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10.1 Cooling system

10.1.1 Warnings and precautions

Warning!

- Refrigerant-related work shall be carried out in a well-ventilated environment to avoid inhaling refrigerant vapors. You shall avoid inhaling A/C refrigerant R-134a (tetrafluoroethane) and lubricating oil vapors or mists. Contact with them can irritate your eyes, nose and throat. When recovering A/C refrigerant R-134a from the A/C system, use certified service equipment (R-134a regeneration equipment) that meets the requirements. In the event of an accidental discharge of the system, the work area must be ventilated before the service continues.
- It is necessary to disconnect the negative terminal of the battery before servicing the electrical system.
 Never perform welding or steam cleaning on or near the vehicles with A/C pipelines or assembly.

Precautions for A/C refrigerants

Warning!

- Skin contact may cause frostbite.
- Wear suitable goggles and protective gloves when working.

Actions to avoid with A/C refrigerants

Warning!

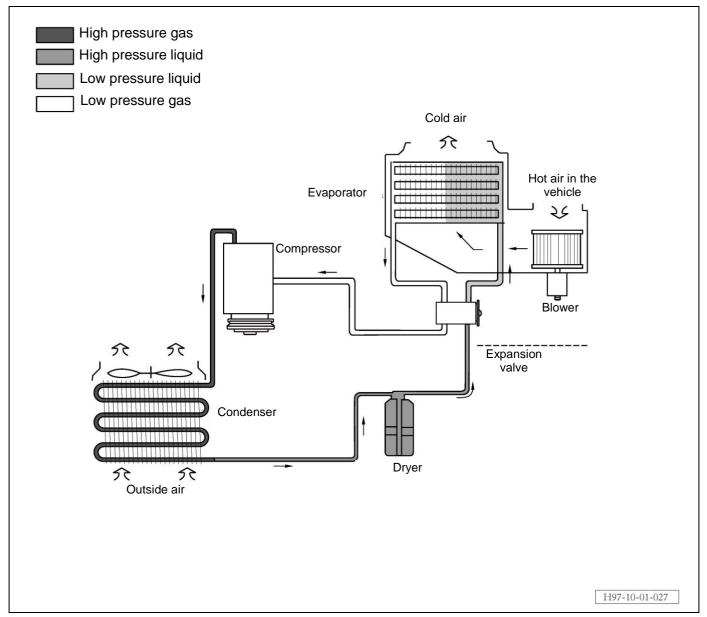
- Do not store the refrigerant in places exposed to sunlight or sources of heat.
- When filling, do not hold the refrigerant bottles upright and keep their valves facing down.
- Do not expose the refrigerant bottle to frost and snow.
- Do not drop the refrigerant bottle.
- Do not discharge the refrigerant directly into the atmosphere in any case.
- Do not mix refrigerants such as R134a (tetrafluoroethane) and R12 (difluorodichloromethane).

Precautions on compressor lubricating oil

Warning!

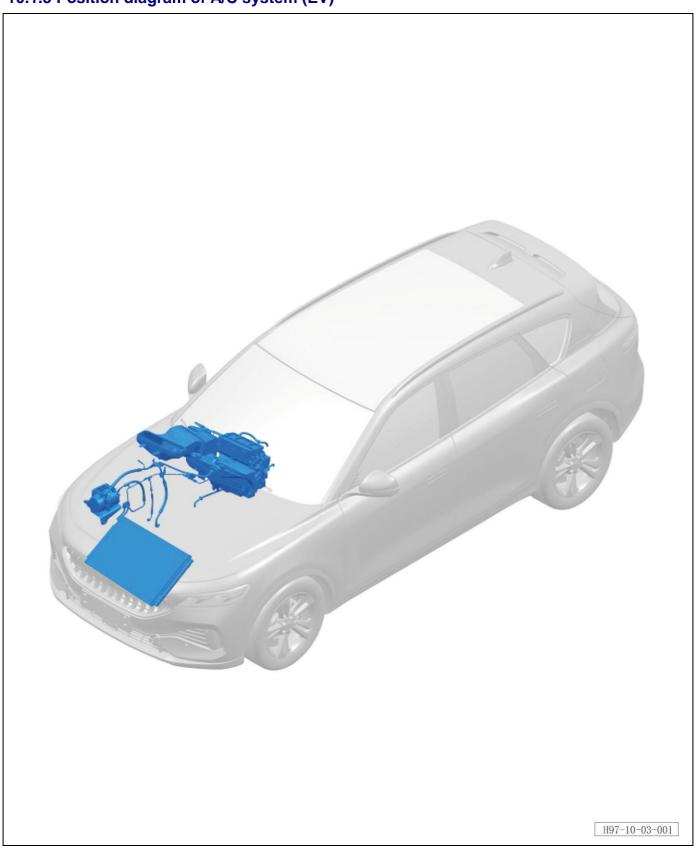
- It is necessary to use compressor lubricating oil of the specified type and brand, and the compressor lubricating oil of different types and brands must not be mixed, otherwise the compressor will be damaged.
- Compressor lubricating oil is very easy to absorb water, so try to minimize the exposure time of the compressor lubricating oil to air as much as possible. Warning!
- Never use water, corrosive solvents or flammable and explosive solvents to clean the A/C system.

4.2 Operating principle of system

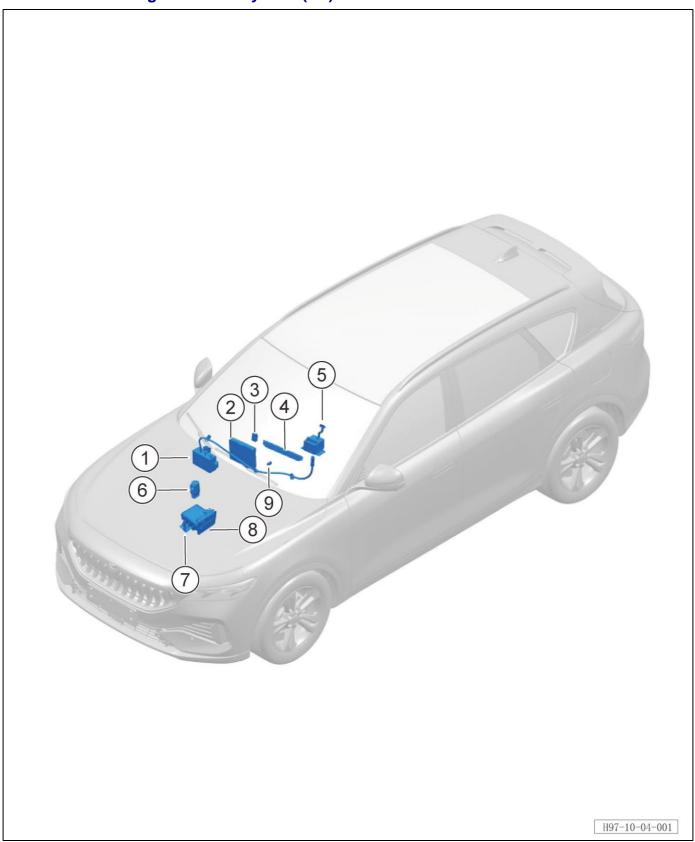


- When the A/C system is refrigerating, the compressor sucks the low-temperature and low-pressure gaseous refrigerant from the evaporator. After compression, the temperature and pressure of the refrigerant increase, and the compressed refrigerant will be sent to the condenser. In the condenser, the high temperature and high pressure gaseous refrigerant passes through the condenser to dissipate the heat, and is liquefied into the high temperature and high pressure liquid refrigerant.
- The high-temperature and high-pressure liquid refrigerant passes through the drier reservoir and high-pressure pipeline, quickly flows through the expansion valve, and is then throttled via the throttle expansion valve, thus being transformed from liquid to gas following a rapid temperature and pressure decline. At last, it is sent to the evaporator through the liquid separator head.
- In the evaporator, the air blower draws the air in the vehicle into the surface of the evaporator, and the air exchanges heat with the low-temperature, low-pressure aerosol refrigerant through the evaporator fins. After absorbing the air heat in the vehicle, the low temperature, low pressure vaporous refrigerant is evaporated into the low temperature, low pressure gaseous refrigerant, and then sent to the low pressure side of the compressor through the pipe for the next cycle.
- The cold air released by the heat exchange is sent into the vehicle by the blower to reduce the vehicle temperature.

10.1.3 Position diagram of A/C system (EV)



10.1.4 Position diagram of A/C system (EV)

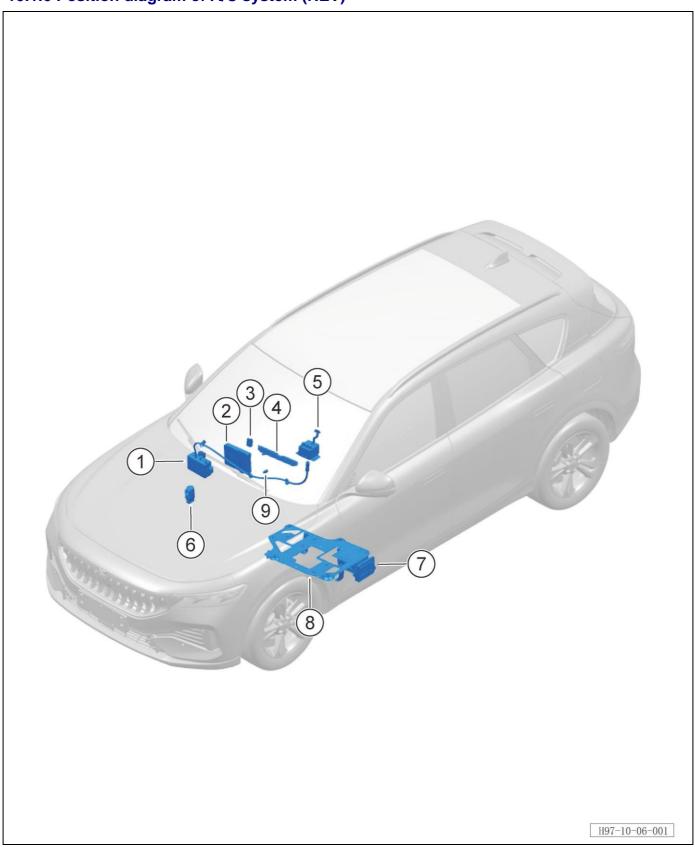


S/N	Part name	Loading quantity	Remarks
1	PM2.5 sensor	1	
2	Automatic A/C control unit	1	
3	Room temperature sensor	1	
4	Automatic A/C control panel	1	
5	Fragrance generator	1	
6	Expansion valve	1	
7	PTC water heating bracket	1	
8	PTC water heating assembly	1	
9	Air quality sensor (AQS)	1	

10.1.5 Position diagram of A/C system (REV)

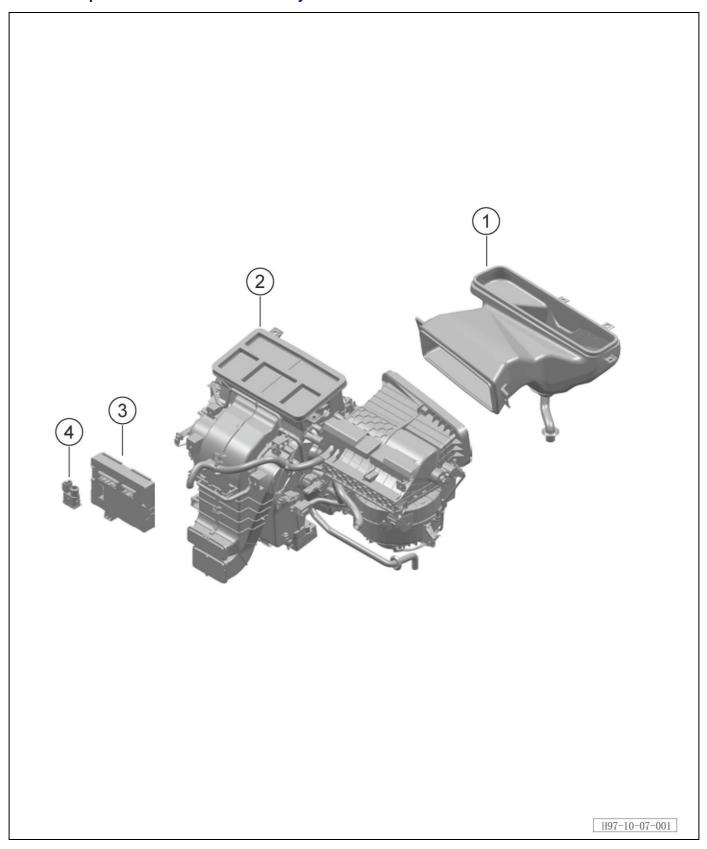


10.1.6 Position diagram of A/C system (REV)



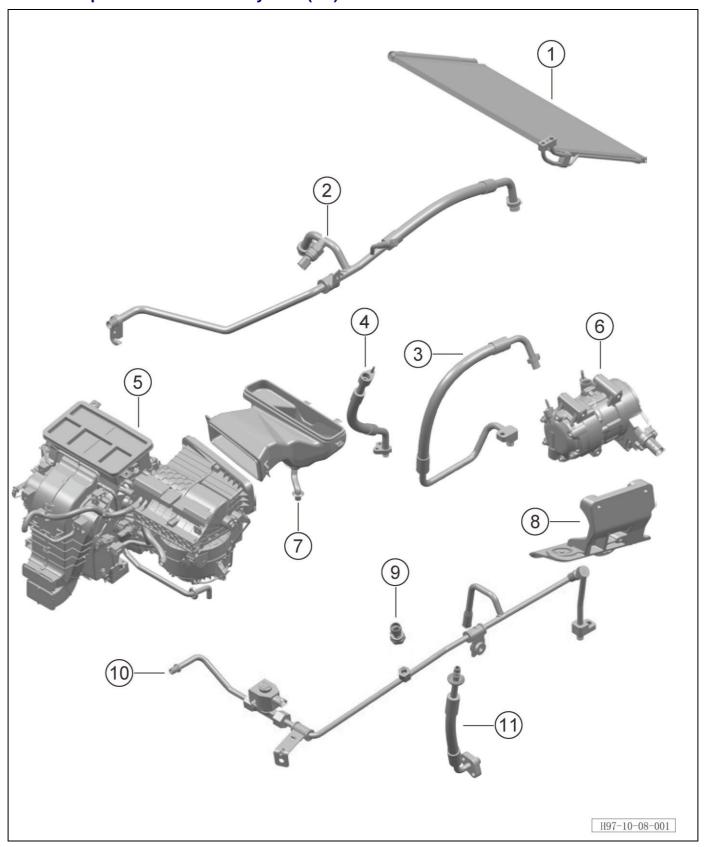
S/N	Part name	Loading quantity	Remarks
1	PM2.5 sensor	1	
2	Automatic A/C control unit	1	
3	Room temperature sensor	1	
4	Automatic A/C control panel	1	
5	Fragrance generator	1	
6	Expansion valve	1	
7	PTC water heating assembly	1	
8	PTC water heating bracket	1	
9	Air quality sensor (AQS)	1	

10.1.7 Exploded views of HVAC assembly



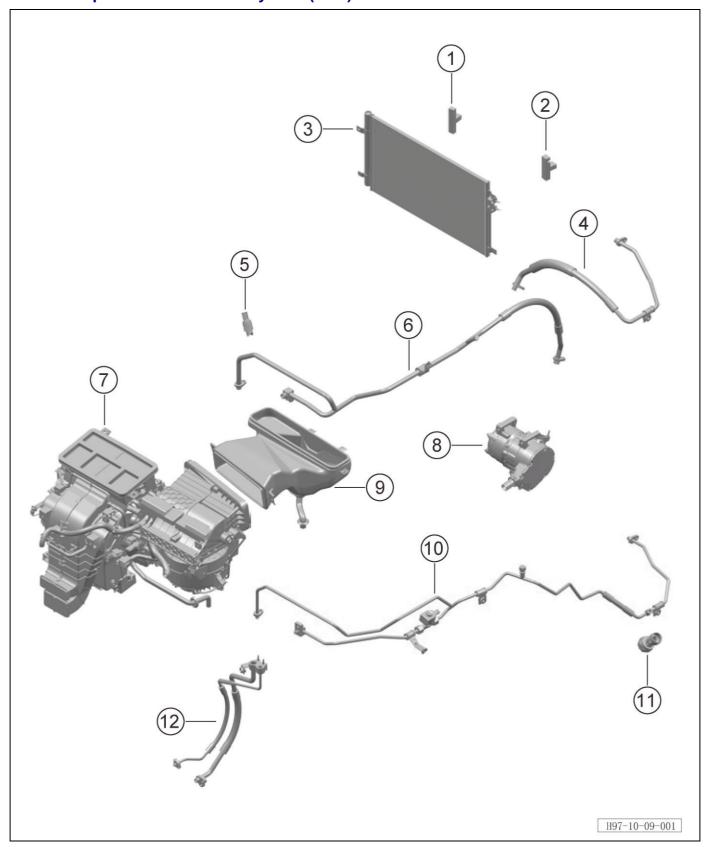
S/N	Part name	Loading quantity	Remarks
1	A/C intake duct assembly	1	
2	HVAC assembly	1	
3	Automatic A/C control unit	1	
4	Room temperature sensor	1	

10.1.8 Exploded views of A/C system (EV)



S/N	Part name	Loading quantity	Remarks
1	Condenser assembly	1	
2	Front evaporator outlet pipe assembly	1	
3	Compressor outlet pipe assembly	1	
4	Battery cooling module A/C outlet pipe assembly	1	
5	HVAC assembly	1	
6	Compressor Set	1	
7	A/C intake duct assembly	1	
8	Compressor bracket assembly	1	
9	Pressure switch	1	
10	Front evaporator inlet pipe assembly	1	
11	Battery cooling module A/C inlet pipe assembly	1	

10.1.9 Exploded views of A/C system (REV)



10.1.10 A/C components

10.1.10.1 Fault diagnosis

1 Diagnostic instructions

The DTC can be read via the OBD DLC with the scan tool. With the use of AC data sheet and reading of data sheet displayed on the scan tool, the function of reading switches and sensorcan be performed without the disassembly of any parts. Reading the data sheet is the first step in troubleshooting and one way to reduce diagnostic time.

2 Visual inspection

1. Confirm the fault symptoms

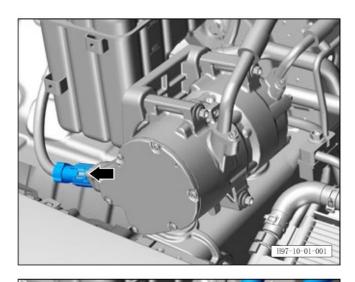
The most difficult situation in troubleshooting is when no symptoms appear, in which case the user-described fault must be thoroughly analyzed. In addition, you need to simulate the same or similar conditions and environments as when the customer's vehicle fails. If you begin to troubleshoot without confirming the symptoms of the fault, something important will be ignored during repair and wrong guesses may be put forward somewhere no matter how experienced and skilled the maintenance personnel are. This will make troubleshooting impossible.

- 2. Check easily accessible or visible system assembly for obvious damage or conditions that could cause a fault.
- 3. The connector joint and the fulcrum of vibration shall be the main parts that need to be thoroughly checked. If there is a possibility of fault due to vibration, it is recommended to use the vibration method.
- a Gently vibrate the potentially faulty sensor part with your finger and check for faults.
- b Gently rock the connection vertically and horizontally
- c Gently rock the harness vertically and horizontally.

10.1.10.2 Removal and refitting of compressor assembly (EV)

Removal procedure

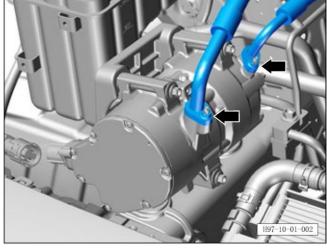
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the engine compartment front middle trim panel assembly (refer to <u>8.6.6.11 Removal and refitting of engine compartment front middle trim panel assembly)</u>
- 5. Remove the compressor assembly.
- a. Remove the compressor harness assembly connectors.

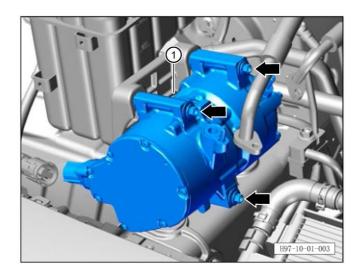


c. Unscrew 2 fixing nuts of the compressor pipeline. Tightening torque of nut: 8±1Nm.

CAUTION:

- Sealing pipeline connectors.





d. Unscrew 3 fixing bolts of the compressor.

Tightening torque of bolt: 25±2Nm.

e. Remove the compressor assembly ①.

Refitting procedure

The refitting procedure is performed in reverse order.

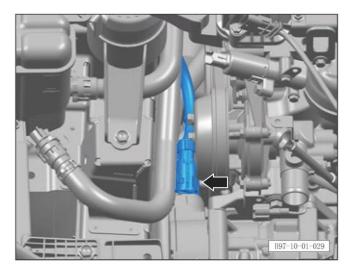
CAUTION:

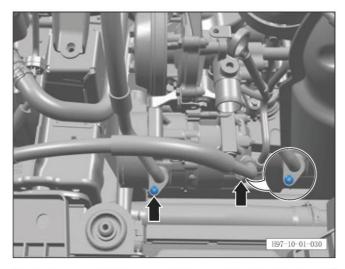
- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant</u>)

10.1.10.3 Removal and refitting of compressor assembly (REV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Lift the vehicle and remove the high voltage (refer to 3.1.6.2 High voltage removal)
- 4. Recover the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>
- 5. Removing the engine compartment front middle trim panel assembly (refer to <u>8.6.6.21 Removal and refitting of engine compartment front middle trim panel assembly (REV)</u>
- 6. Remove the low temperature radiator outlet pipe (refer to <u>4.4.8.15 Removal and refitting of low temperature radiator outlet pipe)</u>
- 7. Remove the compressor assembly.
- a. Remove the compressor harness assembly connectors.

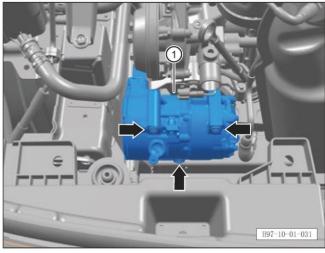




b. Unscrew 2 fixing nuts of the compressor pipeline.Tightening torque of nut: 8±1Nm.

CAUTION:

Sealing pipeline connectors.



c. Unscrew 3 fixing bolts of the compressor.

Tightening torque of bolt: 25±2Nm.

d. Remove the compressor assembly ①.

Refitting procedure

The refitting procedure is performed in reverse order.

CAUTION:

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>



10.1.10.4 Removal and refitting of compressor bracket assembly (EV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the compressor assembly (refer to 10.1.10.2 Removal and refitting of compressor assembly (EV).
- 5. Remove the compressor bracket assembly.
- a. Unscrew 3 fixing bolts of the compressor bracket assembly.
- b. Remove the compressor protective plate bracket assembly ①.

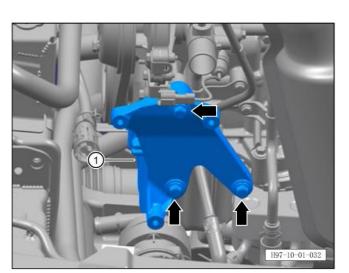
Tightening torque of bolt: 25±2Nm.

Refitting procedure

The refitting procedure is performed in reverse order.

CAUTION:

- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming)
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant</u>)



10.1.10.5 Removal and refitting of compressor bracket assembly (REV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the compressor assembly (refer to 10.1.10.3 Removal and refitting of compressor assembly (REV)
- 5. Remove the compressor bracket assembly.
- a. Unscrew 3 fixing bolts of the compressor bracket assembly.
- b. Remove the compressor protective plate bracket assembly 1.

Tightening torque of bolt: 25±2Nm.

Refitting procedure

The refitting procedure is performed in reverse order.

NOTE:

- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming)
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant)</u>

10.1.10.6 Removal and refitting of compressor exhaust pipe assembly (EV)

Removal procedure

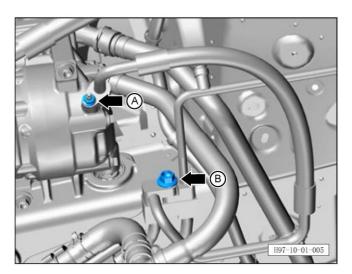
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>
- 4. Remove the engine compartment front middle trim panel assembly (refer to <u>8.6.6.11 Removal and refitting of engine compartment front middle trim panel assembly (EV)</u>
- 5. Remove the compressor exhaust pipe assembly.
- a. Unscrew the fixing nut A of the compressor exhaust pipe.
- b. Unscrew the fixing bolt B of the compressor pipeline.

Tightening torque of nut A: 8±1Nm.

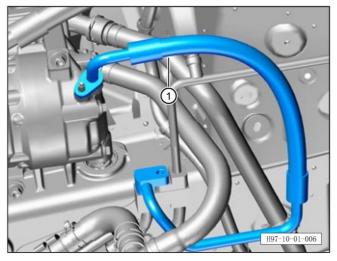
Tightening torque of bolt B: 11±1Nm.

CAUTION:

Sealing pipeline connectors.



- h. Remove the compressor exhaust pipe assembly ①. CAUTION:
- Sealing pipeline connectors.



Refitting procedure

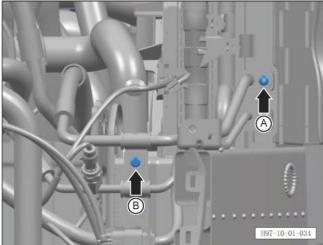
The refitting procedure is performed in reverse order. CAUTION:

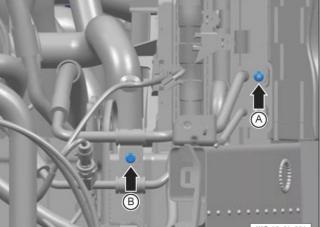
- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming)
- Add the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>

10.1.10.7 Removal and refitting of compressor exhaust pipe assembly (REV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front middle trim panel assembly of the engine compartment (refer to <u>8.6.6.21 Removal and refitting of engine compartment front middle trim panel assembly (REV)</u>
- 5. Remove the low temperature radiator outlet pipe (refer to <u>4.4.8.15 Removal and refitting of low temperature radiator outlet pipe)</u>
- 6. Remove the front bumper (refer to <u>8.6.3.3 Removal</u> and refitting of front bumper assembly)
- 7. Remove the compressor exhaust pipe assembly.





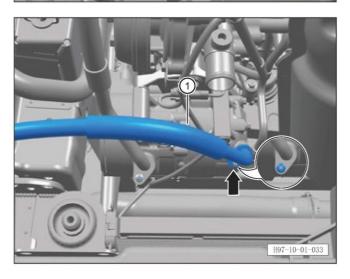
- a. Unscrew the fixing nut A of the compressor exhaust pipe.
- b. Unscrew the fixing bolt B of the compressor exhaust pipe.

Tightening torque of nut A: 8±1Nm.

Tightening torque of bolt B: 8±1Nm.

CAUTION:

- Sealing pipeline connectors.



- c. Unscrew the fixing nuts of the compressor exhaust pipe assembly.
- d. Remove the compressor exhaust pipe assembly ①. Tightening torque of nut A: 8±1Nm.

CAUTION:

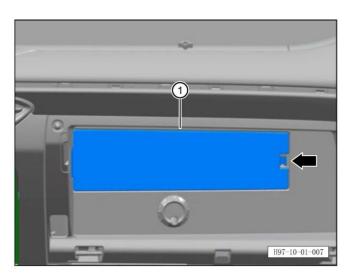
- Sealing pipeline connectors.

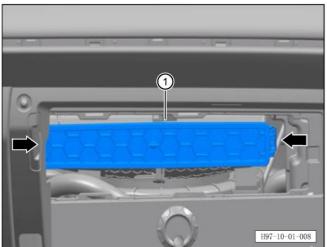
Refitting procedure

The refitting procedure is performed in reverse order.

CAUTION:

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)



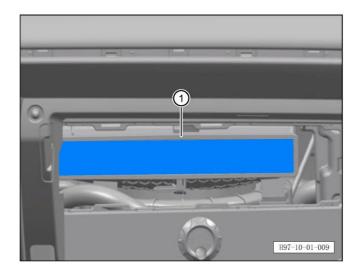


10.1.10.8 Removal and refitting of A/C filter

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Open the glove box.
- 4. Remove the A/C filter.
- a. Disengage the trim panel fixing clips.
- b. Remove the trim plate ①.

- c. Disengage the cover plate fixing clips.
- d. Remove the cover plate ①.



e. Remove the A/C filter ①.

Refitting procedure

The refitting procedure is performed in reverse order.

10.1.10.9 Removal and refitting of front evaporator outlet pipe assembly (EV)

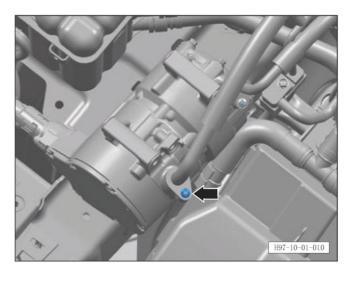
Removal procedure

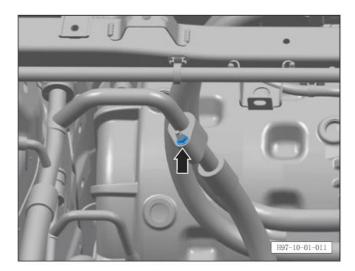
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Removing the engine compartment left and right front trim panel assemblies (refer to <u>8.6.6.20 Removal</u> and refitting of engine compartment left front trim panel (EV)
- 5. Remove the left and right rear trim panel assemblies of the engine compartment (refer to 8.6.6.12 Removal and refitting of engine compartment rear trim panel assembly)
- 6. Remove the wiper cover (refer to <u>8.6.7.9 Removal</u> and refitting of wiper cover plate)
- 7. Remove the A/C air inlet duct assembly (refer to 10.1.11.1 Removal and refitting of A/C air inlet duct assembly)
- 8. Remove the front compartment high pressure box (refer to 4.5.8.2 Removal and refitting of engine compartment HV box assembly)
- 9. Remove the front evaporator outlet pipe assembly.
- a. Unscrew the connecting nut between the front evaporator outlet pipe assembly and the compressor.

Tightening torque of nut: 8±1Nm.



Sealing pipeline connectors.



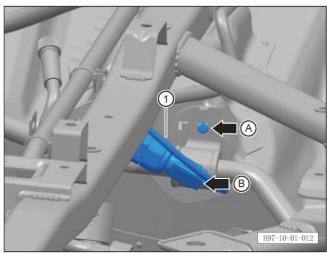


b. Unscrew the connecting nut of the front evaporator outlet pipe assembly and the battery cooling module A/C outlet pipe assembly.

Tightening torque of nut: 8±1Nm.

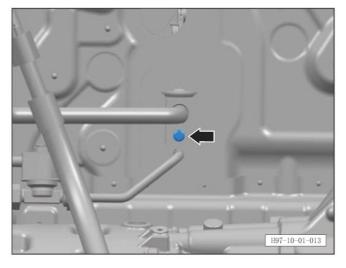
CAUTION:

Sealing pipeline connectors.



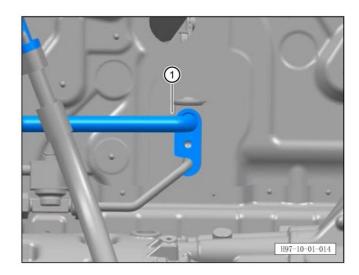
- c. Unscrew the fixing bolt A of the front evaporator outlet pipe assembly.
- d. Disconnect the connector B of A/C pressure switch.
- e. Remove the A/C pressure switch ①.

Tightening torque of bolt: 8±1Nm.



f. Unscrew the connecting bolts of the front evaporator outlet pipe assembly.

Tightening torque of bolt: 8±1Nm.



g. Remove the front evaporator outlet pipe assembly $\widehat{\ 1}$.

Tightening torque of bolt: 8±1Nm.

CAUTION:

Sealing pipeline connectors.

Refitting procedure

The refitting procedure is performed in reverse order.

CAUTION:

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant)</u>

10.1.10.10 Removal and refitting of front evaporator outlet pipe assembly (REV)

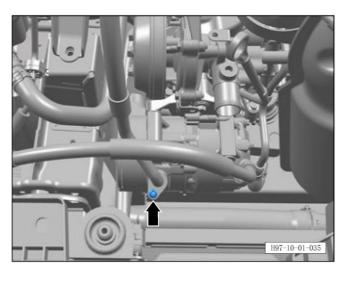
Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Removing the left and right front trim panel assemblies of the engine compartment (refer to 8.6.6.21 Removal and refitting of engine compartment left front trim panel assembly (REV)
- 5. Remove the left and right rear trim panel assemblies of the engine compartment (refer to 8.6.6.12 Removal and refitting of engine compartment rear trim panel assembly)
- 6. Remove the wiper cover plate. See <u>8.6.7.9</u> Removal and refitting of wiper cover plate
- 7. Remove the front compartment high pressure box assembly (refer to 4.5.8.2 Removal and refitting of engine compartment HV box assembly)
- 8. Remove the low temperature radiator outlet pipe (refer to <u>4.4.8.15 Removal and refitting of low temperature radiator outlet pipe)</u>
- 9. Remove the front evaporator outlet pipe assembly.
- a. Unscrew the fixing nut A of the front evaporator outlet pipe assembly.

Tightening torque of nut: 8±1Nm.

CAUTION:

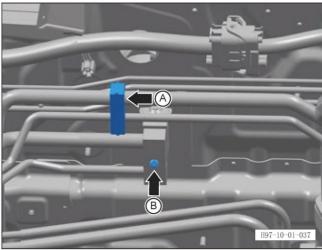
- Sealing pipeline connectors.





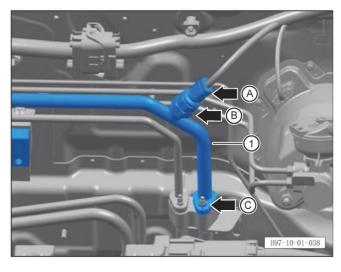
b. Unscrew the fixing bolts of the front evaporator outlet pipe assembly.

Tightening torque of bolt: 11±2Nm.



- c. Disengage the fixing clip A of the front evaporator outlet pipe assembly.
- d. Unscrew the fixing bolt B of the front evaporator outlet pipe assembly.

Tightening torque of bolt: 11±2Nm.



- e. Disconnect the connector A of A/C pressure switch.
- f. Remove the A/C pressure switch B.
- g. Unscrew the fixing bolt C of the front evaporator outlet pipe assembly.
- h. Remove the front evaporator outlet pipe assembly

Tightening torque of nut: 8±1Nm.

CAUTION:

Sealing pipeline connectors.

Refitting procedure

The refitting procedure is performed in reverse order. CAUTION:

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>

10.1.10.11 Removal and refitting of front evaporator inlet pipe assembly (EV)

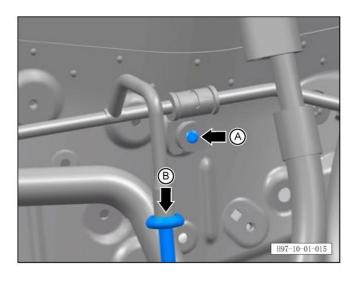
Removal procedure

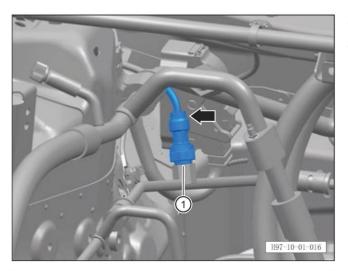
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Removing the engine compartment left and right front trim panel assemblies (refer to <u>8.6.6.20 Removal</u> and refitting of engine compartment left front trim panel (EV)
- 5. Remove the left and right rear trim panel assemblies of the engine compartment (refer to 8.6.6.12 Removal and refitting of engine compartment rear trim panel assembly)
- 6. Remove the wiper cover plate. See <u>8.6.7.9</u> Removal and refitting of wiper cover plate
- 7. Remove the A/C air inlet duct assembly (refer to 10.1.11.1 Removal and refitting of A/C air inlet duct assembly)
- 8. Remove the front compartment high pressure box (refer to 4.5.8.2 Removal and refitting of engine compartment HV box assembly)
- 9. Remove the A/C exhaust pipe assembly (refer to 10.1.10.5 Removal and refitting of compressor exhaust pipe assembly)
- 10. Remove the front evaporator outlet pipe assembly.
- a. Unscrew the fixing bolt A of the front evaporator inlet pipe assembly.
- b. Disconnect the front evaporator inlet pipe assembly from the battery cooling module A/C inlet pipe assembly B

Tightening torque of bolt: 8±1Nm.

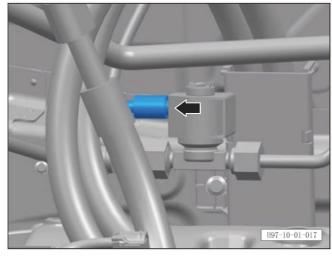
CAUTION:

- Sealing pipeline connectors.

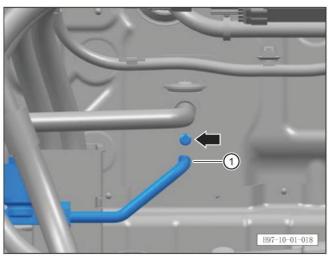




- c. Disconnect the A/C pressure switch connector.
- d. Remove the A/C pressure switch ①.



e. Disconnect the front evaporator inlet pipe assembly connector.



- f. Unscrew the fixing bolts of the front evaporator inlet pipe assembly.
- g. Remove the front evaporator inlet pipe assembly $\widehat{\mbox{\scriptsize (1)}}.$

Tightening torque of bolt: 11±2Nm.

CAUTION:

Sealing pipeline connectors.

Refitting procedure

The refitting procedure is performed in reverse order. CAUTION:

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 Recovering/adding refrigerant)

10.1.10.12 Removal and refitting of front evaporator inlet pipe assembly (REV)

Removal procedure

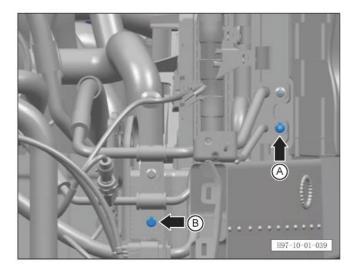
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the left and right front trim panel assemblies of the engine compartment (refer to 8.6.6.21 Removal and refitting of engine compartment front trim panel assembly (REV)
- 5. Remove the left and right rear trim panel assemblies of the engine compartment (refer to 8.6.6.12 Removal and refitting of engine compartment rear trim panel assembly)
- 6. Remove the front bumper (refer to <u>8.6.3.3 Removal</u> and refitting of front bumper assembly)
- 7. Remove the wiper cover (refer to <u>8.6.7.9 Removal</u> and refitting of wiper cover plate)
- 8. Remove the front compartment high pressure box assembly (refer to <u>4.5.8.2 Removal and refitting of</u> engine compartment HV box assembly)
- 9. Remove the low temperature radiator outlet pipe (refer to 4.4.8.15 Removal and refitting of low temperature radiator outlet pipe)
- 10. Remove the front evaporator inlet pipe assembly.
- a. Unscrew the fixing nut A of the front evaporator inlet pipe assembly.
- b. Unscrew the fixing bolt B of the front evaporator inlet pipe assembly.

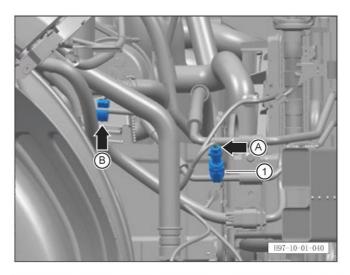
Tightening torque of nut A: 8±1Nm.

Tightening torque of bolt B: 8±1Nm.

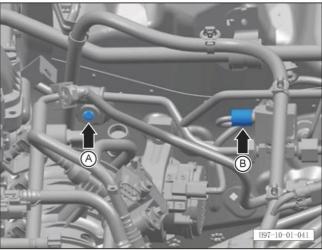
CAUTION:

Sealing pipeline connectors.



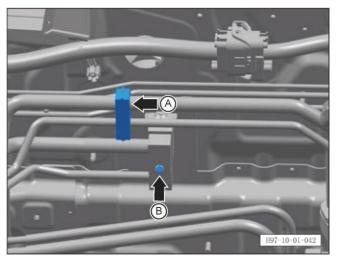


- c. Disconnect the connector A of A/C pressure switch.
- d. Remove the A/C pressure switch ①.
- e. Disengage the clip B of front evaporator inlet pipe assembly.



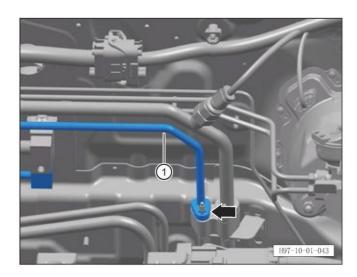
- f. Unscrew the fixing bolt A of the front evaporator inlet pipe assembly.
- g. Disconnect the connector B of the front evaporator inlet pipe assembly .

Tightening torque of bolt A: 8±1Nm.



- h. Disengage the fixing clip A of the front evaporator inlet pipe assembly.
- i. Unscrew the fixing bolt B of the front evaporator inlet pipe assembly.

Tightening torque of bolt: 11±2Nm.



- j. Unscrew the fixing nuts of the front evaporator inlet pipe assembly.
- k. Remove the front evaporator inlet pipe assembly $\widehat{\ 1}$.

Tightening torque of nut: 8±1Nm.

CAUTION:

Sealing pipeline connectors.

Refitting procedure

The refitting procedure is performed in reverse order.

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant)</u>

10.1.10.13 Removal and refitting of battery cooling module A/C inlet pipe assembly (EV)

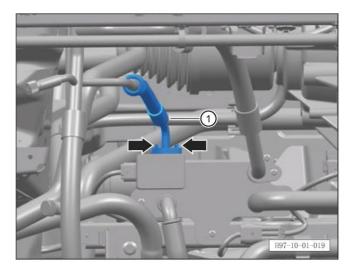
Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Removing the engine compartment left and right front trim panel assemblies (refer to <u>8.6.6.20 Removal</u> and refitting of engine compartment left front trim panel (EV)
- 5. Remove the left and right rear trim panel assemblies of the engine compartment (refer to 8.6.6.12 Removal and refitting of engine compartment rear trim panel assembly)
- 6. Remove the battery cooling module A/C inlet pipe assembly.
- a. Unscrew 2 fixing bolts of the battery cooling module A/C inlet pipe assembly.
- b. Remove the battery cooling module A/C inlet pipe assembly ①.

Tightening torque of bolt: 10±1Nm.

CAUTION:

Sealing pipeline connectors.



Refitting procedure

The refitting procedure is performed in reverse order.

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant)</u>

10.1.10.14 Removal and refitting of battery cooling module A/C outlet pipe assembly (EV)

Removal procedure

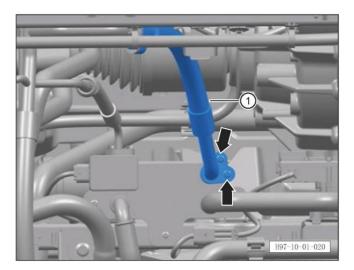
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Removing the engine compartment left and right front trim panel assemblies (refer to <u>8.6.6.20 Removal</u> and refitting of engine compartment left front trim panel (EV)
- 5. Remove the left and right rear trim panel assemblies of the engine compartment (refer to 8.6.6.12 Removal and refitting of engine compartment rear trim panel assembly)
- 6. Remove the battery cooling module A/C outlet pipe assembly.
- a. Unscrew 2 fixing bolts of the battery cooling module A/C outlet pipe assembly.

Tightening torque of bolt: 10±1Nm.

b. Remove the battery cooling module A/C outlet pipe assembly ①.

CAUTION:

Sealing pipeline connectors.



Refitting procedure

The refitting procedure is performed in reverse order.

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming)
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant)</u>

10.1.10.15 Removal and refitting of battery cooling module A/C pipe assembly (REV)

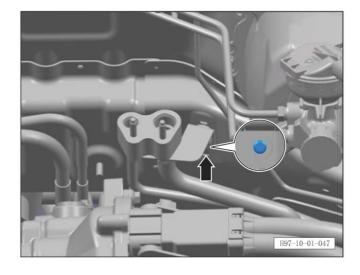
Removal procedure

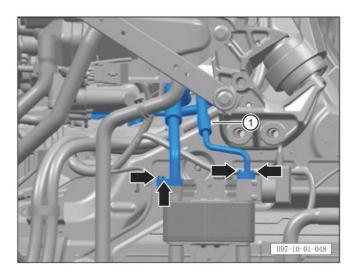
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front evaporator outlet pipe assembly (refer to 10.1.10.10 Removal and refitting of front evaporator outlet pipe assembly (REV)
- 5. Remove the front evaporator inlet pipe assembly (refer to 10.1.10.12 Removal and refitting of front evaporator inlet pipe assembly (REV)
- 6. Remove the battery cooling module A/C pipe assembly.
- a. Unscrew 1 fixing bolt of the battery cooling module A/C pipe assembly.

Tightening torque of bolt: 10±1Nm.

CAUTION:

- Sealing pipeline connectors.





b. Unscrew 4 connecting bolts of the battery cooling module A/C pipe assembly.

Tightening torque of bolt: 10±1Nm.

c. Remove the battery cooling module A/C pipe assembly 1.

CAUTION:

Sealing pipeline connectors.

Refitting procedure

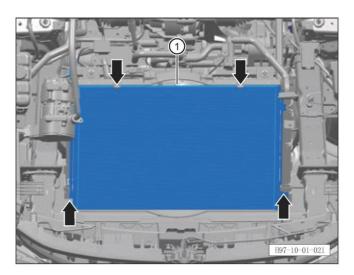
The refitting procedure is performed in reverse order.

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>

10.1.10.16 Removal and refitting of condenser assembly (EV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Remove the battery (refer to <u>3.1.6.1 Maintenance</u> and inspection of the battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front bumper (refer to <u>8.6.3.3 Removal</u> and refitting of front bumper assembly)
- 5. Remove the compressor exhaust pipe assembly (EV) (refer to 10.1.10.5 Removal and refitting of compressor bracket assembly (EV)
- 6. Remove the condenser assembly.
- a. Disengage 4 fixing clips of the condenser assembly.
- b. Remove the condenser assembly $\mathbin{\textcircled{1}}$.



Refitting procedure

The refitting procedure is performed in reverse order.

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 <u>Recovering/adding refrigerant</u>)

10.1.10.17 Removal and refitting of condenser assembly (REV)

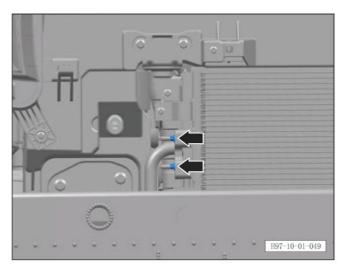
Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front bumper (refer to <u>8.6.3.3 Removal</u> and refitting of front bumper assembly)
- 5. Remove the radiator guide frame (refer to <u>4.4.8.6</u> Removal and refitting of radiator assembly)
- 6. Remove the condenser assembly.
- a. Unscrew 2 connecting nuts of the A/C pipeline.

Tightening torque of nut: 8±1Nm.

CAUTION:

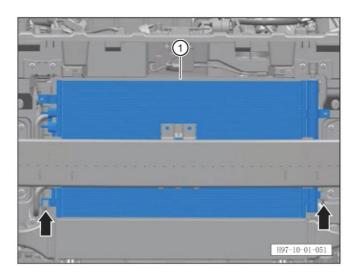
Sealing pipeline connectors.





b. Unscrew 2 fixing bolts of the condenser.

Tightening torque of bolt: 8±1Nm.



- c. Release the fixing clips at both ends of the condenser assembly.
- d. Remove the condenser assembly ①.

Tightening torque of bolt: 8±1Nm.

Refitting procedure

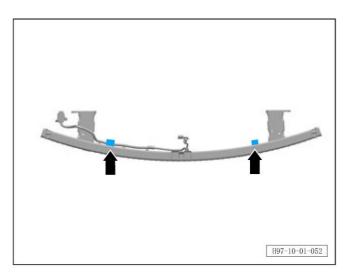
The refitting procedure is performed in reverse order.

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 Recovering/adding refrigerant)

10.1.10.18 Removal and refitting of condenser gasket (REV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front bumper (refer to <u>8.6.3.3 Removal</u> and refitting of front bumper assembly)
- 5. Remove the condenser gasket (REV).
- a. Remove the left and right condenser gaskets.



Refitting procedure

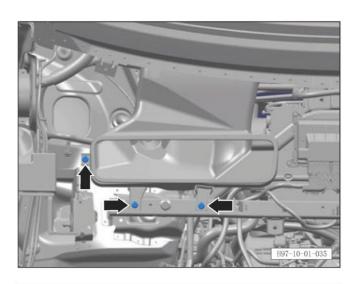
10.1.11 Front air ducts

10.1.11.1 Removal and refitting of A/C inlet duct assembly

Removal procedure

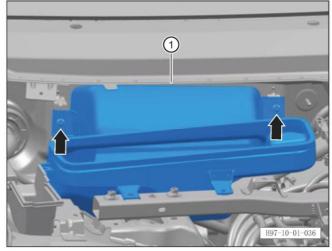
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the wiper cover plate. See <u>8.6.7.9</u> Removal and refitting of wiper cover plate
- 4. Remove the A/C inlet duct assembly.
- a. Unscrew 3 fixing bolts of the A/C inlet duct assembly.

Tightening torque of bolt: 3.5±0.5Nm.



b. Unscrew 2 fixing bolts of the A/C inlet duct assembly. Tightening torque of bolt: 3.5±0.5Nm.





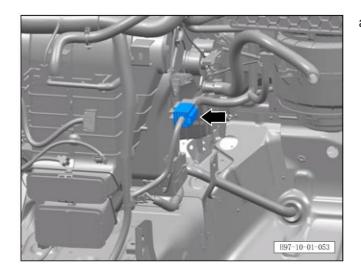
Refitting procedure

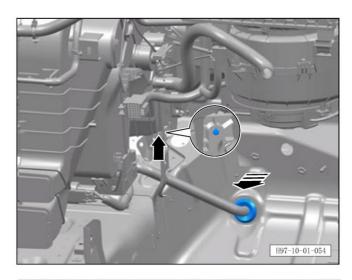
10.1.12 Passenger compartment climate control assembly

10.1.12.1 Removal and refitting of HVAC assembly

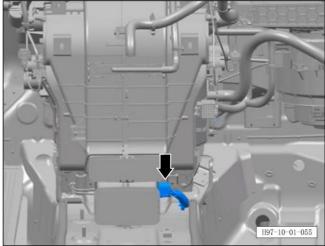
Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front evaporator outlet pipe assembly (refer to 10.1.10.10 Removal and refitting of front evaporator outlet pipe assembly (REV)
- 5. Remove the front evaporator inlet pipe assembly (refer to 10.1.10.12 Removal and refitting of front evaporator inlet pipe assembly (REV)
- 6. Remove the CCB (refer to <u>8.2.3.43 Removal and refitting of CCB</u>)
- 7. Remove the HVAC assembly
- a. Disconnect the HVAC assembly connectors.

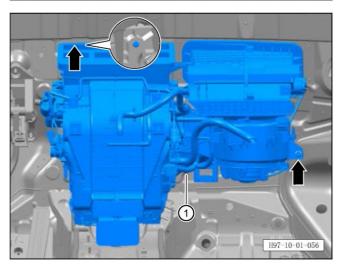




- b. Unscrew the fixing bolts of the HVAC assembly. Tightening torque of bolt: 8±1Nm.
- c. Disconnect the A/C drain pipe as indicated by the arrow.



d. Disconnect the water heating PTC assembly connectors.



- e. Unscrew 2 fixing bolts of the HVAC assembly.
- f. Remove the HVAC assembly 1.

Tightening torque of bolt: 8±1Nm.

Refitting procedure

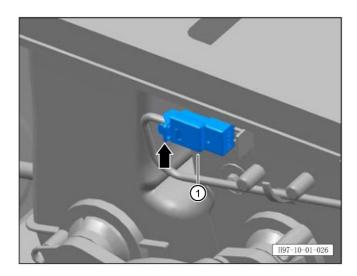
The refitting procedure is performed in reverse order. CAUTION:

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming)
- Add the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>

10.1.12.2 Removal and refitting of air quality sensor

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front evaporator outlet pipe assembly (refer to 10.1.10.10 Removal and refitting of front evaporator outlet pipe assembly (REV)
- 5. Remove the front evaporator inlet pipe assembly (refer to 10.1.10.12 Removal and refitting of front evaporator inlet pipe assembly (REV)
- 6. Remove the CCB (refer to <u>8.2.3.43 Removal and refitting of CCB</u>)
- 7. Remove the HVAC assembly (refer to 10.1.12.1 Removal and refitting of HVAC assembly)
- 8. Remove the air quality sensor.



- a. Disconnect the air quality sensor connectors.
- b. Remove the air quality sensor ①.

Refitting procedure

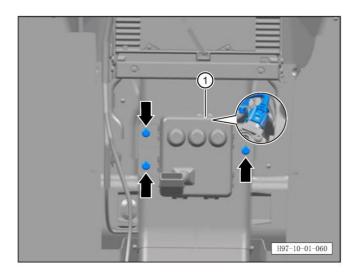
The refitting procedure is performed in reverse order.

- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u> <u>Recovering/adding refrigerant)</u>

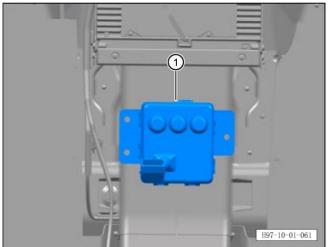
10.1.12.3 Removal and refitting of fragrance generator

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the sub-instrument panel assembly (refer to 8.3.4.22 Removal and refitting of console assembly)
- 4. Remove the fragrance generator.
- a. Disconnect the fragrance generator connector ①.
- b. Unscrew the fixing bolts of the fragrance generator. Tightening torque of bolt: 8±1Nm.



c. Remove the fragrance generator ①.



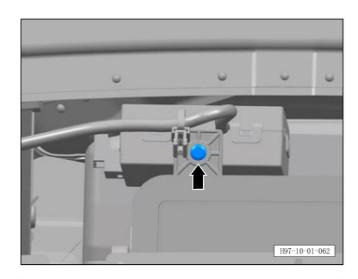
Refitting procedure



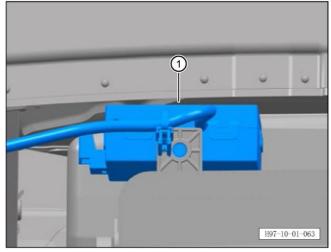
Removal procedure

- 1. Turn off all electrical appliances and the start
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the CCB (refer to <u>8.2.3.43 Removal and refitting of CCB)</u>
- 4. Remove the PM2.5 sensor.
- a. Disconnect the PM2.5 connector and unscrew 1 fixing bolt of the PM2.5 sensor.

Tightening torque of bolt: 8±1Nm.



b. Remove the PM2.5 sensor ①.

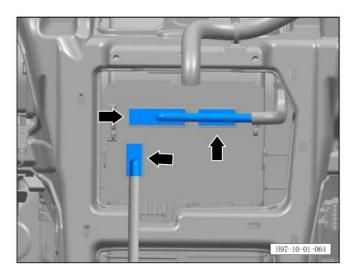


Refitting procedure

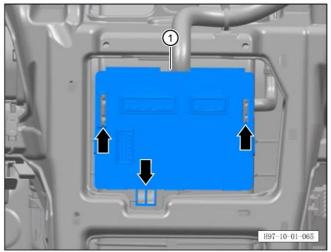
10.1.12.5 Removal and refitting of automatic A/C control unit

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the sub-instrument panel assembly (refer to 8.3.4.22 Removal and refitting of console assembly)
- 4. Remove the automatic A/C control unit.
- a. Disconnect the automatic A/C control unit connector.



b. Disengage 3 fixing clips of the automatic A/C control unit. c. Remove the A/C control unit $\mathbin{\textcircled{\scriptsize 1}}$.

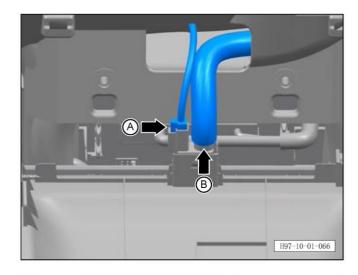


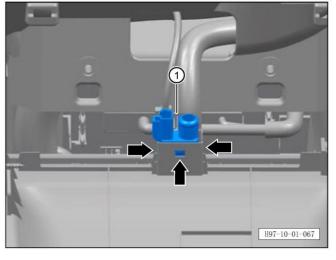
Refitting procedure

10.1.12.6 Removal and refitting of room temperature sensor

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the sub-instrument panel assembly (refer to 8.3.4.22 Removal and refitting of console assembly)
- 4. Remove the room temperature sensor.
- a. Disconnect room temperature sensor connector A.
- b. Disconnect room temperature sensor pipeline B.





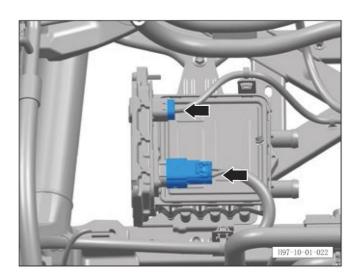
- c. Release 3 fixing clips of the room temperature sensor
- d. Remove the room temperature sensor 1.

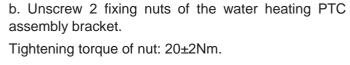
Refitting procedure

10.1.12.7 Removal and refitting of water heating PTC assembly (EV)

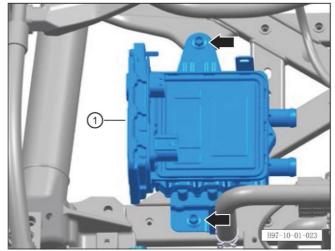
Removal procedure

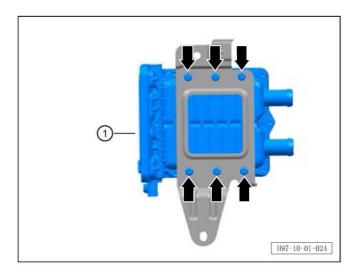
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the PTC water pipe assembly (refer to 4.4.8.22 Removal and refitting of PTC heater inlet pipe assembly)
- 4. Remove the water heating PTC assembly.
- a. Disconnect 2 connectors of the water heating PTC assembly.





c. Remove the water heating PTC assembly and bracket $\mathbin{\textcircled{\scriptsize 1}}$.





d. Unscrew 6 fixing screws of the water heating PTC assembly.

Tightening torque of screw: 8±1Nm

e. Remove the water heating PTC assembly ①.

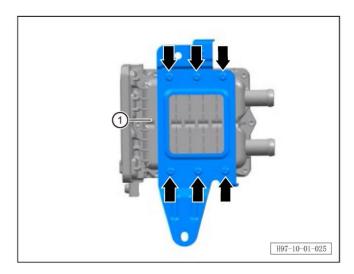
Refitting procedure

The refitting procedure is performed in reverse order.

10.1.12.8 Removal and refitting of water heating PTC assembly (EV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the PTC heater inlet pipe assembly (refer to 4.4.8.22 Removal and refitting of PTC heater inlet pipe assembly)
- 4. Remove the water heating PTC assembly (refer to 10.1.12.7 Removal and refitting of water heating PTC assembly (EV)
- 5. Remove the water heating PTC assembly bracket.



a. Unscrew 6 fixing screws of the water heating PTC assembly.

Tightening torque of screw: 8±1Nm

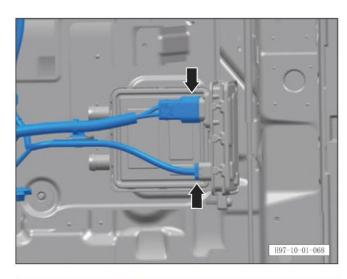
b. Remove the water heating PTC assembly bracket $\widehat{\mbox{\i}}$.

Refitting procedure

10.1.12.9 Removal and refitting of water heating PTC assembly (REV)

Removal procedure

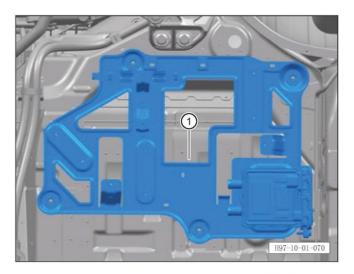
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the PTC water pipe assembly (refer to 4.4.8.22 Removal and refitting of PTC heater inlet pipe assembly)
- 4. Remove the water heating PTC assembly.
- a. Disconnect 2 connectors of the water heating PTC assembly.



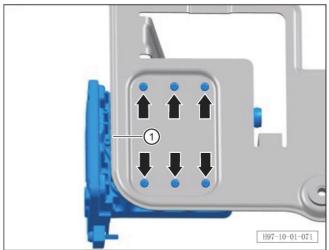


b. Unscrew 4 fixing nuts of the water heating PTC assembly bracket.

Tightening torque of nut: 20±2Nm.



c. Remove the water heating PTC assembly bracket 1).



d. Unscrew 6 fixing screws of the water heating PTC assembly.

The refitting procedure is performed in reverse order.

e. Remove the water heating PTC assembly ①. Tightening torque of screw: 8±1Nm

Refitting procedure

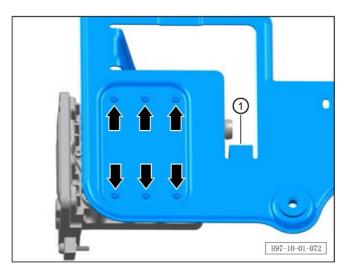
10.1.12.10 Removal and refitting of water heating PTC assembly (REV)

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the PTC water pipe assembly (refer to 4.4.8.22 Removal and refitting of PTC heater inlet pipe assembly)
- 4. Remove the water heating PTC assembly (refer to 10.1.12.9 Removal and refitting of water heating PTC assembly (REV)
- 5. Remove the water heating PTC assembly bracket.
- a. Unscrew 6 fixing screws of the water heating PTC assembly.

Tightening torque of screw: 8±1Nm

b. Remove the water heating PTC assembly bracket ①.



Refitting procedure

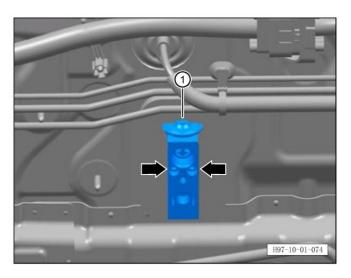
10.1.12.11 Removal and refitting of expansion valve

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant (refer to 10.1.12.12 Recovering/adding refrigerant)
- 4. Remove the front evaporator outlet pipe assembly (refer to 10.1.10.10 Removal and refitting of front evaporator outlet pipe assembly (REV)
- 5. Remove the front evaporator inlet pipe assembly (refer to 10.1.10.12 Removal and refitting of front evaporator inlet pipe assembly (REV)
- 6. Remove the expansion valve.
- a. Unscrew 2 fixing bolts of the expansion valve.

Tightening torque of bolt: 8±1Nm.

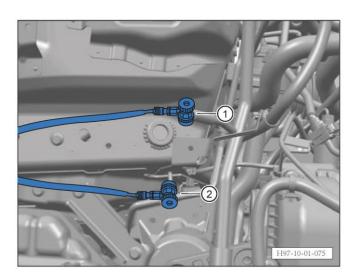
b. Remove the expansion valve ①.



Refitting procedure

The refitting procedure is performed in reverse order.

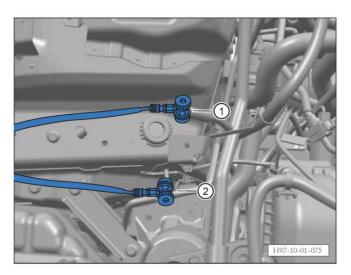
- Replace the O-ring with a new one, and apply A/C compressor lubricating oil to the O-ring.
- Vacuum the A/C system after the refitting is completed (refer to 10.1.12.14 A/C system vacuuming
- Add the refrigerant (refer to <u>10.1.12.12</u>
 Recovering/adding refrigerant)



10.1.12.12 Recovering/adding refrigerant

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Recover the refrigerant.
- a. Connect the high and low pressure lines of the cooling circuit.
- b. Open the low pressure valve switch ① and high pressure valve switch ② of the equipment.
- c. Select the refrigerant recovery of the equipment, start the equipment, and start the recovery.
- d. Check the pressure value of low-pressure gauge of the equipment. When the pressure reaches -34kPa vacuum, turn off the equipment and stop the recovery.



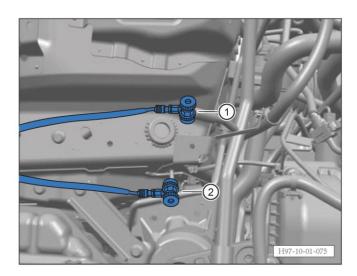
Note:

- Before charging the refrigerant, the A/C system shall be vacuumed.
- Refrigerant charging shall be carried out after the replenishment of the lubricating oil into the A/C compressor.
- 1. Charge the refrigerant.
- a. Select the "Refrigerant make-up" option of the equipment to adjust the filling volume.
- b. Open the low pressure valve switch ①, close the high pressure valve switch ②, and start the equipment for filling.
- c. Observe the display of equipment. When the filling volume has reached the set value, the equipment screen will show that filling is complete.
- d. Close the valve and the filling is complete. Please fill the refrigerant according to the following standards.

Type of refrigerant	Filling volume of refrigerant	
R134a	670g (EV)	
R134a	620g (REV)	

If the equipment shows that the filling speed is too slow, please refer to the following filling methods:

- Disconnect the high pressure connector of the cooling circuit and connect only the low pressure side.
- Close the high and low pressure valves of the equipment.
- Put the car in parking gear, start the car, turn on the A/C and set it to low temperature mode.
- Turn on the low pressure valve switch of the equipment, and the refrigerant will be filled into the refrigeration pipeline from the low pressure side.
- Disconnect the low pressure connector when the pressure gauge shows that the standard low pressure value is reached.
- Refrigerant filling is complete.



10.1.12.13 Recover/add compressor oil

Note:

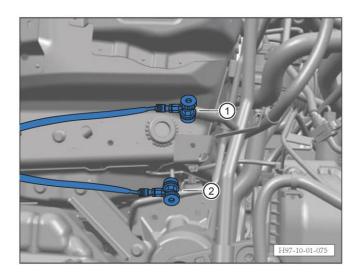
- Before charging the refrigerant, the A/C system shall be vacuumed.
- Refrigerant charging shall be carried out after the replenishment of the lubricating oil into the A/C compressor.
- 1. Drain the compressor lubricating oil.
- a. Connect the high and low pressure lines of the cooling circuit.
- b. Open the low pressure valve switch ① and high pressure valve switch ② of the equipment.
- c. Open the oil discharge valve on the control panel of the A/C refrigerant filling machine, and start the equipment to check whether the A/C compressor lubricating oil is discharged into the collection bottle.
- d. After the discharging of the A/C compressor lubricating oil is completed, stop the oil discharge and close the oil discharge valve.
- e. Check the collection bottle and record the oil amount.
- 2. Replenish the compressor lubricating oil.

Note:

Only add the compressor oil after vacuuming.

Refit the filling bottle and add the compressor lubricating oil as standard

- Connect the high and low pressure pipelines of the refrigeration circuit, open the high pressure valve of the equipment and the lubricating oil filling switch of the compressor.
- Start the A/C refrigerant filling machine and observe the oil level in the filling bottle until it reaches the required level.
- Close the high pressure valve.



10.1.12.14 A/C system vacuuming

- 1. Vacuumize the A/C system.
- a. Connect the high and low pressure lines of the cooling circuit.
- b. Open the low pressure valve switch ① and the high pressure valve switch ② of the equipment, select the option "Vacuumize", and set the time to 15 minutes. Start the equipment to vacuumize, and when the time reaches the set value, the equipment will automatically stop working.
- c. Close the high pressure valve switch ② of the equipment and check the pressure value of the low pressure gauge.
- d. If the pressure value reaches the set value and does not rise again, it can be confirmed that there is no leakage in the cooling circuit, and the compressor lubricating oil and refrigerant can be added.
- e. If the pressure value rises, check the cooling circuit for leaks.

10.2 Safety system

10.2.1 Warnings and precautions

Caution!

- Before removing the steering wheel assembly, the wheels shall be kept in the forward direction and the steering column assembly must be in the locked position.
- After removing the steering wheel assembly, do not move the front tires and wheels, otherwise certain parts may be inaccurately positioned during the refitting, which will cause the airbag clock spring in the steering column assembly to deviate from the center position, resulting in the airbag clock spring damage.

Warning!

This vehicle is equipped with the SRS. Failure to follow proper operating procedures can result in the following:

- The SRS deploys unexpectedly.
- The system does not function when airbag protection is required.

Warning!

You must strictly observe the following principles to avoid the above situations:

- Refer to the exploded view of SRS parts to determine whether you are servicing on/around the SRS assembly, or on the wiring of SRS parts.
- Disconnect the battery negative terminal if you are servicing on/around the SRS assembly, or on the wiring of SRS parts.

Warning for high temperature of deployed SRS ECU

Warning!

- Allow sufficient cooling time before touching any metal surface of a SRS part.
- Do not place inflated SRS assembly next to anything flammable.

Warning for supplement restraint system (SRS) clock spring

Warning!

- Improper refitting of the clock spring assembly will damage the internal coil of the clock spring, which may cause the fault of the coil that makes the ACU fail to work normally, resulting in personal injury.

Warning for scrapping of SRS module

Warning!

- In order to prevent accidental deployment of the SRS that can cause personal injury, the undeployed ACU shall not be disposed as regular workshop waste. Some of the materials contained in the undeployed modules may cause serious illness or personal injury if the sealed container is damaged during the disposal process. The undeployed ACU shall be safely scrapped following the deployment procedures.

Warning for pickup and storage of SRS inflation module

Warning!

- Do not carry the wires or connectors on the ACU.
- Make sure the airbag opening is not facing you or anyone else.

Warning!

- When storing an undeployed ACU, ensure that the airbag opening is not facing the surface where the ACU is placed. The airbag opening shall not face down. Never place any objects on the ACU. There shall be enough space around the airbag for accidental employment, otherwise it will cause personal injury.

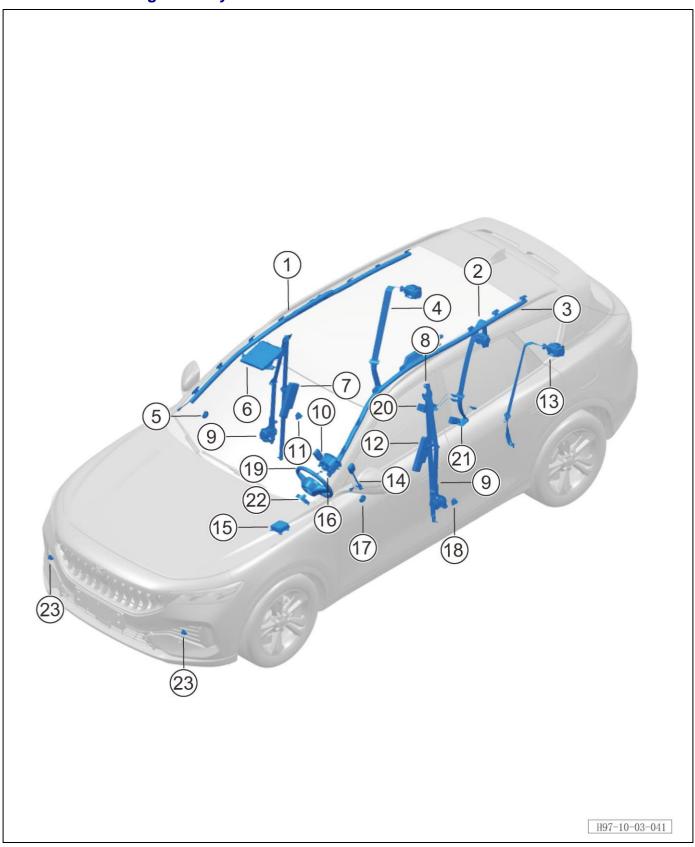
- Never immerse the undeployed ACU in water or contact with other liquids. - Never place the undeployed SRS module near the fire source or in a high temperature area to prevent accidental deployment of the SRS that may cause personal injury.

Warning for handling SRS impact sensors

Warning!

- Do not hit or shake the SRS impact sensor. Before powering on the impact sensor, ensure that the impact sensor is firmly fixed. Failure to follow the correct refitting procedures may cause the SRS to be mistakenly deployed or fails to work when it is supposed to, resulting in personal injury.

10.2.2 Position diagram of system



S/N	Part name	Loading quantity	Remarks
1	Right side curtain airbag assembly	1	
2	Second-row middle seat belt body assembly	1	
3	Left side curtain airbag assembly	1	
4	Second-row right seat belt body assembly	pody assembly 1	
5	Right door pressure sensor	1	
6	Front passenger airbag module	1	
7	Front right side ACU	1	
8	Front seat belt height adjuster	2	
9	Front seat belt body assembly	2	
10	Front right seat belt buckle	1	
11	Right impact sensor	1	
12	Front left ACU	1	
13	Second-row left seat belt body assembly	belt body assembly 1	
14	Front left seat belt buckle	1	
15	Airbag controller	1	
16	Driver airbag module	1	
17	Left door pressure sensor	1	
18	Left side impact sensor	act sensor 1	
19	Steering wheel assembly	1	
20	Rear double buckle components	1	
21	Rear single buckle components	1	
22	Clock spring	1	
23	Front impact sensor	2	

10.2.3 Special tools

S/N	Diagram	Tool number	Name
1		H973607A00	Special tool for removal of airbag

10.2.4 Removal and refitting

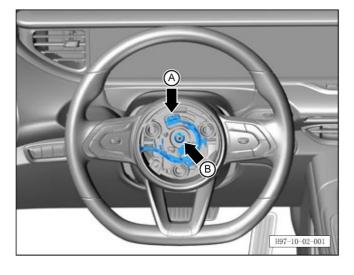
10.2.4.1 Removal and refitting of steering wheel assembly

Removal procedure

Note:

- Re-adjustment of the clock spring is necessary to remove the steering wheel.
- This vehicle is equipped with a driver's airbag, please pay attention to the standard operation when removing the steering wheel.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the driver's ACU (refer to 10.9.2.1 Removal and refitting of driver's ACU)
- 4. Remove the steering wheel.
- a. Turn the steering wheel to center (wheels in straight running position).
- b. Disconnect the combination switch from the clock spring assembly connector A.
- c. Unscrew the fixing bolt B of the steering wheel.

Tightening torque of bolt A: 55±5Nm.





d. Remove the steering wheel ①.

CAUTION:

- When removing the steering wheel, pay attention to the marks on the steering column and steering wheel.
- If there is no mark on the steering column, mark the steering column with a marker before removing the steering wheel.
- When disassembling, screw the fixing bolts of steering wheel into the steering column (3-4 turns is sufficient), pull the steering wheel upwards in the axial direction of the steering column, and then unscrew the bolts.
- Do not turn the clock spring after the steering wheel is removed.

Refitting procedure

The refitting procedure is performed in reverse order.

CAUTION:

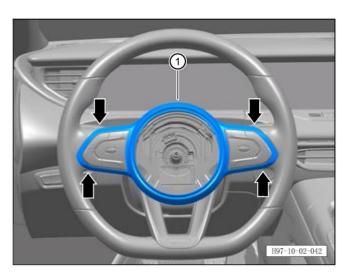
- Check whether the clock spring is in the center before refitting.
- When refitting the steering wheel, the center locating mark of the steering wheel and steering column must be aligned.

10.2.4.2 Removal and refitting of steering wheel trim panel

Removal procedure

Note:

- This vehicle is equipped with a driver's airbag, please pay attention to the standard operation when removing the steering wheel.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the driver's ACU (refer to 10.9.2.1 Removal and refitting of driver's ACU)
- 4. Remove the steering wheel trim panel.
- a. Remove the steering wheel trim plate $\ensuremath{\mathbb{1}}$ along both ends.



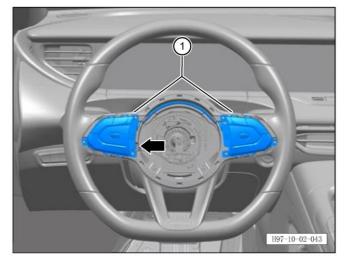
Refitting procedure

10.2.4.3 Removal and refitting of steering wheel button

Removal procedure

Note:

- This vehicle is equipped with a driver's airbag, please pay attention to the standard operation when removing the steering wheel.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the driver's ACU (refer to 10.9.2.1 Removal and refitting of driver's ACU)
- 4. Remove the steering wheel trim panel (refer to 10.2.4.2 Removal and refitting of steering wheel trim panel)
- 5. Remove the steering wheel button.
- a. Disconnect the steering wheel button connector.
- b. Remove the steering wheel button ①.

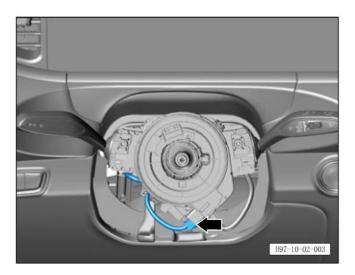


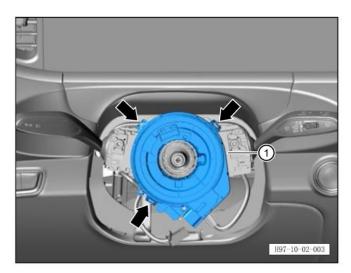
Refitting procedure

10.2.4.4 Removal and refitting of clock spring assembly

Removal procedure

- Re-adjustment of the clock spring is necessary to remove the steering wheel. The clock spring is not replaced separately. If there is any fault, the combination switch and clock spring assembly shall be replaced as a whole.
- This vehicle is equipped with a driver's airbag, please pay attention to the standard operation when removing the steering wheel.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the driver's airbag (refer to 10.9.2.1 Removal and refitting of driver's ACU)
- 4. Remove the steering wheel (refer to 10.2.4.1 Removal and refitting of steering wheel assembly)
- 5. Remove the steering column lower guard assembly (refer to 8.2.3.16 Removal and refitting of steering column lower shroud assembly)
- 6. Remove the clock spring assembly.
- a. Disconnect the clock spring assembly connector.





- b. Disengage 3 fixing clips of the clock spring assembly with a slotted screwdriver.
- c. Remove the clock spring assembly ①.

Refitting procedure

The refitting procedure is performed in reverse order.

CAUTION:

- Check whether the clock spring is in the center before refitting.
- When refitting the steering wheel, the center locating mark of the steering wheel and steering column must be aligned.

10.2.5.1 Removal and refitting of airbag

10.2.5.1 Fault diagnosis

Diagnostic information and procedures of ACU

1 Diagnostic instructions

The DTC can be read via the OBD DLC with the scan tool. With the use of ACU data sheet and reading of data sheet displayed on the scan tool, the function of reading switches and sensor can be performed without the disassembly of any parts. Reading the data sheet is the first step in troubleshooting and one way to reduce diagnostic time.

- 2 Visual inspection
- 1. Confirm the fault symptoms

The most difficult situation in troubleshooting is when no symptoms appear, in which case the user-described fault must be thoroughly analyzed. In addition, you need to simulate the same or similar conditions and environments as when the customer's vehicle fails. If you begin to troubleshoot without confirming the symptoms of the fault, something important will be ignored during repair and wrong guesses may be put forward somewhere no matter how experienced and skilled the maintenance personnel are. This will make troubleshooting impossible.

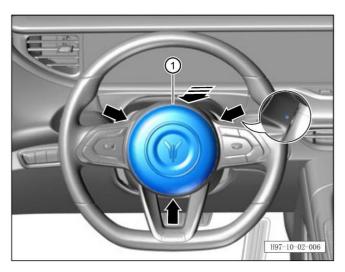
- 2. Check easily accessible or visible system assembly for obvious damage or conditions that could cause a fault.
- 3. The connector joint and the fulcrum of vibration shall be the main parts that need to be thoroughly checked. If there is a possibility of fault due to vibration, it is recommended to use the vibration method.
- a Gently vibrate the potentially faulty sensor part with your finger and check for faults.
- b Gently rock the connection vertically and horizontally
- c Gently rock the harness vertically and horizontally.

10.2.5.2 Removal and refitting of driver's ACU

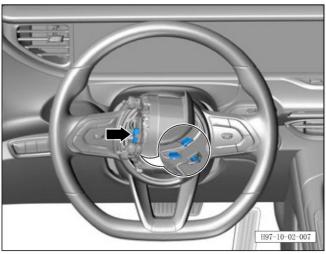
Removal procedure

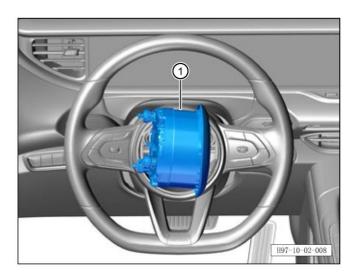
Note:

- Static electricity can cause the airbag to be triggered accidentally. Static electricity must be discharged before the servicing on the system for protection. The body can be touched for a short time.
- Note that if you do not operate as the instructions, it will affect the normal operation of the SRS and may cause injury to the driver.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal. Refer to 3.1.6.1 Maintenance and inspection battery
- 3. Remove the driver's ACU.
- a. Use the special airbag removal tool H973607A00 to connect into the rear of the steering wheel and disengage the driver's airbag latch.
- b. Take out the driver's ACU ① as indicated by the arrow.



c. Disconnect driver's airbag and horn connector.





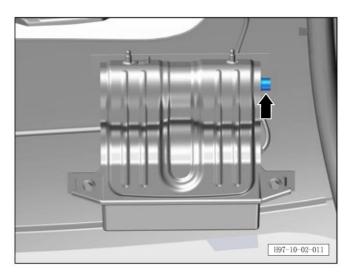
d. Take out the driver's ACU ①.

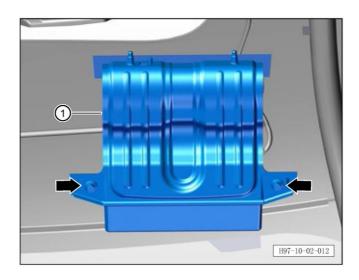
Refitting procedure

10.2.5.3 Removal and refitting of front passenger's ACU

Removal procedure

- Static electricity can cause the airbag to be triggered accidentally. Static electricity must be discharged before the servicing on the system for protection. The body can be touched for a short time.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal. Refer to 3.1.6.1 Maintenance and inspection battery
- 3. Remove the front ceiling lamp assembly (refer to 9.9.11.2 Removal and refitting of ceiling lamp assembly)
- 4. Remove the rear ceiling lamp assembly (refer to 9.9.11.3 Removal and refitting of rear ceiling lamp assembly)
- 5. Remove the left and right sun visors (refer to 8.5.4.3 Removal and refitting of sun visor)
- 6. Remove the front and rear safety handles (refer to 8.5.3.1 Removal and refitting of safety handle)
- 7. Remove the roof inner trim panel assembly (refer to 8.5.61 Removal and refitting of roof inner trim panel assembly)
- 8. Remove the front passenger's ACU.
- a. Disconnect the driver's ACU connector.





- b. Unscrew 2 fixing bolts of the front passenger's ACU.
- c. Remove the front passenger's ACU ①.

Tightening torque of screw: 10±1Nm

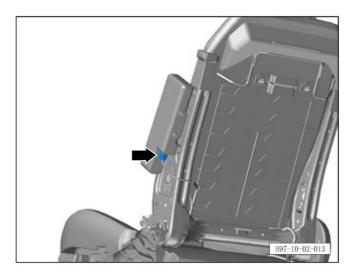
Refitting procedure

The refitting procedure is performed in reverse order.

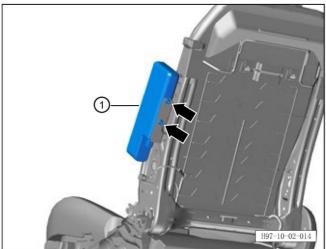
10.2.5.4 Removal and refitting of front left ACU

Removal procedure

- Static electricity can cause the airbag to be triggered accidentally. Static electricity must be discharged before the servicing on the system for protection. The body can be touched for a short time.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the left front seat backrest cover assembly (refer to 8.1.4.7 Removal and refitting of front seat backrest cover assembly)
- 4. Remove the front left ACU.



a. Disconnect the front left ACU connector.



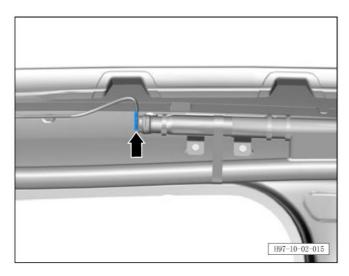
- b. Unscrew 2 fixing nuts of the left front ACU. Tightening torque of nut: 9±1Nm.
- c. Remove the front left ACU ①.

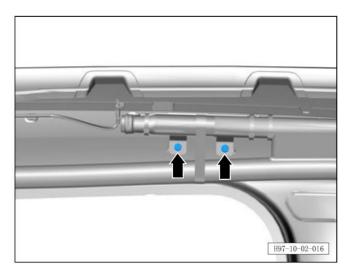
Refitting procedure

10.2.5.5 Removal and refitting of left side curtain airbag assembly

Removal procedure

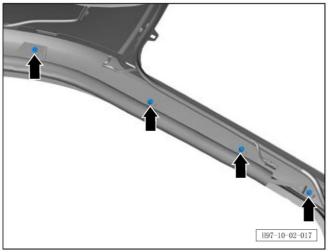
- The removal and refitting of the left side curtain airbag assembly is described here, which can be referred to for the operations on the right side.
- Static electricity can cause the airbag to be triggered accidentally. Static electricity must be discharged before the servicing on the system for protection. The body can be touched for a short time.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the A-pillar upper protective plate assembly (refer to <u>8.5.5.1 Removal and refitting of A-pillar upper protective plate assembly)</u>
- 4. Remove the left B-pillar upper protective plate assembly (refer to <u>8.5.5.3 Removal and refitting of B-pillar upper protective plate assembly)</u>
- 5. Remove the left C-pillar upper protective plate assembly (refer to 8.5.5.7 C-pillar upper protective plate assembly)
- 6. Remove the roof inner trim panel assembly (refer to 8.5.6.1 Removal and refitting of roof inner trim panel assembly)
- 7. Remove the left side curtain airbag assembly.
- a. Disconnect the connector of left side curtain airbag assembly.





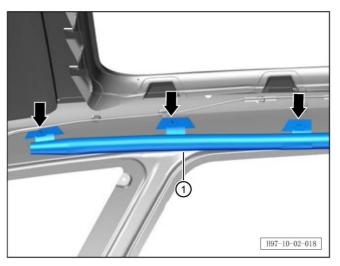
b. Unscrew 2 fixing bolts of the left side curtain airbag assembly.

Tightening torque of bolt: 9±1Nm.



c. Unscrew 4 fixing bolts at the front of the left side curtain airbag assembly.

Tightening torque of bolt: 9±1Nm.



d. Unscrew 3 fixing bolts at the rear of the left side curtain airbag assembly.

Tightening torque of bolt: 9±1Nm.

e. Remove the left side curtain airbag assembly $\mathbin{\textcircled{\scriptsize 1}}$.

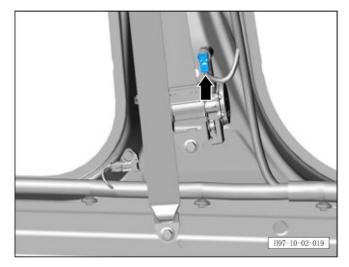
Refitting procedure

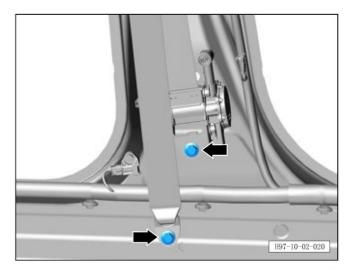
10.2.6 Removal and refitting of seat belt

10.2.6.1 Removal and refitting of front left seat belt body assembly

Removal procedure

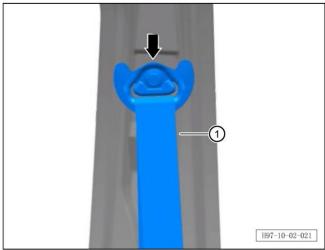
- The removal and refitting of the left seat belt body assembly is described here, which can be referred to for the operations on the right side.
- Static electricity can cause the airbag to be triggered accidentally. Static electricity must be discharged before the servicing on the system for protection. The body can be touched for a short time.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the left B-pillar lower protective plate assembly (refer to <u>8.5.5.2 Removal and refitting of B-pillar lower protective plate assembly)</u>
- 4. Remove the front left seat belt body assembly.
- a. Disconnect the connector of left seat belt body assembly.





b. Unscrew 2 fixing bolts on the lower part of the seat belt body assembly.

Tightening torque of bolt: 50±8Nm.



c. Unscrew 1 fixing bolt on the upper part of the seat belt body assembly.

Tightening torque of bolt: 50±8Nm.

d. Remove the left seat belt body assembly ①.

Refitting procedure

The refitting procedure is performed in reverse order.

CAUTION:

The bolts involved in above disassembly and assembly are all applied with the thread glue. To facilitate disassembly, you can heat them with a hot air blower before disassembly, and use a damp cloth to protect the adjacent seat belt during heating.

10.2.6.2 Removal and refitting of front left seat belt height adjuster

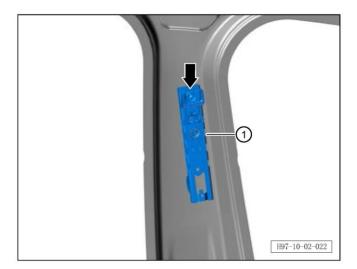
Removal procedure

Note:

- The removal and refitting of front left seat belt height adjuster is described here, which can be referred to for the operations on the right side.
- Static electricity can cause the airbag to be triggered accidentally. Static electricity must be discharged before the servicing on the system for protection. The body can be touched for a short time.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the left B-pillar upper protective plate assembly (refer to <u>8.5.5.3 Removal and refitting of B-pillar upper protective plate assembly)</u>
- 4. Remove the front left seat belt body assembly (refer to 10.2.6.1 Removal and refitting of front left seat belt body assembly)
- 5. Remove the front left seat belt height adjuster.
- a. Unscrew 1 fixing bolt of the left seat belt height adjuster.

Tightening torque of bolt: 50±8Nm.

b. Remove the left seat belt height adjuster ①.

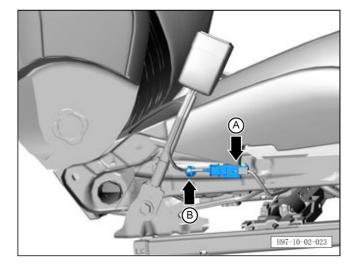


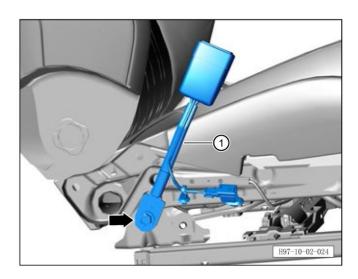
Refitting procedure

10.2.6.3 Removal and refitting of front seat belt buckle

Removal procedure

- The removal and refitting of the front left seat belt buckle, which can be referred to for the operations on the right side.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the front seat assembly (refer to <u>8.1.4.1</u> Removal and refitting of front seat assembly)
- 4. Remove the left seat cushion foam assembly of the front seat (refer to <u>8.1.4.5 Removal and refitting of front seat cushion foam assembly</u>)
- 5. Remove the front cushion cover assembly (refer to 8.1.4.6 Removal and refitting of front cushion cover assembly)
- 6. Remove the front left seat belt buckle.
- a. Disconnect the connector A and the clip of the front left seat belt buckle.
- b. Disengage the fixing clip B.





- c. Unscrew the fixing bolts of the front left seat belt buckle.
- d. Remove the front left seat belt buckle 1).

Tightening torque of bolt: 50±8Nm.

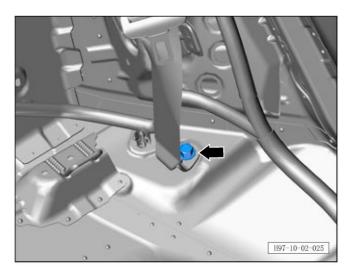
Refitting procedure

The refitting procedure is performed in reverse order.

10.2.6.4 Removal and refitting of second-row side seat belt body assembly

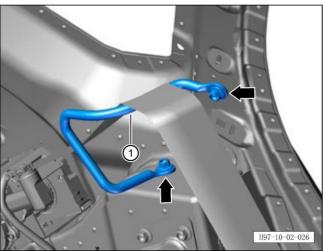
Removal procedure

- The removal and refitting of the second-row left seat belt is described here, which can be referred to for the operations on the right side.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the rear seat cushion assembly (refer to 8.1.6.1 Removal and refitting of rear seat cushion assembly)
- 4. Remove the rear left back assembly (refer to 8.1.6.4 Removal and refitting of rear left back assembly)
- 5. Remove the left C-pillar lower protective plate assembly (refer to 8.5.5.4 Removal and refitting of left C-pillar lower protective plate assembly)
- 6. Remove the second-row left seat belt body assembly.



a. Unscrew the fixing bolts of the second-row left seat belt body assembly.

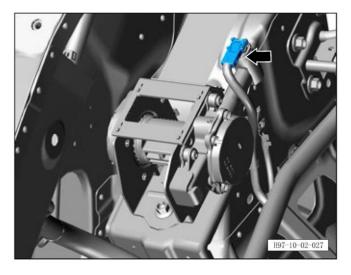
Tightening torque of bolt: 50±8Nm.



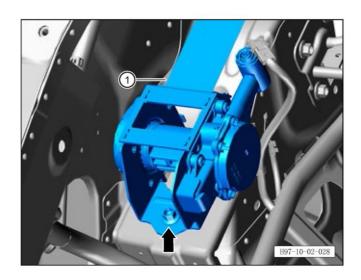
b. Unscrew the fixing bolts from the guide rod of the second-row left seat belt body assembly.

Tightening torque of bolt: 20±3Nm.

c. Remove the second-row left seat belt guide rod 1.



d. Disconnect the connector of second-row left seat belt body assembly.



- e. Unscrew the fixing bolts of the second-row left seat belt body assembly.
- f. Remove the second-row left seat belt body assembly ①.

Tightening torque of bolt: 50±8Nm.

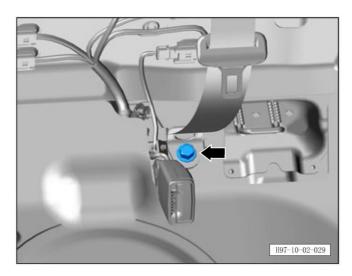
Refitting procedure

The refitting procedure is performed in reverse order.

10.2.6.5 Removal and refitting of second-row seat middle seat belt body assembly

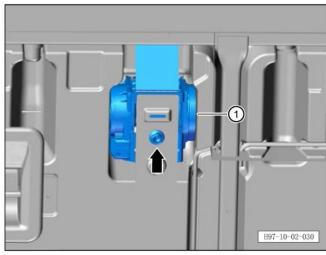
Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the rear seat cushion assembly (refer to 8.1.6.1 Removal and refitting of rear seat cushion assembly)
- 4. Remove the rear left back assembly (refer to 8.1.6.4 Removal and refitting of rear left back assembly)
- 5. Remove the second-row middle seat belt body assembly.



a. Unscrew the fixing bolts of the second-row middle seat belt body assembly.

Tightening torque of bolt: 50±8Nm.



b. Unscrew the fixing bolts of the seat middle seat belt body assembly.

Tightening torque of bolt: 50±8Nm.

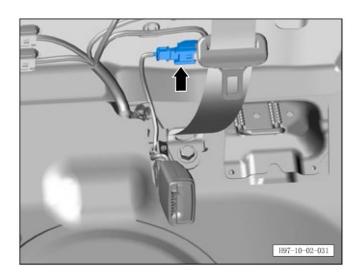
c. Remove the second-row middle seat belt body assembly $\mathbin{\textcircled{\scriptsize 1}}.$

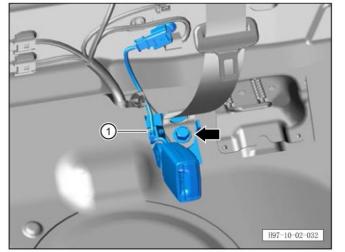
Refitting procedure

10.2.6.6 Removal and refitting of rear single buckle components

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal. Refer to 3.1.6.1 Maintenance and inspection battery
- 3. Remove the rear seat cushion assembly (refer to 8.1.6.1 Removal and refitting of rear seat cushion assembly)
- 4. Remove the rear left back assembly (refer to 8.1.6.4 Removal and refitting of rear left back assembly)
- 5. Remove the rear single buckle components.
- a. Disconnect the rear single buckle component connectors.





b. Unscrew the fixing bolts of the rear single buckle components.

Tightening torque of bolt: 50±8Nm.

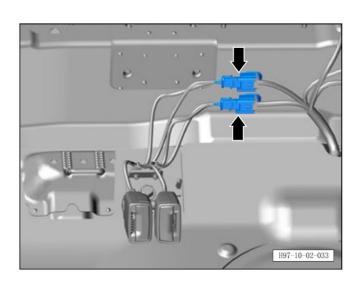
c. Remove the rear single buckle components ①.

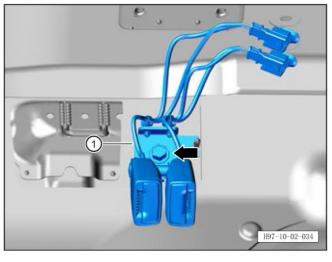
Refitting procedure

10.2.6.7 Removal and refitting of rear double buckle components

Removal procedure

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the rear seat cushion assembly (refer to 8.1.6.1 Removal and refitting of rear seat cushion assembly)
- 4. Remove the rear left back assembly (refer to 8.1.6.4 Removal and refitting of rear left back assembly)
- 5. Remove the rear double buckle components.
- a. Disconnect 2 connectors of the rear double buckle components.





- b. Unscrew the fixing bolts of the rear double buckle components.
- c. Remove the rear double buckle components $\mathbin{\textcircled{\scriptsize 1}}.$

Tightening torque of bolt: 50±8Nm.

Refitting procedure

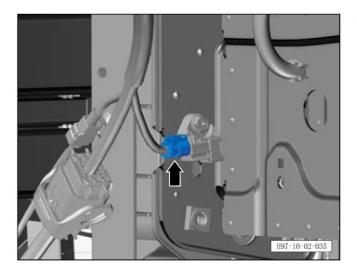
10.2.7 Removal and refitting of passive safety control and sensor

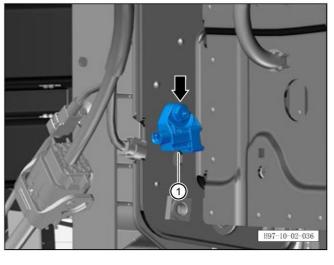
10.2.7.1 Removal and refitting of front impact sensor

Removal procedure

Note:

- The removal and refitting of the left front impact sensor is described here, which can be referred to for the operations on the right side.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the front wheel housing mudguard assembly (refer to 8.6.4.1 Removal and refitting of front wheel housing mudguard assembly)
- 4. Remove the left front impact sensor.
- a. Disconnect the left front impact sensor connector.





b. Unscrew the fixing bolts of the left front impact sensor.

Tightening torque of bolt: 9±1Nm.

c. Remove the left front impact sensor ①.

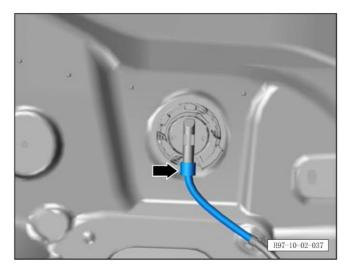
Refitting procedure

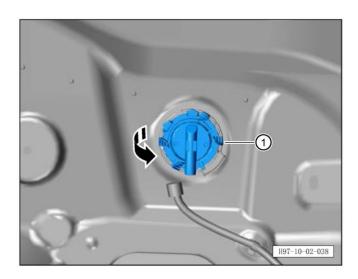
The refitting procedure is performed in reverse order.

10.2.7.2 Removal and refitting of door pressure sensor

Removal procedure

- The removal and refitting of the left side door pressure sensor is described here, which can be referred to for the operations on the right side.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the left front door panel assembly (refer to 8.4.2.1 Removal and refitting of front door trim panel assembly)
- 4. Remove the left side door pressure sensor.
- a. Disconnect the left side door pressure sensor connector.





b. Unscrew the left side door pressure sensor ① as indicated by the arrow.

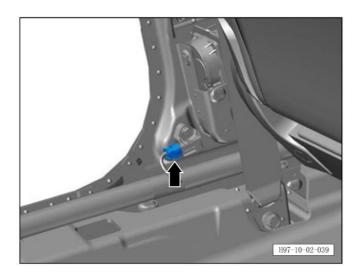
Refitting procedure

The refitting procedure is performed in reverse order.

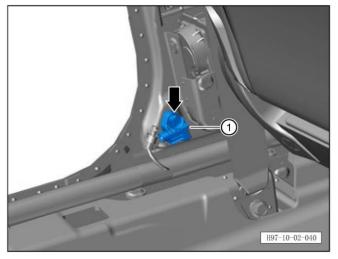
10.2.7.3 Removal and refitting of side impact sensor

Removal procedure

- The removal and refitting of the left side impact sensor is described here, which can be referred to for the operations on the right side.
- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the B-pillar lower protective plate assembly (refer to 8.5.5.2 Removal and refitting of B-pillar lower protective plate assembly)
- 4. Remove the left side impact sensor.



a. Disconnect the left side impact sensor connector.



- b. Unscrew the fixing bolts of the left side impact sensor.
- c. Remove the left side impact sensor ①. Tightening torque of bolt: 9±1Nm.

Refitting procedure

10.2.7.4 Removal and refitting of airbag ECU

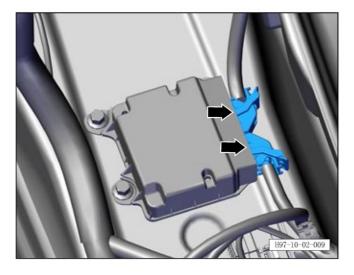
Removal procedure

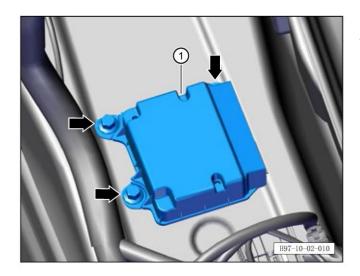
Note:

 Static electricity can cause the airbag to be triggered accidentally. Static electricity must be discharged before the servicing on the system for protection.

The body can be touched for a short time.

- 1. Turn off all electrical appliances and the start switch.
- 2. Disconnect the battery negative terminal (refer to 3.1.6.1 Maintenance and inspection of battery)
- 3. Remove the console assembly (refer to <u>8.3.4.22</u> Removal and refitting of console assembly)
- 4. Remove the rear of the rear face blowing duct (refer to <u>8.3.4.26 Removal and refitting of rear of rear</u> face blowing duct)
- 5. Remove the rear foot blowing duct front section assembly (refer to <u>8.3.4.28 Removal and refitting of rear foot blowing duct air distributor assembly</u>)
- 6. Remove the driver's airbag ECU.
- a. Disconnect 2 connectors of the driver's airbag ECU.





b. Unscrew 3 fixing bolts of the airbag ECU.

Tightening torque of bolt: 9±1Nm.

c. Remove the airbag ECU $\mathbin{\textcircled{\scriptsize 1}}$.

Refitting procedure