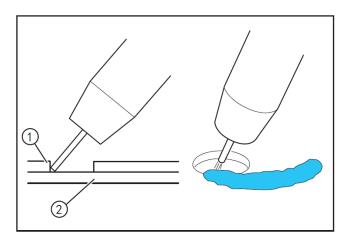
Welding of plug welding hole

- Use a stainless steel wire brush to clean the part to be welded before welding.
- Use the plug welding method to start welding from the outside (1). Start welding from the position about 15mm outside the hole, make sure that the plate melts after preheating and allow to check initial melting by arc.
- At the beginning of welding, hold the welding gun (2) and keep your body in a comfortable and supported pose, so as to see the welding position clearly.
- Move the welding gun to the edge of hole when checking the welding results.
- For the welding of aluminum alloy, mind that the clearance between electrode and workpiece shall not be too large.

Welding of monolayer plug welding hole in two-layer plates:

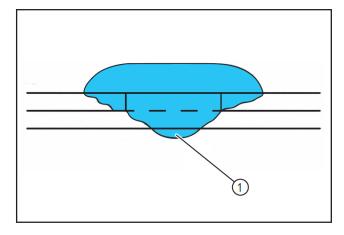
 Align the edges of hole in the upper plate (1) and lower plate (2) for welding, and ensure that the depth of fusion of lower plate is sufficient.





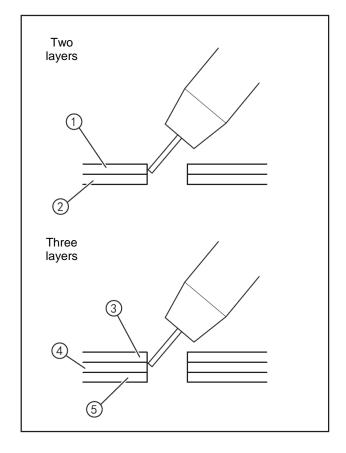
Depth of fusion check

- Depth of fusion shall be 1/2 to 2/3 of thickness of the lower plate.
- Welding bead (1) appeared on the back indicates that depth of fusion is sufficient.



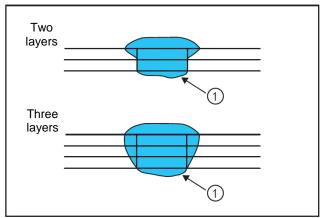
Welding of through hole in two/three-layer plates:

- Through hole welding:
- Through hole in two layers of plates.
- Weld the fitting edges of upper plate (1) and lower plate (2).
- Weld around the hole for about 1 to 1/2 turn to fill the plug welding hole.
- Through hole in three layers of plates.
- Weld the fitting edges of middle plate (4) and lower plate (5).
- Weld around the hole for about 2 turns to fill the plug welding hole.



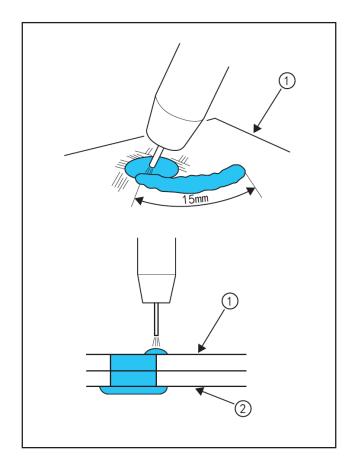
Welding bead polishing

 Polish the welding bead (1) on the back of lower plate.



Welding

• Starting from the outside of hole, weld along the plug welding hole from the rear part of lower plate (1).



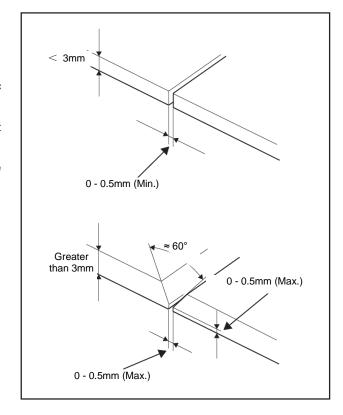
Ensure to check post-welding cracks

 Polish the welding position, spray the penetrant to the welded position and wait for 5 - 10 minutes, wash the welded position with corresponding detergent or alcohol and then apply developer. Wait for 5 minutes and observe the color change: if unchanged, it indicates that there is no "gas hole" and "crack" etc. at the welded position; and vice versa.

Butt Welding

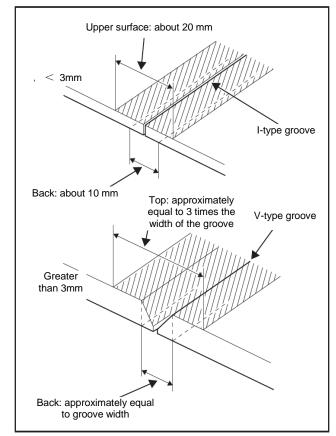
Grooving

- For thickness less than 3 mm:
 - Joint with no gap left (I-type groove).
- For thickness greater than 3 mm:
 - Groove along the butted line using a disc sander or file.
 - Trim the polished surface using a disc belt sander (P80) or finishing file.
 - With a V-type groove, welding bead will be formed easily.



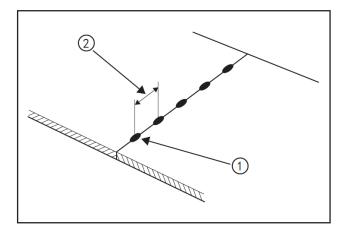
Clearing up of oxide layer

- Clear the dirt on the surface to be welded with the degreasing agent.
- Polish and clean the paint layer with the belt sander (P80).
- Use a stainless steel wire brush to clear the oxide layer.
- Clear the oxide layer at the shade lines.



Tack Welding

- Tack welding is basically the same with the steel plate welding.
- Weld short welding beads (1) at intervals. The thinner the plate is, the smaller the pitch (2) for welding will be. Do not perform welding at the end or corner of the workpiece.



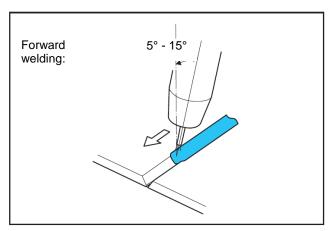
Formal Welding

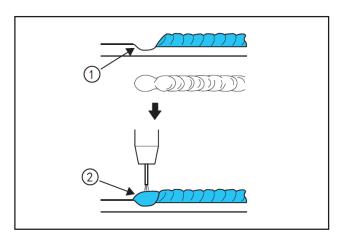
A CAUTION

- Be sure to wear authorized helmet, gloves and safety shoes during welding to avoid eye injuries and scalds.
- Use a stainless steel wire brush to clean the part to be welded before welding.
- Hold the welding gun and incline it for 5° 15°, and then use forward welding method to weld along the joint line.
- Meanwhile, check the clearance between contact tip and workpiece, angle of welding gun and depth of fusion, and adjust the moving speed of the welding gun.
- As the welding technique is improved, a higher power (high current) can be used to increase the moving speed of welding gun. The rapid welding will reduce the heating of workpiece and distortion.
- When welding a thin plate, increase welding capacity gradually to avoid lack of weld.
- If the welding equipment is designed with skip welding mode, this mode could be used.

Pit Filling

- Gradually stop moving the welding gun at the end of welding bead and then fill the pit.
- Do not quench the arc suddenly at the end of welding bead.
- Repeat the above operations to fill (2) the pit (1) if it appears.





Ensure to check post-welding cracks

 Polish the welding position, spray the penetrant to the welded position and wait for 5 - 10 minutes, wash the welded position with corresponding detergent or alcohol and then apply developer. Wait for 5 minutes and observe the color change: if unchanged, it indicates that there is no "gas hole" and "crack" etc. at the welded position; and vice versa.

Fillet Welding

Clearing up of oxide layer

A CAUTION

 Be sure to wear authorized respiratory protection equipment and eye-protective device during polishing.

Upper plate	2. Lower plate	
3. About 10 mm at top of	4. End of upper plate	
upper plate		
5. About 5 mm when measure	ed from top weld line of	
lower plate		
6. About 10mm when measured from top weld line of		
lower plate		
7. About 5 mm at the back	8. Weld line	
of upper plate		

- Clear the dirt on the surface to be welded with the degreasing agent.
- Polish and clean the paint layer with the belt sander (P80).
- Use a stainless steel wire brush to clear the oxide layer.
- Clear the oxide layer at the shade lines.
- The upper and lower plates must fits closely with each other.

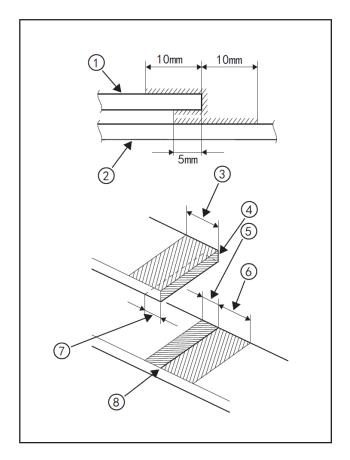
Starting of welding

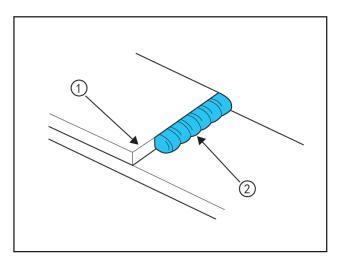
A CAUTION

 Be sure to wear authorized helmet, gloves and safety shoes during welding to avoid eye injuries and scalds.

1. This corner is easy to	2. This part is hard to
melt.	melt.

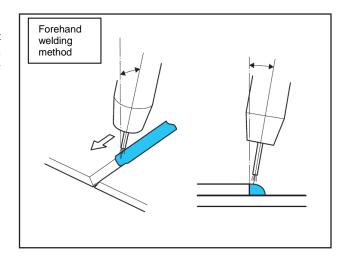
- Use a stainless steel wire brush to clean the part to be welded before welding.
- The edge of upper plate will be melt rapidly while the middle part of lower plate will be melt slowly during fillet welding.
- The current should be slightly lower than that during butt welding. Check if depth of fusion of the lower plate is correct during welding.





Precautions for welding:

 Hold the welding gun tightly and keep it at a correct angle to the workpiece. Check the depth of fusion during welding if the thicknesses of upper and lower plates are different.



Ensure to check post-welding cracks

 Polish the welding position, spray the penetrant to the welded position and wait for 5 - 10 minutes, wash the welded position with corresponding detergent or alcohol and then apply developer. Wait for 5 minutes and observe the color change: if unchanged, it indicates that there is no "gas hole" and "crack" etc. at the welded position; and vice versa.

Symbolic Signs

Sequence number	Operation	Symbol
1	Debonding of welding spot (drilling method)	*
2	Debonding of welding (grinder grinding)	∇
3	Preparation, trimming, straightening of fitting edge, clearing up of burrs and primer, and application of weldable conductive coat	
4	Spot welding (including spot welding and MAG welding)	•
5	Plug Welding	
6	Cutting	•
7	Scribing	
8	Sealant application	 -
9	Application of stone chip resistant coating & sticking of noise insulation board	
10	Tinning	$\overset{\times}{\otimes}$
11	Spraying of hollow body protective agent, filling of foam packing material and spraying of liquid wax layer	<i>*</i>
12	Splicing welding joint	
13	Drilling of spare part edge	\oplus
14	Spray tank	B
15	Cutting	Ġ.
16	Welding between welding plates	Х

Note - Only locations of welding spots are shown in the Welding section, and the number of the welding spots shall not be less than that of original welding spots.

Recommended Auxiliary Materials for Body Repair

I - Extrudable adhesive

Service characteristics	Application	Code in this Manual
Sealing between welding plates	For sealing metal plates after seal welding	A1
Glass glue	For bonding front & rear windshields	A3

II - Sound deadening adhesive

Service characteristics	Application	Code in this Manual
Polyurethane sealant with sealing and sound insulation effects	For bonding and sealing between plates without welding spot	H2
Sound insulation plate	Stuck inside the door or on the real wheel housing for sound insulation	H5

III - Adhesive

Service characteristics	Application	Code in this Manual
Gluing between metal and glass	For gluing between interior rearview mirror holder and front windshield	B1
	For gluing of interiors	B2
Instant alua	For gluing of door interiors	B3
Instant glue	For gluing of plastic parts	B5
	For gluing of trademark and decorative strip	B6
Sealing strip adhesive	For gluing of waterproof sealing strips, interiors and carpet	B10
Gluing of composite material	For repairing composite material	B4
Gluing between plates, and spot welding is allowed before glue is dry.	For sealing and gluing between overlap welding plates	B8

IV - Lubricant

Service characteristics	Application	Code in this Manual
Multipurpose grease	For general lubrication	G6

V- Protective agent

Service characteristics	Application	Code in this Manual
Weldable conductive coating	It can be used for protection of spot welding plate inner surface and applied onto the inner surface of the plate to be welded.	C7
Stone chip resistant coating	Applied to underbody for resistance of aggregate striking	C3
Hollow cavity protective agent	Sprayed on the small hollow cavity inside the body for protection against corrosion	C5
Polyurethane foaming agent	It is sprayed on the large sealing-protective hollow cavity inside the body to foam for shock absorbing and sealing protection.	C6
Regalvanizing of plates	For plates required to be galvanized after repair	C8

VI - Cleaning agent

Service characteristics	Application	Code in this Manual
Spray tank for preliminary surface cleaning before use of auxiliary material	For cleaning pretreatment before gluing	J1

Paint spraying instructions

1 – Safety precautions for paint spraying

A WARNING

Most paints contain harmful substances and should not be inhaled or swallowed. Read the paint label carefully before opening the paint barrel lid. To ensure the operation safety in the paint spraying area, pay attention to the following.

- Wear qualified masks and goggles when painting.
- Wear qualified gloves and appropriate work clothes during painting to avoid skin contact with paint.
- Always perform paint spraying in a ventilated place.
- When the paint spills out, cover with sand, or wipe it off immediately.
- If the paint splashes on your mouth or your skin, rinse thoroughly with water. If the paint splashes into your eyes, wash with water and seek medical attention immediately.
- After the painting, wash your face and rinse your mouth with water.
- The paint is flammable. Therefore, please store it in a safe place away from sparks, flames or cigarettes.
- 2 Basic principles of topcoat touch-up
- Always use the specified two-component polyurethane acrylate paint to repair the damaged paint surface; perform polishing and baking to the 3 layers of coating as in normal production to maintain the original paint film thickness and ensure the same quality as the original paint surface.
- 3 Painting process in factory



4 - Characteristics of painting process

Pretreatment and E-coat

 During the pretreatment, the entire body is degreased, cleaned and coated with zinc phosphate by soaking. After cleaned with water, the body is placed in an electrolytic tank containing soluble primer (cationic E-coat), which will form a strong corrosion protection layer on the inner surface and corners of the body, pillar, door sill and panel.

Primer

A pass of primer will be applied to the pretreated surface to prevent damage further.

Topcoat

For good adhesion, smoothness, brightness and durability, the enamel coating, polyester coating or acrylic resin is adopted for topcoat.

5 - Paint code

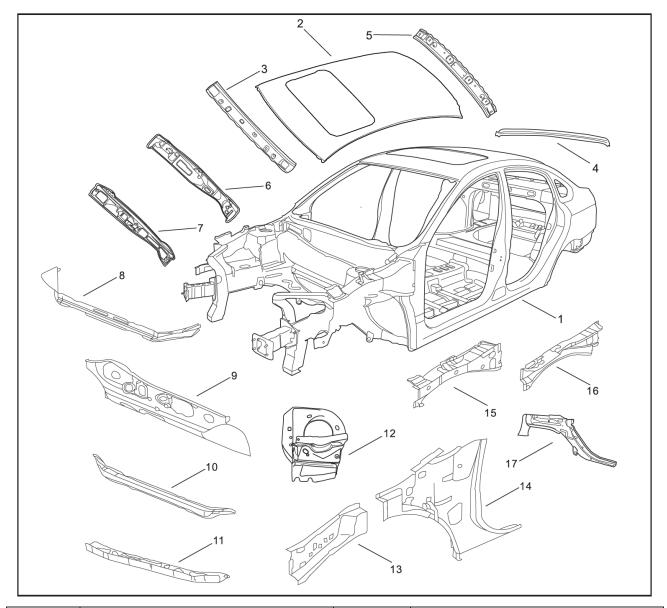
Sequence number	Supplier name	Color	Grade	Film thickness requirement
1	Hunan Xiangjiang	Jade white (1A)	DC-100	
2	Kansai Paint Co., Ltd.	Cloud gray (1Z)	DC-100	
3		Inkstone black (1B)		13 \sim 15 μm
4	Nippon Paint (China) Co., Ltd.	Amber gold (1Q)	SP-M95	
5	30., Eta.	Silk silver (1C)		

Identification of Body Structure Spare Parts

▲ CAUTION

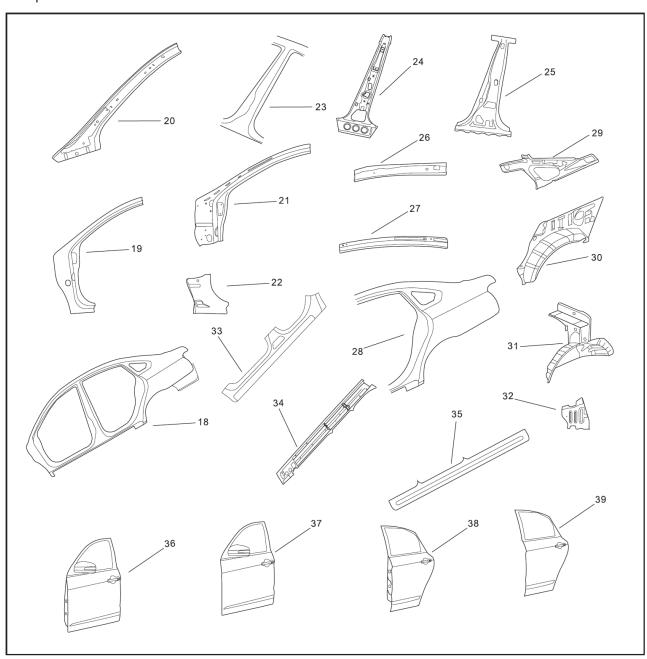
• The body parts herein are only for structure description, but not spare parts in the as-supplied state.

Top & front parts



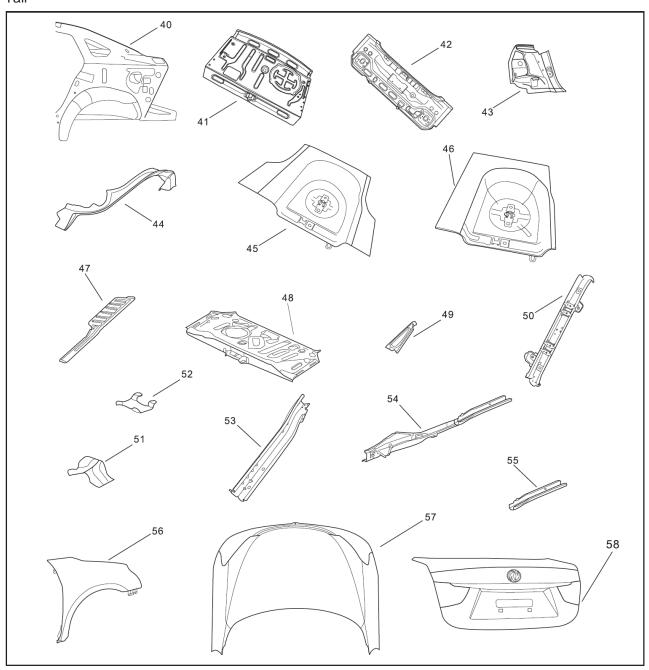
No.	Name	No.	Name
1	Carbody	10	Front wall lower plate
2	Roof cover	11	Powertrain front cross member
3	Roof front cross member	12	Left/right front wheel housing assembly
4	Roof middle member	13	Left/right front fender inner panel front plate
5	Roof rear cross member.	14	Left/right front fender inner panel rear plate
6	Front wall upper panel outer plate	15	Left/right front fender reinforcement plate - front
7	Front wall upper panel inner plate	16	Left/right front fender reinforcement plate - rear
8	Front wall upper panel	17	Left/right front side member assembly
9	Front wall panel		

Side part



No.	Name	No.	Name
18	Side panel assembly	29	Rear wheel housing outer panel upper plate
19	Front pillar outer plate	30	Rear wheel housing outer panel lower plate
20	Front pillar inner panel	31	Rear wheel housing inner panel
21	Front pillar inner panel reinforcement plate upper plate	32	Rear wheel housing outer panel extension plate
22	Front pillar inner panel reinforcement plate lower plate	33	Sill outer plate
23	Central pillar outer plate	34	Door sill outer panel reinforcement plate
24	Center pillar inner panel	35	Door sill inner panel
25	Center pillar inner panel reinforcement plate	36	Front door assembly
26	Door frame middle beam	37	Front door outer panel
27	Door frame middle beam reinforcement plate	38	Rear door assembly
28	Rear wall outer panel	39	Rear door outer panel

Tail



No.	Name	No.	Name
40	Rear wall inner panel assembly	50	Rear floor cross member
41	Rear partition left/right bracket	51	Spare wheel carrier assembly
42	Rear wall assembly	52	Jack bracket assembly
43	Left/right tail lamp fixing plate	53	Rear seat cross member assembly
44	Drip channel	54	Rear Side Member Assembly
45	Rear floor assembly	55	Rear side member stiffener
46	Rear floor rear part	56	Front fender
47	Rear floor left/right panel	57	Hood
48	Rear floor front part	58	Trunk lid
49	Rear floor extension plate		





11.Air-conditioner

11 A/C system

11

The service manual is copyrighted by Dongfeng Motor Corporation Passenger Vehicle Company. Reproduction in whole or in part of its content without the Company's prior written consent is strictly prohibited.

The company reserves the right to make changes to and interpret this manual.

11

A/C System

Contents

Precautions	11-3
Precautions for Use of R-134a	11-3
General Precautions for Refrigerant	11-3
Precautions for Cooling Joints	11-3
Precautions for Replacing or Cleaning Refrigerant Recycling Components	11-4
Inspection of Refrigerant Leakage	11-4
Inspection of System Leakage by Fluorescent Leak Detector	11-4
Inspection of System Leakage by Fluorescent Leak Detector	11-4
Preparations	11-5
Special Tools	11-5
General Tools	11-5
Service Data and Specifications	11-6
Technical Parameters	11-6
Recommended Balance Value for Refrigeration Oil Replacement of A/C Components .	11-6
Tightening Torque	11-6
System Overview	11-7
Electric A/C	11-7
Troubleshooting	11-9
AC (Air Conditioning Control) DTCs	11-9
Data Stream	11-10
Common Fault Troubleshooting	11-11
Refrigeration Oil	11-15
Charging of Refrigeration Oil	11-15
Recovery/Vacuuming/Pressurizing/Charging/Leak Detection of Refrigerant	11-16
Operating Instructions of Freon-free Refrigerant (R-134a) Handling Machine	11-16
Inspection of A/C Refrigerant	11-17
Recovery/Vacuuming/Pressurizing/Charging of Refrigerant (by Refrigerant Handling M	,
Lock Data Sign of A/O Contains	
Leak Detection of A/C System	
A/C Control Panel	
Removal and Refitting of A/C Control Panel 1	
Removal and Refitting of A/C Control Panel 2	11-32

Air Pipe / Air Outlet	11-36
Removal and Refitting of Side Air Outlet	11-36
Removal and Refitting of Rear Central Air Outlet	11-38
Removal and Refitting of Air Vent Pipe	11-40
A/C Servo Motor	11-44
Removal and Refitting of Temperature Servo Motor	11-44
Removal and Refitting of Internal and External Circulation Servo Motor	11-48
Removal and refitting of Mode Selector Servo Motor	11-51
A/C Fan	11-55
Removal and Refitting of A/C Fan	11-55
Removal and Refitting of Fan Motor Speed Control Module	11-59
A/C Filter	11-61
Functions of A/C Filter	11-61
Removal and Refitting of A/C Filter	11-61
A/C Pipeline	11-64
Removal and Refitting of Compressor High-pressure Pipe	11-64
Removal and Refitting of A/C High/Low Pressure Pipe	11-67
A/C Pressure Switch	11-72
Removal and Refitting of A/C Pressure Switch	
A/C Expansion Valve	11-75
Removal and Refitting of A/C Expansion Valve	11-75
A/C Compressor	11-79
Removal and Refitting of Compressor	11-79
A/C Condenser	11-85
Removal and Refitting of Condenser	11-85
A/C Heater	11-89
Removal and Refitting of A/C Heater	11-89
A/C Heater Water Pump	11-95
Removal and Refitting of A/C Heater Water Pump	11-95
A/C Heater Pipe Assembly	11-99
Removal and Refitting of A/C Heater Pipe Assembly	11-99
A/C Assembly	
Removal and Refitting of A/C Assembly	11-106
Evaporator and Evaporator Temperature Sensor	11-118
Removal and Refitting of Evaporator and Evaporator Temperature Sensor	11-118
A/C Heater	11-127
Removal and Refitting of A/C Heater Assembly	11-127
Foot-blowing Air Outlet Temperature Sensor	
Removal and Refitting of Foot-blowing Air Outlet Temperature Sensor	
Side Air Outlet Temperature Sensor	11-138
Removal and Refitting of Side Air Outlet Temperature Sensor	11-138

HVAC System (for Model with Simple Thermal Management System)	11-144
Change of Heating System Coolant	11-144
Replacement of Heating System Expansion Tank	11-147
Removal and Refitting of Heating System Expansion Tank Water Inlet Pipe	11-152
Removal and Refitting of Heating System Expansion Tank Water Outlet Pipe	11-156
Removal and Refitting of Heater Water Pump	11-161
Removal and Refitting of PTC Heater Water Inlet Pipe	11-164
Removal and Refitting of PTC Heater Water Outlet Pipe	11-167
Removal and Refitting of PTC Heater	11-171
Removal and Refitting of Heater Water Tank Water Inlet Pipe	11-175
Removal and Refitting of Heater Water Tank Water Return Pipe	11-177
Removal and Refitting of Three-way Water Valve	11-182
Removal and Refitting of Three-way Water Valve Through Plate Heat Exchanger Water Pipe	
Removal and Refitting Heater Through Plate Heat Exchanger Water Pipe	
Removal and Refitting of Expansion Valve 1	11-193
Removal and Refitting of Plate Heat Exchanger	11-197
Removal and Refitting of A/C Through Plate Heat Exchanger High-pressure Pipe	11-202
Removal and Refitting of A/C Through Plate Heat Exchanger Low-pressure Pipe	11-205

Precautions for Use of R-134a

- R-134a A/C system and R-134a components can only use the specified refrigeration oil. Or compressor failure will occur.
- The specific refrigeration oil used by the R-134a A/C system and R-134a components, which can quickly absorb moisture from the air. Please observe the following considerations:
 - When removing any cooling components from the vehicle, cover (seal) the components as soon as possible to reduce the ingress of moisture in the air.
 - When refitting the cooling components on the vehicle, do not remove the cover (seal) before connecting them.
 Please connect all cooling circuit components as soon as possible in order to minimize moisture in the air entering the system.
 - Only use the specified refrigeration oil stored in a sealed container. After use, please immediately reseal the
 refrigeration oil container. If not properly sealed, the refrigeration oil will absorb moisture and can no longer be
 used.
 - Never allow the refrigeration oil (oil of Grade S for Dongfeng A/C system) to contact with the components made of polystyrene material. Or the components will be damaged.
- Never mix R-134a refrigerant and its specified refrigeration oil with R-12 refrigerant and its specified refrigeration oil. Both refrigerants/refrigeration oils must be processed by separate and non-interchangeable service equipment.
- The refrigerant container joint, service hose joint and service equipment joint (equipment for processing the
 refrigerant and/or refrigeration oil) of R-12 are different from those of R-134a. This can prevent mixing two kinds of
 refrigerant/refrigeration oil.
- Never use an adapter to convert the joint of one size to the one of another. Or refrigerant/refrigeration oil contamination and compressor failure may occur.

General Precautions for Refrigerant

- Avoid inhaling vapor or mist of A/C refrigerant and refrigeration oil. For these substances can irritate eyes, nose and throat. Only the approved recovery/recycling equipment can be used for discharging R-134a refrigerant. If unexpected leak occurs in the system, the work area should be ventilated before the repair. More information on personal health and safety is available from the manufacturers of the refrigerant and refrigeration oil.
- Never discharge refrigerants into the air. The approved recovery/recycling equipment should be used for collecting refrigerant each time the A/C system is drained.
- When handling refrigerant or maintaining A/C system, be sure to protect your eyes and hands (wear safety goggles and gloves).
- Never heat the refrigerant container or store it above 52°C.
- Never use open flame to heat refrigerant container; if this becomes necessary, soak its bottom in a warm water bucket.
- Never deliberately throw, puncture or burn the refrigerant container.
- Keep the refrigerant away from open flame, for the refrigerant will produce toxic gases once ignited.
- The refrigerant will displace oxygen in the air, so be sure to work in a well ventilated area to prevent suffocation.
- In the process of maintenance, never use the compressed air for pressure test or leak test of R-134a service equipment or A/C system. It has been proved that the gas mixture of air and R-134a is flammable at a high pressure. If the gas mixture is accidentally ignited, personal injury or property damage may occur. More information on personal health and safety is available from the refrigerant manufacturers.

Precautions for Cooling Joints

- Cooling joints are applied for the whole cooling line, and attention shall be paid to the O-ring at each connection.
 - Between refrigerant pressure switch and condenser.
 - Between expansion valve and evaporator.
- O-rings for each cooling joint differ in structure. Never confuse with these O-rings, and they are not interchangeable.
 And the joint with the wrong O-ring may cause refrigerant leak.

Precautions for Replacing or Cleaning Refrigerant Recycling Components.

- When replacing or cleaning the refrigerant recycling components, please observe the following rules.
 - After removing the compressor, store it the same way as installed on the vehicle; otherwise, the refrigeration oil
 may flow into the low-pressure chamber.
 - When connecting the pipe, use a torque wrench and a spare wrench to tighten the required parts.
 - After disconnecting the pipe, immediately block all connections to prevent invasion of dust and moisture.
 - Never open the seal covers of the pipe and other components until the pipe is to be connected.
 - When store any components in the shade, never open its seal cover until its temperature reaches the ambient temperature. This can prevent moisture condensation inside the A/C components.
 - Before charging the refrigerant, completely remove moisture in the cooling system.
 - Always replace the used O-rings.
 - When connecting the pipeline, apply an appropriate amount of refrigeration oil on the outside surface of O-ring.
 Do not to apply lubricant to the thread.
 - Name of refrigeration oil: Oil for Dongfeng A/C system
 - O-rings should be installed close to the groove part of the pipe.
 - When replacing the O-ring, be careful not to damage the O-ring and pipe.
 - Connect the pipe until a click is heard, and then hand tighten the nut or bolt. Confirm that the O-ring is properly
 installed onto the pipe.
 - Perform leak test after connecting the pipe, confirming that there is no leak at the joint. If leak occurs, disconnect
 the pipe and replace the O-ring. Then tighten the seal seat joint to the specified torque.

Inspection of Refrigerant Leakage

• Visually check all cooling parts, joints, hoses and components for A/C refrigeration oil leakage, damage or corrosion signs. A/C refrigeration oil leakage indicates the refrigerant leakage. It's required to extend the time to check these areas whether using an electronic leak detector or a fluorescent dye leak detector.

Inspection of System Leakage by Fluorescent Leak Detector

- If any dye is found, it is necessary to use the electronic leak detector for leakage inspection. This may also be caused by incomplete cleaning in previous leak repair.
- When investigating for leaking part, do not stop after finding one leak, but continue to check for leakage of all system components and connectors.
- When investigating for the refrigerant leaking part by an electronic leak detector, move the probe along the suspected leaking area at a speed of 25-50mm/s and no more than 6 mm away from the detected component.
- When moving the probe of the electronic leak detector, the slower the probe moving speed and the closer to the suspected leaking area, the greater chance to find out the leakage.

Inspection of System Leakage by Fluorescent Leak Detector

- At a place with poor sunlight (an area without windows is recommended for this purpose), check the A/C system for leakage by using an ultraviolet light. Be sure to illuminate all parts, joints and pipeline. And at the leaking position, the dye will show bright green/yellow color. If the fluorescent dye is found at the discharge port of the evaporator, it indicates that the evaporator core assembly (like pipe, core or expansion valve) leaks.
- If the suspected leaking area is hardly visible, use a piece of clean cloth or cotton cloth to wipe the suspected area and then use an ultraviolet light to check for residual dye.
- After repairing the leaking part, use the dye cleaner to remove any residual dye, so as to prevent future wrong diagnosis.
- Inspect the system performance, and use an approved electronic leak detector to verify the effect after leakage repair.

A CAUTION

- Other liquids in the work area or substances on the A/C components, like antifreeze, windshield washer fluid, solvent and refrigeration oil, are likely to mislead the leak detector. So, be sure to keep the checked surfaces clean.
- Always clean with a piece of dry cloth or with the workshop compressed air.
- Do not contact the detector probe with any substance. For this will also lead to false readings and may damage the
 detector.

Special tools

Tool No.	Tool Name	Tool Picture	Description
BF1102	Interior trim removal tool		For removing clamps, pawls and metal clips.

General Tools

Tool name	Tool picture	Description
Service hoses		Hose color Hose on high-pressure side: black-stripe on blue background
Hose on high-pressure side		Hose on low-pressure side: black-stripe on red background
Hose on low-pressure sideCommon hose		Common hose: black-stripe on yellow background or black-stripe on green background Hose joint for connecting manifold pressure gauge:
		• 1/2"-16 A/CME
Pipe joint on high-pressure side Pipe joint on low-pressure side		Hose joints for service hoses: • M14X1.5 joint is acceptable for temporary or permanent connection.
Freon-free refrigerant (R134a) handling machine		Function: recovery, recycling and recharging of refrigerant
R-134a refrigerant		Container mark: R-134a Joint size: thread size • 1/2" -16 A/CME
Ultraviolet light and anti-UV safety goggles		Power supply: DC 12V (battery terminal) Used for inspection of refrigerant leakage, and applicable to A/C system with fluorescent dye applied inside Including: Ultraviolet light and anti-UV safety goggles
Manifold pressure gauge		Used to test A/C pipeline pressure

Technical Parameters

Pofrigoropt	Туре	R-134a
Refrigerant	Capacity	0.52kg
Coolant	Туре	DF-3
Coolant	Capacity	1.3±0.1L

Recommended Balance Value for Refrigeration Oil Replacement of A/C Components

Part name	Refrigeration amount required for new parts replacement (ml)		
Evaporator	20		
Condenser	20		
A/C Dinalina	High-pressure pipe 5		
A/C Pipeline	Low-pressure pipe 5		
Condenser dryer element	15		

Tightening Torque

Sequence number	Name	Torque (N·m)
1	A/C high-pressure pipe fixing nut	13.7
2	A/C low-pressure pipe fixing nut	13.7
3	A/C Pressure Switch	10.8
4	Compressor fixing bolt	20±10%
5	Expansion valve fixing bolt	3.9

Electric A/C

Working environment requirements

- Environmental requirements for normal operation of controller:
 - Rated working voltage: DC12V;
 - Working voltage range: 9V-16V;
 - Use temperature: -35°C ~ +80°C;
 - Storage temperature: -40°C ~ +85°C;
 - Relative humidity: 45% 95%.

Instruction of electric A/C control panel



Temperature control knob	4. A/C OFF button	7. Rear windshield defroster/defogger button
2. Air volume adjusting knob	5. Heating button	8. Front windshield defroster/defogger button
3. A/C cooling button	6. Mode selector button	9. Internal circulation button

Function introduction

- 1. Temperature control knob
- Turn the knob to the required temperature between blue mark (cooling) and red mark (heating).
- 2. Fan control knob
- Turn the knob from 1 to 6 to increase the fan speed gradually.
- 3. A/C cooling button
- The A/C system is applicable for climate control at all seasons, such as cooling in summer and defogging in winter. A better air conditioning effect will be expected if all windows are closed when the A/C is working.
- Press "A/C" button to activate cooling function, when the green indicator lamp on the button will come on.
- Press "A/C" button again to deactivate cooling function, when the green indicator lamp on the button will go out.

- 4. A/C OFF button
- Press the "OFF PUSH" button to turn off the A/C system.
- 5. Heating button
- To make the heater work for heating:
 - If the indicator on the "A/C PUSH" button is on, press the "A/C PUSH" button, and then the indicator thereon goes out, indicating that the cooling function is turned off.
 - Press the "HEAT" button, and then the indicator on the button goes on. Then, turn the temperature adjustment knob to the desired temperature.
- In case of windows fogging, please use the defogger instead of the heater to clear the fog.
- 6. Ventilation mode selector button
- Airflow goes out mainly from center and side air outlets.
- Airflow goes out mainly from center, side and foot-blowing air outlets.
- Airflow goes out mainly from front windshield air outlet and foot-blowing air outlet.
- Airflow goes out completely from the air outlet under the front windshield.
- 7. Rear windshield defroster/defogger button
- When this button is pressed with key in ACC, the rear windshield defroster/defogging will work, and after the key is removed, the working status will be memorized and will be activated next time the A/C is switched on. Rear windshield defroster/defogger is used to reduce the moisture, fog or frost on the front windshield surface, thus improving the driver's field of view.
- To turn off this defogger manually, press the rear windshield defogger/defroster button again.

A CAUTION

- If the ignition switch is turned to OFF before the defogger/defroster stops automatically, the defogger/defroster will resume working next time the vehicle is started.
- Use of rear windshield defogger/defroster will increase the electricity consumption, and therefore, please stop defogger/defroster as early as possible.
- 8. Front windshield defroster/defogger button
- Press the front windshield defroster/defogger button, and then the indicator on the button goes on, indicating that the front windshield defroster/defogger is started.
- 9. Internal circulation button
- The internal circulation button is designed to adjust the circulation damper to realize the switchover between internal circulation mode and external circulation mode.
- When the internal circulation button is pressed, the indicator on the button goes on, the display shows the internal circulation icon, indicating that the system works in the internal circulation button, and when the internal circulation button is pressed again, the indicator on the button goes out, and the display does not show the internal circulation icon, indicating that the system works in the external circulation mode.

▲ CAUTION

Apply external circulation as far as possible to avoid foul smell accumulation and window fogging.

AC (Air Conditioning Control) DTCs

• Use a special scan tool to perform fault diagnosis.

DTC	Hexadecimal	Description	Possible causes	Recommended countermeasures
B1600	17	Voltage above upper limit	High pressure	1. Test the circuit. 2. Connect the external standard unit to verify the voltage. 3. The condenser involves poor heat dissipation. 4. Ask the professional maintenance personnel for maintenance.
B1601	16	Voltage below lower limit	No voltage	1. Test the circuit. 2. Connect the external standard unit to verify the voltage. 3. Refrigerator leakage. 4. Ask the professional maintenance personnel for maintenance.
B1614	15	Ambient temperature sensor short to battery or open	ECU circuit fault Sensor not connected. Low sensor temperature.	Check circuit or replace sensor
B1614	11	short-circuited to ground	ECU circuit fault	Check circuit or replace sensor
B1604	15	Evaporator temperature sensor short to battery or open	ECU circuit fault Sensor not connected. Low sensor temperature.	Check circuit or replace sensor
B1605	11	Evaporator temperature sensor open circuit	ECU circuit fault	Check circuit or replace sensor
B1616	15	Pressure sensor short circuit	ECU circuit fault Sensor not connected. Low sensor temperature.	Check circuit or replace sensor
B1616	11	Pressure sensor short circuit	ECU circuit fault	Check circuit or replace sensor
U3003	17	Power supply voltage above upper limit	 Incorrect ECU acquisition. Abnormal battery voltage. 	Check circuit replace ECU
U3003	16	Power supply voltage below lower limit	 Incorrect ECU acquisition. Abnormal battery voltage. 	Check circuit replace ECU
B1617	16	Overhigh load	Excessive refrigerant charging; Condenser fan work failure	1. Check if the system pressure is too high (generally it will reach the system high pressure protection value, and the compressor will stop in this case). 2. Check if the condenser fan is working.
B1617	17	High voltage output overvoltage	High voltage output above the compressor operating voltage	Check if the high voltage input of the compressor is above 435V, if not, contact the battery manufacturer.
B1618	19	High voltage output undervoltage	Low traction battery voltage	Check if the high voltage input of the compressor is below 195V, if not, charge the battery.
B1618	24	Hardware malfunction	IPM burn-out	Replace the compressor (it is recommended to inform the compressor supplier to check on site)
B1619	24	Overpower protection	Excessive refrigerant; condenser fan damage; cooling circuit blockage; excessive load	The system high pressure is too high (greater than 25bar). It is recommended to refill according to the calibrated filling amount; check whether the condenser fan is working properly; vacuumize again, and add refrigerant.

DTC	Hexadecimal	Description	Possible causes	Recommended countermeasures
B1620	24	IPM overtemperature protection	Insufficient refrigerant; Compressor internal leakage.	1. Check the system pressure, and if the system high pressure is lower than 6bar or greater than 25bar, it is recommended add the refrigerant according to the calibrated filling amount (it is recommended to add 30ml refrigerant during refilling). 2. The system low pressure is greater than 3.5bar or lower than 10bar and the compressor housing is burning hot. It is recommended to replace the compressor.
B1621	23	Line current overhigh fault	Excessive refrigerant charging; Condenser fan work failure	The system pressure is too high. It is recommended to add refrigerant according to the calibrated filling amount. Check if the condenser fan is working normally.
B1622	94	Internal blocking	Damage of mechanical structure, and blockage of running parts	Replace the compressor.
B1624	23	Phase current overhigh fault	Excessive refrigerant charging; Condenser fan work failure	The system pressure is too high. It is recommended to add refrigerant according to the calibrated filling amount. Check if the condenser fan is working normally.
B1625	27	Communication fault	Internal communication fault	Replace the compressor. It is recommended to inform the compressor supplier to check on site
B1623	23	Internal and external motor open circuit	Line fault	Inspect A/C lines
B1623	24	Short circuit of internal and external motors	Line fault	Inspect A/C lines

Data Flow

Name of data flow	Value	Units
Battery voltage	0-16	V
Solar sensor	None	w/m²
Indoor temperature sensor	None	$^{\circ}\! \mathbb{C}$
Ambient temperature sensor	-40~80	$^{\circ}\! \mathbb{C}$
Face-blowing air outlet temperature sensor	None	$^{\circ}\!$
Foot-blowing air outlet temperature sensor	None	$^{\circ}$
Evaporator temperature sensor	-40~80	$^{\circ}\! \mathbb{C}$
Mode actuator position	0~2400	steps
Temperature actuator position	0~1150	steps
Fan control	0-16	-
AC request status	0 or 1	-
Rear defroster request status	0 or 1	-
Rear defroster feedback signal	0 or 1	-
Analog button push	0 or 1	-

Common Fault Troubleshooting

1 - High pressure in high-pressure pipelines of circulated cooling system

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check the amount of the refrigerant and the pressure in the refrigeration system	Go to step 1	Abnormal system pressure and excessive refrigerant	Recycle or discharge the refrigerant, and then charge the refrigerant to meet the standard.
1	Check electronic fan	OK	Faulty	Operation method
	Check if the electronic fan motor is normal	Go to step 2	Internal open circuit of electronic fan motor or poor cooling effect	Replace the electronic fan assembly
2	Check condenser	OK	Faulty	Operation method
	Check if the condenser fins are clogged	Go to step 3	Clogging of condenser fin	Clean or replace the condenser
3	Check expansion valve	OK	Faulty	Operation method
	Check if the expansion valve works as normal	Go to step 4	Clogging and failure of expansion valve	Replace the expansion valve
4	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.

2 - High pressure in low-pressure pipeline of circulated cooling system

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check if the amount of the refrigerant and the pressure in the cooling system are normal	Go to step 1	Excessive refrigerant	Recycle or discharge the refrigerant, and then charge the refrigerant to meet the standard.
1	Check expansion valve	OK	Faulty	Operation method
	Check if the expansion valve works as normal	Go to step 2	Clogging of low-pressure pipeline ports, expansion valve fault	Replace the expansion valve
2	Check A/C compressor	OK	Faulty	Operation method
	Check if the A/C compressor is normal	Go to step 3	Compressor fault	Replace the A/C compressor
3	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.

3 - Low pressure in low-pressure pipeline of circulated cooling system

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check the amount of the refrigerant and the pressure in the refrigeration system	Go to step 1	Abnormal system pressure and excessive refrigerant	Recycle or discharge the refrigerant, and then charge the refrigerant to meet the standard.
1	Check expansion valve	OK	Faulty	Operation method
	Check if the expansion valve works as normal	Go to step 2	No low-temperature, no cooling effect of low-pressure pipe and clogged expansion valve	Replace the expansion valve
2	Check evaporator	OK	Faulty	Operation method
	Check if the evaporator is clogged or leaking	Go to step 3	Leak and clogging of evaporator	Replace the evaporator
3	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.

4 - Low pressure in high-pressure pipeline of circulated cooling system

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check the amount of the refrigerant and the pressure in the refrigeration system	Go to step 1	Abnormal system pressure and excessive refrigerant	Recycle or discharge the refrigerant, and then charge the refrigerant to meet the standard.
1	Check expansion valve	OK	Faulty	Operation method
	Check the working condition of the expansion valve	Go to step 2	Vacuum displayed on low-pressure gauge, and clogging of expansion valve	Replace the expansion valve
2	Check A/C compressor	OK	Faulty	Operation method
	Check if the A/C compressor is normal	Go to step 4	Pipe leaking, low pressure and A/C compressor fault	Replace the A/C compressor
3	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.

5- No cooling effect of A/C

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check the A/C relay and fuse	Go to step 1	Relay fault Fuse fault	Replace the relay Replace the fuse
1	Check tri-state pressure switch	OK	Faulty	Operation method
	Check if the tri-state pressure switch is normal	Go to step 2	Damaged switch	Replace the tri-state pressure switch
2	Check temperature sensor	OK	Faulty	Operation method
	Check if the outdoor temperature sensor, indoor temperature sensor and evaporator temperature sensor are normal	Go to step 3	Failure or open circuit of sensor	Replace the faulty temperature sensor
3	Check cooling system	OK	Faulty	Operation method
	Check if the pressure in the refrigeration system is normal	Go to step 5	Insufficient refrigerant	Check the pipeline for leakage, and charge the refrigerant
4	Check A/C compressor	OK	Faulty	Operation method
	Check if the A/C compressor is normal	Go to step 6	Failure or internal damage of A/C compressor	Replace the A/C compressor
5	Check the A/C control panel	OK	Faulty	Operation method
	Check the A/C control panel assembly	Go to step 7	Fault or failure of A/C control panel assembly	Replace the A/C control panel assembly
6	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.

6 - No air supply of A/C system

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check the blower relay and fuse initially	Go to step 1	Relay fault Fuse fault	Replace the relay Replace the fuse
1	Check blower	OK	Faulty	Operation method
	Check if the blower motor is normal	Go to step 2	Short circuit or failure of blower motor	Replace the blower
2	Check thermistor	OK	Faulty	Operation method
	Check if thermistor is normal	Go to step 3	Short circuit or damage of thermistor	Replace thermistor
3	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.

7 - Poor cooling effect of A/C

Sequence number Check procedure		Check result			
0	Check condenser assembly	OK	Faulty	Operation method	
	Check if the condenser fins are clogged	Go to step 2	Debris on condenser fin	Clean or replace the condenser	
1	Check temperature sensor	OK	Faulty	Operation method	
	Check if outdoor temperature sensor, indoor temperature sensor and evaporator temperature sensor are normal	Go to step 3	Failure or open circuit of sensor	Replace the faulty temperature sensor	
2	Check cooling system	OK	Faulty	Operation method	
	Check if the pressure in the refrigeration system is normal	Go to step 5	Insufficient refrigerant	Check the pipeline for leakage, and charge the refrigerant	
3	Check A/C compressor	OK Faulty		Operation method	
	Check if the A/C compressor is normal	Go to step 6	Failure or internal damage of A/C compressor	Replace the A/C compressor	
4	Check the A/C control panel	rol panel OK Faulty		Operation method	
	Check the A/C control panel assembly	Go to step 7	Fault or failure of A/C control panel assembly	Replace the A/C control panel assembly	
5	Check the operations	OK	Faulty	Operation method	
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.	

8 - Low condenser fan speed and poor cooling effect

Sequence number Check procedure		Check result			
0	Initial check	OK	Faulty	Operation method	
	Check radiator fan relay and fuse initially	Go to step 1	Relay fault Fuse fault	Replace the relay Replace the fuse	
1	Check A/C pressure switch	OK	Faulty	Operation method	
	Check if the A/C pressure switch is normal	Go to step 2	Fault or failure of A/C pressure switch	Replace the A/C pressure switch	
2	Check radiator fan motor	OK Faulty		Operation method	
	Check if the radiator fan motor is normal	Go to step 3 Short circuit of radiator fan Replace the ra		Replace the radiator fan	
3	Check the operations	OK	Faulty	Operation method	
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.	

9- Failure and low working efficiency of A/C system compressor

Sequence number Check procedure		Check result			
0	Initial check	OK	Faulty	Operation method	
	Check the A/C relay and fuse	Go to step 1	Relay fault Fuse fault	Replace the relay Replace the fuse	
1	Check A/C compressor	OK	Faulty	Operation method	
	Check if the A/C compressor is normal	Go to step 4	Internal fault of A/C compressor	Replace the A/C compressor	
2	Check the A/C control panel	OK	Faulty	Operation method	
	Check the A/C control panel assembly	Go to step 5	Fault of A/C control panel	Replace the A/C control panel	
3	Check the operations	OK	Faulty	Operation method	
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.	

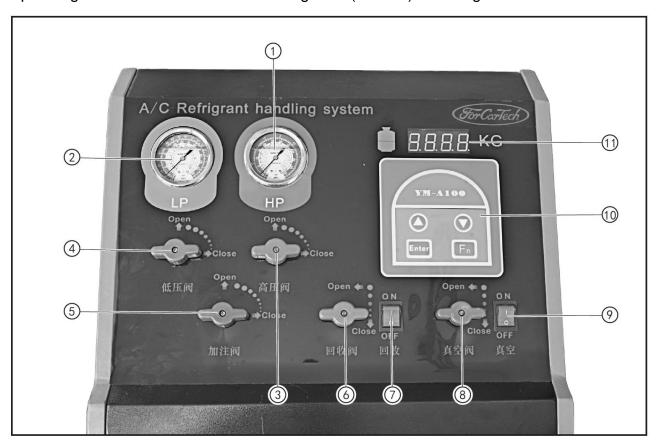
10-No heating effect of A/C system

Sequence number	Check procedure	Check result		
0	Initial check	OK	Faulty	Operation method
	Check heater relay and fuse	Go to step 1	Relay fault Fuse fault	Replace the relay Replace the fuse
1	Check blower	OK	Faulty	Operation method
	Check if the fan is normal.	Go to step 2 Blower fault Service or replace the		Service or replace the fan
2	Check servo motor	OK	Faulty	Operation method
	Check if the servo motor is normal	Go to step 3	Failure to open the damper and motor fault	Replace the damper servo motor
3	Check the A/C control panel	OK Faulty Operation		Operation method
	Check the A/C control panel assembly	Go to step 5	Fault of A/C control panel assembly	Replace the A/C control panel assembly
4	Check the operations	OK	Faulty	Operation method
	Check if the fault exists after servicing properly.	Diagnosis end	Fault still exists.	Identify the fault from other symptoms.

Charging of Refrigeration Oil

- The refrigeration oil and refrigerant in the compressor circulate throughout the system. When any component is replaced or severe refrigerant leak occur, please add refrigeration oil into the compressor. It's very important to keep the specified amount of refrigeration oil.
- The following faults may occur in case of an inappropriate refrigeration oil:
- Insufficient refrigeration oil: possible compressor seizure;
- Excessive refrigeration oil: inadequate cooling effect (heat exchange interference).
- Perform the refrigeration oil balancing when replacing the compressor or other A/C system components.
- Replace the A/C compressor (refer to "Refrigeration Oil Adjusting Steps after Compressor Replacement".).
- Add a proper amount of refrigeration oil into the system (refer to "Recovery/Vacuuming/Charging/Pressure Maintaining/Charging/Leak Detection of Refrigerant") after replacing any one of the following important components. Refer to "Service Data and Specification" for the filling amount of refrigeration oil.
 - Evaporator.
 - Condenser.
 - A/C pipeline
 - Condenser dryer element.

Operating Instructions of Freon-free Refrigerant (R-134a) Handling Machine



Sequence number	Name	Function description
1	High-pressure gauge	For monitoring the pressure of high-pressure pipe, and when connected to the A/C system, enabling the user to check the high pressure reading of system.
2	Low-pressure gauge	For monitoring the pressure of low-pressure pipe, and when connected to the A/C system, enabling the user to check the low pressure reading of system.
3	High-pressure ball valve	For control of the connecting valve between high-pressure pipe and A/C system pipe.
4	Low-pressure ball valve	For control of the connecting valve between low-pressure pipe and A/C system pipe.
5	Charging ball valve	Used as refrigerant charging pipeline control valve during charging.
6	Recovery ball valve	Used as refrigerant recovery pipeline control valve during recovery.
7	Recovery switch	For control of the compressor power switch during recovery.
8	Vacuum ball valve	For control of the vacuum pump pipeline valve during vacuuming.
9	Vacuum switch	For control of vacuum pump power switch during vacuuming.
10	Button operation area	For setting of the amount of refrigerant to be added
11	LCD area	For displaying readings of refrigerant mass in the reservoir and the added refrigerant amount.

A CAUTION

- The pressure vessel in which R-134a refrigerant is stored shall not be overfilled for fear of explosion.
- Wear protective suit while operating.
- Avoid using a too long power line.
- Replace the drier filter periodically.
- Check the joints and pipeline for any leakage every 3 months.
- Keep this equipment away from gasoline or other combustible materials.



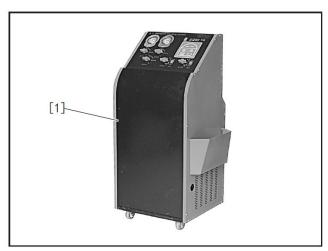


Inspection of A/C Refrigerant

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

• Freon-free refrigerant (R-134a) handling machine [1].

A CAUTION

- The vapor of A/C refrigerant and refrigerant oil can irritate eyes, nose and throat. So be cautious when connecting the service equipment. Do not breathe any vapor of refrigerant and refrigerant oil. Be sure to use the service equipment appropriate for R-134a refrigerant.
- To prevent accidental leakage, always ventilate the work area before repairing. For other information on health and safety, refer to the manufacturer's instructions for the refrigerant and refrigeration oil.
- Operate after the vehicle is topped.
- Operate the freon-free refrigerant handling machine according to the manufacturer's safety manual and workshop safety rules for electricity.



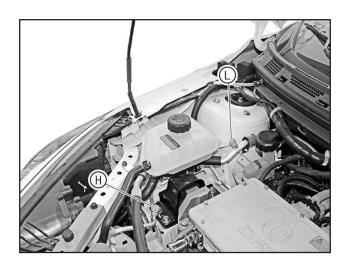


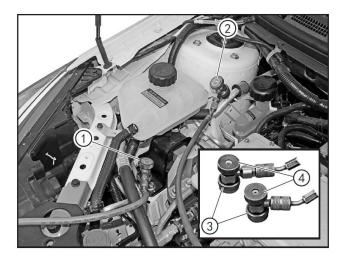
3 - Operations

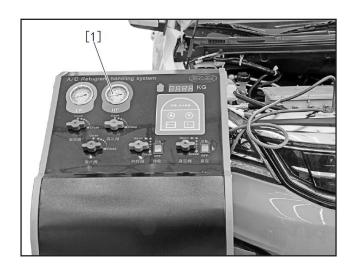
- Operation conditions setting:
- Ambient temperature above 15°C, vehicle started, A/C turned on, temperature set to LO, in internal circulation and face-blowing mode, air speed at minimum position, and instrument panel air outlet fully opened.
- Judgment:
- If the air outlet temperature is not below 10°C, it can be judged that the cooling power does not reach the standard; in this case, check the refrigerant amount.

4 - Check

- Clean the radiator and condenser.
- Clean the dust covers of high/low-pressure service valves and the pipelines around the A/C.
- Remove the dust covers of high/low-pressure service valves.
- Note: The high-pressure valve and low-pressure valve have different diameters and there are corresponding marks on their dust covers: H indicates the high-pressure valve, and L indicates the low-pressure valve.
- Note: The red indicates high-pressure filling valve joint (1). The blue one indicates low-pressure filling valve joint (2).
- Slide the lock rings (3) of the high and low pressure filler pipe joints upward, fit them with the high and low pressure service valves, and then release lock rings (3) to fasten them to high and low pressure service valves.
- Clockwise turn the knobs (4) of the high and low pressure filler pipe joints to connect the equipment pipeline to the A/C pipeline.



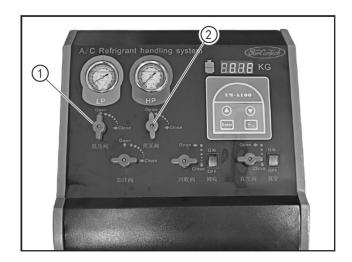




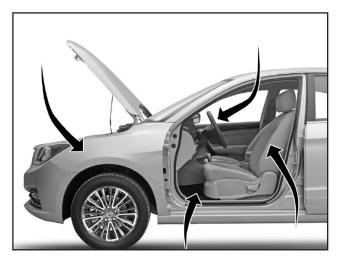
- Turn on power switch of the freon-free refrigerant handling machine [1].
- Fully open the low-pressure ball valve (1), high-pressure ball valve (2) counterclockwise.
- Check the pressure value of A/C system refrigerant (as given in the table below).

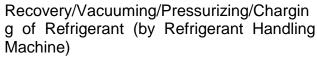
Normal pressure of A/C system

Ambient temperature (°C)	System pressure (bar)
15	3.9
20	4.7
25	5.6
30	6.7
35	7.8
40	9.1
45	10.5



• In case the pressure of the A/C circulation circuit is 1bar less than the value in the table above, turn on the A/C switch, and if the high pressure keeps stable, and low pressure quickly reduces to below 2bar, it indicates that there is little refrigerant in the A/C circuit, and leakage may occur; in this case, it is required to check A/C system components for leakage. (Refer to "Leak Detection of A/C System").

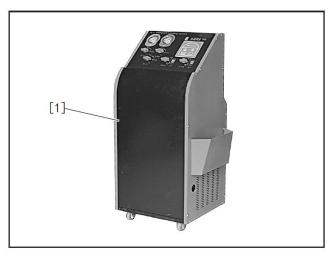




1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Recommended tools

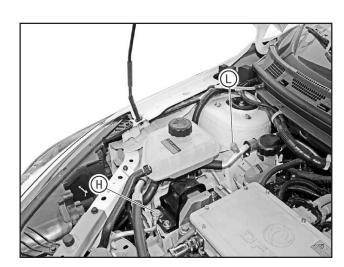
• Freon-free refrigerant (R-134a) handling machine [1].

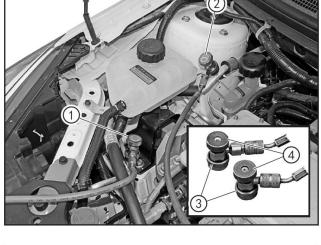
A CAUTION

- The vapor of A/C refrigerant and refrigerant oil can irritate eyes, nose and throat. So be cautious when connecting the service equipment. Do not breathe any vapor of refrigerant and refrigerant oil. Be sure to use the service equipment appropriate for R-134a refrigerant.
- To prevent accidental leakage, always ventilate the work area before repairing. For other information on health and safety, refer to the manufacturer's instructions for the refrigerant and refrigeration oil.
- Operate after the vehicle is topped.
- Operate the freon-free refrigerant handling machine according to the manufacturer's safety manual and workshop safety rules for electricity.

3 - Refrigerant recovery

- Clean the dust covers of high/low-pressure service valves and the pipelines around the A/C.
- Remove the dust covers of high/low-pressure service valves.
- Note: The high-pressure valve and low-pressure valve have different diameters and there are corresponding marks on their dust covers.
- H for high-pressure service valve; L for low-pressure service valve.



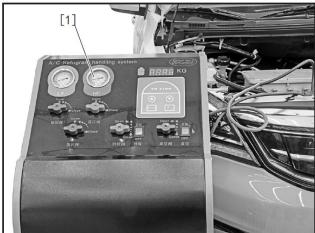




The blue one indicates low-pressure filling valve joint (2).

- Slide the lock rings (3) of the high and low pressure filler pipe joints upward, fit them with the high and low pressure service valves, and then release lock rings (3) to fasten them to high and low pressure service valves.
- Clockwise turn the knobs (4) of the high and low pressure filler pipe joints to connect the equipment pipeline to the A/C pipeline.

Turn on power switch of the freon-free refrigerant

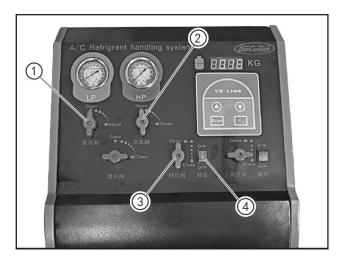


- Open the low-pressure ball valve (1), high-pressure ball valve (2) and recovery ball valve (3) anticlockwise completely, and then turn on the recovery switch (4). Recover the refrigerant until the handling machine stops automatically, close the low-pressure ball valve (1), high-pressure ball valve (2) and recovery ball valve (3) clockwise, and turn off the recovery switch.

handling machine [1].

CAUTION

- During the recovery, turn on the low-pressure ball valve to relieve the pressure before turning on the high-pressure ball valve, so as to avoid instrument damage due to high pressure of refrigerant at the beginning of recovery.
- Recover at most 10kg refrigerant each time to avoid instrument fault.









4 - Refrigeration oil recovery

- Close all the ball valves on the panel of freon-free refrigerant handling machine [1].
- Open the drain valve (1) until all the refrigeration oil is drained out.

A CAUTION

 After recovering the refrigeration oil, check the residual pressure in the circuit; if the pressure is 0, it indicates that the A/C circuit incurs moisture ingress during the operation of A/C, at this time, it is required to check the A/C system.

5- Vacuuming and pressurizing

- Open the low-pressure valve (1) counterclockwise.
- Open the vacuum ball valve (2), and turn on the vacuum switch (3).
- Observe the low-pressure gauge reading, and when it is less than -20psi, close the vacuum ball valve counterclockwise, and turn off the vacuum switch.
- After vacuuming, check if pressure rise occurs in the A/C system; if so, it indicates that the A/C system leaks, and at this time, check the A/C system for leakage and eliminate such fault. (refer to "Leak Detection of A/C System")

A CAUTION

 The vacuum pump shall not work continuously over 30min; otherwise it may be damaged.



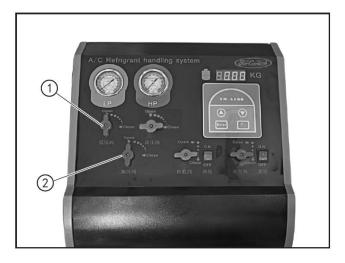


 Open the low-pressure ball valve (1) and charging valve (2) to adjust the filling amount of refrigeration oil manually.

A CAUTION

 In the case that moisture ingress occurs to A/C circuit during the operation of A/C, add 80ml new refrigeration oil into the A/C pipeline when charging refrigerant.





7 - Refrigerant charging

A CAUTION

 After closing the low-pressure control valve and high-pressure control valve, wait 5min, then perform the charging operation after confirming that the pointer does not move; if the pointer moves, check the pipelines and joints for leakage and repair the faulty parts, and then perform the following operations.

7.1- Charging by fluoride-charging machine

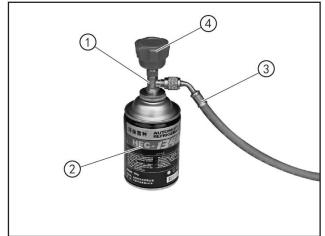
- Press "Enter" button, adjust the refrigerant filling amount by "▲" and "▼" buttons, and press the "Enter" button again to confirm the adjustment.
- Open the low-pressure ball valve (1) and charging ball valve (2) to add refrigerant.
- Turn off the low-pressure ball valve and charging ball valve after charging.
- Remove the joints of high/low-pressure charging valves
- Refit the dust covers of the service valves on the A/C pipelines.

A CAUTION

- Refrigerant inside the reservoir shall be more than 1kg, so as to avoid charging failure due to insufficient refrigerant.
- When the internal pressure of the equipment is too low to charge all the refrigerant in, open the low-pressure control valve, close the high-pressure control valve and start the vehicle to charge all the refrigerant in.
- After removing the joints of high/low-pressure charging valves, pour soapy water into high/low-pressure service valves on A/C pipeline and observe for bubbles, and if any, it indicates that the valve leaks, and it is required to tighten the valve spool by an A/C valve spool tool. Then, check for leakage again, and in case of no leakage, blow out the soapy water from the high/low-pressure service valve with the compressed air.



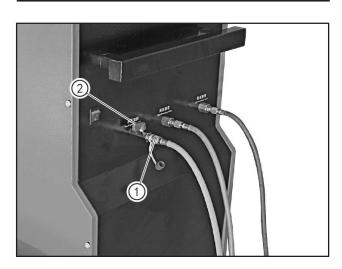
- Connect the bottle opener (1) to the refrigerant canister (2).
- Connect the bottle opener (1) to the refrigerant filling pipe (3).
- Turn the manual valve (4) of bottle opener (1) clockwise to the end to withdraw the opener's needle valve to the top.

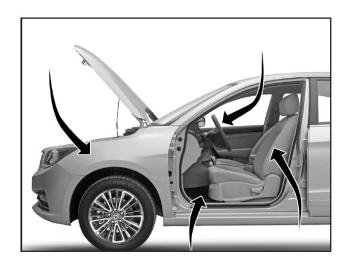


- Loosen the refrigerant filler pipe end (1) to exhaust air in the filler pipe, and then screw in the filler pipe end.
- Open the charging ball valve (2) of tank to charge refrigerant.
- After charging, remove the joints of high/low-pressure charging valves.
- Refit the dust covers of the service valves on the A/C pipelines.

A CAUTION

- When the internal pressure of the equipment is too low to charge all the refrigerant in, open the low-pressure control valve, close the high-pressure control valve and start the vehicle to charge all the refrigerant in.
- After removing the joints of high/low-pressure charging valves, pour soapy water into high/low-pressure service valves on A/C pipeline and observe for bubbles, and if any, it indicates that the valve leaks, and it is required to tighten the valve spool by an A/C valve spool tool. Then, check for leakage again, and in case of no leakage, blow out the soapy water from the high/low-pressure service valve with the compressed air.



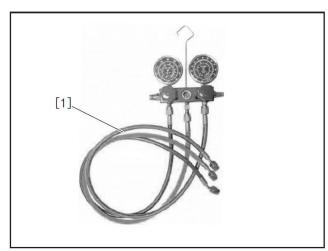


Leak Detection of A/C System

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



- 2 Recommended tools
- Manifold pressure gauge [1].



Refrigerant with fluorescent agent [2].

3 - Operations

Leak detection by soapy water

A CAUTION

 Recover/vacuum the refrigerant before leak detection. (Refer to "Recovery/Vacuuming/Pressurizing/Charging of Refrigerant (by Refrigerant Handling Machine)")

Charge nitrogen gas into the A/C pipeline through manifold pressure gauge, and when the manifold pressure gauge displays 1.00MPa, stop charging.

Apply soapy water to connections of A/C pipeline joints and check for bubbles, and if any, remove the A/C pipeline components and replace seal rings or the pipeline components.

A CAUTION

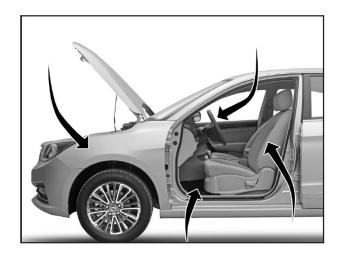
- The pressure of the charged nitrogen gas should not exceed 1.00MPa, or the A/C pipelines will be damaged.
- Never perform leak test with compressed air during the service, since the gas mixture of refrigerant (R-134a) and air is flammable under a high pressure, thus causing serious consequences.

Leak detection by fluorescent agent

- · Vacuumize the A/C pipeline first.
- Charge the refrigerant containing fluorescent agent into the A/C pipeline, and after 24h, expose the
 connections of the A/C pipeline joints to an ultraviolet lamp, and the fluorescent spots indicate the
 leak positions, and then remove the A/C pipeline components to replace the sealing rings or the
 pipeline components.

A CAUTION

 After one or two leaks are found, do not stop detection until all leaks are found.



Removal and Refitting of A/C Control Panel 1

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

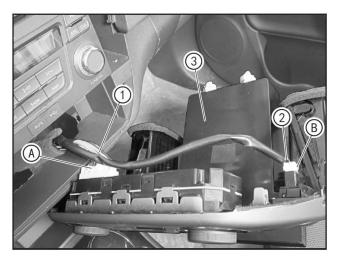
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the fixing screw cap (1) of central panel frame with the interior trim removal tool (BF1102) [1].



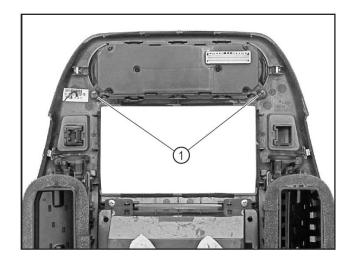
 Remove the fixing screws (1) of the central panel frame with the Phillips screwdriver.



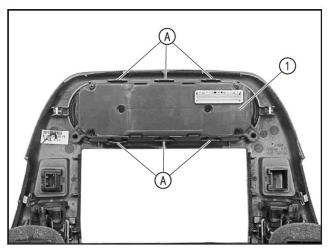
• Remove the central panel frame (1) with the interior trim removal tool (BF1102) [1].



- Press the clip A of the A/C control panel connector, and disconnect the A/C control panel connector (1) outwards.
- Press down hazard warning lamp switch connector locking clip B, and disconnect the hazard warning lamp switch connector (2).
- Remove the central panel frame (3).



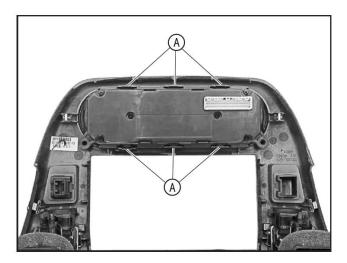
Remove the fixing screw (1) of the A/C control panel with the Phillips screwdriver.



- Move the clip A of central control panel outward with the interior trim removal tool (BF1102) to detach the $\,$ A/C control panel from the central control panel.
- Remove the A/C control panel (1).

A CAUTION

Apply a small force when moving the clip A of central control panel outward, so as to prevent the clip A of central control panel from being broken.

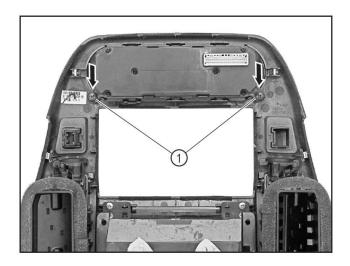


4- Refitting

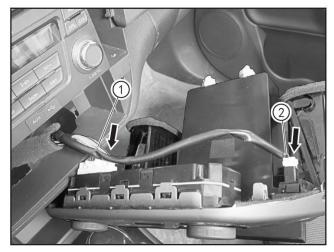
Refit the A/C control panel in place with the clip A on the central panel frame aligned with the claw on the A/C control panel.

A CAUTION

Do not press the clip violently, so as to avoid the clip from being broken.



 Tighten the fixing screw (1) of the A/C control panel with the Phillips screwdriver.



- Connect the A/C control panel connector (1) in place.
- Connect the hazard warning lamp switch connector (2) in place.



 Press fit the central panel frame (1) in place after aligning the clips thereon with the fixing points on the instrument panel.



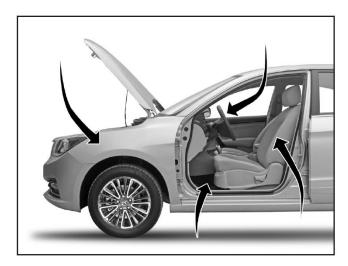
 Tighten the fixing screws (1) of the central panel frame with the Phillips screwdriver.



 Press fit the fixing screw cap (1) of the center panel frame in place.

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions are normal, and then connect the scan tool to clear DTCs.



Removal and Refitting of A/C Control Panel 2

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

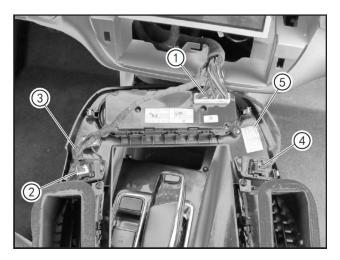
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the fixing screw cap (1) of central panel frame with the interior trim removal tool (BF1102).



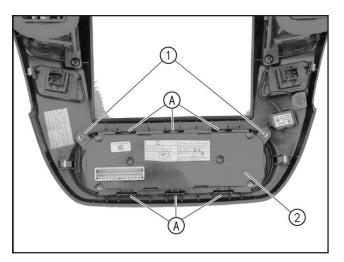
Remove the fixing screws (1) of the central panel frame with the Phillips screwdriver.



Remove the central panel frame (1) with the interior trim removal tool (BF1102) [1].



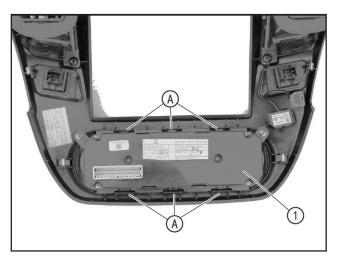
- Press the clip of the A/C control panel connector, and disconnect the A/C control panel connector (1) outwards.
- Press down hazard warning lamp switch connector locking clip, and disconnect the hazard warning lamp switch connector (2).
- Press the clip of the microphone connector, and disconnect the microphone connector (3) outwards.
- Press the clip of the MP5 player power button connector, and disconnect the MP5 player power button connector (4) outwards.
- Remove the central panel frame (5).



- Remove the fixing screw (1) of the A/C control panel with the Phillips screwdriver.
- Move the clip A of central control panel outward with the interior trim removal tool (BF1102) to detach the A/C control panel from the central control panel.
- Remove the A/C control panel (2).

A CAUTION

 Apply a small force when moving the clip A of central control panel outward, so as to prevent the clip A of central control panel from being broken.

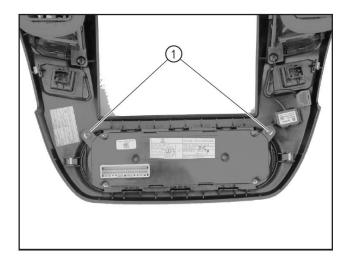


4- Refitting

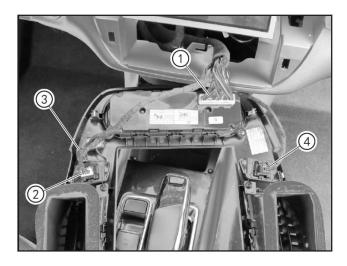
Refit the A/C control panel (1) in place with the clip A
on the central panel frame aligned with the claw on
the A/C control panel.

CAUTION

 Do not press the clip violently, so as to avoid the clip from being broken.



 Tighten the fixing screw (1) of the A/C control panel with the Phillips screwdriver.



- Connect the A/C control panel connector (1) in place, and ensure that it is locked reliably.
- Connect the hazard warning lamp switch connector (2) in place, and ensure that it is locked reliably.
- Connect the microphone connector (3), and ensure that it is locked reliably.
- Connect the MP5 player power button connector (4), and ensure that it is locked reliably.



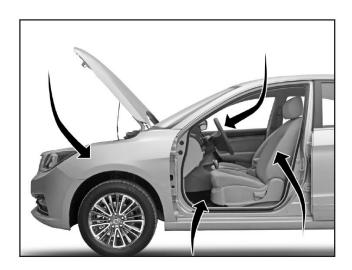
- Press fit the central panel frame (1) in place after aligning the clips thereon with the fixing points on the instrument panel.
- Tighten the fixing screws (2) of the central panel frame with the Phillips screwdriver.



 Press fit the fixing screw cap (1) of the center panel frame in place.

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions are normal.



Removal and Refitting of Side Air Outlet

1 - Protection

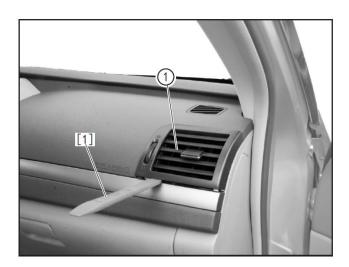
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



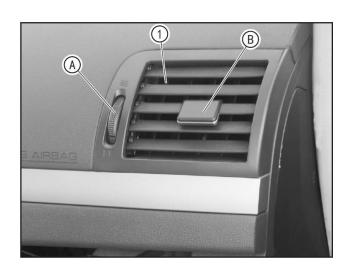
2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Pry and remove the side air outlet (1) with the interior trim removal tool (BF1102) [1].

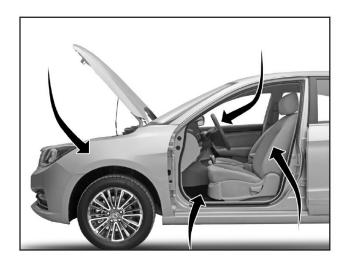


4- Refitting

 Place the side air outlet (1) into the mounting hole after alignment, and press it gently along its perimeter to install it in place.

A CAUTION

 After the installation is completed, adjust thumbwheel A and paddle B to check that the air supply is normal.



Removal and Refitting of Rear Central Air Outlet

1 - Protection

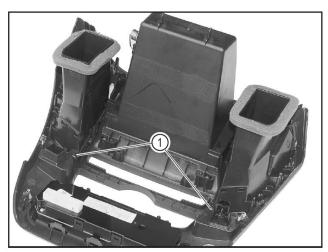
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



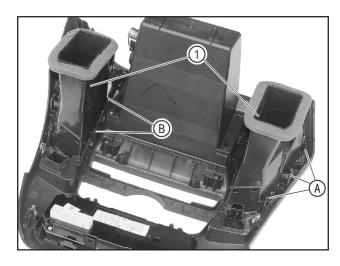
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

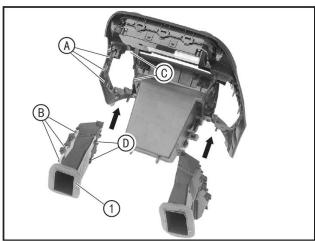


3 - Removal

- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove central panel frame. (Refer to "Removal and Refitting of Electric A/C Control Panel" in this section).
- Remove the fixing screws (1) of the central air outlet with the Phillips screwdriver.



- Unlock the outer clip A of central air outlet with the interior trim removal tool BF1102. (3 pcs on each side)
- Unlock the inner clip A of central air outlet with the interior trim removal tool BF1102. (2 pcs on each side)
- Remove the central air outlet (1).

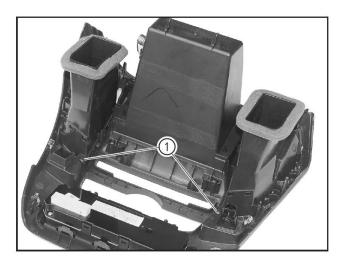


4- Refitting

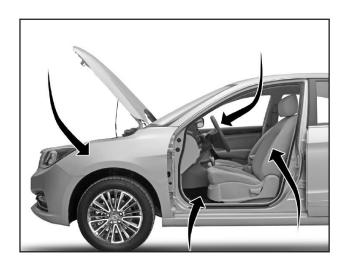
- Insert the clip A on the central panel frame into the locating hole B at the central air outlet after alignment, and meanwhile, insert the clip C on the central panel frame into the mounting surface D at the central air outlet after alignment,
- Gently press the central air outlet (1) to secure it.

A CAUTION

After the installation is completed, adjust thumbwheel and paddle on the air outlet to check that the air supply is normal.



- Tighten the fixing screws (1) of the central air outlet with the Phillips screwdriver.
- Refit the central panel frame. (Refer to "Removal and Refitting of Electric A/C Control Panel" in this section).



Removal and Refitting of Air Vent Pipe

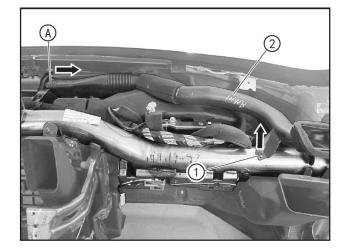
1 - Protection

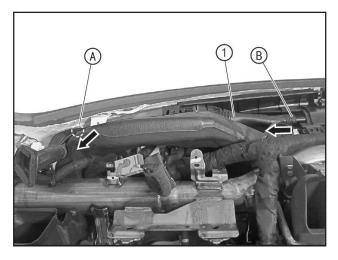
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



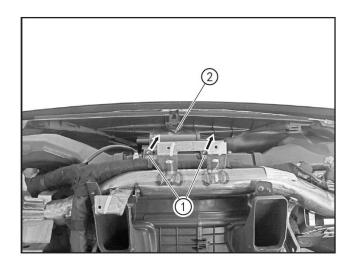
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the instrument panel. (Refer to "Removal and Refitting of Instrument Panel" in "Instrument Panel".)
- Remove the fixing screw (1) of the right windshield defrosting air pipe with the Phillips screwdriver.
- Disconnect the right windshield defrosting pipe from the fixed end A of central air pipe.
- Remove the right windshield defrosting pipe (2).



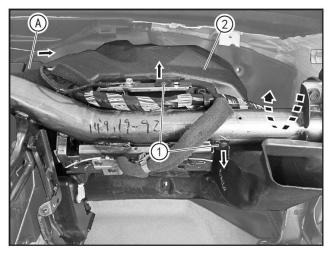


- Disconnect the left windshield defrosting from the fixed point A.
- Disconnect the left windshield defrosting pipe from the fixed end B of central air pipe.
- Remove the left windshield defrosting pipe (1).

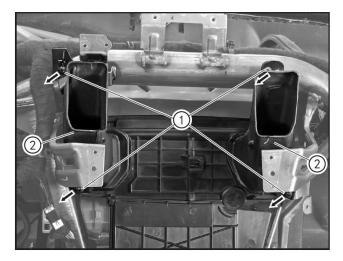




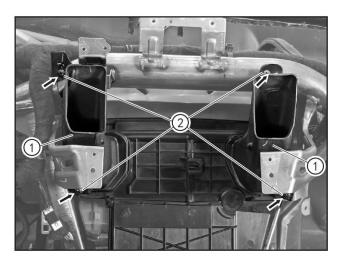
- Remove the fixing screws (1) of the central defrosting air pipe with the Phillips screwdriver.
- Remove the central defrosting pipe (2).



- Remove fixing screw (1) of right side air outlet with the Phillips screwdriver.
- Disconnect the right side air pipe from the connecting end A of A/C assembly.
- Take out the right side air pipe (2).
- Remove the left side air pipe following the same method.

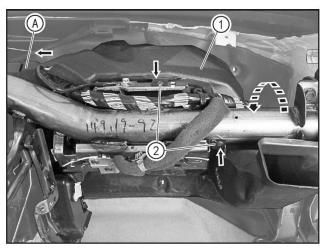


- Remove the fixing screws (1) of the central ventilation air pipe with the Phillips screwdriver.
- Remove the central air pipe (2).

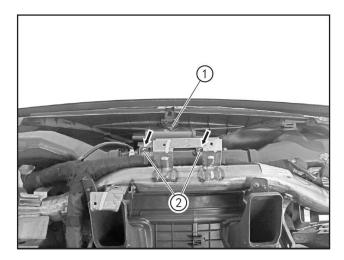


3- Refitting

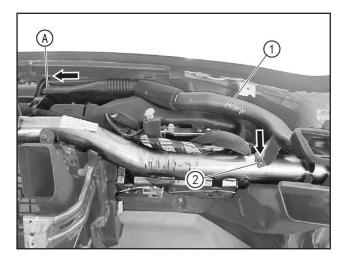
- Refit the central air pipe (1) to the connecting end on A/C housing after alignment without gap.
- Tighten the fixing screw (2) of the central air pipe with the Phillips screwdriver.



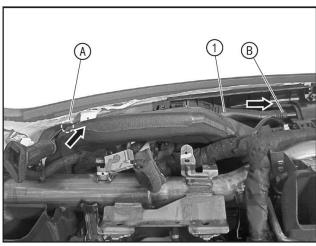
- Refit the right side air pipe (1) to the connecting end on A/C housing after alignment without gap.
- Connect the right side air pipe to the connecting end A of A/C assembly.
- Tighten the fixing screw (2) of right side air outlet with the Phillips screwdriver.
- Refit the left side air pipe following the same method.



- Refit the central defrosting pipe (1) to the connecting end on A/C housing after alignment without gap.
- Tighten the fixing screw (2) of the central defrosting pipe with the Phillips screwdriver.



- Refit the right windshield defrosting pipe (1) to the mounting end of central defrosting pipe after alignment without gap.
- Connect the right windshield defrosting pipe to the fixed end A of central air pipe.
- Tighten the fixing screw (2) of the right windshield defrosting air pipe with the Phillips screwdriver.



- Refit the left windshield defrosting pipe (1) to the mounting end of central defrosting pipe after alignment without gap.
- Clamp the left windshield defrosting to the fixed point A.
- Connect the left windshield defrosting pipe to the fixed end B of central air pipe.
- Refit the instrument panel. (Refer to "Removal and Refitting of Instrument Panel" in "Instrument Panel".)
- Refit the console assembly. (Refer to "Removal and Refitting of Console" in "Instrument Panel")
- After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all air outlets work normally.



Removal and Refitting of Temperature Servo Motor

1 - Protection

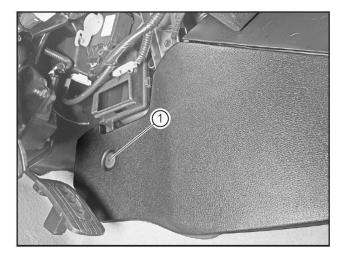
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



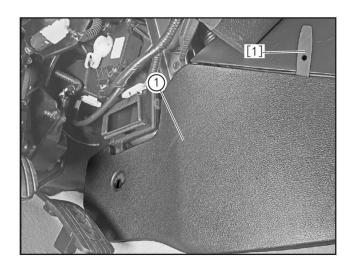
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

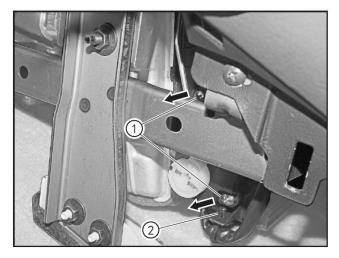


3 - Removal

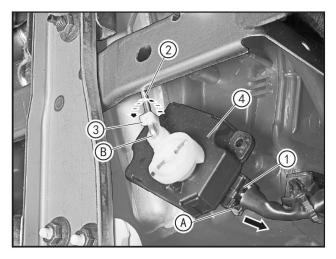
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the clips (1) of the A/C left protective plate with the Phillips screwdriver.



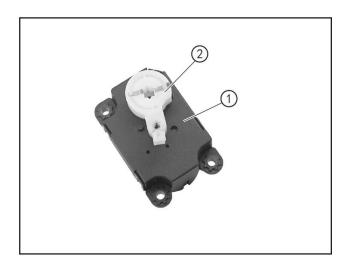
 Remove the A/C left protective plate (1) with the interior trim removal tool (BF1102) [1].



- Remove the fixing screws (1) of temperature servo motor with the Phillips screwdriver.
- Detach the wire harness clip (2) with the interior trim removal tool (BF1102).

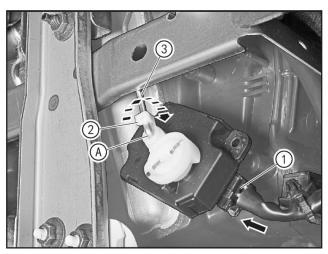


- Press the connector clip A, and disconnect the temperature servo motor connector (1) outwards.
- Rotate the motor link (2) in the direction as indicated by the arrow to detach the fixed end B of the link from the motor swing arm (3).
- Remove the temperature servo motor (4).



4 - Check

- Check if the housing of temperature servo motor (1) is cracked or damaged, and if so, replace the temperature servo motor.
- Check if the temperature servo motor swing arm (2) is loose, and if so, replace the temperature servo motor.

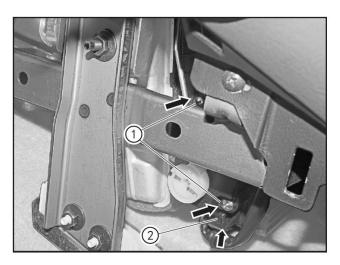


5- Refitting

- Connect the temperature servo motor connector (1) in place.
- Insert the fixed end A of link into the mounting hole on the motor swing arm (2), and rotate the motor link (3) to the installation position in the direction as indicated by the arrow. (As shown in the figure.)

A CAUTION

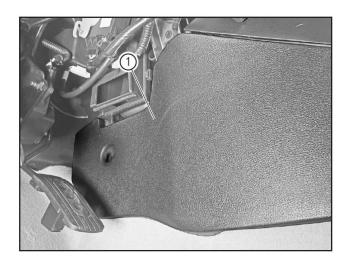
When installing the motor link, apply a small amount of grease to the rotation position of each link.



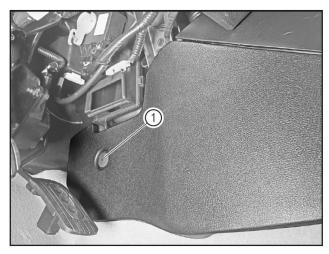
- Tighten the fixing screws (1) of temperature servo motor with the Phillips screwdriver.
- Refit the wire harness clip (2) in place.

A CAUTION

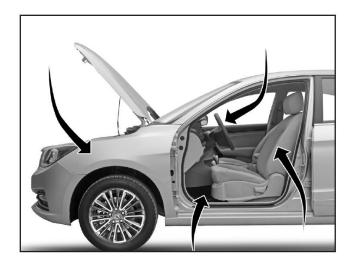
 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the temperature adjustment knob on the A/C control panel, and check that all functions are normal, and then connect the scan tool to clear DTCs.



Refit the A/C left protective plate (1) after aligning the clip thereon with the fixing point on the console.



 Install the clip (1) of A/C left protective plate, and tighten it with the Phillips screwdriver.

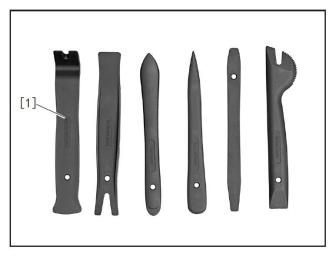


Removal and Refitting of Internal and External Circulation Servo Motor

1 - Protection

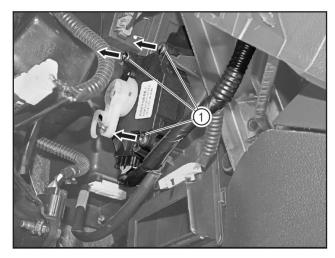
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



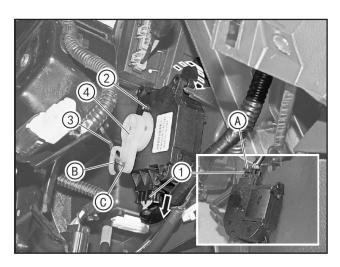
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

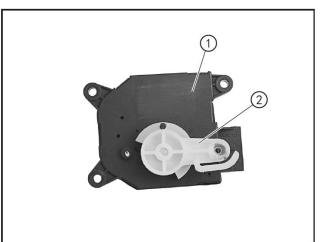


3 - Removal

- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- The internal/external circulation servo motor is located on the left side of A/C assembly.
- Remove the fixing screw (1) of internal and external circulation servo motor with the Phillips screwdriver.

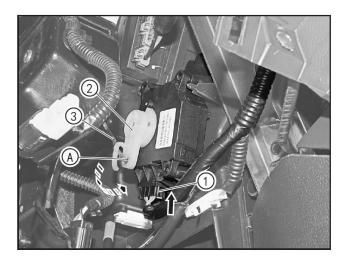


- Press the connector clip A, and disconnect the internal/external circulation servo motor connector (1) outwards.
- Rotate the servo motor (2) in the direction as indicated by the arrow to detach the link (3) from fixing point B.
- Detach the fixed end C of link from the motor swing arm (4).
- Remove the internal and external circulation servo motor (2).



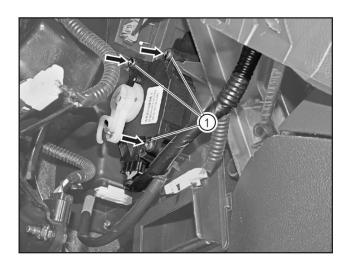
4 - Check

- Check if the housing of internal/external circulation servo motor (1) is cracked or damaged, and if so, replace the internal/external circulation servo motor.
- Check if the internal/external circulation servo motor swing arm (2) is loose, and if so, replace the internal/external circulation servo motor.



5- Refitting

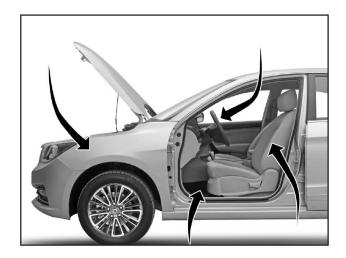
- Connect the internal/external circulation servo motor connector (1) in place.
- Insert the fixed end A of link into the mounting hole on the motor swing arm (2), and rotate the motor link (3) to the installation position in the direction as indicated by the arrow. (As shown in the figure.)



 Tighten the fixing screw (1) of internal and external circulation servo motor with the Phillips screwdriver.

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the internal/external circulation mode button on the A/C control panel, and check that all functions are normal, and then connect the scan tool to clear DTCs.



Removal and refitting of mode selector servo motor

1 - Protection

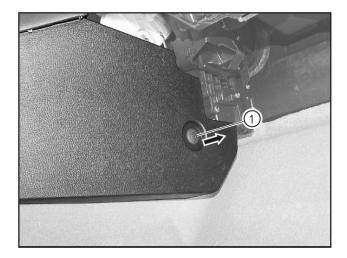
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



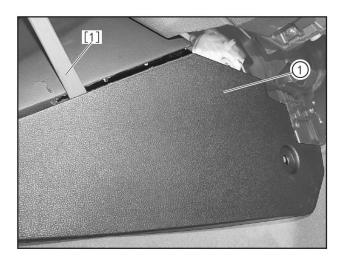
2 - Recommended tools

Interior trim removal tool (BF1102) [1].

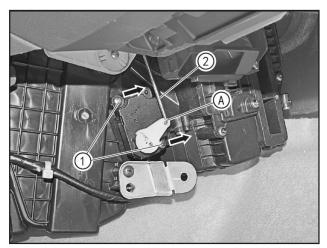


3 - Removal

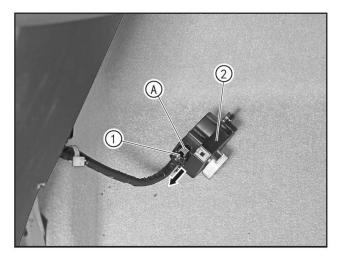
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the clips (1) of the A/C right protective plate with the Phillips screwdriver.



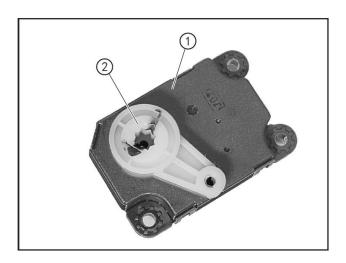
• Remove the A/C right protective plate (1) with the interior trim removal tool (BF1102) [1].



- Remove the fixing screws (1) of mode selection servo motor with the Phillips screwdriver.
- Detach the link (2) from the fixed end A of mode selection servo motor.

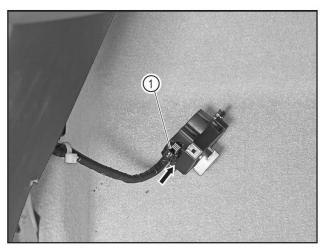


- Press the connector clip A, and disconnect the mode selection servo motor connector (1) outwards.
- Remove the mode selector servo motor (2).



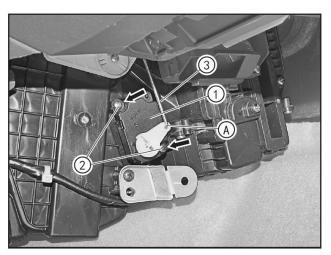
4 - Check

- Check if the housing of mode selection servo motor (1) is cracked or damaged, and if so, replace the mode selection servo motor.
- Check if the mode selection servo motor swing arm
 (2) is loose, and if so, replace the mode selection servo motor.



5- Refitting

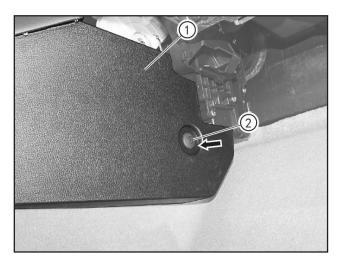
• Connect the mode selection servo motor connector (1) in place.



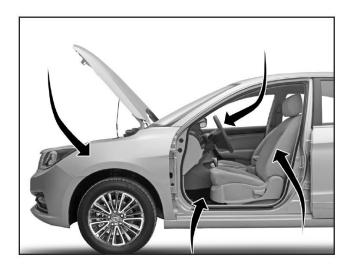
- Refit the mode selection servo motor (1) in place.
- Tighten the fixing screws (2) of mode selection servo motor with the Phillips screwdriver.
- Refit the link (3) to the fixed end A of the motor swing

▲ CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the mode selection button on the A/C control panel, and check that all functions are normal, and then connect the scan tool to clear DTCs.



- Refit the A/C right protective plate (1) after aligning the clip thereon with the fixing point on the console.
- Install the clip (2) of A/C right protective plate, and tighten it with the Phillips screwdriver.

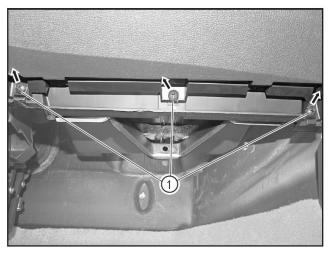


Removal and Refitting of A/C Fan

1 - Protection

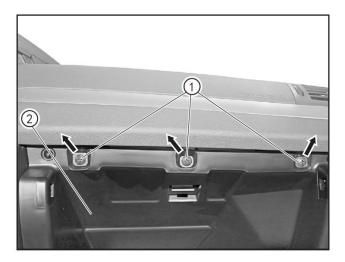
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

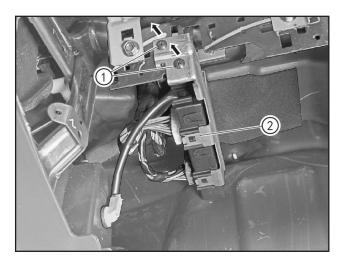


2 - Removal

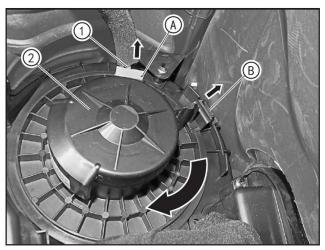
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the lower fixing screws (1) of glove box with the Phillips screwdriver.



- Remove the upper fixing screws (1) of glove box with the Phillips screwdriver.
- Take out the glove box (2).



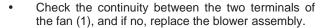
- Remove the fixing screw (1) of body control module with the Phillips screwdriver.
- Detach the bracket of the body control module (2) from the bracket of the instrument panel.

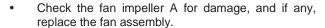


- Press the connector clip A, and disconnect the fan connector (1) outwards.
- Unlock the fan clip B outwards, and rotate the fan assembly (2) clockwise to take it out.

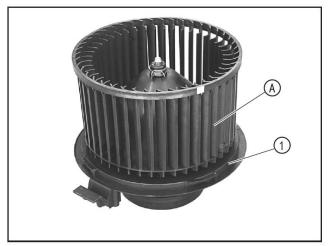
- If the ambient light is not enough for removing the fixing screw of fan, it is required to use a flashlight as an assistance, and take actions to prevent the disassembled screws from falling.
- When removing the fan, avoid collision between the fan impeller and the vehicle body, and prevent the fan from falling; otherwise, the fan may be damaged.
- Place the fan with the blower facing upwards.
- If the fan accidentally falls to the ground, replace it with a new one.

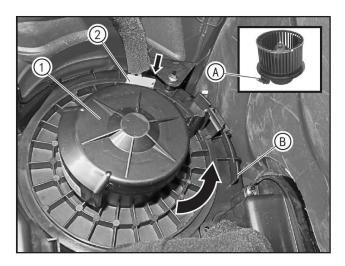






 Energize the fan and check for smooth operation and unusual noise. If there is noise during operation, replace the fan assembly.



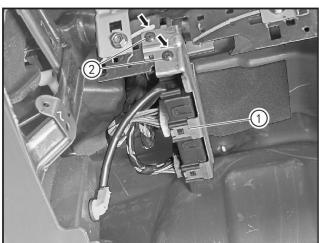


4- Refitting

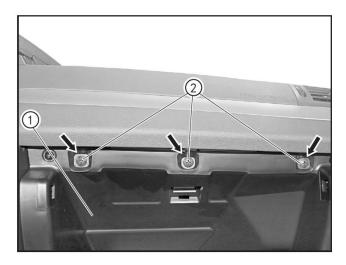
- Align the groove for clip of fan (1) with the boss B on the A/C assembly housing.
- Rotate the fan counterclockwise to install it in place.
- Connect the fan connector (2) in place.

A CAUTION

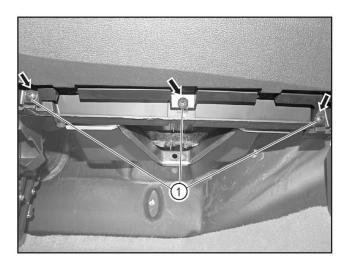
After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions are normal, and the fan works normally without unusual noise, and then connect the scan tool to clear DTCs.



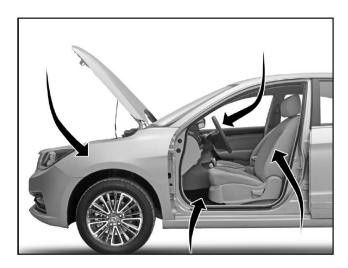
- Install the body control module (1) on the instrument panel bracket after positioning.
- Tighten the fixing screw (2) of body control module with the Phillips screwdriver.



- Place the glove box (1) on the mounting surface.
- Tighten the upper fixing screws (2) of glove box with the Phillips screwdriver.



 Tighten the lower fixing screws (1) of glove box with the Phillips screwdriver.

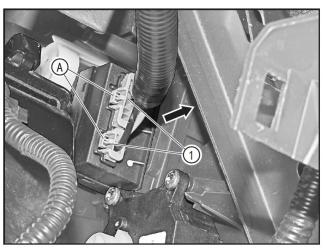


Removal and Refitting of Blower Motor Speed Control Module

1 - Protection

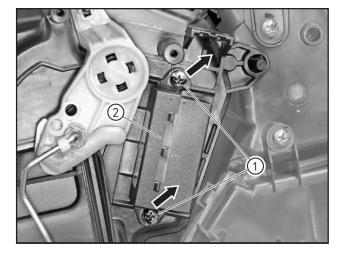
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

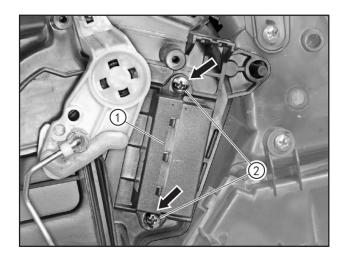


2 - Removal

- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the brake pedal. (Refer to "Removal and Refitting of Brake Pedal" in "Brake System").
- The fan speed control module is located on the left side of the A/C housing.
- Press the connector clip A, and disconnect the fan speed control module connector (1).

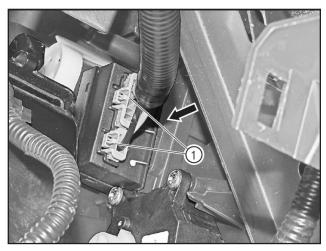


- Remove the fixing screws (1) of fan speed control module with the Phillips screwdriver.
- Remove the fan speed control module (2).



3- Refitting

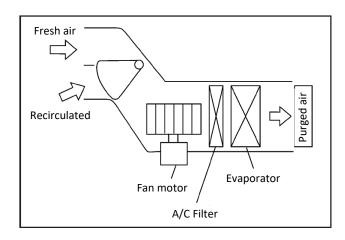
- Refit the fan speed control module (1) into the mounting hole.
- Tighten the fixing screws (2) of fan speed control module with the Phillips screwdriver.



- Connect the fan speed control module connector (1) in place.
- Refit the brake pedal. (Refer to "Removal and Refitting of Brake Pedal" in "Brake System").

A CAUTION

After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the fan speed adjustment knob on the A/C control panel, and check that all functions are normal, and then connect the scan tool to clear DTCs.



Functions of A/C Filter

• Install the A/C filter into the A/C unit assembly, so that the air in the passenger compartment can be kept clean in internal/external circulation mode.

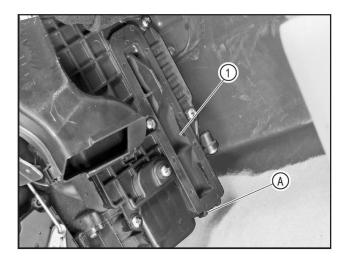


Removal and Refitting of A/C Filter

1 - Protection

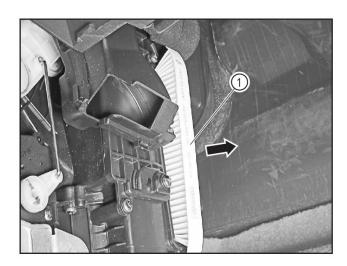
Place protective pads at following locations:

- · Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- Steering wheel;
- Shift lever.

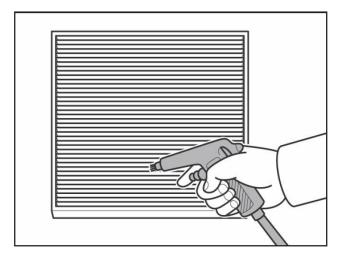


2 - Removal

- The A/C filter is located on the right side of the A/C housing assembly.
- Loosen the clip (A) at the lower part of the trim cover on the A/C filter. Press down the trim cover (1) of the A/C filter, and take it down rightward.

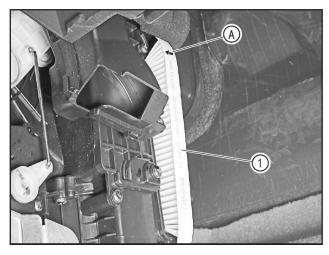


Take out the A/C filter element (1) from the A/C assembly.



3 - Cleaning

- Check the condition of A/C filter, and clean or replace the filter in time according to the recommended interval.
- Blow the compressed air in from the back side of the air cleaner until all foreign matters have been cleared.

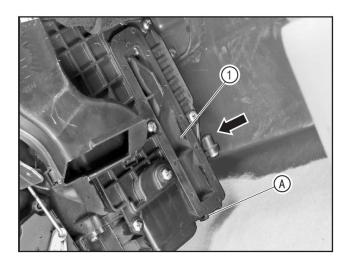


4- Refitting

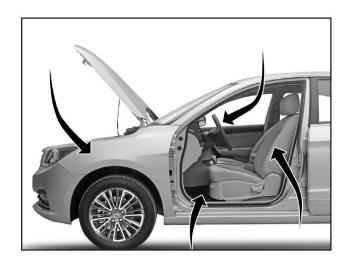
Install the A/C filter (1) into the corresponding hole on the A/C assembly.

A CAUTION

 Refit the A/C filter element according to the airflow direction indicated by arrow (A).



Refit from down to up: first snap the clip at the lower part of A/C filter trim cover onto the A/C housing, and press the trim cover (1) horizontally until it is firmly fixed.

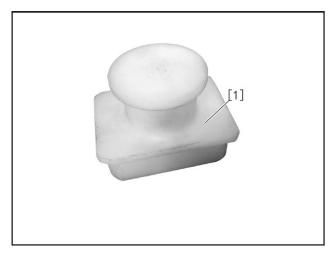


Removal and Refitting of Compressor High-pressure Pipe

1 - Protection

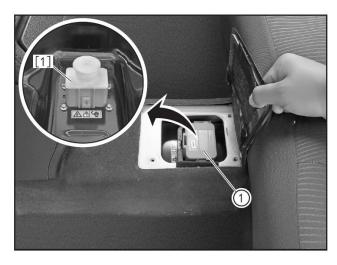
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Traction battery service switch plug (E700102) [1].



3 - Removal

A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Turn off the ignition switch, and disconnect battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

CAUTION

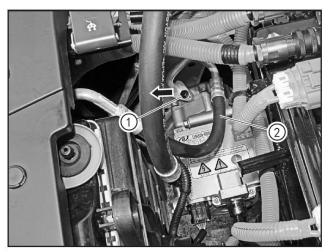
 After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.



 Remove the fixing nut (1) of A/C compressor high-pressure pipe (condenser side) with the 10mm open-end wrench.

A CAUTION

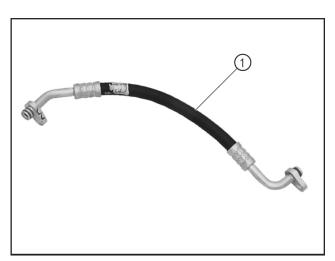
 There is still some refrigeration oil left in the compressor high-pressure pipe. In view of this, protect the exposed pipe orifices after the compressor high-pressure pipe is disconnected from the fixed end. After the pipe is disconnected, wipe off the spilled refrigeration oil.



- Remove the fixing bolt (1) (M6×20) of the A/C compressor high-pressure pipe (compressor side) with the 10 mm socket.
- Remove the A/C compressor high-pressure pipe (2)

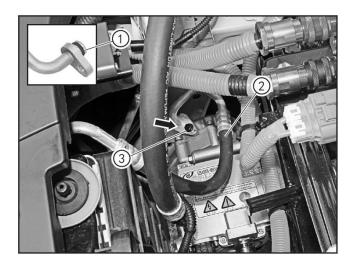
A CAUTION

Protect the exposed orifices of the A/C pipe after being disconnected from the fixed end. After the pipe is disconnected, wipe off the spilled refrigeration oil.



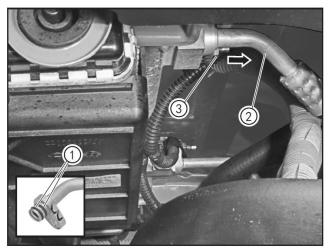
4 - Check

 Check the compressor high-pressure pipe (1) for aging crack, damage, or any deformation at the pipe orifice connecting position; and if any, replace the compressor high-pressure pipe (1).



5- Refitting

- Replace with a new O-ring (1), and apply some refrigeration oil on it before installation.
- Install the connecting joint of A/C compressor high-pressure pipe (2) into the mounting hole on compressor.
- Tighten the fixing bolt (3) (M6X20) of A/C compressor high-pressure pipe to 13.7N·m with the 10mm socket.



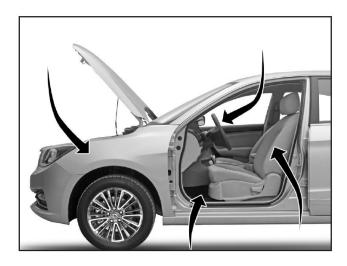
- Replace with 2 new O-rings (1), and apply some refrigeration oil on them before installation.
- Install the connecting joint of A/C compressor high-pressure pipe (2) into the mounting hole on condenser.
- Tighten the fixing nut (3) of A/C compressor high-pressure pipe to 13.7N·m with the 10mm socket.



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

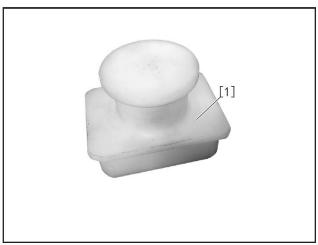


Removal and Refitting of A/C High/Low Pressure Pipe

1 - Protection

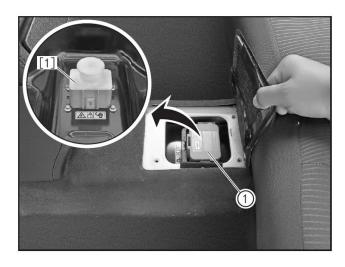
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Traction battery service switch plug (E700102) [1].



3 - Removal

A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Turn off the ignition switch, and disconnect battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

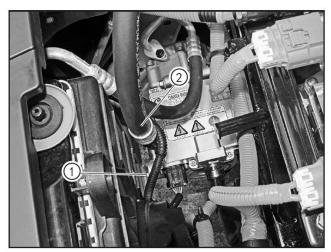
A CAUTION

After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.



- Remove the fixing nut (1) of A/C high-pressure pipe (condenser side) with the 10mm socket.
- Disconnect the A/C high-pressure pipe from the connecting joint on condenser.

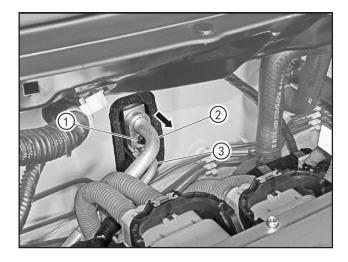
 There is still some refrigeration oil left in the compressor high-pressure pipe. In view of this, protect the exposed pipe orifices after the compressor high-pressure pipe is disconnected from the fixed end. After the pipe is disconnected, wipe off the spilled refrigeration oil.



- Remove the fixing bolt (1) (M6×20) of the A/C low-pressure pipe with the 10 mm socket.
- Disconnect the A/C low-pressure pipe (2) from the fixed end on compressor.

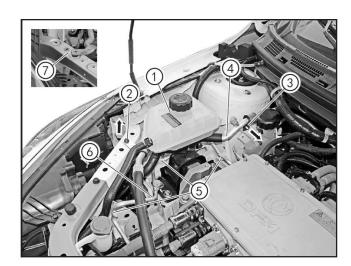
A CAUTION

 Protect the exposed orifices of the A/C pipe after being disconnected from the fixed end. After the pipe is disconnected, wipe off the spilled refrigeration oil.



- Remove the fixing bolt (1) (M6x25) of A/C pipe with the 10mm socket.
- Disconnect the A/C low-pressure pipe (2) and the A/C high-pressure pipe (3) from the fixed end on expansion valve.



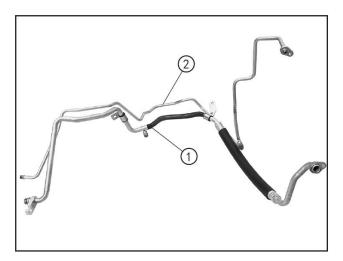


- Remove the expansion tank (1). (Refer to "Removal and Refitting of Expansion Valve" in "Motor Cooling System")
- Remove the fixing bolt (2) (M6x15) of the A/C low-pressure pipe with the 10 mm socket.
- Remove the fixing nut (3) of A/C low-pressure pipe with the 10mm socket.
- Carefully take out the A/C low-pressure pipe (4).
- Detach the A/C high-pressure pipe from the bracket (5).
- Carefully take out the A/C high-pressure pipe (6).

- After taking down the A/C low-pressure pipe (4), pay attention to removing the A/C fixing gasket (7), and if it is damaged, replace it with a new one.
- When removing the A/C pipe, prevent scratching or bending, so as to avoid damage to the parts.



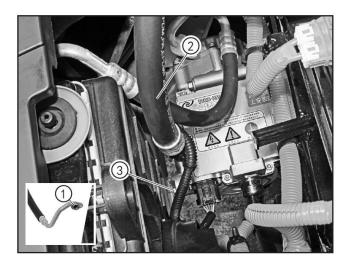
 Check the A/C low-pressure pipe (1) and A/C high-pressure pipe (2) for aging crack, damage, or any deformation at the pipe orifice connecting position. If any, replace the A/C low-pressure pipe (1) or the A/C high-pressure pipe (2).



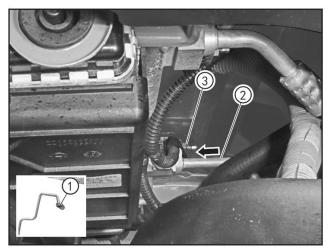


5- Refitting

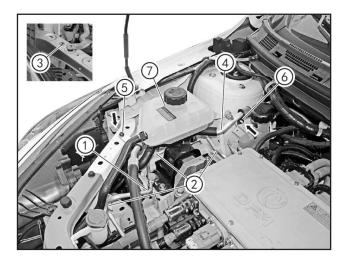
- Place the A/C pipe on the mounting surface bypassing the obstruction members.
- Replace with a new O-ring (1), and apply some refrigeration oil on it before installation.
- Insert the A/C high-pressure pipe (2) and the A/C low-pressure pipe (3) into the mounting holes on expansion valve.
- Tighten the fixing bolts (4) of A/C pipe with the 10mm socket.



- Replace with a new O-ring (1), and apply some refrigeration oil on it before installation.
- Insert the A/C compressor low-pressure pipe (2) into the mounting hole on compressor in place.
- Tighten the fixing bolt (3) of the A/C compressor low-pressure pipe with the 10 mm socket.



- Replace with a new O-ring (1), and apply some refrigeration oil on it before installation.
- Insert the A/C compressor high-pressure pipe (2) into the mounting hole on condenser in place.
- Tighten the fixing nut (3) of A/C high-pressure pipe (condenser side) with the 10mm socket.



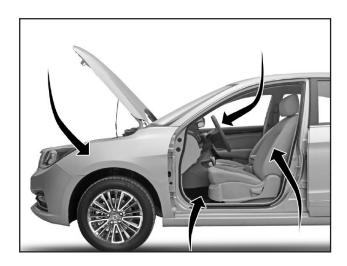
- Place the A/C high-pressure pipe (1) at the mounting position carefully.
- Snap the A/C high-pressure pipe into the bracket (2).
- Put the gasket (3) in place.
- Place the A/C low-pressure pipe (4) at the mounting position carefully.
- Tighten the fixing bolt (5) of the A/C low-pressure pipe with the 10 mm socket.
- Tighten the fixing nut (6) of the A/C high-pressure pipe with the 10 mm socket.
- Refit the expansion tank (7). (Refer to "Removal and Refitting of Expansion Valve" in "Motor Cooling System")

- If the gasket is worn or cracked, replace it with a new one.
- When installing the A/C pipe, prevent scratching or bending, so as to avoid damage to the parts.



- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

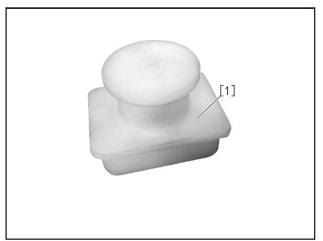


Removal and Refitting of A/C Pressure Switch

1 - Protection

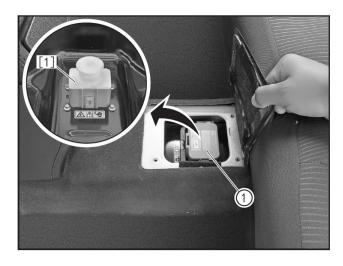
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Traction battery service switch plug (E700102) [1].



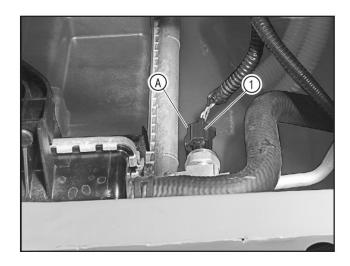
3 - Removal

A CAUTION

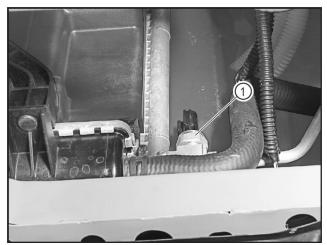
- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Turn off the ignition switch, and disconnect battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

▲ CAUTION

 After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.



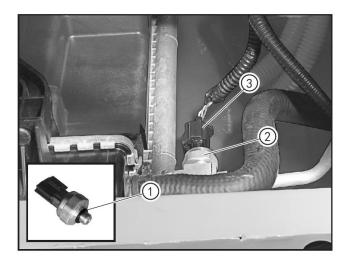
 Press down the connector clip A, and disconnect the A/C pressure switch connector (1).



 Remove the A/C pressure switch (1) with the 24mm long socket.

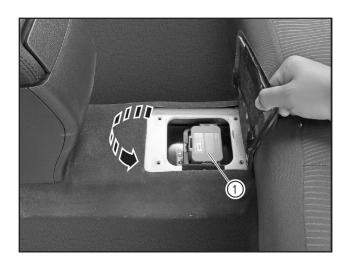
▲ CAUTION

• There is still some refrigeration oil left in the compressor high-pressure pipe. In view of this, protect the exposed pipe orifices after the compressor high-pressure pipe is disconnected from the fixed end. After the pipe is disconnected, wipe off the spilled refrigeration oil.



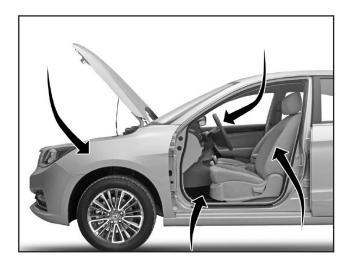
4- Refitting

- Replace with a new O-ring (1) for the A/C pressure switch.
- Apply a little of refrigeration oil to the O-ring.
- Tighten the A/C pressure switch (2) to 10.8N·m with the 27mm socket.
- Connect the A/C pressure switch connector (3) in place.



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

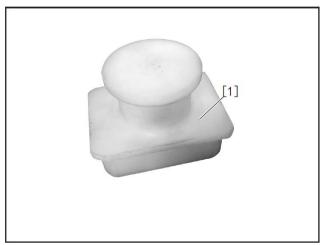


Removal and Refitting of A/C Expansion Valve

1 - Protection

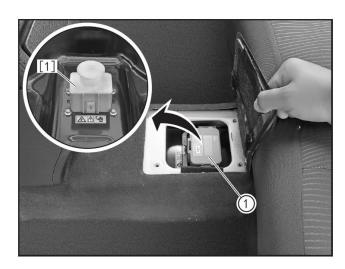
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Traction battery service switch plug (E700102) [1].



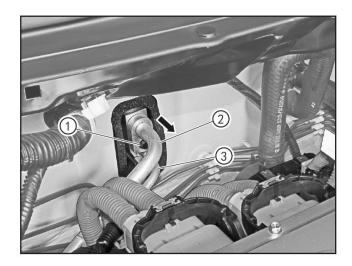
3 - Removal

▲ CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Turn off the ignition switch, and disconnect battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

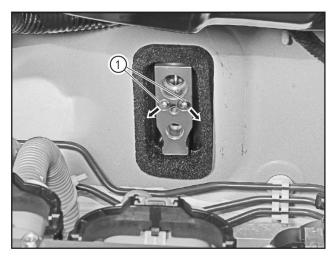
A CAUTION

 After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.

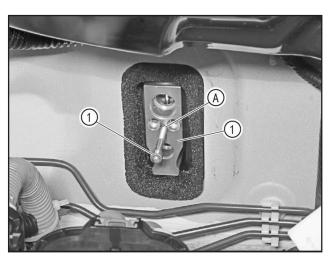


- Remove the fixing bolt (1) (M6x25) of A/C pipe with the 10mm socket.
- Disconnect the A/C low-pressure pipe (2) and the A/C high-pressure pipe (3) from the fixed end on expansion valve.

 There is still some refrigeration oil left in the A/C pipe. In view of this, protect the exposed pipe orifices after the A/C pipe is disconnected from the fixed end. After the pipe is disconnected, wipe off the spilled refrigeration oil.



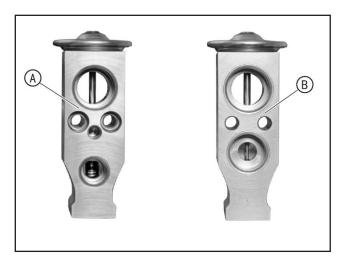
Remove the fixing bolt (1) of expansion valve with the T25 screwdriver bit.



 Screw the fixing bolt (1) of expansion valve into the hole A reserved on the expansion valve, shake the bolt up and down, and take down the expansion valve (2).

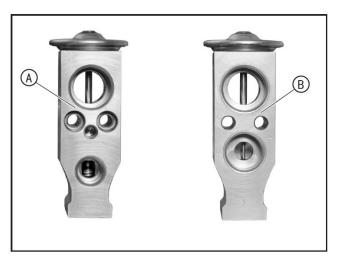
A CAUTION

 After removing the expansion valve, use a clean cloth to block the A/C pipe joints in time to prevent the A/C system from being contaminated.



4 - Check

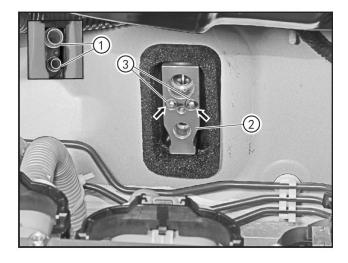
- A and B indicate the front side and back side of the expansion valve respectively.
- Before installation and use of expansion valve, check if the expansion valve works properly or is unobstructed. In order to ensure proper working of the expansion valve, make sure to store it in a thermally-insulated and moisture proofed place which is protected against the interference from cold temperature, thermal gas flow and other objects.



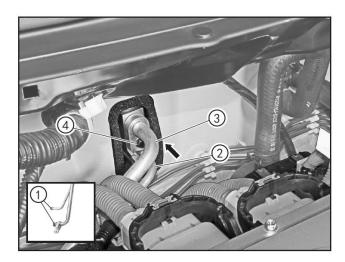
5- Refitting

A CAUTION

 Install the expansion valve with side A outward and side B inward.



- Replace with a new O-ring (1) for the connecting joint of A/C pipe.
- Apply a little of refrigeration oil to the O-ring.
- Install the A/C pipe into the mounting hole on expansion valve (2) in place.
- Tighten the fixing bolt (3) of expansion valve onto the A/C assembly with the T25 screwdriver bit to 3.9N·m.



- Replace with a new O-ring (1) for the orifice of A/C pipe to be connected with expansion valve in the motor compartment.
- Insert the A/C high-pressure pipe (2) and the A/C low-pressure pipe (3) into the mounting holes on expansion valve.
- Tighten the fixing bolts (4) of A/C pipe with the 10mm socket.



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.





Removal and Refitting of Compressor

1 - Protection

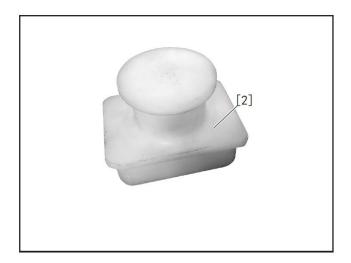
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

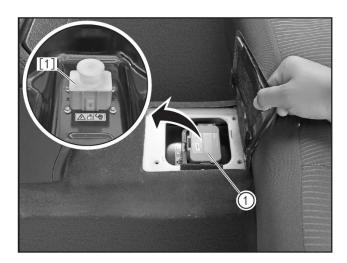


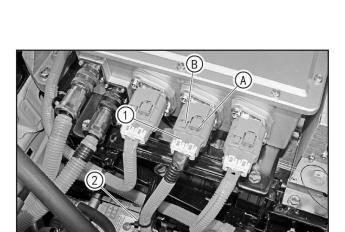
2 - Recommended tools

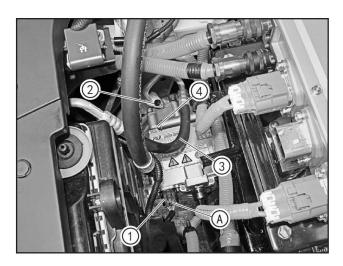
Interior trim removal tool (BF1102) [1].



• Traction battery service switch plug (E700102) [2].







3 - Removal

A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Turn off the ignition switch, and disconnect battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

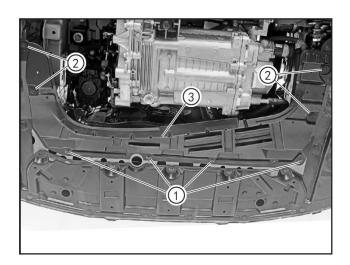
▲ CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Unlock the connector clip A outwards, press the connector clip B, and disconnect the A/C compressor connector (1).
- Remove the wire harness clip (2) with the interior trim removal tool (BF1102).

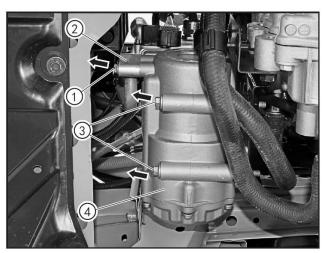
- Press the clip A of A/C compressor connector, and disconnect the A/C compressor connector (1).
- Remove the fixing bolt (2) (M6x20) of the A/C compressor high-pressure pipe with the 10 mm socket.
- Disconnect the A/C compressor high-pressure pipe (3) from the fixed end on compressor.
- Remove the fixing bolt (4) (M6×110) of the compressor with the 10mm socket.

A CAUTION

 There is still some refrigeration oil left in the A/C pipe. In view of this, protect the exposed pipe orifices after the A/C pipe is disconnected from the fixed end. After the pipe is disconnected, wipe off the spilled refrigeration oil.

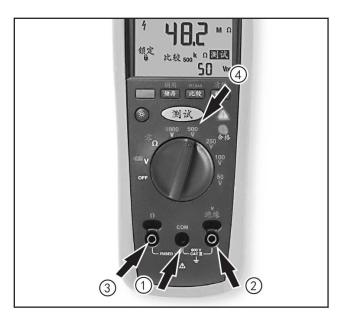


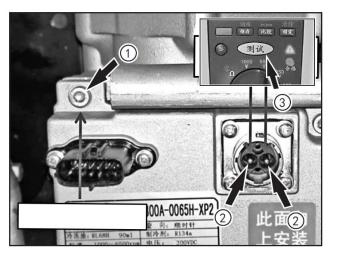
- Lift the vehicle as appropriate.
- Remove the fixing bolt (1) (M6x20) of the powertrain lower protective plate with the 10 mm socket.
- Remove the clip (2) of the powertrain lower protective plate with the interior trim removal tool (BF1102).
- Remove the powertrain lower protective plate (3).

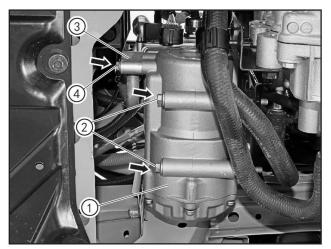


- Remove the fixing bolt (1) (M6x20) of A/C compressor low-pressure pipe with the 10mm socket.
- Disconnect the A/C compressor low-pressure pipe
 (2) from the fixed end on compressor, and take sealing measures to protect the pipe orifice.
- Remove the fixing bolt (3) (M6x110) of the compressor with the 10mm socket.
- Remove the A/C compressor assembly (4).

 Since the refrigeration oil is highly hygroscopic, block the air inlet and air outlet of the compressor with clean cloth immediately after removal.







4 - Check

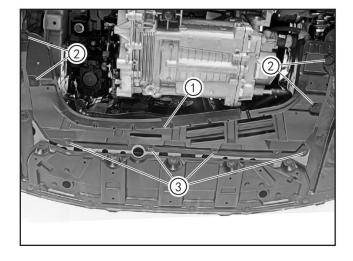
• Use the insulation resistance tester, connect the black probe to COM end (1) of the insulation resistance tester, one red probe to the insulation resistance testing end (2) and the other red probe to ground end (3) and clamp the ground; and select 500V insulation resistance test position (4).

▲ CAUTION

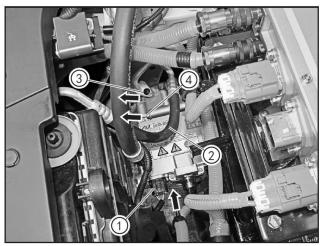
- Always wear insulated gloves and use insulated tools for all operations.
- Do not touch the testing end of probe with your hand.
- Confirm that the object under test is dead and safely grounded before measurement.
- Do not touch the object under test; otherwise, electric shock by high voltage may ensue.
- Keep one hand out of contact with other objects while measuring, which will reduce the chance of current flowing through the chest and heart.
- Always stand on an insulated mat for measurement.
- Clamp one end of the black probe to the position (1) on the housing as shown.
- Measure the resistance of 2 electrodes (2) of the illustrated connector to housing with the red probe.
- Press and hold the test button (3) for 2s, and when the indication is stabilized, make reading.
- Record the test results of each connector end, which should be ≥20MΩ in normal case.
- If any abnormality is found such that the installation becomes impossible, find the cause as soon as possible or replace it with a new one.

5- Refitting

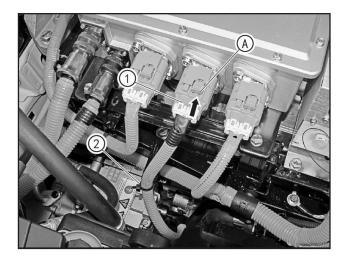
- Place the A/C compressor assembly (1) in the mounting position.
- Tighten the fixing bolt (2) (M6x110) of the compressor to 20±2N·m with the 10mm socket.
- Replace with a new O-ring, and install the A/C compressor low-pressure pipe (3) into the mounting hole on compressor.
- Tighten the fixing bolt (4) (M6X20) of A/C compressor low-pressure pipe to 13.7N·m with the 10mm socket.



- Lift the vehicle as appropriate.
- Install the powertrain lower protective plate (1) in place with mounting holes aligned.
- Refit the clip (2) of the powertrain lower protective plate in place.
- Tighten the fixing bolts (3) (M6x20) of the powertrain lower protective plate with the 10 mm socket.



- Lower the vehicle.
- Press the A/C compressor connector (1) to plug it into position.
- Replace with a new O-ring, and install the A/C compressor high-pressure pipe (2) into the mounting hole on compressor.
- Tighten the fixing bolt (3) (M6X20) of A/C compressor high-pressure pipe to 13.7N·m with the 10mm socket.
- Tighten the fixing bolt (4) (M6x110) of the compressor to 20±2N·m with the 10mm socket.



- Connect the A/C compressor connector (1) in place, and push in the clip A to lock the connector securely.
- Clamp the wire harness clip (2) in place.



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

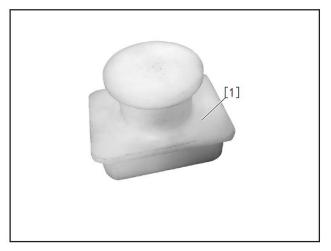


Removal and Refitting of Condenser

1 - Protection

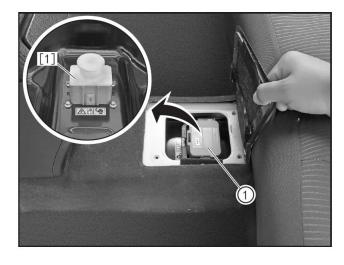
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Traction battery service switch plug (E700102) [1].



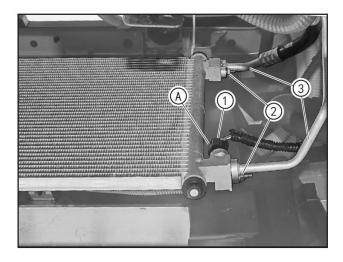
3 - Removal

A CAUTION

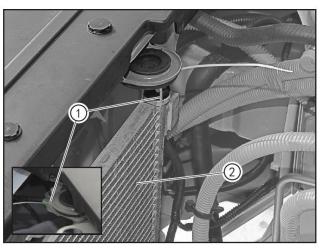
- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Turn off the ignition switch, and disconnect battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

▲ CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Remove the radiator assembly. (Refer to "Removal and Refitting of Radiator" in "Motor Cooling System")

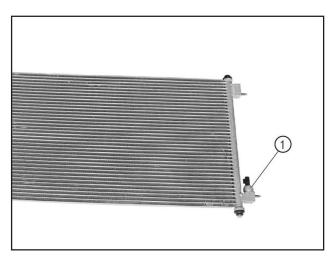


- Press down the connector clip A, and disconnect the A/C pressure switch connector (1).
- Remove the fixing nut (2) of A/C high-pressure pipe with the 10mm socket.
- Disconnect the A/C high-pressure pipe (3) from the connecting joint on condenser, and take sealing measures to protect the pipe orifice..

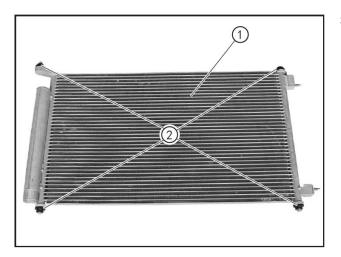


- Scissor off the strap (1) for fastening the condenser.
 (During removal and refitting of radiator, use 1 strap on left and right ends respectively)
- Remove the condenser (2) upwards.

When removing the A/C condenser assembly, be careful not to scratch the body parts to avoid damage to the A/C condenser assembly.

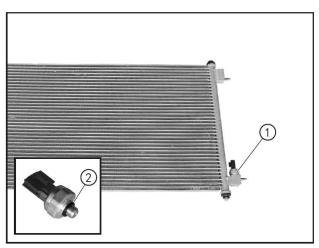


 Remove the A/C pressure switch (1) with the 24mm open-end wrench.



3 - Check

- If the condenser surface is clogged, rinse the condenser blades with water, and dry them with compressed air.
- Check the surface of the condenser (1) for damage and leakage. If any, repair or replace the condenser.
- Check the 4 bumper blocks (2) of condenser for damage, corrosion, aging, if any, replace.

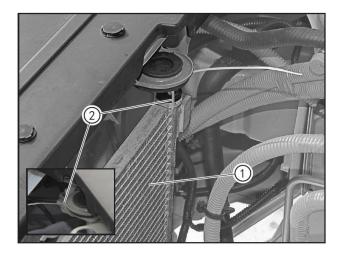


4- Refitting

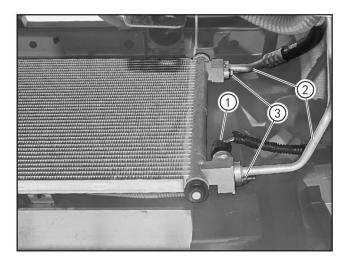
Tighten the A/C pressure switch (1) to 10.8N·m with the 24mm socket.

A CAUTION

Replace with a new O-ring (2).



- Refit the condenser assembly (1) in place after aligning the mounting of condenser with the fixing points on the vehicle body.
- Fasten the condenser to the body with strap (2).



- Connect the A/C pressure switch connector (1) in place.
- Insert the A/C high-pressure pipes (2) at the upper and lower parts of condenser into the mounting hole on condensers in place.
- Tighten the fixing nut (3) of the A/C high-pressure pipe with the 10 mm socket.

- Replace with a new O-ring.
- Refit the radiator assembly. (Refer to "Removal and Refitting of Radiator" in "Motor Cooling System")



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

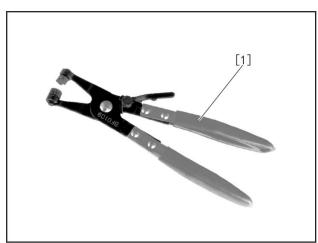


Removal and Refitting of A/C Heater

1 - Protection

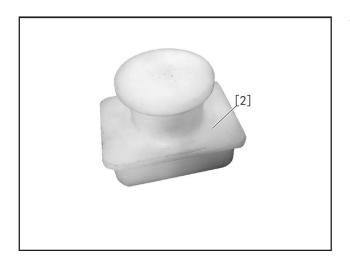
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

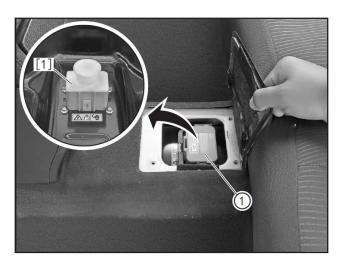


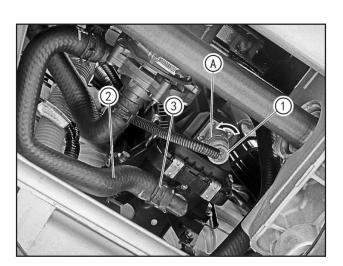
2 - Recommended tools

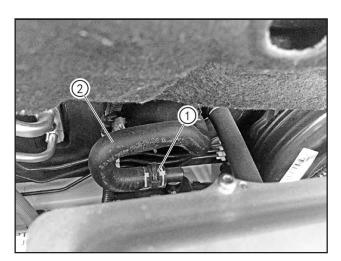
Hose clamp removal plier (BF0109) [1].



Traction battery service switch plug (E700102)[2].







3 - Removal

A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Turn off the start switch and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

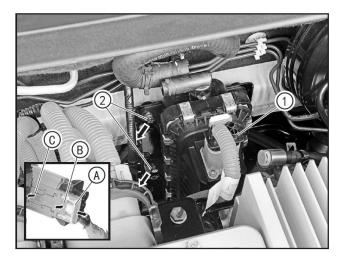
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- If the heating function has been used before maintenance, wait for the coolant to cool down before any maintenance operation.
- Lift the vehicle to an appropriate height.
- Rotate the connector clip A counterclockwise, and disconnect A/C heater connector (1) downwards.
- Place a container under the A/C heater water inlet pipe (2).
- Detach the clamp (3) of A/C heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C heater water inlet pipe from side to side to loosen it, and then, disconnect the A/C heater water inlet pipe (2) and drain the A/C coolant.

A CAUTION

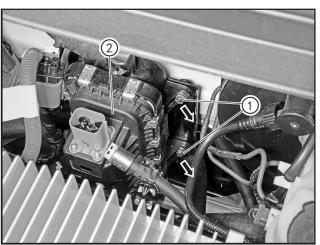
- Wipe the coolant that flows onto the body parts with a clean rag.
- Lower the vehicle as appropriate.
- Detach the clamp (1) of A/C heater water outlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C heater water outlet pipe from side to side to loosen it, and then, disconnect the A/C heater water outlet pipe (2).

A CAUTION

Wipe the coolant that flows onto the body parts with a clean rag.



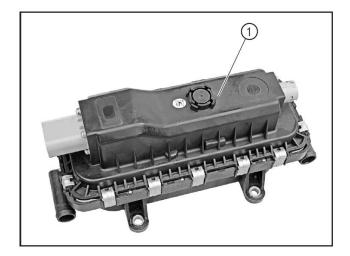
- Pull out the connector clip A, press the clip B, pry the clip C with the small screwdriver, and disconnect the A/C heater connector (1).
- Remove the left fixing bolt (2) of the A/C heater with the T40 screwdriver bit.



- Remove the right fixing bolt (1) of the A/C heater with the T40 screwdriver bit.
- Take out the A/C heater assembly (2).

▲ CAUTION

 When taking out the A/C heater assembly, be careful not to scratch the body parts to avoid damaging those parts due to a confined operation space.

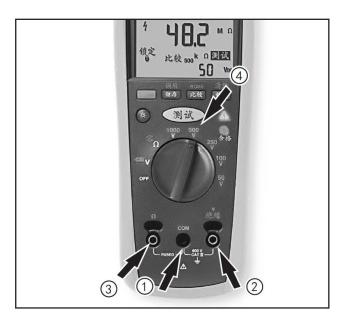


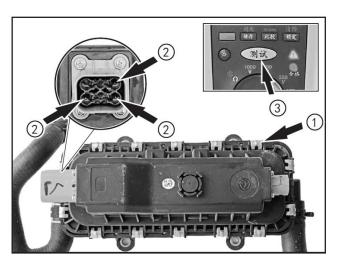
4 - Check

 Check the surface of the A/C heater housing for crack, damage or leakage, and if any, replace the A/C heater (1).

A CAUTION

 The A/C heater can only be replaced but not repaired.

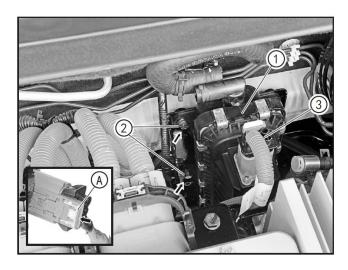




• Use the insulation resistance tester, connect the black probe to COM end (1) of the insulation resistance tester, one red probe to the insulation resistance testing end (2) and the other red probe to ground end (3) and clamp the ground; and select 500V insulation resistance test position (4).

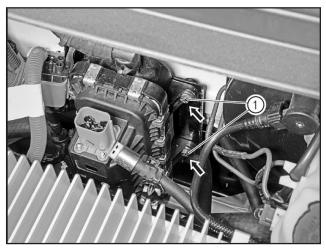
A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Do not touch the testing end of probe with your hand.
- Confirm that the object under test is dead and safely grounded before measurement.
- Do not touch the object under test; otherwise, electric shock by high voltage may ensue.
- Keep one hand out of contact with other objects while measuring, which will reduce the chance of current flowing through the chest and heart.
- Always stand on an insulated mat for measurement.
- Clamp one end of the black probe to the position (1) on the housing as shown.
- Measure the resistance of 3 electrodes (2) of the illustrated connector to housing with the red probe.
- Press and hold the test button (3) for 2s, and when the indication is stabilized, make reading.
- Record the test results of each connector end, which should be ≥20MΩ in normal case.
- If any abnormality is found such that the installation becomes impossible, find the cause as soon as possible or replace it with a new one.

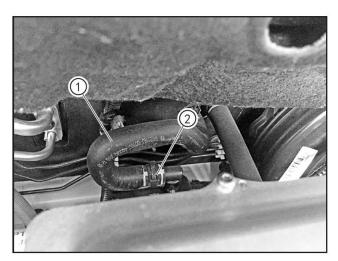


5- Refitting

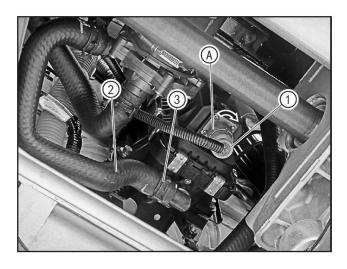
- Refit the A/C heater assembly (1) on the mounting face.
- Tighten the fixing bolt (2) of the A/C heater with the 10mm socket.
- Connect the A/C heater connector (3) in place, and push in the clip A to lock the connector securely.



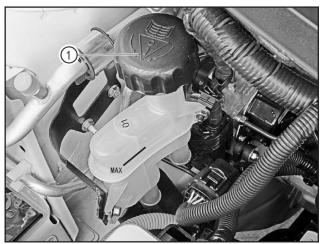
Tighten the fixing bolt (1) (M8x16) of the A/C heater with the 10mm socket.



- Refit the A/C heater water outlet pipe (1) in place.
- Snap the clamp (2) of A/C heater water outlet pipe into position with the hose clamp removal and refitting pliers (BF0109).



- Connect the A/C heater connector (1) in place, and rotate clip A clockwise to lock the connector securely.
- Refit the A/C heater water inlet pipe (2) in place.
- Move the clamp (3) of A/C heater water inlet pipe into position with the hose clamp removal and refitting pliers (BF0109), and then snap it in place.



- Unscrew the reservoir cover (1) counterclockwise, and add coolant to MAX mark.
- Before tightening the reservoir cover (1), turn the ignition key to ON, turn on the A/C heating (HEAT) function to discharge the air in the A/C system. Pay attention that the coolant level will drop in the process of discharging, and please add coolant to MAX mark when appropriate, and when the coolant level is stabilized, turn the ignition key to OFF. Check if the coolant level drops when the coolant temperature reduces below 60°C, and if not, tighten the reservoir cover (1), otherwise, continue to add coolant.



 Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

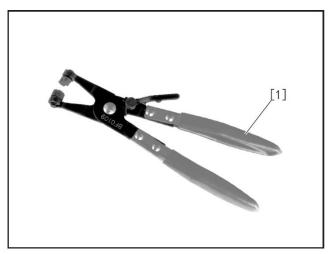


Removal and Refitting of A/C Heater Water Pump

1 - Protection

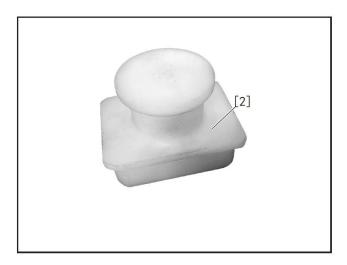
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

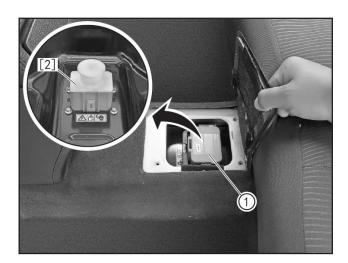


2 - Recommended tools

Hose clamp removal plier (BF0109) [1].



• Traction battery service switch plug (E700102)[2].





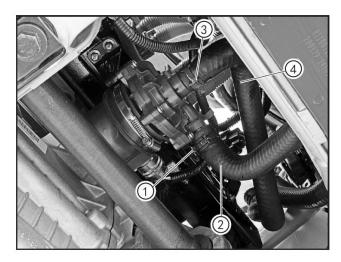
- Always wear insulated gloves and use insulated tools for all operations.
- Turn off the start switch and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [2] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- If the heating function has been used before maintenance, wait for the coolant to cool down before any maintenance operation.
- Lift the vehicle to an appropriate height.
- Place a container under A/C heater water inlet pipe (1).
- Detach the clamp (2) of A/C heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C heater water inlet pipe from side to side to loosen it, and then, disconnect the A/C heater water inlet pipe (1) and drain the A/C coolant.

A CAUTION

 Wipe the coolant that flows onto the body parts with a clean rag.



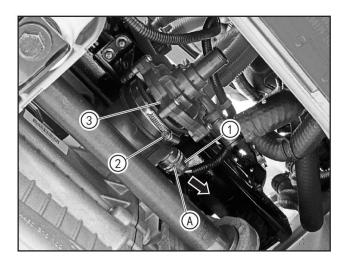
- Detach the clamp (1) of A/C heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C heater water inlet pipe (2) from side to side to disconnect the A/C heater water inlet pipe from the connecting joint on water pump.
- Detach the clamp (3) of A/C water pump water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C water pump water inlet pipe (4) from side to side to disconnect the A/C water pump water inlet pipe from the connecting joint on water pump.

A CAUTION

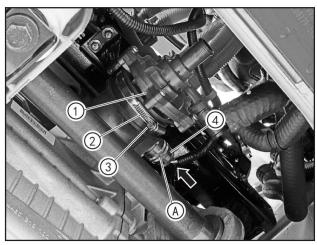
Wipe the coolant that flows onto the body parts with a clean rag.





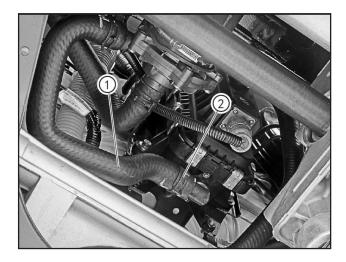


- Pull the connector clip A in the direction as indicated by the arrow, and disconnect the heater water pump connector (1).
- Unscrew the fixing bolt (2) of belt-type clamp with the slotted screwdriver to loosen the belt-type clamp.
- Remove the heater water pump (3).

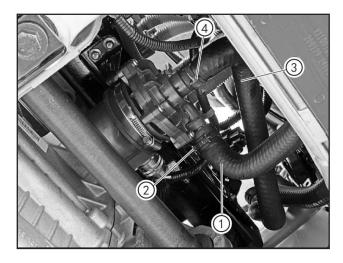


4- Refitting

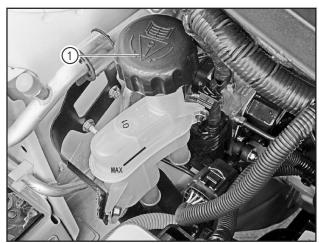
- Refit the heater water pump (1) into the belt-type clamp (2), and tighten the fixing bolt (3) of belt-type clamp with the slotted screwdriver.
- Press the connector clip A in the direction as indicated by the arrow, and connect the heater water pump connector (4) in place.



- Connect the A/C heater water inlet pipe (1) to the fixed end on A/C heater.
- Snap the clamp (2) of A/C heater water inlet pipe into position with the hose clamp removal and refitting pliers (BF0109).



- Connect the A/C heater water inlet pipe (1) to the fixed end on water pump.
- Refit the hose clamp (2) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).
- Connect the A/C heater water pump water inlet pipe
 (3) to the water inlet of water pump.
- Refit the hose clamp (4) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).



- Unscrew the reservoir cover (1) counterclockwise, and add coolant to MAX mark.
- Before tightening the reservoir cover (1), turn the ignition key to ON, turn on the A/C heating (HEAT) function to discharge the air in the A/C system. Pay attention that the coolant level will drop in the process of discharging, and please add coolant to MAX mark when appropriate, and when the coolant level is stabilized, turn the ignition key to OFF. Check if the coolant level drops when the coolant temperature reduces below 60°C, and if not, tighten the reservoir cover (1), otherwise, continue to add coolant.



• Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

- After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.
- Check that the heater pipes are not leaking.

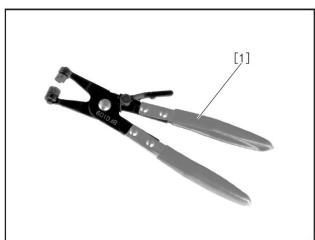


Removal and Refitting of A/C Heater Pipe Assembly

1 - Protection

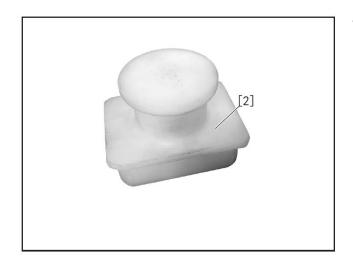
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

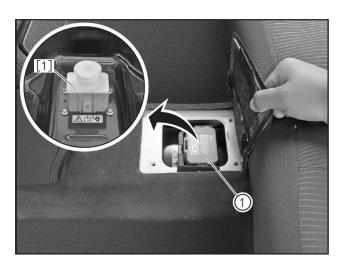


2 - Recommended tools

Hose clamp removal plier (BF0109) [1].



Traction battery service switch plug (E700102)[2].





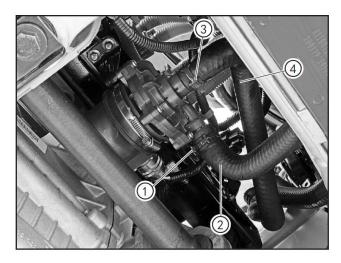
- Always wear insulated gloves and use insulated tools for all operations.
- Turn off the start switch and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- If the heating function has been used before maintenance, wait for the coolant to cool down before any maintenance operation.
- Lift the vehicle to an appropriate height.
- Place a container under A/C heater water inlet pipe (1).
- Detach the clamp (2) of A/C heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C heater water inlet pipe from side to side to loosen it, and then, disconnect the A/C heater water inlet pipe (1) and drain the A/C coolant.

A CAUTION

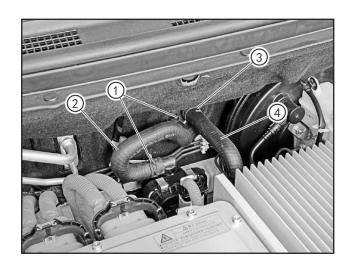
Wipe the coolant that flows onto the body parts with a clean rag.



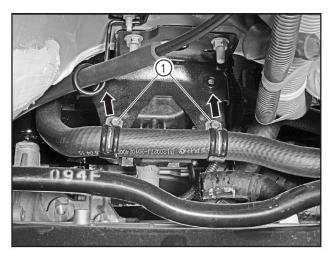
- Detach the clamp (1) of A/C heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C heater water inlet pipe (2) from side to side to disconnect and take off the A/C heater water inlet pipe from the connecting joint on water pump.
- Detach the clamp (3) of water pump water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the water pump water inlet pipe (4) from side to side to disconnect the water pump water inlet pipe from the connecting joint on water pump.

A CAUTION

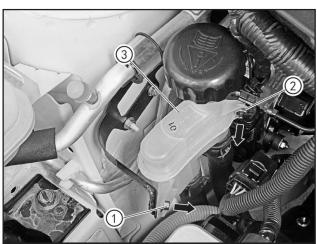
 Wipe the coolant that flows onto the body parts with a clean rag.



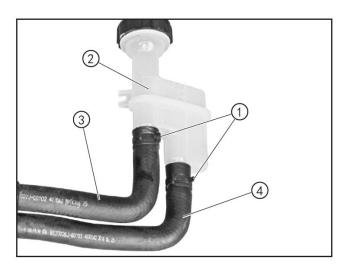
- · Lower the vehicle.
- Detach the 2 clamps (1) of heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the heater water inlet pipe from side to side to detach it from the fixed end, and then take down the heater water inlet pipe (2).
- Detach the clamp (3) of heater water outlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the heater water outlet pipe (4) from side to side to detach it from the fixed end.



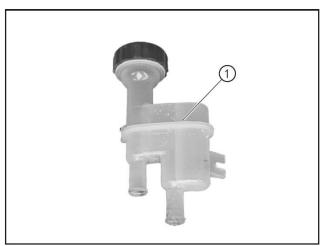
Remove the fixing bolts (1) (M6x12) of the reservoir water outlet pipe with the 8mm socket.



- Remove the fixing bolts (1) (M6x12) of the reservoir bracket with the 8mm socket.
- Loosen the fixing nut (2) of A/C coolant reservoir with the 10mm socket.
- Take out the reservoir & water inlet/outlet pipe assembly (3).

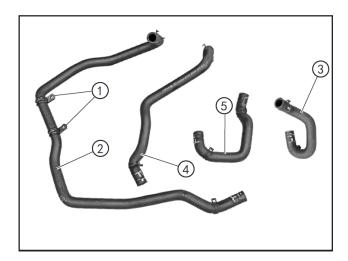


- Detach the 2 clamps (1) of water pipe from the mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the water pipe from side to side to disconnect the water pipe from the reservoir (2).
- Remove the heater water pipe (3) and the water pump water inlet pipe (4).



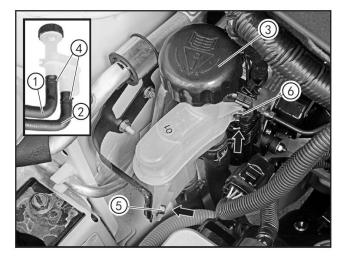
4 - Check

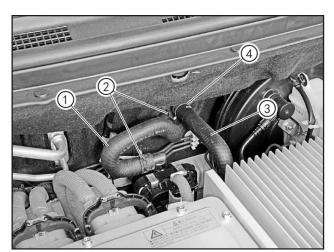
 Check the A/C coolant reservoir for crack and damage, and if any, replace the A/C coolant reservoir (1).

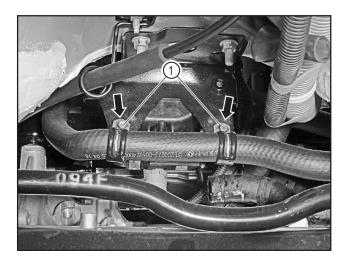


- Check the pipe bracket (1) for rust and breakage. If any, replace the pipe bracket.
- Check the heater water outlet pipe (2), heater water inlet pipe (3), water pump water inlet pipe (4) and water pump water outlet pipe (5) for aging or damage. If any, replace the defective pipe.





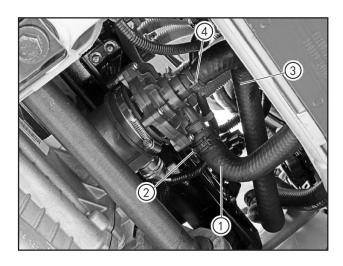




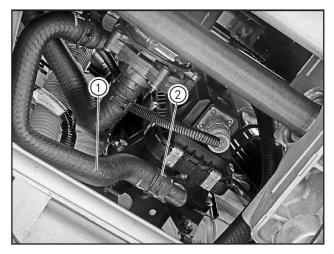
5- Refitting

- Place the heater water inlet pipe (1), water pump water inlet pipe (2) and coolant reservoir (3) to the corresponding mounting position.
- Connect the heater water inlet pipe and water pump water inlet pipe to the connecting joints on coolant reservoir, and ensure that they are connected in place.
- Refit the hose clamp (4) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).
- Tighten the fixing bolt (5) of the reservoir with the 6mm socket.
- Tighten the fixing bolt (6) of the reservoir with the 10mm socket.
- Insert the heater water inlet pipe (1) into the mounting joint in place.
- Refit the hose clamps (2) on both ends in place and clip them securely with the hose clamp removal and refitting pliers (BF0109).
- Insert the heater water outlet pipe (3) into the mounting joint in place.
- Refit the hose clamp (4) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).

• Tighten the fixing bolt (1) (M6x12) of the reservoir water outlet pipe with the 8mm socket.



- Lift the vehicle to an appropriate height.
- Insert the water pump water outlet pipe (1) into the mounting joint in place.
- Refit the hose clamp (2) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).
- Insert the water pump water outlet pipe (3) into the mounting joint in place.
- Refit the hose clamp (4) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).



- Insert the heater water inlet pipe (1) into the mounting joint in place.
- Refit the hose clamp (2) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).



- Unscrew the reservoir cover (1) counterclockwise, and add coolant to MAX mark.
- Before tightening the reservoir cover (1), turn the ignition key to ON, turn on the A/C heating (HEAT) function to discharge the air in the A/C system. Pay attention that the coolant level will drop in the process of discharging, and please add coolant to MAX mark when appropriate, and when the coolant level is stabilized, turn the ignition key to OFF. Check if the coolant level drops when the coolant temperature reduces below 60°C, and if not, tighten the reservoir cover (1), otherwise, continue to add coolant.





 Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

- After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.
- Check that the heater pipes are not leaking.

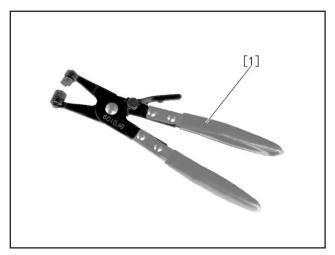


Removal and Refitting of A/C Assembly

1 - Protection

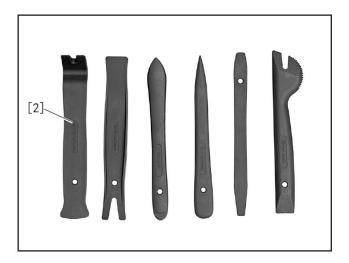
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

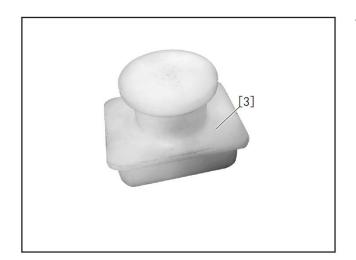


2 - Recommended tools

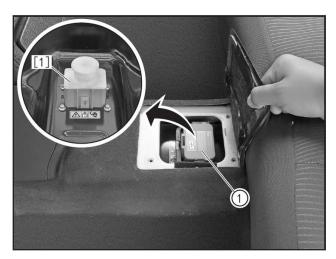
Hose clamp removal plier (BF0109) [1].



Interior trim removal tool (BF1102) [2].



Traction battery service switch plug (E700102)[3].



3 - Removal

A CAUTION

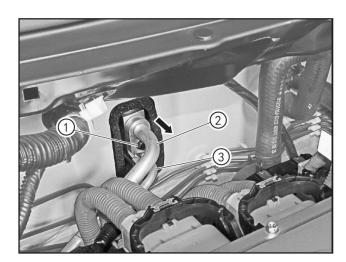
- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Turn off the start switch and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

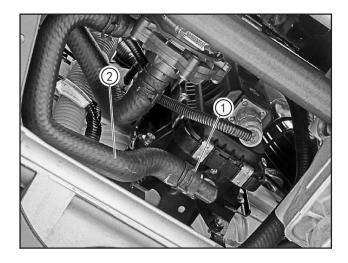
A CAUTION

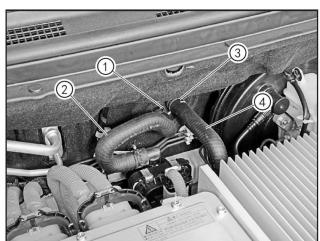
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Remove the fixing bolt (1) (M6x25) of A/C pipe with the 10mm socket.
- Detach the A/C low-pressure pipe (2) and A/C high-pressure-pipe (3) from the fixed ends on expansion valve, and take sealing measures to protect the pipe orifice.

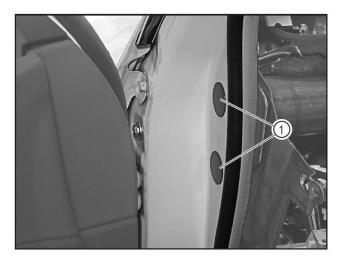


 If the heating function has been used before maintenance, wait for the coolant to cool down before any maintenance operation.



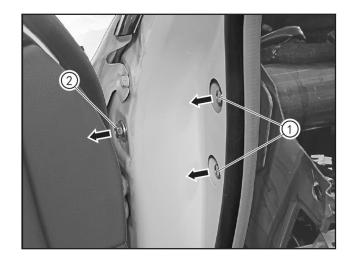




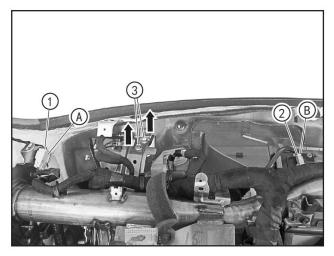


- Lift the vehicle to an appropriate height.
- Place a container under A/C heater water inlet pipe (1).
- Detach the clamp (2) of A/C heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the A/C heater water inlet pipe from side to side to loosen it, and then, disconnect the A/C heater water inlet pipe (1) and drain the A/C coolant.

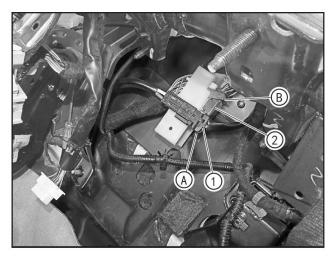
- Wipe the coolant that flows onto the body parts with a clean rag.
- Lower the vehicle.
- Detach the clamp (1) of heater water inlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the heater water inlet pipe from side to side to detach it from the fixed end, and then take down the heater water inlet pipe (2).
- Detach the clamp (3) of heater water outlet pipe from its mounting position with the hose clamp removal and refitting pliers (BF0109).
- Shake the heater water inlet pipe (4) from side to side to detach it from the fixed end.
- Remove the console assembly. (Refer to "Removal and Refitting of Instrument Panel Assembly" in "Instrument Panel")
- Remove the steering column assembly. (Refer to "Removal and Refitting of Steering Column Assembly" in "Power Steering System")
- Remove of A/C ventilation pipe. (Refer to "Removal and Refitting of Ventilation Pipe" in this section)
- Remove the bolt trim cover (1) with the interior trim removal tool (BF1102).



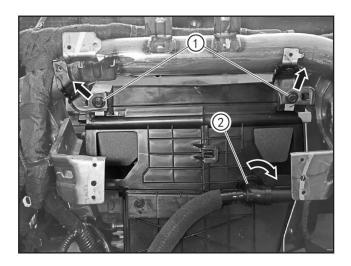
- · Open the left front door to the limit.
- Remove the left fixing bolt (1) (M8x40) of the instrument panel bracket with the 12mm socket.
- Remove the left fixing bolt (2) of the instrument panel bracket with the 13mm socket. (This bolt cannot be taken down)



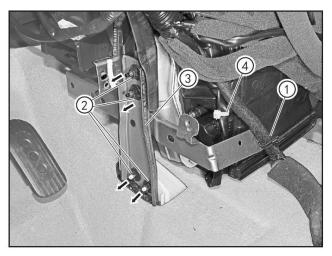
- Press the connector clip A, and disconnect the roof wire harness connector (1).
- Press the connector clip B, and disconnect the A/C temperature sensor connector (2).
- Remove the left upper fixing bolt (1) (M8×25) of the instrument panel frame with the 13mm socket.



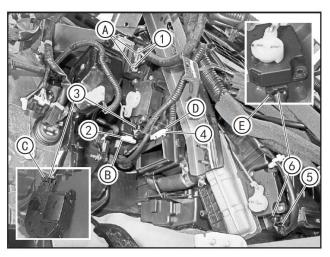
- Pres the connector clip A, and disconnect the cabin wire harness connector (1).
- Turn the connector clip B clockwise, and disconnect the cabin wire harness connector (2).



- Remove the fixing bolt (1) (M6x20) of the instrument panel bracket with the 10mm socket.
- Rotate the connecting joint of the air inlet pipe (2) clockwise to disconnect the air inlet pipe from the A/C housing.



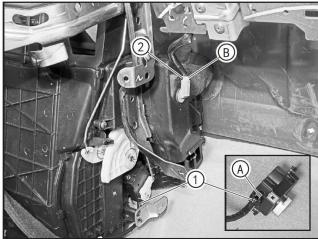
- Detach the wire harness clip (1) from the bracket with the interior trim removal tool (BF1102).
- Remove the fixing bolt (2) of the instrument panel left upper bracket with the 10mm socket.
- Take off the bracket (3).
- Detach the wire harness clip (4) from the A/C housing with the interior trim removal tool (BF1102).



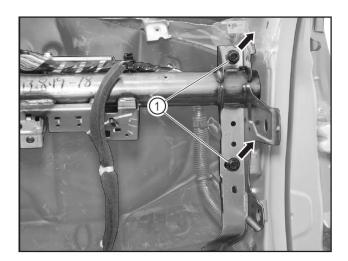
- Press the connector clip A, and disconnect the fan speed control motor connector (1).
- Press the connector clip B, and disconnect the heater temperature sensor connector (2).
- Press the connector clip C, and disconnect the internal/external circulation servo motor connector (3).
- Press the connector clip D, and disconnect the evaporator temperature sensor connector (4).
- Detach the wire harness clip (5) of temperature servo motor connector from the A/C housing with the interior trim removal tool (BF1102).
- Press the connector clip E, and disconnect the temperature servo motor connector (6).



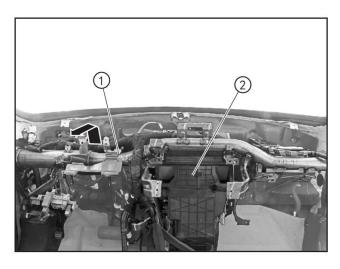
 Press the connector clip A, and disconnect the fan connector (1) outwards.



- Press the connector clip A, and disconnect the mode selection servo motor connector (1).
- Press the connector clip B, and disconnect the foot-blowing air outlet temperature sensor connector (2).

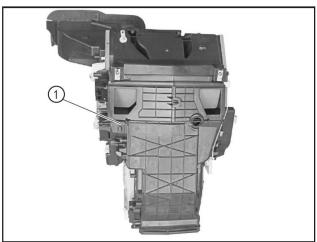


 Remove the 2 fixing bolts (1) (M8×25) of the instrument panel frame on the front passenger side with the 13mm socket.



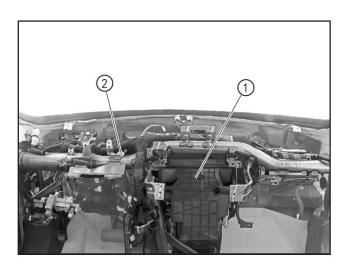
- Lift the instrument panel bracket to detach it from the fixed point. Move the instrument panel bracket (1) toward the rear of the vehicle.
- Remove the A/C assembly (2).

 When removing the A/C assembly, be careful not to scratch the body parts to avoid damage to the A/C housing.



4 - Check

Check the A/C assembly housing (1) for breakage or damage, and if any, replace the A/C housing assembly.

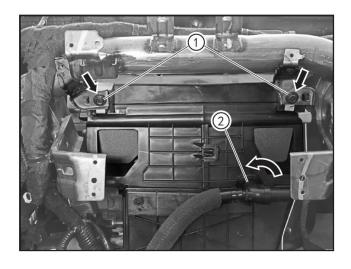


5- Refitting

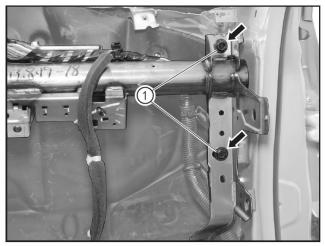
- Place the A/C assembly (1) in the mounting position.
- Lift the instrument panel bracket (2), and snap its left end to the fixing point on the vehicle body, align the threaded hole on the bracket with the threaded holes on the vehicle body, and then insert the fixing bolts.

A CAUTION

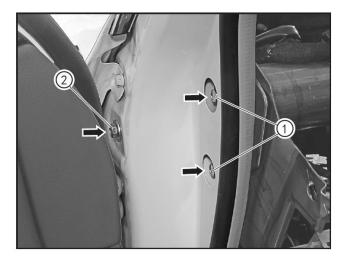
- When refitting the A/C assembly, be careful not to scratch the body parts to avoid damage to the A/C housing.
- When refitting the A/C assembly, check that the water outlet pipe on the A/C housing is aligned with the water outlet on the vehicle body.



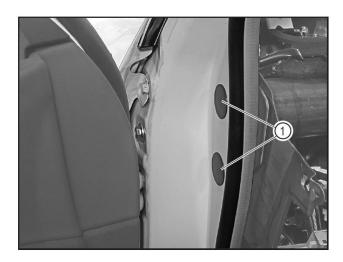
- Refit the fixing bolt (1) (M6x20) of the instrument panel bracket with the 10mm socket.
- Rotate the connecting joint of the air inlet pipe (2) counterclockwise to refit it in place.



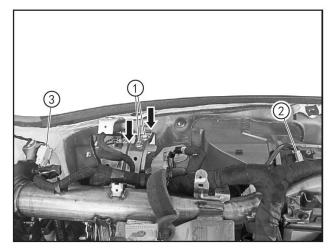
Tighten the 2 fixing bolts (1) (M8×25) of the instrument panel frame on the front passenger side with the 13mm socket to 27.5N·m.



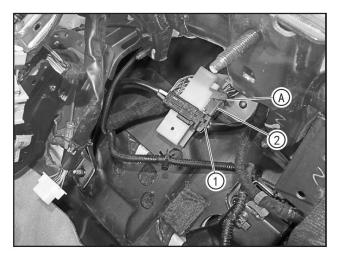
- Open the left front door to the limit.
- Tighten the left fixing bolt (1) (M8×40) of the instrument panel frame with the 12mm socket to 27.5N·m.
- Tighten the left fixing bolt (2) of the instrument panel bracket with the 13mm socket to 27.5N·m.



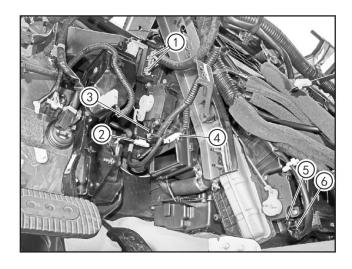
Install the bolt trim cap (1).



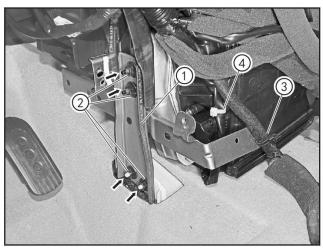
- Tighten the left upper fixing bolt (1) (M8×25) of the instrument panel frame with the 13mm socket.
- Connect the A/C temperature sensor connector (2) and the roof wire harness connector (3) in place.



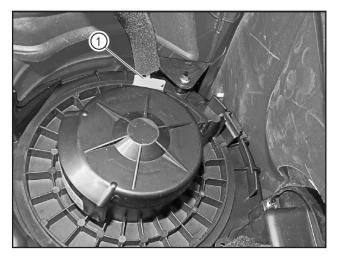
- Connect the cabin wire harness connector (1) in place.
- Turn the connector clip A counterclockwise, and then connect the cabin wire harness connector (2) in place.



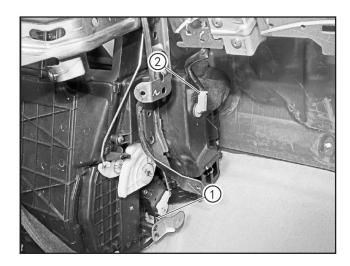
- Connect the fan connector (1), heater temperature sensor connector (2), internal/external circulation servo motor connector (3), evaporator temperature sensor connector (4) and temperature servo motor connector (5) in place.
- Snap the wire harness clip (6) of temperature servo motor connector into the A/C housing.



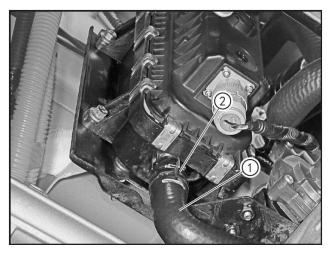
- Refit the left lower bracket (1) of instrument panel in place, and tighten the fixing nut (2) of the instrument panel left lower bracket with the 10mm socket to 27.5N·m.
- Snap the wire harness clip (3) to the instrument panel left lower bracket.
- Snap the wire harness clip (4) into the A/C housing.



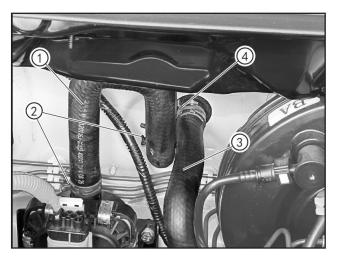
• Connect the fan connector (1) in place.



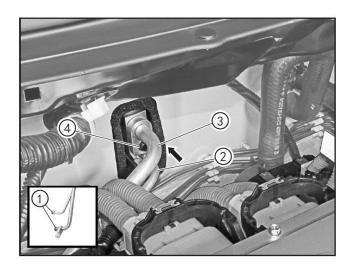
- Connect the mode selection servo motor connector (1) and the foot-blowing air outlet temperature sensor connector (2) in place.
- Refit the A/C ventilation pipe. (Refer to "Removal and Refitting of Ventilation Pipe")
- Refit the steering column assembly. (Refer to "Removal and Refitting of Steering Column Assembly")
- Install the console assembly. (Refer to "Removal and Refitting of Instrument Panel Assembly")



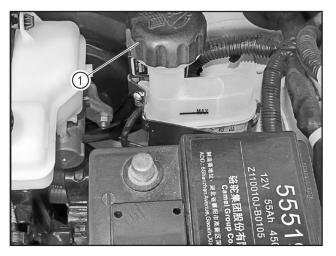
- Lift the vehicle to an appropriate height.
- Insert the heater water inlet pipe (1) into the mounting joint in place.
- Refit the hose clamp (2) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).



- Lower the vehicle as appropriate.
- Insert the heater water inlet pipe (1) into the mounting joint in place.
- Refit the hose clamp (2) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).
- Insert the heater water outlet pipe (3) into the mounting joint in place.
- Refit the hose clamp (4) in place and clip it securely with the hose clamp removal and refitting pliers (BF0109).



- Replace with a new O-ring (1) for the A/C pipe joint to be connected with the expansion valve
- Insert the A/C high-pressure pipe (2) and the A/C low-pressure pipe (3) into the mounting holes on expansion valve.
- Tighten the fixing bolts (4) of A/C pipe with the 10mm socket.



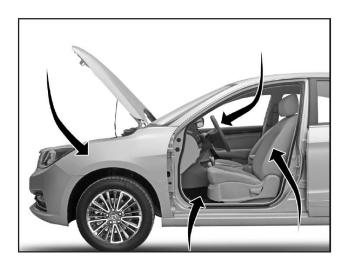
- Unscrew the reservoir cover (1) counterclockwise, and add coolant to MAX mark.
- Before tightening the reservoir cover (1), turn the ignition key to ON, turn on the A/C heating (HEAT) function to discharge the air in the A/C system. Pay attention that the coolant level will drop in the process of discharging, and please add coolant to MAX mark when appropriate, and when the coolant level is stabilized, turn the ignition key to OFF. Check if the coolant level drops when the coolant temperature reduces below 60°C, and if not, tighten the reservoir cover (1), otherwise, continue to add coolant.



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

A CAUTION

- After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.
- Check that the heater pipes are not leaking.

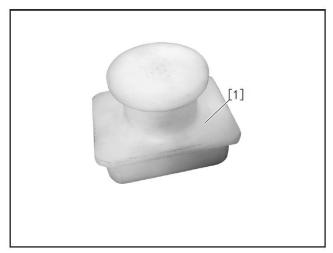


Removal and Refitting of Evaporator and Evaporator Temperature Sensor

1 - Protection

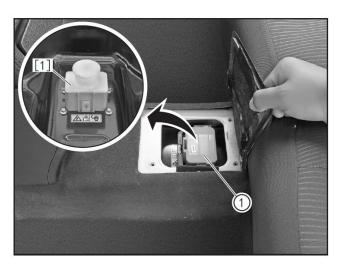
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- · Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Traction battery service switch plug (E700102)[1].



3 - Removal

A CAUTION

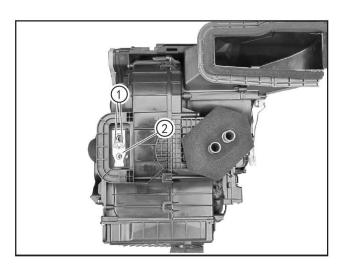
- Always wear insulated gloves and use insulated tools for all operations.
- Turn off the start switch and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

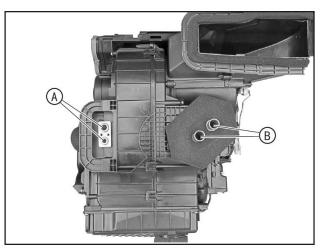
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Remove the A/C assembly. (Refer to "Removal and Refitting of A/C Assembly" in this section)





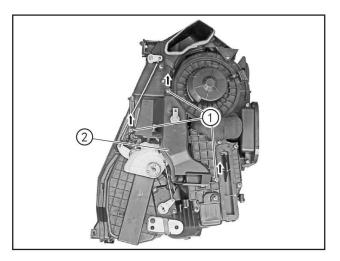


- Remove the expansion valve (2).

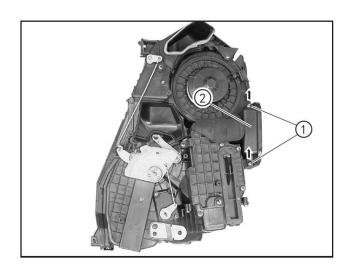


A CAUTION

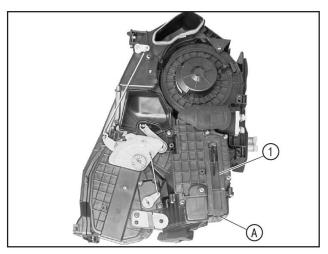
Block the cooling pipe orifice A and the heater water pipe orifice B with a clean cloth to prevent the A/C system from being contaminated.



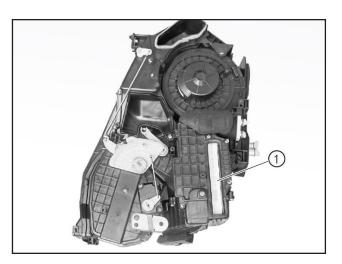
- Remove the fixing screw (1) of right foot-blowing air pipe with the Phillips screwdriver.
- Remove the right foot-blowing air pipe (2).



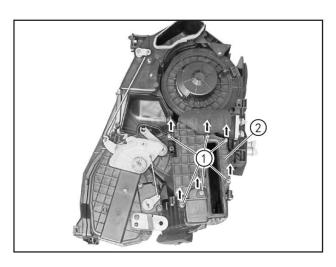
- Remove the fixing screw (1) of the expansion valve mount with the Phillips screwdriver.
- Remove the expansion valve mount (2).



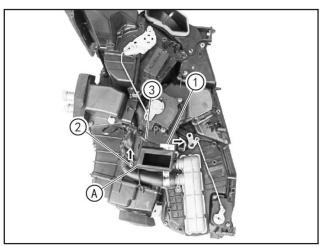
Detach the clip A of the A/C filter trim cover, and remove the A/C filter trim cover (1).



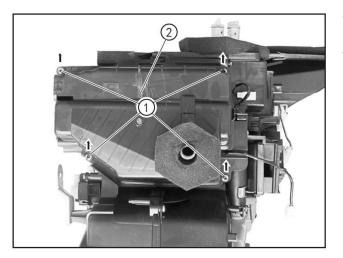
Take out the A/C filter element (1).



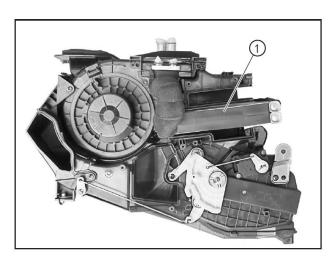
- Remove the fixing screw (1) of evaporator trim cover with the Phillips screwdriver.
- Remove the evaporator trim cover (2).



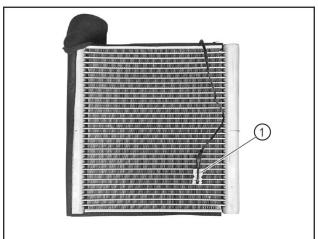
- Detach the evaporator temperature sensor connector (1) from the fixed end on A/C housing in the direction as indicated by the arrow.
- Remove the fixing screw (2) of left foot-blowing air outlet pipe with the Phillips screwdriver.
- Gently pull up the left foot-blowing air outlet A to remove the evaporator temperature sensor wire harness (3) from left foot-blowing air outlet A.



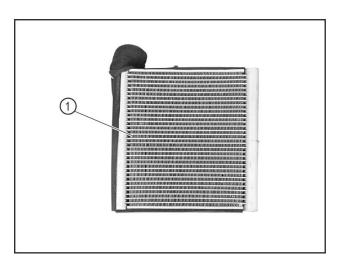
- Remove the fixing screw (1) of A/C lower housing with the Phillips screwdriver.
- Remove the A/C lower housing (2).



Remove the evaporator & evaporator temperature sensor assembly (1).

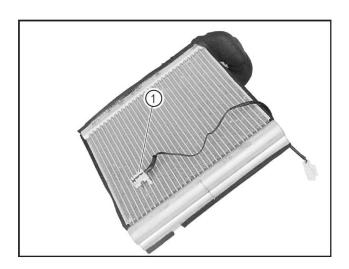


Pull out the evaporator temperature sensor (1).



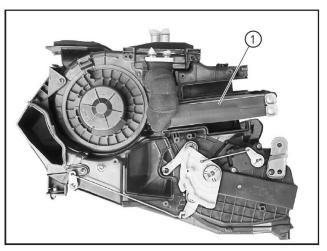
4 - Check

- If evaporator heat-conducting fin is found clogged, rinse the evaporator heat-conducting fin with water, and dry with high-pressure air.
- If the heat-conducting fin of evaporator (1) is found leaking or damaged, repair or replace the evaporator as appropriate.



5- Refitting

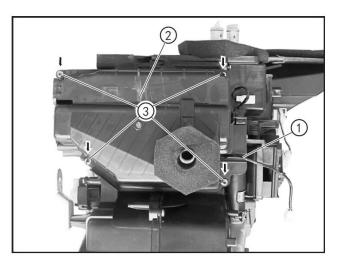
Press fit the evaporator temperature sensor (1) into the mounting holes on the evaporator in place after



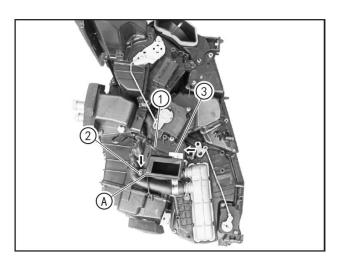
Refit the evaporator & evaporator temperature sensor assembly (1) to mounting surface.

A CAUTION

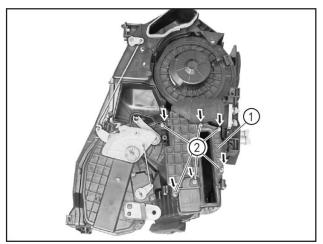
Prevent scratching the A/C housing to avoid damaging the evaporator heat-conducting fin.



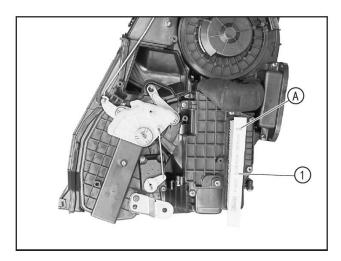
- Put the evaporator temperature sensor wire harness (1) in place.
- Position the A/C lower housing (2) on the mounting surface.
- Tighten the fixing screw (3) of A/C lower housing with the Phillips screwdriver.



- Gently pull up the left foot-blowing air outlet A to pass the evaporator temperature sensor wire harness (1) through left foot-blowing air outlet A.
- Tighten the fixing screw (2) of left foot-blowing air pipe with the Phillips screwdriver.
- Snap the evaporator temperature sensor connector (3) to the fixed end on A/C housing in the direction as indicated by the arrow.



- Refit the evaporator trim cover (1) onto the mounting surface.
- Tighten the fixing screw (2) of evaporator trim cover with the Phillips screwdriver.

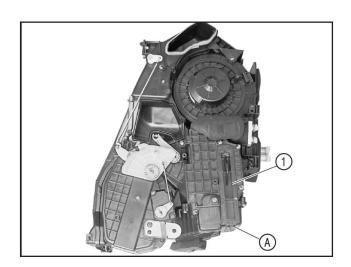


- Clean or replace the A/C filter and its element.
- Install the A/C filter (1) into the corresponding hole on the A/C assembly.

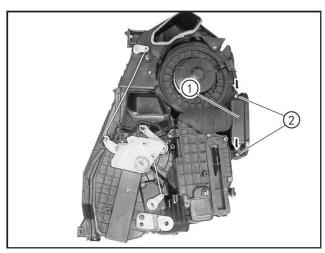
A CAUTION

 Refit the A/C filter element with the airflow as arrowed on it (A).

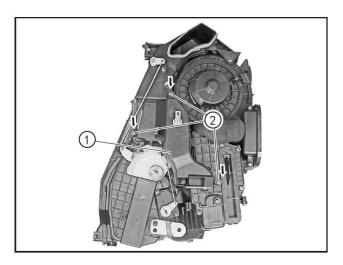




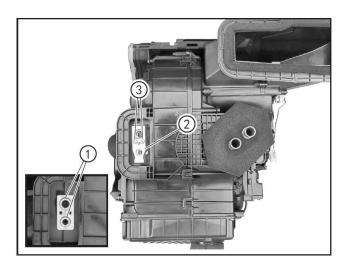
 Refit A/C filter trim cover (1), and snap the A.C filter trim cover to the clip at position A securely.



- Place the expansion valve mount (1) in the mounting position.
- Tighten the fixing screw (2) of the expansion valve mount with the Phillips screwdriver.



- Place the right foot-blowing air pipe (1) in the mounting position..
- Tighten the fixing screw (2) of right foot-blowing air pipe with the Phillips screwdriver.



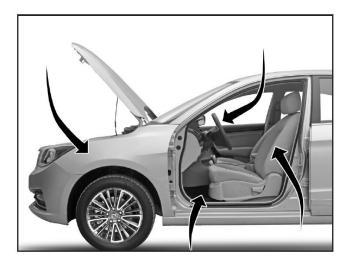
- Remove the cloth for blocking the pipe orifice, and replace with a new O-ring (1).
- Place the expansion valve (2) in the mounting position.
- Tighten the fixing bolt (3) of expansion valve with the T25 screwdriver bit.
- Refit the A/C assembly. (Refer to "Removal and Refitting of A/C Assembly" in this section)



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

A CAUTION

After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

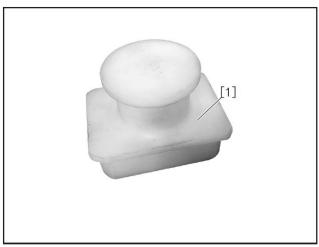


Removal and Refitting of A/C Heater Assembly

1 - Protection

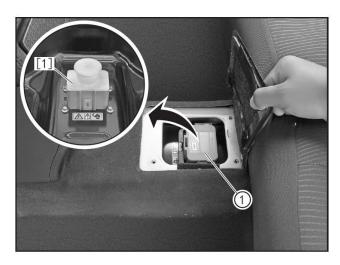
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Traction battery service switch plug (E700102)[1].



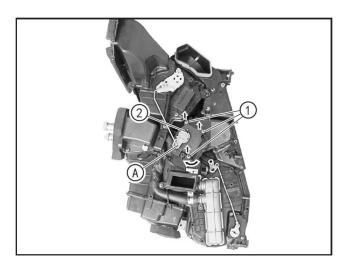
3 - Removal

A CAUTION

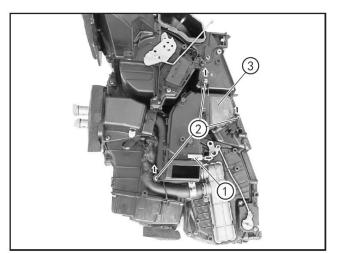
- Always wear insulated gloves and use insulated tools for all operations.
- Turn off the start switch and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

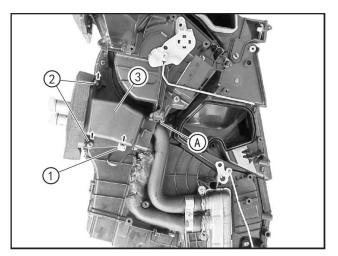
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Remove the A/C assembly. (Refer to "Removal and Refitting of A/C Assembly" in this section)



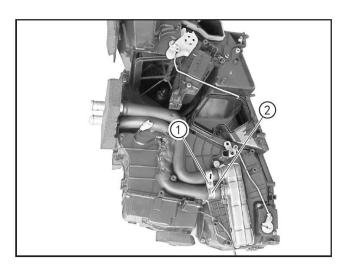
- Remove fixing screws (1) of temperature servo motor with the Phillips screwdriver.
- Rotate the servo motor clockwise to detach the fixed end A of link from the motor.
- Remove the temperature servo motor (2).



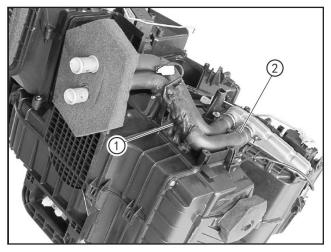
- Disconnect the evaporator temperature sensor connector (1) from the A/C housing rightwards.
- Remove the fixing screw (2) of left foot-blowing air outlet pipe with the Phillips screwdriver.
- Remove the left foot-blowing air pipe (3).



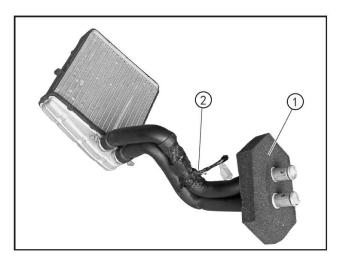
- Disconnect the heater temperature sensor connector (1) from the A/C housing upwards.
- Remove the fixing screws (2) of heater pipe holder with the Phillips screwdriver.
- Pry the clip A outwards, and remove the heater pipe holder (3).



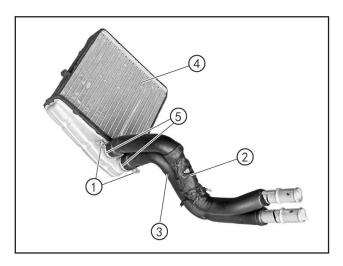
- Remove fixing screws (1) of heater pipe bracket with the Phillips screwdriver.
- Remove the bracket (2).



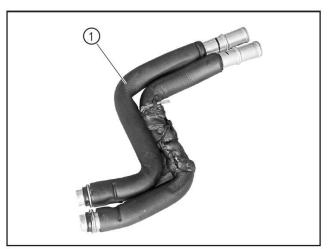
- Cut off the adhesive (1) between the heater pipe and the A/C housing with a knife carefully.
- Take out the A/C heater assembly (2).



- Remove the fan housing wear cover (1).
- Move away the adhesive around the heater water inlet pipe temperature sensor (2), and take out the heater water inlet pipe temperature sensor (2).

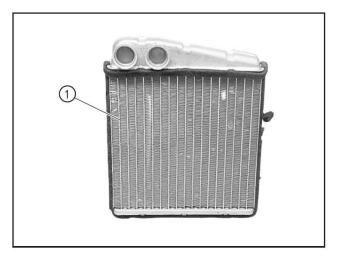


- Remove the fixing bolts (1) of heater water inlet/outlet pipe clamps with the T15 screwdriver bit.
- Detach the heater water inlet pipe (2) and the heater water outlet pipe (3) from the heater core (4).
- Remove the clamp (5).



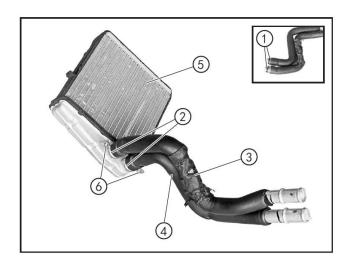
3 - Check

 Check the heater water pipe assembly (1) for damage or leakage, and any deformation at the pipe orifice connecting position. If any, replace the heater pipe.



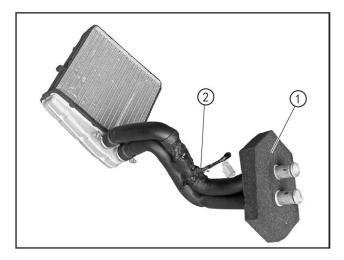
 Check the heater core (1) for any bump, damage, rust or leakage. Check if the heater core blade is deformed, or if there are any residues inside the heater core assembly. If any, repair or replace the heater core.



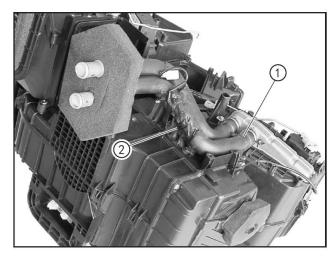


4- Refitting

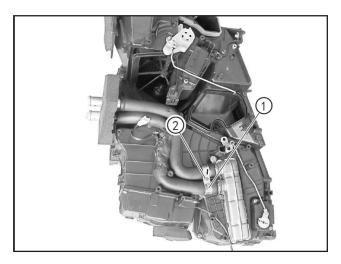
- Replace with 2 new seal rings (1) for the water pipe.
- Refit the clamp (1) to the water pipe joint on heater
- Refit heater water inlet pipe (3) and the heater water outlet pipe (4) to the heater core (5).
- Tighten the fixing bolt (6) of pipe clamps with the T15 screwdriver bit until the pipe is fitted securely and closely.



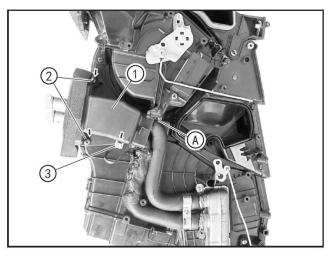
- Insert the fan housing wear cover 1) into the heater
- Refit the heater temperature sensor (2) to the heater water inlet pipe in place, and secure it with the adhesive.



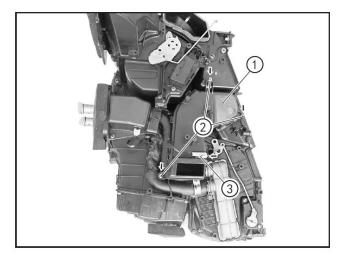
- Refit the A/C heater assembly (1) in place.
- Secure the heater pipe to the A/C housing with the adhesive (2).



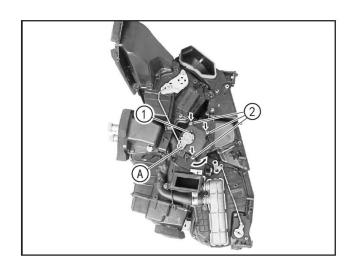
- Refit the heater pipe bracket (1) in place.
- Tighten the fixing screws (2) of heater pipe bracket with the Phillips screwdriver.



- Refit the heater pipe holder (1) in place and press the clip A to secure it in place.
- Tighten the fixing screws (2) of heater pipe holder with the Phillips screwdriver.
- Clamp the heater temperature sensor connector (3) to the fixing point on the A/C housing.



- Refit the right foot-blowing air pipe (1) in the mounting position.
- Clamp the evaporator temperature sensor connector
 (2) to the fixing point on the A/C housing.
- Tighten the fixing screw (3) of left foot-blowing air pipe with the Phillips screwdriver.



- Clamp the fixed end A of link to the fixing point on motor, and rotate the servo motor counterclockwise.
- Refit the A/C temperature servo motor (1) on the mounting surface.
- Tighten the fixing screws (2) of temperature servo motor with the Phillips screwdriver.

A CAUTION

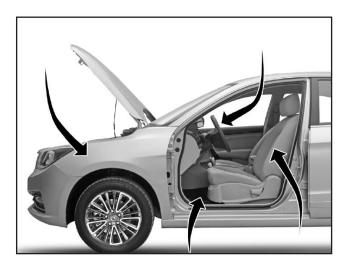
- Apply a small amount of grease to the rotating end of the servo motor link.
- Refit the A/C assembly. (Refer to "Removal and Refitting of A/C Assembly" in this section)



- Refit the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

A CAUTION

 After the installation is completed, connect the battery negative cable, turn the ignition key to ON, operate the A/C control panel, and check that all functions of A/C system are normal, and then connect the scan tool to clear DTCs.

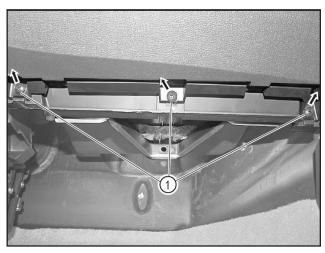


Removal and Refitting of Foot-blowing Air Outlet Temperature Sensor

1 - Protection

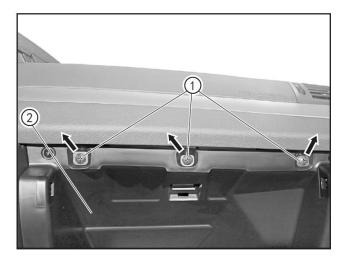
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

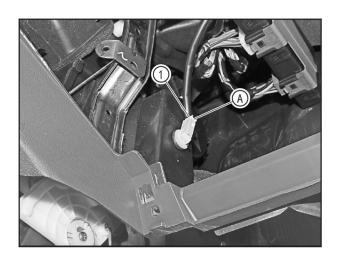


2 - Removal

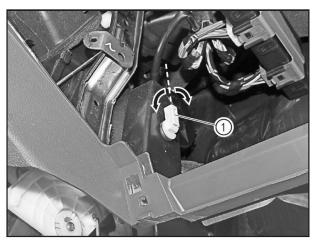
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the lower fixing screws (1) of glove box with the Phillips screwdriver.



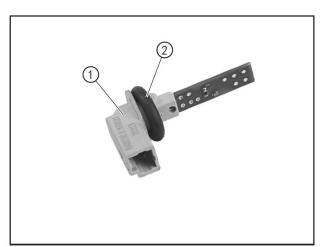
- Remove the upper fixing screws (1) of glove box with the Phillips screwdriver.
- Take out the glove box (2).



 Press the connector clip A, and disconnect the foot-blowing air outlet temperature sensor connector (1).

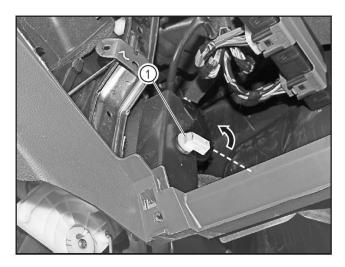


 Rotate clockwise or counterclockwise by 90° as shown, and take out the foot-blowing air outlet temperature sensor (1).



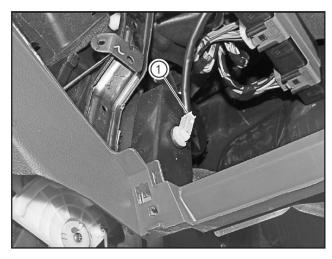
3 - Check

- Check the continuity between the two terminals of the foot-blowing air outlet temperature sensor (1), and if no, replace the foot-blowing air outlet temperature sensor.
- Check the seal (2) on the foot-blowing air outlet temperature sensor for damage, and if any, replace the seal of foot-blowing air outlet temperature sensor.

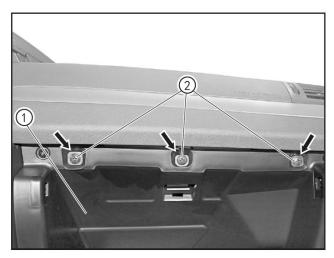


4- Refitting

 Insert the foot-blowing air outlet temperature sensor into the mounting surface (as shown) with mounting holes aligned, and rotate it by 90° to install the foot-blowing air outlet temperature sensor (1) in place.



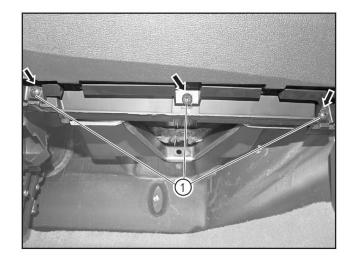
 Press the connector clip A, and disconnect the foot-blowing air outlet temperature sensor connector (1).



- Place the glove box (1) in the mounting surface.
- Tighten the upper fixing screws (2) of glove box with the Phillips screwdriver.







• Tighten the lower fixing screws (1) of glove box with the Phillips screwdriver.



Removal and Refitting of Side Air Outlet Temperature Sensor

1 - Protection

Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.



2 - Recommended tools

Interior trim removal tool (BF1102) [1].



3 - Removal

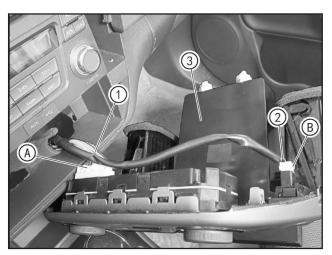
- Turn the ignition switch to "OFF", and disconnect the battery negative cable.
- Remove the fixing screw cap (1) of central panel frame with the interior trim removal tool (BF1102) [1].



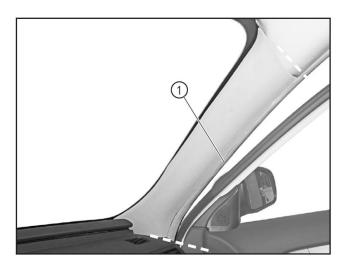
 Remove the fixing screws (1) of the central panel frame with the Phillips screwdriver.



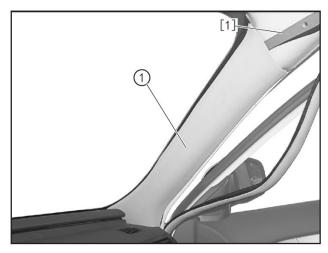
Remove the central panel frame (1) by the interior trim removal tool (BF1102) [1].



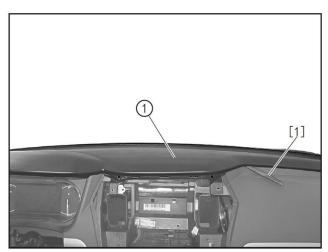
- Press the clip A of the A/C control panel connector, and disconnect the A/C control panel connector (1) outwards.
- Press down hazard warning lamp switch connector locking clip B, and disconnect the hazard warning lamp switch connector (2) outwards.
- Remove the central panel frame (3).



- Open the front door and disengage the door sealing strip (1) from the dotted line.
- Remove the door sealing strip on the other side following the same method.

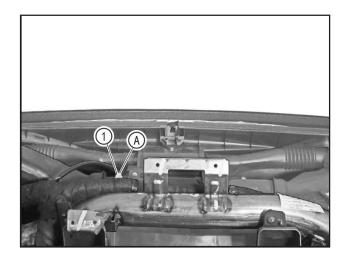


Remove the front pillar upper trim panel (1) with the interior trim removal tool (BF1102) [1]. (1 pcs on each side)

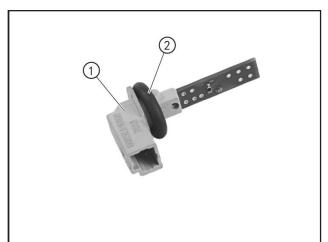


Remove the instrument panel upper cover plate (1) with the interior trim removal tool (BF1102) [1].



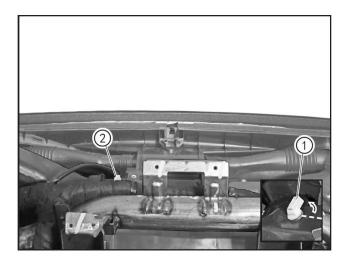


Press the connector clip A, detach the side air outlet temperature sensor (1), rotate it leftward or rightward by 90°, and remove the side air outlet temperature sensor.



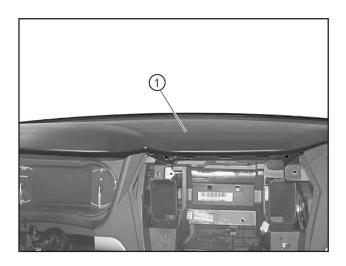
4 - Check

- Check the continuity between the two terminals of the side air outlet temperature sensor (1), and if no, replace the side air outlet temperature sensor.
- Check the seal (2) on the side air outlet sensor for damage, and if any, replace the seal of side air outlet temperature sensor.

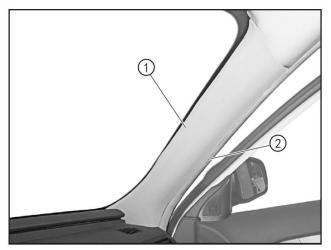


5- Refitting

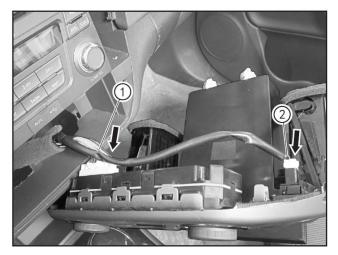
- Insert the side air outlet temperature sensor into the mounting surface with mounting holes aligned, and rotate it by 90° to install the side air outlet temperature sensor (1) in place.
- Connect the side air outlet temperature sensor connector (2) in place.



Press fit the instrument panel upper cover plate (1) in place after aligning the clips thereon with the fixing points on the instrument panel.



- Press fit the front pillar upper trim panel (1) in place after aligning the clips thereon with the mounting holes on the front pillar. (1 pcs on each side)
- Open the front door, and install the sealing strip in place.



- Connect the A/C control panel connector (1) in place.
- Connect the hazard warning lamp switch connector (2) in place.



 Press fit the central panel frame (1) in place after aligning the clips thereon with the fixing points on the instrument panel.



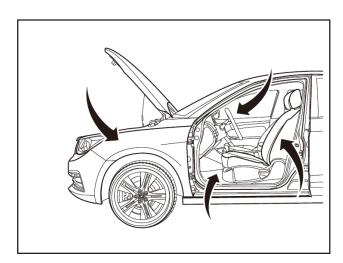
Tighten the fixing screws (1) of the central panel frame with the Phillips screwdriver.



 Press fit the fixing screw cap (1) of the center panel frame in place.

A CAUTION

After the installation is completed, connect the battery negative cable, turn the ignition key to ON, and check that all functions are normal, and then connect the scan tool to clear DTCs. Carry out a road test to check that there is no unusual noise.

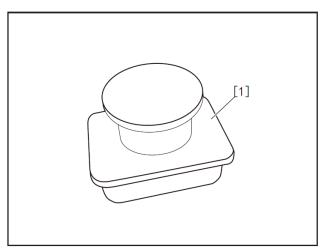


Change of Heating System Coolant

1 - Protection

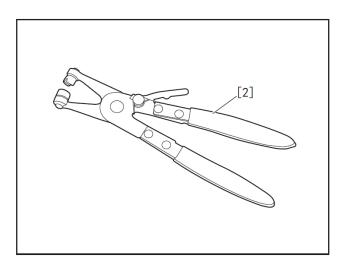
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

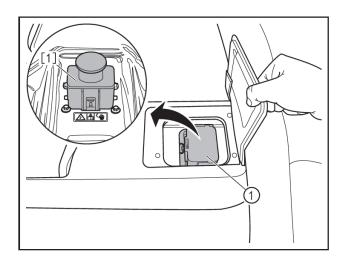


2 - Special tools

• Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109) [2].



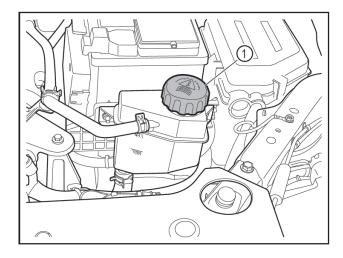
3 - Removal

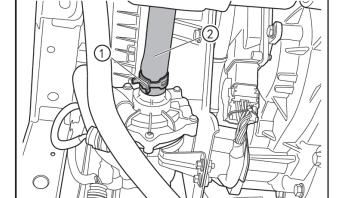
A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- $\boldsymbol{\cdot}$ Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Open the expansion tank cover (1) of heater system.

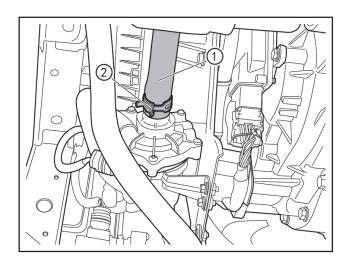




- Lift the vehicle as appropriate.
- Place a container below the heater water pump.
- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the heater water tank water return pipe (2) from the connecting joint on heater water pump.
- Drain the coolant from the heating system.

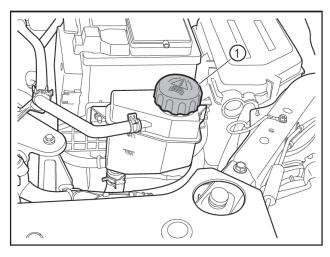
▲ CAUTION

Upon drainage of coolant, wipe off the residual liquid around the heater water tank water return pipe with a cleaning cloth, in order to check coolant for leakage again.



4- Refitting

- Refit the end of heater water tank water return pipe
 (1) to the heater water return pipe in place.
- Move the heater water tank water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

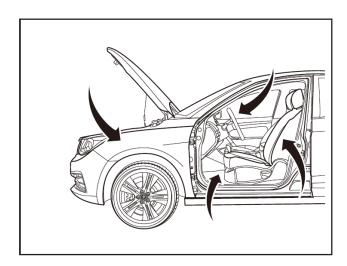


- Lower the vehicle, install the coolant filling barrel (BF0104) and add the coolant to the level between MAX and MIN marks of the expansion tank.
- Remove the coolant filling barrel (BF0104) and tighten the expansion tank cover (1).

A CAUTION

 After the coolant filling is completed, check the coolant pipeline for leakage; if so, remove and refit the pipeline.

- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

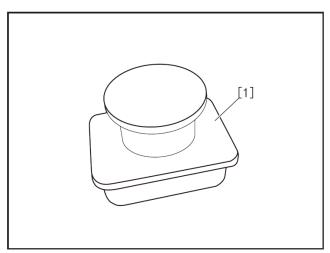


Replacement of Heating System Expansion Tank

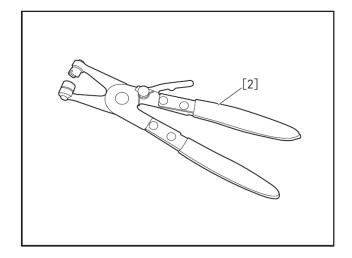
1 - Protection

Place protective pads at following locations:

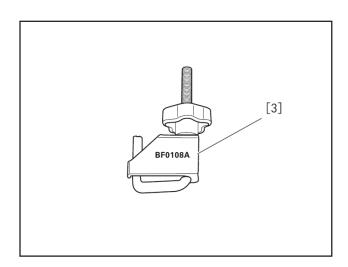
- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



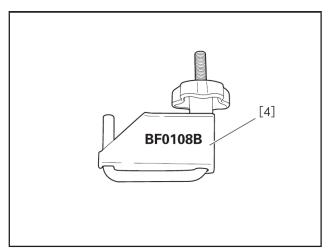
- 2 Special tools
- Traction battery service switch plug (E700102)[1].



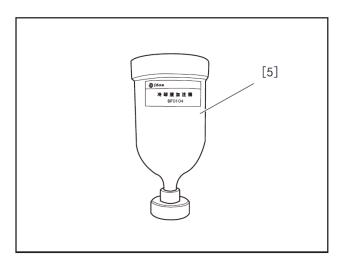
Hose clamp removal and refitting pliers (BF0109)
 [2].



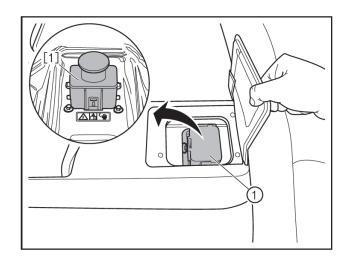
Hose pincers (BF0108A) [3].



Hose pincers (BF0108B) [4].



Coolant filling barrel (BF0104) [5].

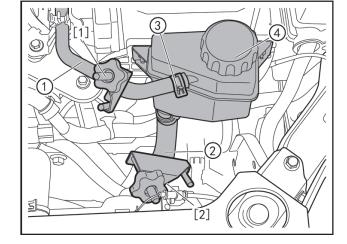


A CAUTION

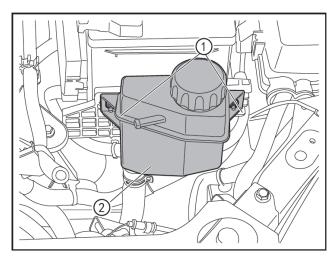
- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
 - Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

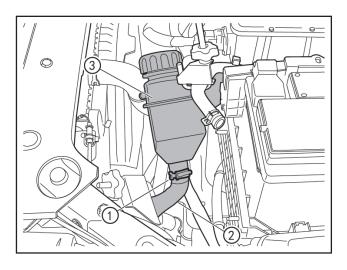
A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Hold down the expansion tank water inlet pipe (1) with the hose clamp pliers [1] (BF0108A).
- Hold down the expansion tank water outlet pipe (2) with the hose clamp pliers [2] (BF0108B).
- Open the expansion tank cover, and suck the coolant in the expansion tank with the sucker, and then screw the expansion tank cover.
- Move back the clamp (3) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water inlet pipe (1) from the connecting joint on expansion tank (4).

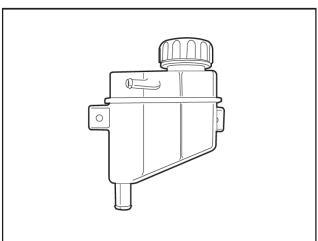


 Remove the 2 fixing nuts (1) of expansion tank with the 10mm socket, and detach the expansion tank (2) from the battery bracket.



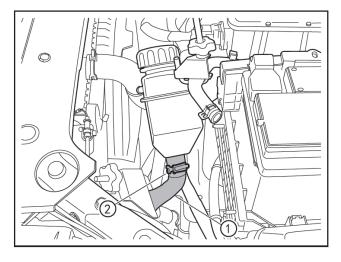


- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water outlet pipe (2) from the connecting joint on expansion tank (2).
- Remove the expansion tank (3).

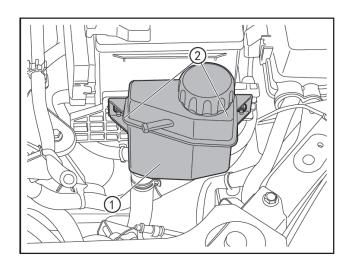


4 - Check

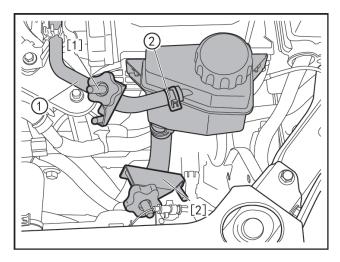
 Check the expansion tank (1) for cracks and breakage, and if any, replace it.



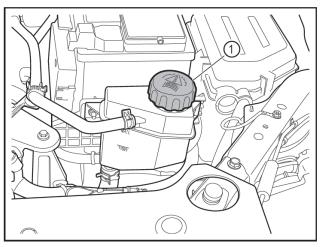
- Refit the end of expansion tank water outlet pipe (1) to the expansion tank in place.
- Move the expansion tank water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).



- Insert the expansion tank (1) onto the fixing stud of battery bracket after alignment, and install the expansion tank fixing nut (2).
- Tighten the fixing nut (2) of the expansion tank with the 10mm socket.



- Refit the end of expansion tank water inlet pipe (1) to the expansion tank in place.
- Move the expansion tank water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).
- Remove the hose clamp pliers [1] and hose clamp pliers [2]

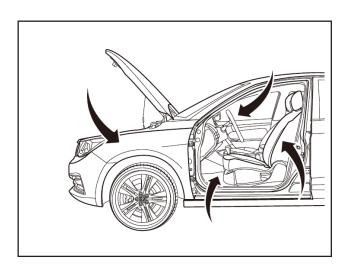


- Install the coolant filling barrel (BF0104) and add the motor coolant to the level between MAX and MIN marks of the expansion tank.
- Remove the coolant filling barrel (BF0104) and tighten the expansion tank cover (1).

A CAUTION

 After the coolant filling is completed, check the coolant pipeline for leakage; if so, remove and refit the pipeline.

- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

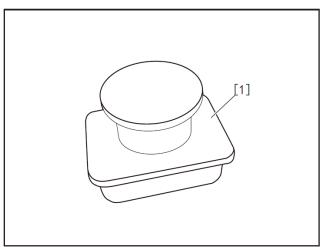


Removal and Refitting of Heating System Expansion Tank water Inlet Pipe

1 - Protection

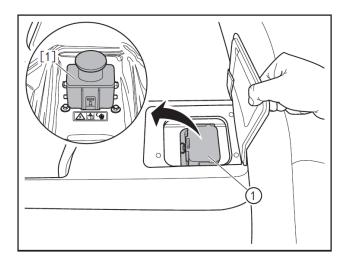
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.



2 - Special tools

Traction battery service switch plug (E700102)[1].



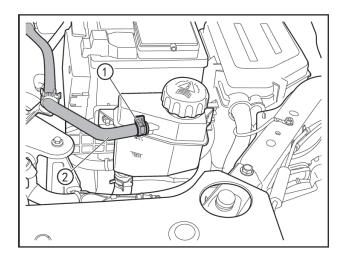
3 - Removal

A CAUTION

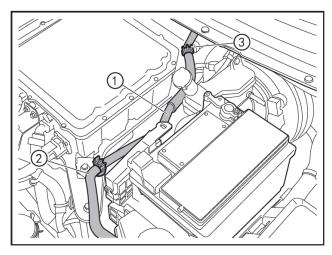
- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

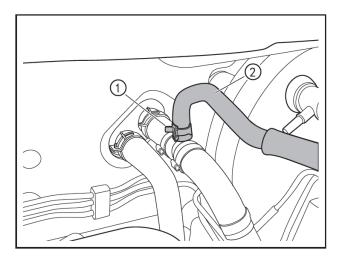
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.



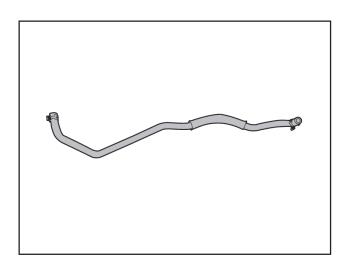
Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water inlet pipe (2) from the connecting joint on the expansion tank.



Unlock the bracket clip, and detach the expansion tank water inlet pipe (1) from the bracket (2) and the bracket (3).

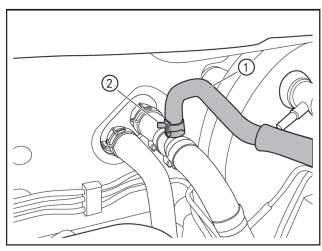


- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water inlet pipe (2) from the connecting joint on heater water tank water turn pipe.
- Take down the expansion tank water inlet pipe (2).



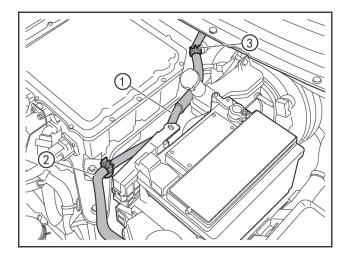
4 - Check

 Check the expansion tank water inlet pipe (1) for corrosion, breakage and aging, and if any, replace it.

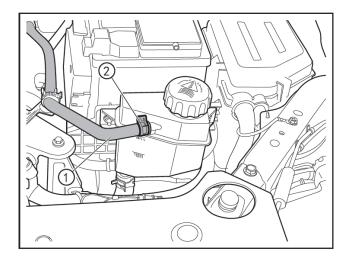


5- Refitting

- Refit the end of expansion tank water inlet pipe (1) to the heater water tank water turn pipe in place.
- Move the expansion tank water inlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

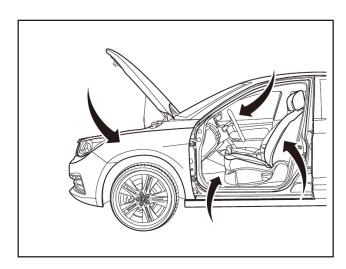


 Clamp the expansion tank water inlet pipe (1) into the bracket (2) and the bracket (3), and then lock the bracket clip.



- Refit the end of expansion tank water inlet pipe (1) to the expansion tank in place.
- Move the expansion tank water inlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

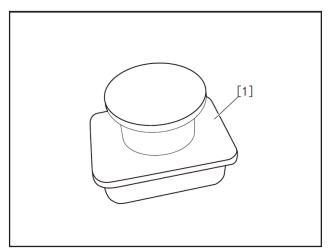


Removal and Refitting of Heating System Expansion Tank water Outlet Pipe

1 - Protection

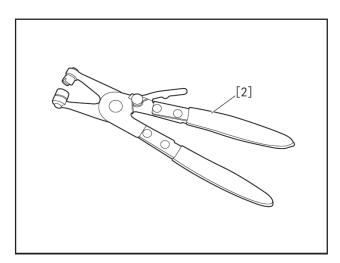
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

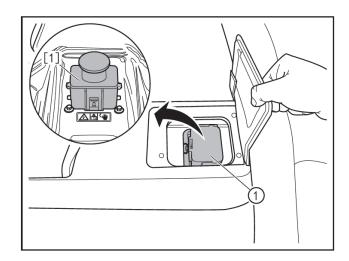


2 - Special tools

• Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109)
 [2].

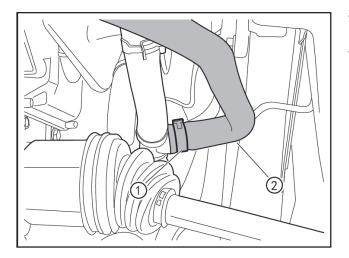


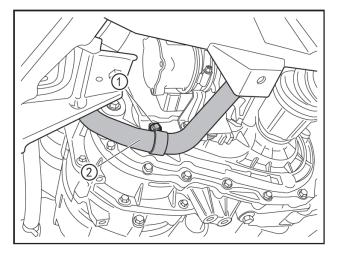
A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

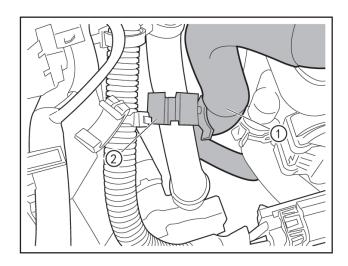
A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Drain the coolant from the heating system. (Refer to "Change of Heating System Coolant" in this section)
- Pry and remove the clamp (1) of expansion tank water outlet pipe with the slotted screwdriver, and disconnect the expansion tank water outlet pipe (2) from the heater water tank water return pipe.

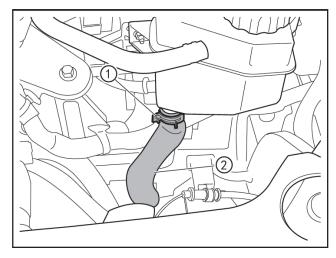




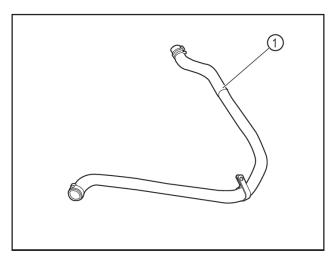
- Remove the fixing bolt (1) (M6x12) of the expansion tank water outlet pipe bracket with the 8mm socket.
- Disconnect the expansion tank water outlet pipe (2) from reducer.



 Detach the expansion tank water outlet pipe (1) from the bracket (2).

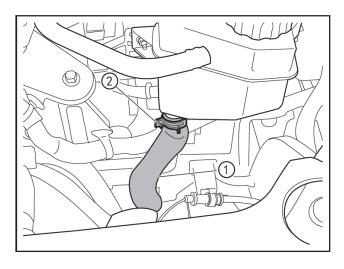


- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water outlet pipe (2) from the connecting joint on the expansion tank.
- Take down the expansion tank water outlet pipe (2).

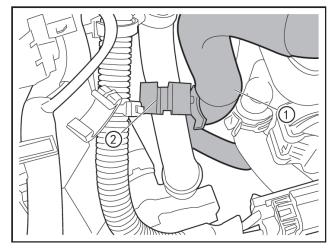


4 - Check

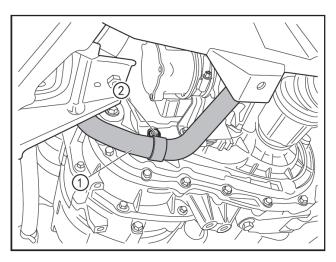
 Check the expansion tank water outlet pipe (1) for corrosion, breakage and aging, and if any, replace it.



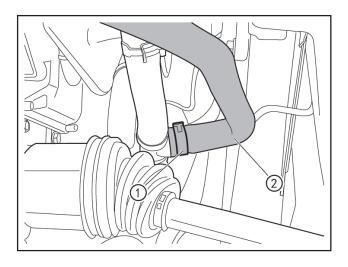
- Refit the end of expansion tank water outlet pipe (1) to the heater water tank in place.
- Move the expansion tank water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).



• Snap the expansion tank water outlet pipe (1) onto the bracket (2).

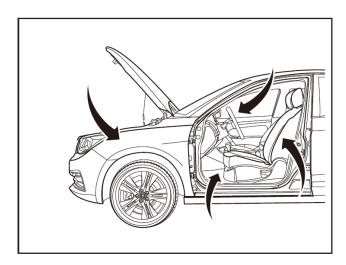


- Lift the vehicle as appropriate.
- Align the bracket of expansion tank water outlet pipe (1), and install its fixing bolt (2) (M6×12).
- Tighten the fixing bolt of the expansion tank water outlet pipe bracket with the 8mm socket.



- Replace with a new clamp (1) for expansion tank water outlet pipe, and sleeve it onto the pipe.
- Refit the end of expansion tank water outlet pipe (2) to the heater water return pipe in place.
- Secure the expansion tank water outlet pipe clamp (1) with the clamp pliers.

- Add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- · Connect the battery negative cable.

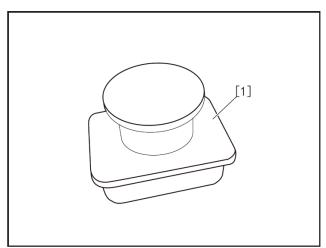


Removal and Refitting of Heater Water Pump

1 - Protection

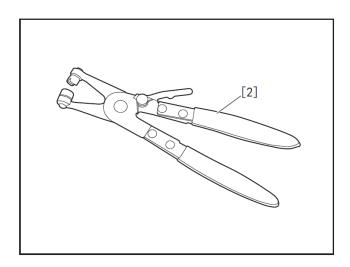
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

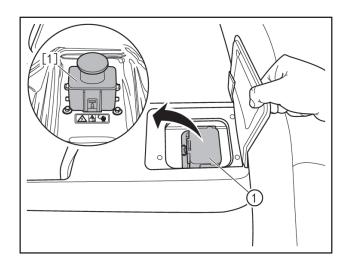


2 - Special tools

Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109)
 [2].

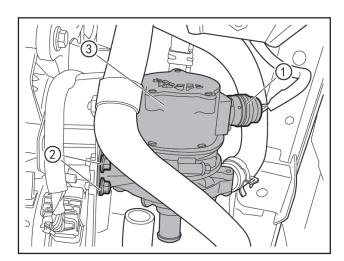


A CAUTION

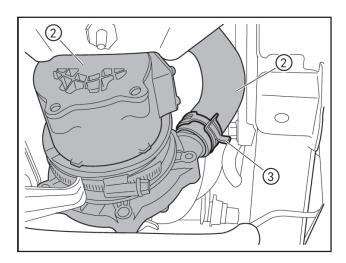
- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

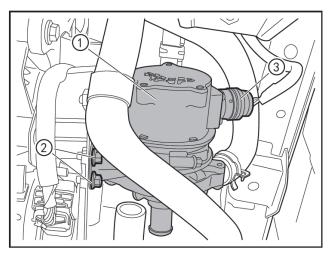
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Drain the coolant from the heating system. (Refer to "Change of Heating System Coolant" in this section)
- Rotate the heater water pump connector (1) counterclockwise to disconnect it.
- Remove the 4 fixing bolts (2) (M6x12) (2 on upper part and lower part respectively) of the water pump bracket with the 8mm socket.
- Disconnect the heater water pump (3) from the reducer.



- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the PTC heater water inlet pipe (2) from the connecting joint on heater water pump.
- Remove the heater water pump (3).

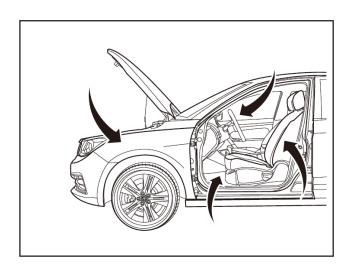


- Refit the end of PTC heater water inlet pipe (1) to the heater water pump (2) in place.
- Move the PTC heater water inlet pipe clamp (3) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).



- Refit the heater water pump (1) to the reducer after alignment, and install all the fixing bolts (2) (4 pcs in total).
- Tighten the 4 fixing bolts (2) (M6x12) of the water pump bracket with the 8mm socket.
- Rotate the heater water pump connector (3) clockwise to refit it.

- Add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

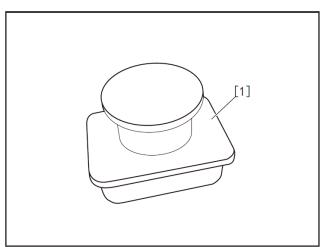


Removal and Refitting of PTC Heater Water Inlet Pipe

1 - Protection

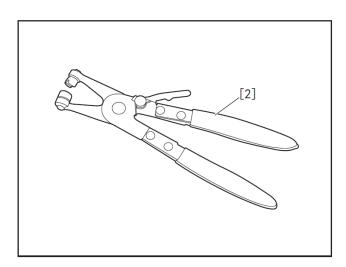
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

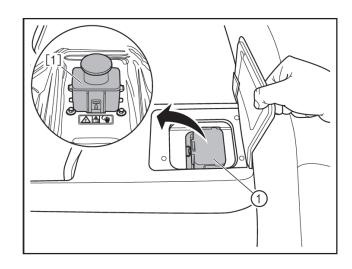


2 - Special tools

• Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109)
 [2].

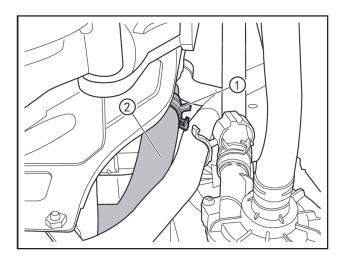


A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

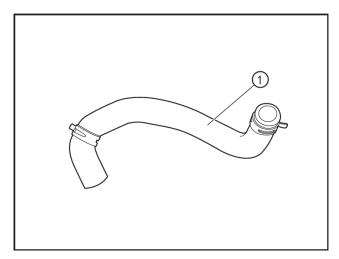
A CAUTION

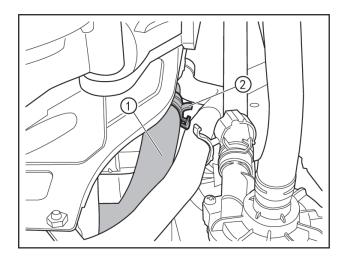
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Remove the heater water pump. (Refer to "Removal and Refitting of Heater Water Pump" in this section)
- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the PTC heater water inlet pipe (2) from the connecting joint on PTC heater.
- Remove the PTC heater water inlet pipe (2).



4 - Check

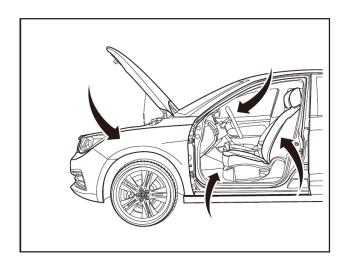
 Check the PTC heater water inlet pipe (1) for corrosion, breakage and aging, and if any, replace it.





- Refit the end of PTC heater water inlet pipe (1) to the PTC heater in place.
- Move the PTC heater water inlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

- Refit the heater water pump. (Refer to "Removal and Refitting of Heater Water Pump" in this section)
- Lower the vehicle and add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- · Connect the battery negative cable.

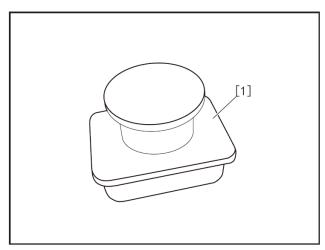


Removal and Refitting of PTC Heater Water Outlet Pipe

1 - Protection

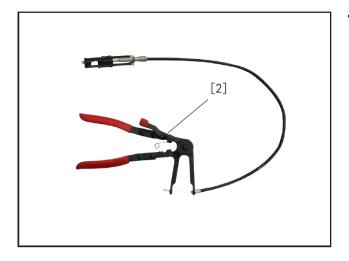
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

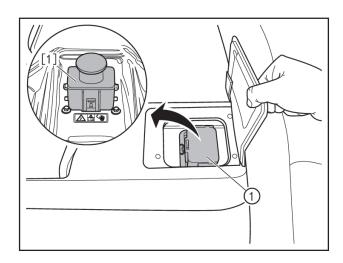


2 - Special tools

Traction battery service switch plug (E700102)[1].



Hose clamp pliers (AX70206) [2].

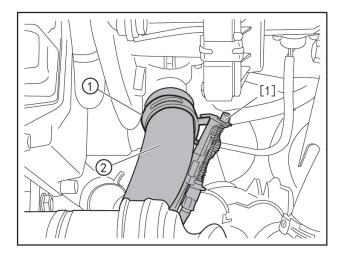


A CAUTION

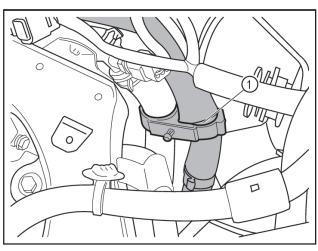
- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

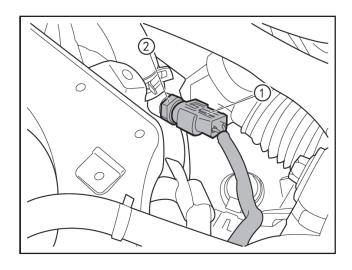
A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Drain the coolant from the heating system. (Refer to "Change of Heating System Coolant" in this section)
- Hold the clamp (1) with the hose clamp pliers [1] (AX70206), and disconnect the PTC heater water outlet pipe (2) from the PTC heater.

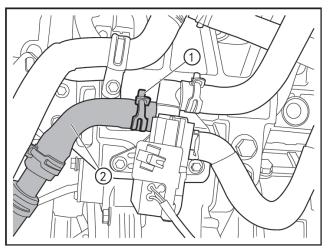


 Detach the PTC heater water outlet pipe (1) from the bracket (1).

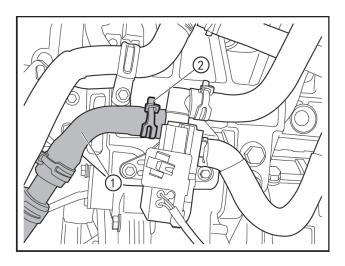




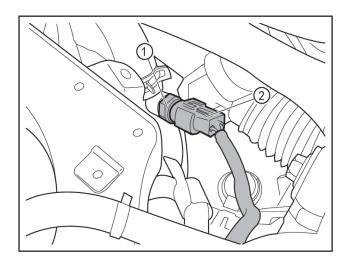
- Disconnect the water temperature sensor connector (1).
- Remove the water temperature sensor (2) with the 19mm open-end wrench.



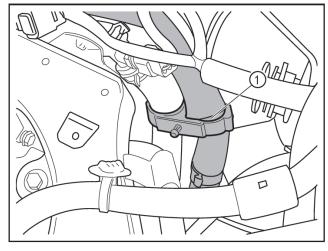
- Hold the clamp (1) with the hose clamp pliers (AX70206), and disconnect the PTC heater water outlet pipe (2) from the connecting joint on three-way water valve.
- Remove PTC heater water outlet pipe (2).



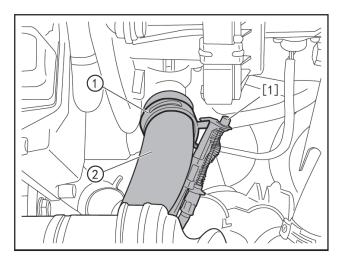
- Refit the end of PTC heater water outlet pipe (1) to the three-way water valve in place.
- Move the PTC heater water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).



- Refit the water temperature sensor (1), and tighten the water temperature sensor (1) with the 19mm open-end wrench.
- Connect the water temperature sensor connector (2).

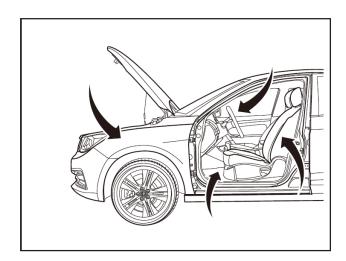


Clamp the PTC heater water outlet pipe (1) into the bracket (1).



- Hold the clamp (1) with the hose clamp pliers [1] (AX70206), and refit the PTC heater water outlet pipe (2) to the PTC heater in place.
- Move the clamp (1) to the white area and snap it into position, and remove the hose clamp pliers [1].

- Add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

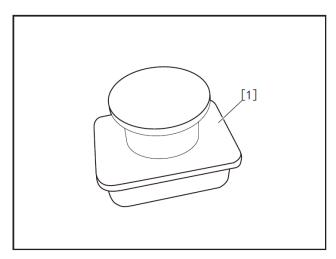


Removal and Refitting of PTC Heater

1 - Protection

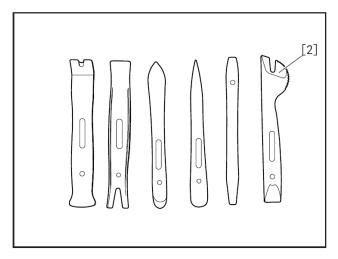
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

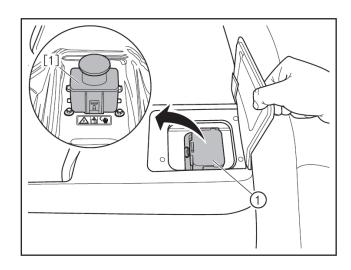


2 - Special tools

• Traction battery service switch plug (E700102)[1].



Interior trim removal tool (BF1102) [2].

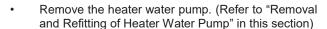


A CAUTION

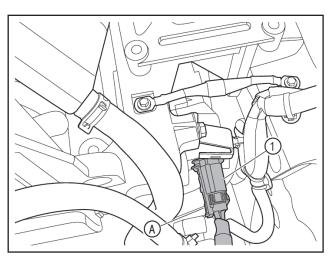
- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

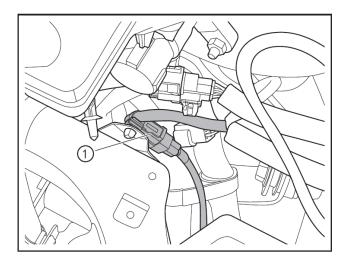
A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.

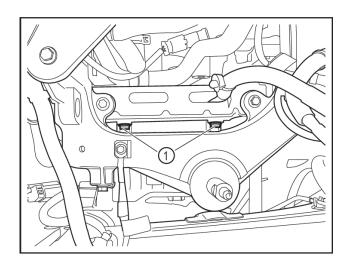


- Remove the left mounting of motor. (Refer to "Motor Left Mounting" in "Motor Makeup")
- Unlock the white clip A outwards, press the connector clip, and disconnect the PTC heater power line connector (1).

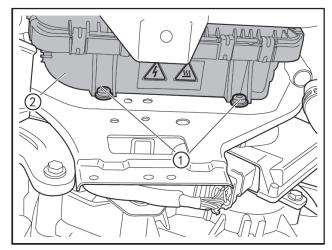




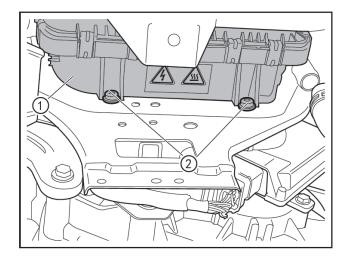
- Detach the PTC heater signal line connector from the motor bracket with the interior trim removal tool (BF1102).
- Press the connector clip, and disconnect the PTC heater signal line connector (1).



 Remove the 2 fixing bolts (1) (M8x25) at the upper part of PTC heater with the T40 screwdriver bit.

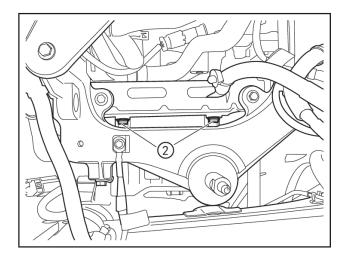


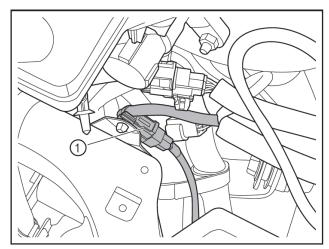
- Remove the 2 fixing bolts (1) (M8x25) at the lower part of PTC heater with the T40 screwdriver bit.
- Take out PTC heater (2).



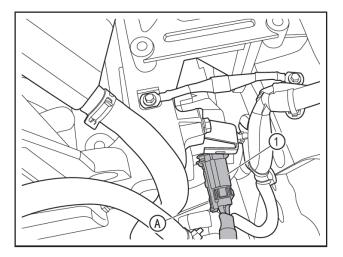
4- Refitting

- Refit the PTC heater (1) onto PTC heater bracket after alignment.
- Install the 4 fixing bolts (2) of PTC heater.

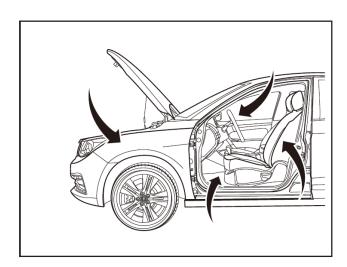




• Connect the PTC heater signal line connector (1), and snap the connector into the motor bracket.



- Connect PTC heater power line connector (1), and push in the white clip A.
- Refit the left mounting of motor. (Refer to "Motor Left Mounting" in "Motor Makeup")
- Refit the heater water pump. (Refer to "Removal and Refitting of Heater Water Pump" in this section)
- Lower the vehicle and add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

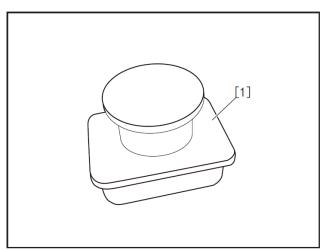


Removal and Refitting of Heater Water Tank Water Inlet Pipe

1 - Protection

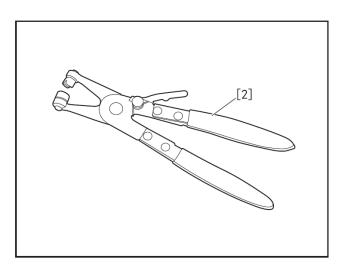
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

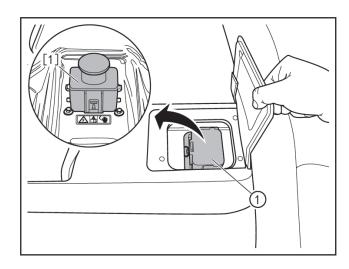


2 - Special tools

Traction battery service switch plug (E700102)[1].



• Hose clamp removal and refitting pliers (BF0109) [2].

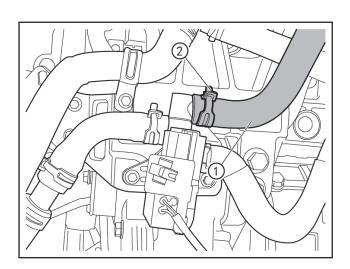


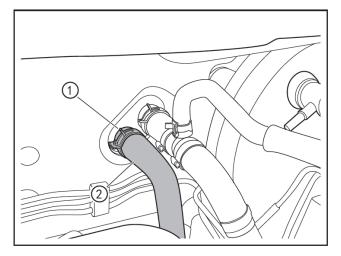
A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

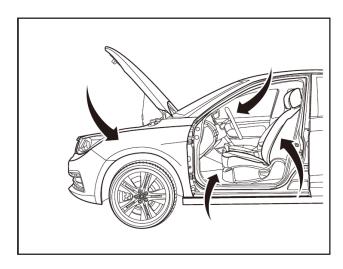
A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Lift the vehicle and drain the coolant from the heating system. (Refer to "Change of Heating System Coolant" in this section)
- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the heater water tank water inlet pipe (2) from the connecting joint on three-way water valve.





- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the heater water tank water inlet pipe (2) from the connecting joint on heater water tank.
- Take down the heater water tank water inlet pipe (2).

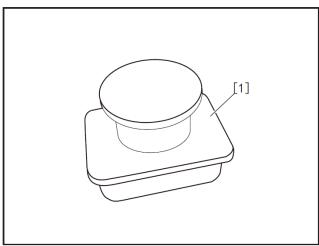


Removal and Refitting of Heater Water Tank Water Return Pipe

1 - Protection

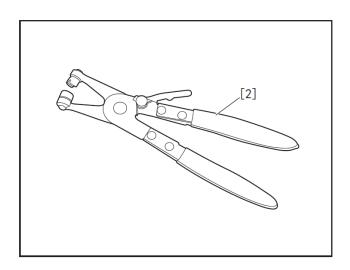
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

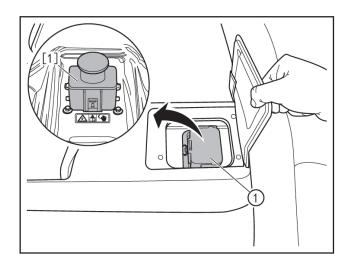


2 - Special tools

• Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109)
 [2].

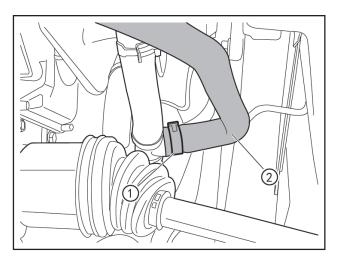


A CAUTION

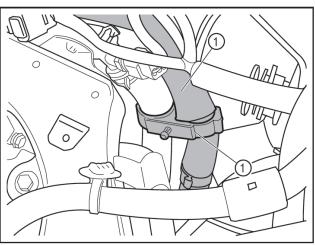
- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

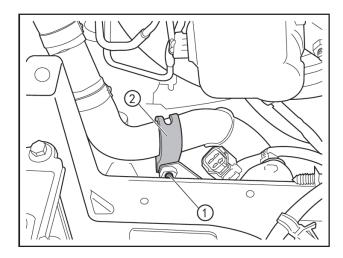
A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Lift the vehicle and drain the coolant from the heating system. (Refer to "Change of Heating System Coolant" in this section)
- Pry and remove the clamp (1) of expansion tank water outlet pipe with the slotted screwdriver, and disconnect the expansion tank water outlet pipe (2) from the heater water tank water return pipe.

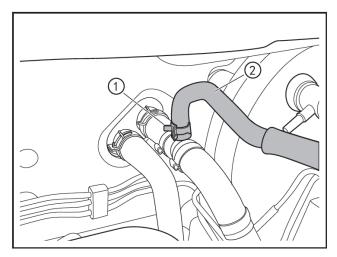


 Detach the heater water tank water return pipe (1) from the bracket (2).

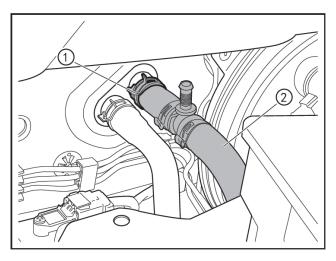




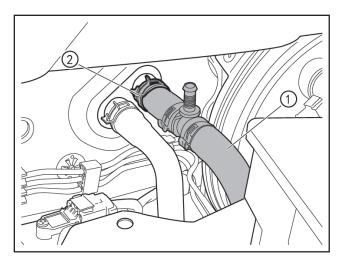
- Remove the fixing bolt (1) (M6x20) of the heater water tank water return pipe bracket with the 8mm socket.
- Detach the heater water tank water return pipe bracket (2) from the water pipe bracket on the motor bracket.



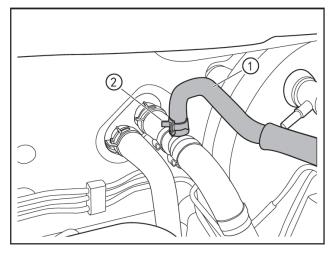
- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water inlet pipe (2) from the connecting joint on heater water tank water turn pipe.
- Take down the expansion tank water inlet pipe (2).



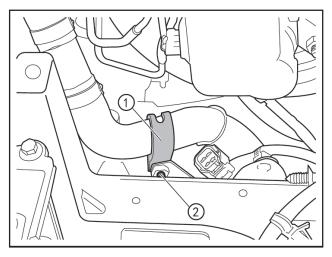
- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water inlet pipe (2) from the connecting joint on the expansion tank water return pipe.
- Take down the expansion tank water return pipe (2).



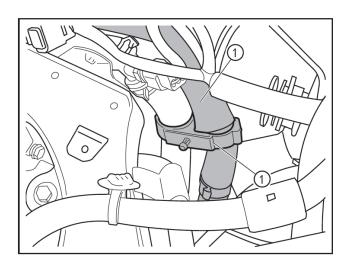
- Refit the end of heater water tank water return pipe
 (1) to the heater water tank in place.
- Move the heater water tank water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).



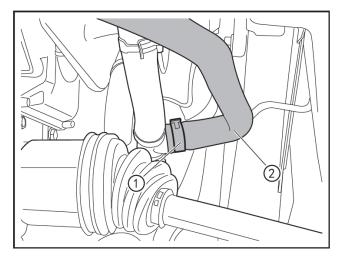
- Refit the end of expansion tank water inlet pipe (1) to the heater water tank water turn pipe in place.
- Move the expansion tank water inlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).



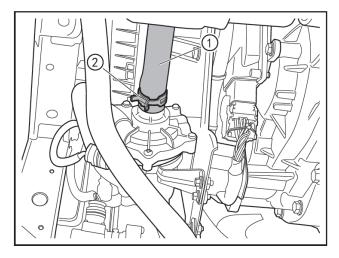
- Refit the heater water tank water return pipe bracket (1) to the water pipe bracket on the motor bracket, and install its fixing bolt (2).
- Tighten the fixing bolt of the heater water tank water return pipe bracket with the 8mm socket.



 Snap the heater water tank water return pipe (1) into the bracket (2).

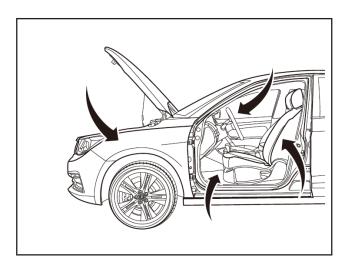


- Replace with a new clamp (1) for expansion tank water outlet pipe, and sleeve it onto the pipe.
- Refit the end of expansion tank water outlet pipe (2) to the heater water return pipe in place.
- Secure the expansion tank water outlet pipe clamp (1) with the clamp pliers.



- Refit the end of heater water tank water return pipe (1) to the heater water return pipe in place.
- Move the heater water tank water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

- Lower the vehicle and add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

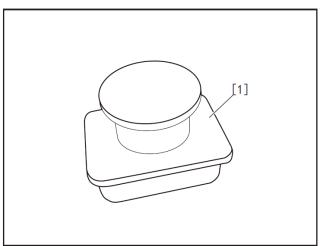


Removal and Refitting of Three-way Water Valve

1 - Protection

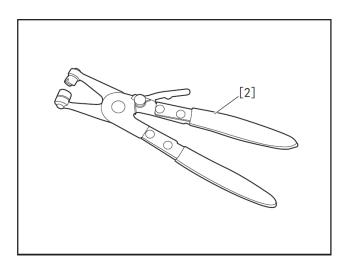
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

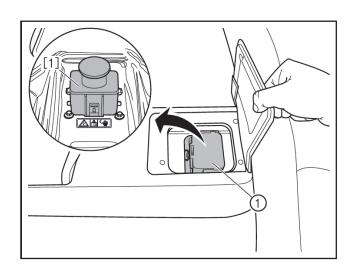


2 - Special tools

• Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109)
 [2].

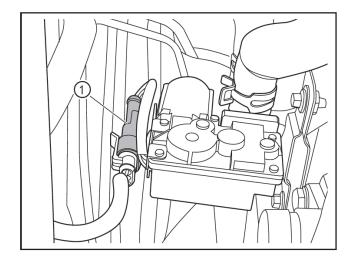


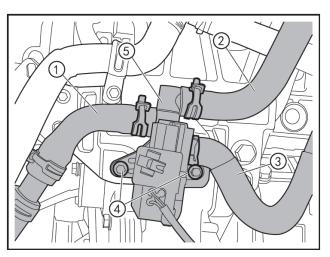
A CAUTION

- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

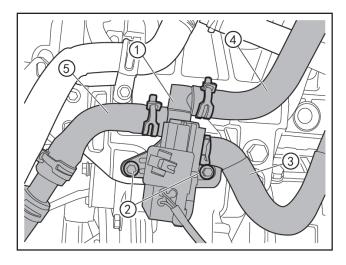
A CAUTION

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.
- Lift the vehicle and drain the coolant from the heating system. (Refer to "Change of Heating System Coolant" in this section)
- Open the connector clip, and disconnect the three-way water valve connector (1).

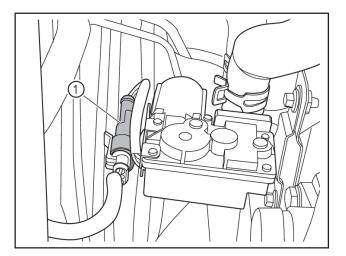




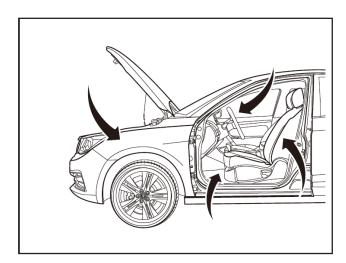
- Move back the clamp with the water hose clamp removal and refitting pliers (BF0109), and disconnect the PTC heater water outlet pipe (1) from the connecting joint on three-way water valve.
- Move back the clamp with the water hose clamp removal and refitting pliers (BF0109), and disconnect the heater water return pipe (2) from the connecting joint on three-way water valve.
- Move back the clamp with the water hose clamp removal and refitting pliers (BF0109), and disconnect the three-way water valve through plate heat exchanger water pipe (3) from the connecting joint on three-way water valve.
- Remove the 2 fixing bolts (M6x12) of three-way water valve with the 8mm socket;
- Remove the three-way water valve (5).



- Refit the three-way water valve (1) to the motor after alignment, and install the fixing bolts of the three-way water valve.
- Tighten the 2 fixing bolts (2) of the three-way water valve with the 8mm socket.
- Refit the end of the three-way water valve through plate heat exchanger water pipe (3) to the three-way water valve in place.
- Move the clamp of the three-way water valve through plate heat exchanger water pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).
- Refit the end of heater water return pipe (4) to the three-way water valve in place.
- Move the heater water return pipe clamp to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).
- Refit the end of PTC heater water outlet pipe (5) to the three-way water valve in place.
- Move the PTC heater water outlet pipe clamp to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).
- Connect the three-way water valve connector (1).



- Lower the vehicle and add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

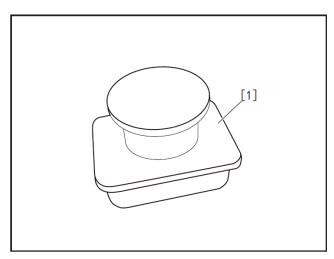


Removal and Refitting of Three-way Water Valve Through Plate Heat Exchanger Water Pipe

1 - Protection

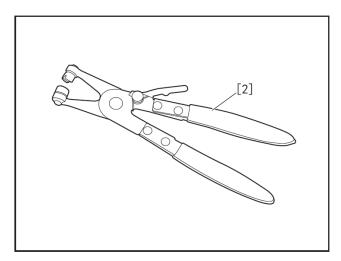
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

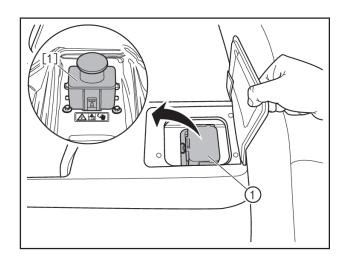


2 - Special tools

• Traction battery service switch plug (E700102)[1].



• Hose clamp removal and refitting pliers (BF0109) [2].

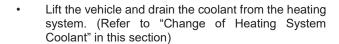


A CAUTION

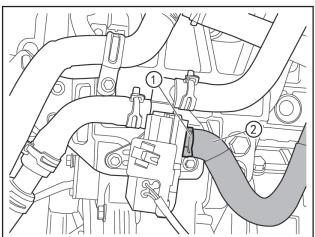
- Always wear insulated gloves and use insulated tools for all operations.
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

A CAUTION

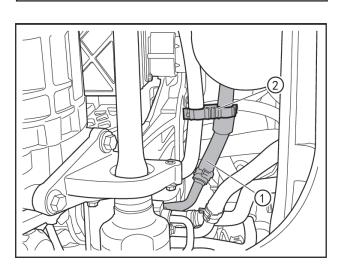
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.

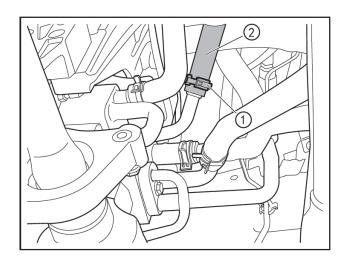


Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the three-way water valve through plate heat exchanger water pipe (2) from the connecting joint on three-way water valve.

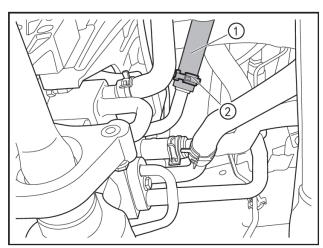


Detach the three-way water valve through plate heat exchanger water pipe (1) from the bracket (2).

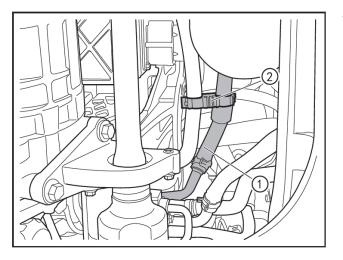




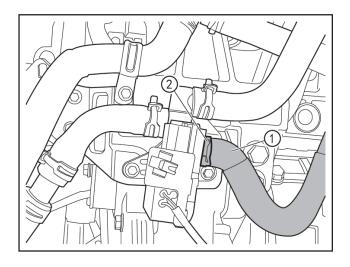
- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the three-way water valve through plate heat exchanger water pipe (2) from the connecting joint on plate heat exchanger.
- Remove the three-way water valve through plate heat exchanger water pipe (2).



- Refit the end of the three-way water valve through plate heat exchanger water pipe (1) to the plate heat exchanger in place.
- Move the clamp of the three-way water valve through plate heat exchanger water pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

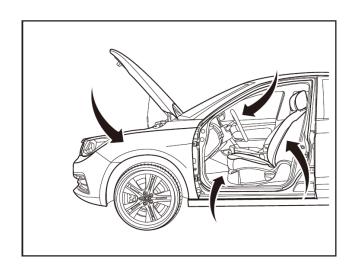


 Snap the three-way water valve through plate heat exchanger water pipe (1) into the bracket (2).



- Refit the end of the three-way water valve through plate heat exchanger water pipe (1) to the three-way water valve in place.
- Move the clamp (2) of the three-way water valve through plate heat exchanger water pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

- Lower the vehicle and add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

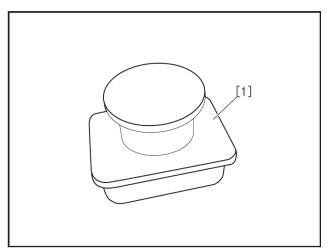


Removal and Refitting of Heater Through Plate Heat Exchanger Water Pipe

1 - Protection

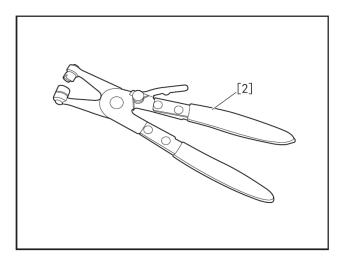
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

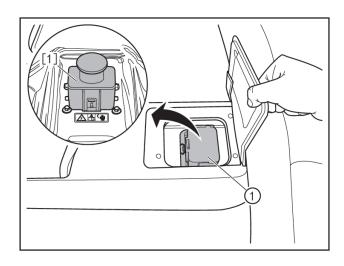


2 - Special tools

Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109)
 [2].

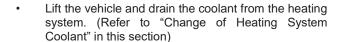


A CAUTION

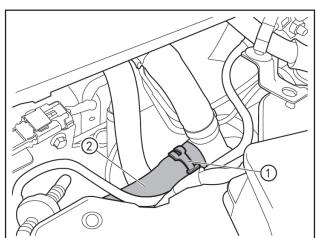
- Always wear insulated gloves and use insulated tools for all operations.
- · Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

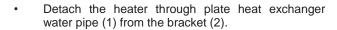
A CAUTION

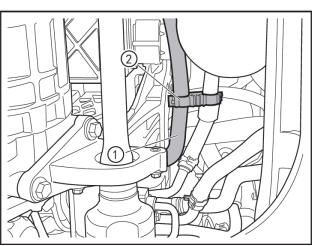
- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- During the removal of cooling pipeline, a few coolant will flow out. Before disconnecting the pipe, use a rag to wrap the joint to be removed to avoid pollution.
- Remove the pipes after the coolant is cooled, so as to prevent scalding.

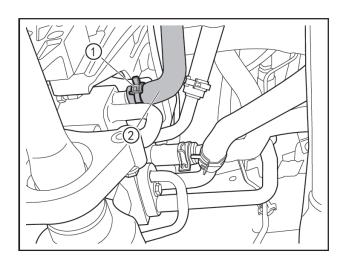


 Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the heater through plate heat exchanger water pipe from the connecting joint on heater water tank water return pipe.

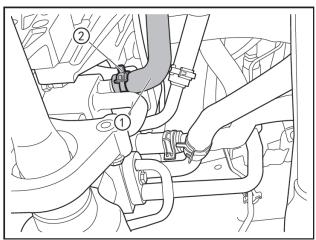




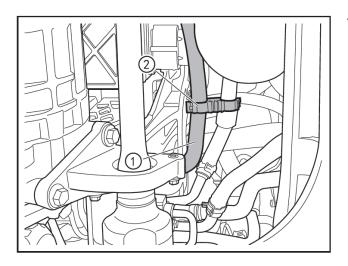




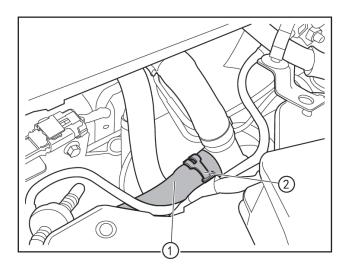
- Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the heater through plate heat exchanger water pipe (2) from the connecting joint on plate heat exchanger.
- Remove the heater through plate heat exchanger water pipe (2).



- Refit the end of the heater through plate heat exchanger water pipe (1) to the plate heat exchanger in place.
- Move the clamp (2) of the heater through plate heat exchanger water pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

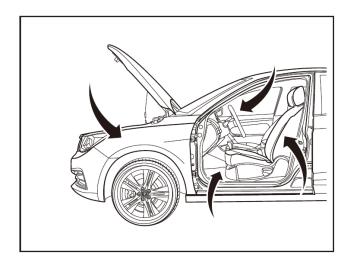


Snap the heater through plate heat exchanger water pipe (1) into the bracket (2).



- Refit the end of the heater through plate heat exchanger water pipe (1) to the heater water return pipe in place.
- Move the clamp (2) of the heater through plate heat exchanger water pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

- Lower the vehicle and add the coolant. (Refer to "Change of Heating System Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.

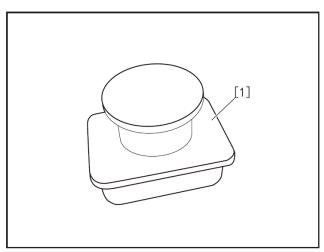


Removal and Refitting of Expansion Valve 1

1 - Protection

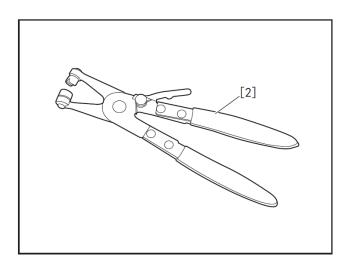
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

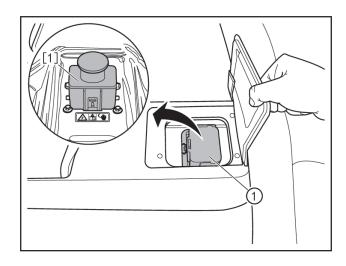


2 - Special tools

Traction battery service switch plug (E700102)[1].



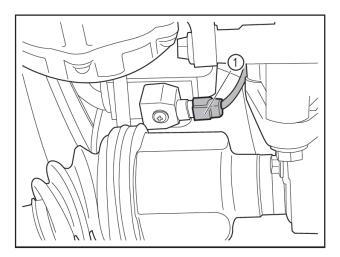
Hose clamp removal and refitting pliers (BF0109)
 [2].

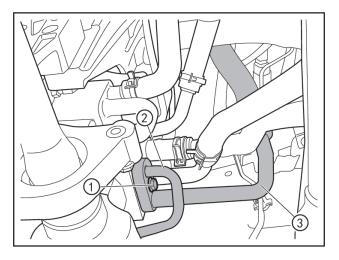


A CAUTION

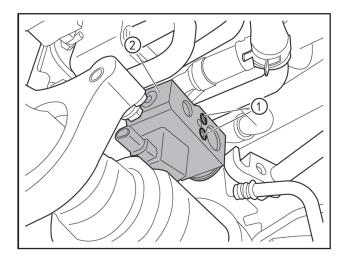
- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Disconnect the plate heat exchanger connector (1).

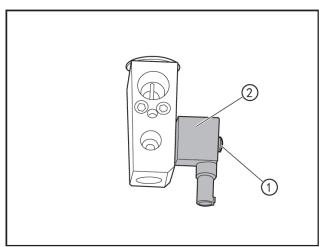




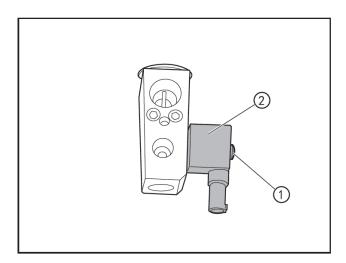
- Remove the fixing bolt (1) (M6×20) of A/C pipe bracket with the 10mm socket.
- Pull out the A/C through plate heat exchanger high-pressure pipe (2) and A/C through plate heat exchanger low-pressure pipe (3) from the plate heat exchanger together.



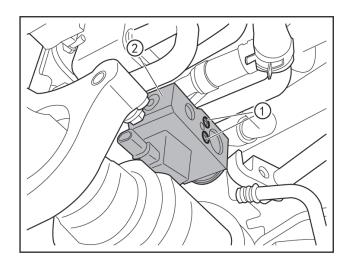
- Remove the fixing bolt (1) (M5×40) of expansion valve assembly with the 4mm Allen wrench.
- Remove the expansion valve assembly (2).



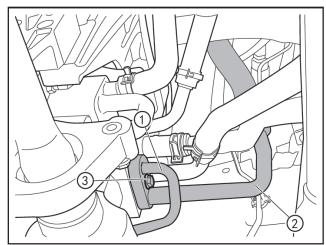
Remove the fixing screw (1) of the A/C sensor with the Phillips screwdriver, and remove the A/C sensor (2) from the expansion valve.



- Refit the A/C sensor (1) on the expansion valve.
- Tighten the fixing screw (2) of A/C sensor with the Phillips screwdriver.



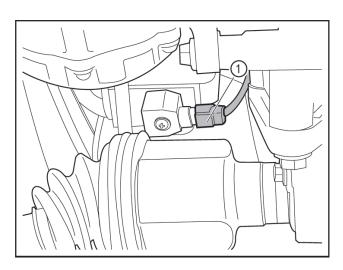
- Replace with a new A/C pipe seal, sleeve it onto the plate heat exchange, and apply a proper amount of grease to the joint surface.
- Press the expansion valve (1) into the plate heat exchanger after alignment.
- Install the fixing bolt (1) of the expansion valve assembly, and tighten it with the 4mm Allen wrench.



- Snap the A/C through the plate heat exchanger high-pressure pipe (1) into the A/C pipe bracket.
- Refit the A/C through plate heat exchanger high-pressure pipe (1) and A/C through plate heat exchanger low-pressure pipe (2) onto the plate heat exchanger together.
- Install the fixing bolt (3) (M6x20) of A/C pipe bracket, and tighten it with the 10mm socket.

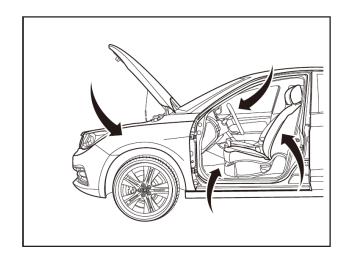
A CAUTION

Straighten the pipe first to ensure that it is free of twist or deformation before installation.



Connect the plate heat exchanger connector (1).

- Lower the vehicle and refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- · Connect the battery negative cable.
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

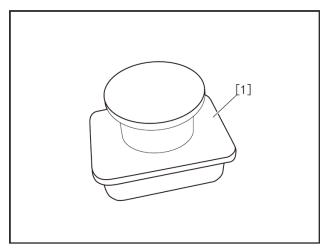


Removal and Refitting of Plate Heat Exchanger

1 - Protection

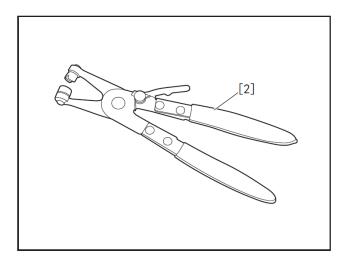
Place protective pads at following locations:

- Front fender;
- Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

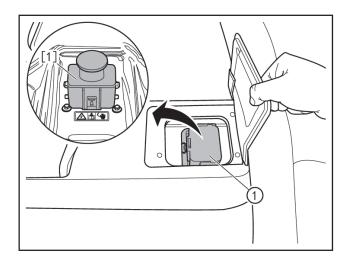


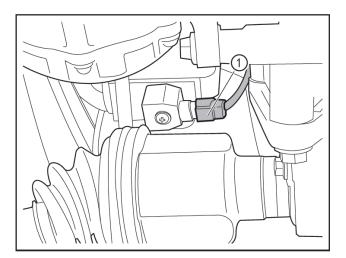
2 - Special tools

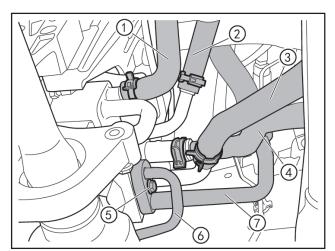
• Traction battery service switch plug (E700102)[1].



Hose clamp removal and refitting pliers (BF0109) [2].





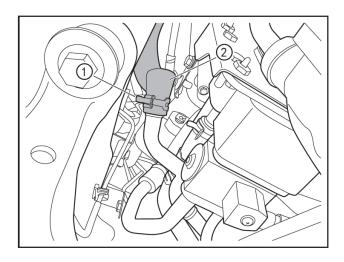


A CAUTION

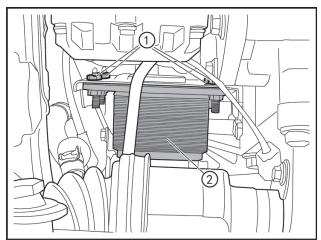
- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Drain the coolant from the heating system. (Refer to "Change of Traction Battery Coolant" in this section)
- Drain the traction battery coolant. (Refer to "Change of Traction Battery Coolant" in this section)
- Disconnect the plate heat exchanger connector (1).

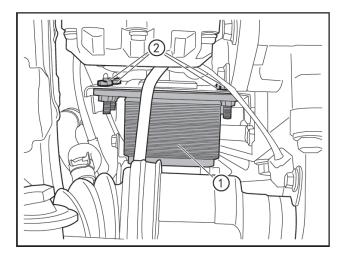
- Move back the clamp with the water hose clamp removal and refitting pliers (BF0109), and disconnect the heater through plate heat exchanger water pipe (1) from the connecting joint on plate heat exchanger.
- Move back the clamp with the water hose clamp removal and refitting pliers (BF0109), and disconnect the three-way water valve through plate heat exchanger water pipe (2) from the connecting joint on plate heat exchanger.
- Move back the clamp with the hose clamp removal and refitting pliers (BF0109), and disconnect the traction battery water pump water inlet pipe (3) from the connecting joint on the plate heat exchanger.
- Move back the clamp with the water hose clamp removal and refitting pliers (BF0109), and disconnect the connecting hose (4) between the plate heat exchanger and the traction battery water outlet steel pipe from the connecting joint on plate heat exchanger.
- Remove the fixing bolt (5) (M6x20) of A/C pipe bracket with the 10mm socket.
- Pull out the A/C through plate heat exchanger high-pressure pipe (6) and A/C through plate heat exchanger low-pressure pipe (7) from the plate heat exchanger together.



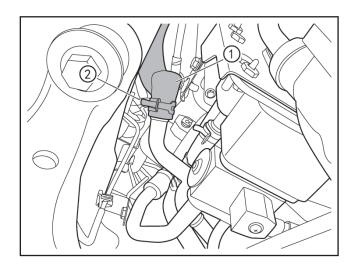
Move back the clamp (1) with the water hose clamp removal and refitting pliers (BF0109), and disconnect the expansion tank water outlet pipe (2) from the connecting joint on plate heat exchanger.



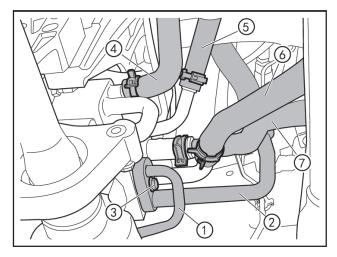
- Remove the 4 fixing nuts (M6x20) of the plate heat exchanger with the 10mm socket.
- Remove the plate heat exchanger assembly (2).



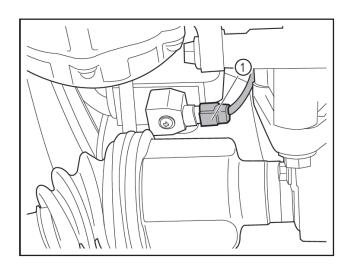
- Refit the plate heat exchanger assembly (1) onto the motor.
- Tighten the 4 fixing nuts (2) (M6x20) of the plate heat exchanger with the 10mm socket.



- Install the end of expansion tank water outlet pipe (1) to the plate heat exchanger in place.
- Move the expansion tank water outlet pipe clamp (2) to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).

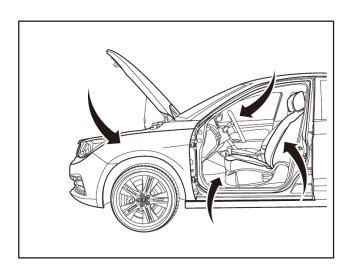


- Replace with new seals for the A/C pipe.
- Snap the A/C through the plate heat exchanger high-pressure pipe (1) into the A/C pipe bracket.
- Refit the A/C through plate heat exchanger high-pressure pipe (1) and A/C through plate heat exchanger low-pressure pipe (2) onto the plate heat exchanger together.
- Install the fixing bolt (3) (M6x20) of A/C pipe bracket, and tighten it with the 10mm socket.
- Refit the end of the heater through plate heat exchanger water pipe (4) to the plate heat exchanger in place.
- Move the clamp of the heater through plate heat exchanger water pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).
- Refit the end of the three-way water valve through plate heat exchanger water pipe (5) to the plate heat exchanger in place.
- Move the clamp of the three-way water valve through plate heat exchanger water pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).
- Install the end of traction battery water pump water inlet pipe (6) to the plate heat exchanger in place.
- Move the traction battery water pump water inlet pipe clamp to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).
- Refit the end of the connecting hose (7) between the plate heat exchanger and the traction battery water outlet steel pipe to the plate heat exchanger in place.
- Move the clamp of the connecting hose between the plate heat exchanger and the traction battery water outlet steel pipe to the white area and snap it into position with the water hose clamp removal and refitting pliers (BF0109).



• Connect the plate heat exchanger connector (1).

- Lower the vehicle and add the coolant. (Refer to "Change of Traction Battery Coolant" in this section)
- Add the traction battery coolant. (Refer to "Change of Traction Battery Coolant" in this section)
- Refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- · Connect the battery negative cable.
- Charge the refrigerant and perform refrigerant leak detection. (Refer to
 - "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

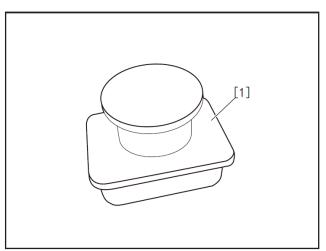


Removal and Refitting of A/C Through Plate Heat Exchanger High-pressure Pipe

1 - Protection

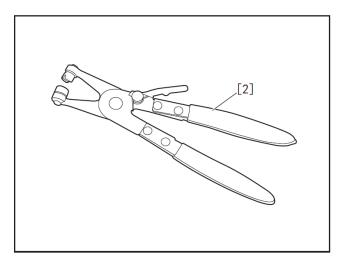
Place protective pads at following locations:

- Front fender;
- Front bumper;
- · Driver's seat;
- Carpet (on driver's side);
- Steering wheel;
- Shift lever.

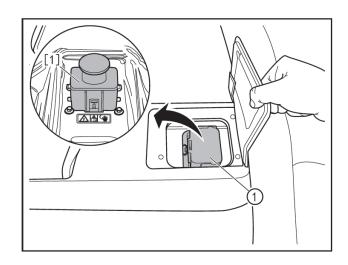


2 - Special tools

• Traction battery service switch plug (E700102)[1].



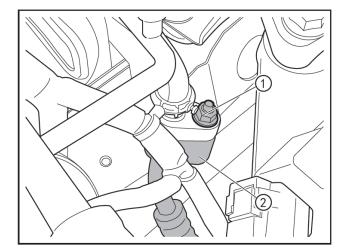
• Hose clamp removal and refitting pliers (BF0109) [2].

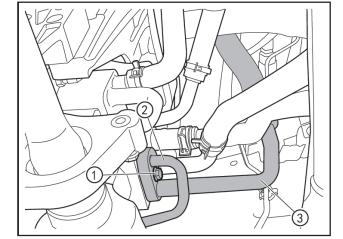


A CAUTION

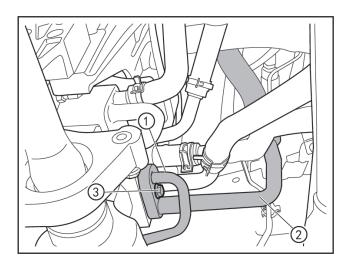
- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Remove the fixing nut (1) of A/C through plate heat exchanger high-pressure pipe with the 10mm socket.
- Detach the A/C through plate heat exchanger high-pressure pipe (2) from the A/C high-pressure pipe.

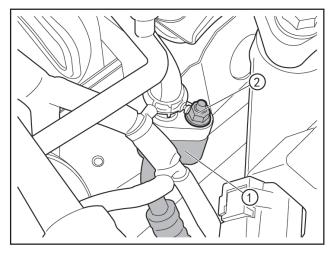




- Remove the fixing bolt (1) (M6×20) of A/C pipe bracket with the 10mm socket.
- Pull out the A/C through plate heat exchanger high-pressure pipe (2) and A/C through plate heat exchanger low-pressure pipe (3) from the plate heat exchanger together.
- Remove the A/C through plate heat exchanger high-pressure pipe (2).

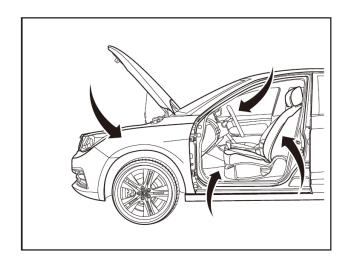


- Replace with new seals for the A/C pipe.
- Refit the A/C through plate heat exchanger high-pressure pipe (1) and A/C through plate heat exchanger low-pressure pipe (2) onto the plate heat exchanger together.
- Install the fixing bolt (3) (M6x20) of A/C pipe bracket, and tighten it with the 10mm socket.



- Replace with new seals for the A/C pipe.
- Refit the A/C through plate heat exchanger high-pressure pipe (1) to the A/C high-pressure pipe, and install its fixing nut.
- Tighten the fixing nut of he A/C through plate heat exchanger high-pressure pipe with the 10mm socket.

- Lower the vehicle and refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)

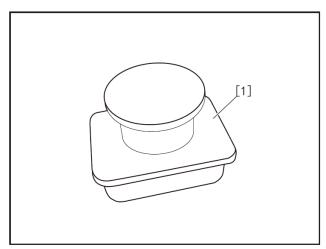


Removal and Refitting of A/C Through Plate Heat Exchanger Low-pressure Pipe

1 - Protection

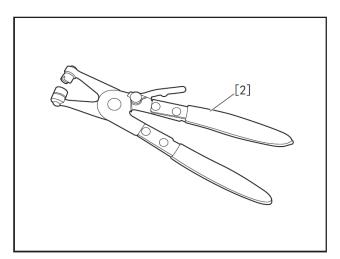
Place protective pads at following locations:

- Front fender;
- · Front bumper;
- Driver's seat;
- Carpet (on driver's side);
- · Steering wheel;
- Shift lever.

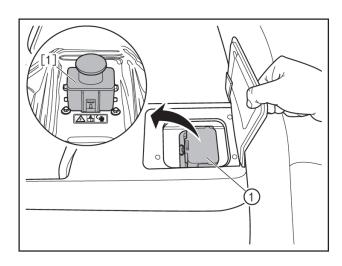


2 - Special tools

• Traction battery service switch plug (E700102)[1].



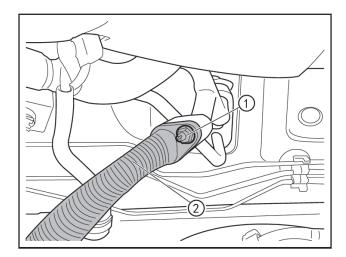
Hose clamp removal and refitting pliers (BF0109) [2].

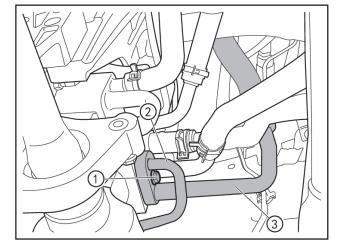


A CAUTION

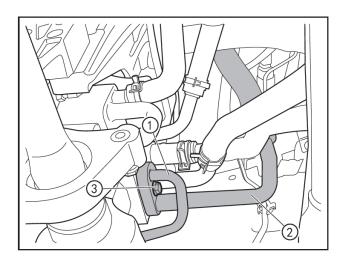
- Always wear insulated gloves and use insulated tools for all operations.
- Recycle the refrigerant. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)
- · Put the shift lever in P.
- Turn off the ignition switch, and disconnect the battery negative cable.
- Remove the service switch (1). (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")

- After removing the service switch, cover the service switch mounting hole with the traction battery service switch plug (E700102) [1] to prevent electric circuit fault when any metal chips falls into the mounting hole.
- Remove the fixing nut (1) of A/C through plate heat exchanger low-pressure pipe with the 10mm socket.
- Detach the A/C through plate heat exchanger low-pressure pipe (2) from the A/C low-pressure pipe.

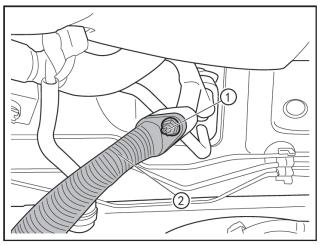




- Remove the fixing bolt (1) (M6x20) of A/C pipe bracket with the 10mm socket.
- Pull out the A/C through plate heat exchanger high-pressure pipe (2) and A/C through plate heat exchanger low-pressure pipe (3) from the plate heat exchanger together.
- Remove the A/C through plate heat exchanger low-pressure pipe (2).



- Replace with new seals for the A/C pipe.
- Refit the A/C through plate heat exchanger high-pressure pipe (1) and A/C through plate heat exchanger low-pressure pipe (2) onto the plate heat exchanger together.
- Install the fixing bolt (3) (M6x20) of A/C pipe bracket, and tighten it with the 10mm socket.



- Replace with new seals for the A/C pipe.
- Refit the A/C through plate heat exchanger low-pressure pipe (1) to the A/C low-pressure pipe, and install its fixing nut.
- Tighten the fixing nut of he A/C through plate heat exchanger low-pressure pipe with the 10mm socket.

- Lower the vehicle and refit the service switch. (Refer to "Removal and Refitting of Service Switch" in "Traction Battery")
- Connect the battery negative cable.
- Charge the refrigerant and perform refrigerant leak detection. (Refer to "Recovery/Vacuuming/Charging/Leak Detection of Refrigerant" in this section)