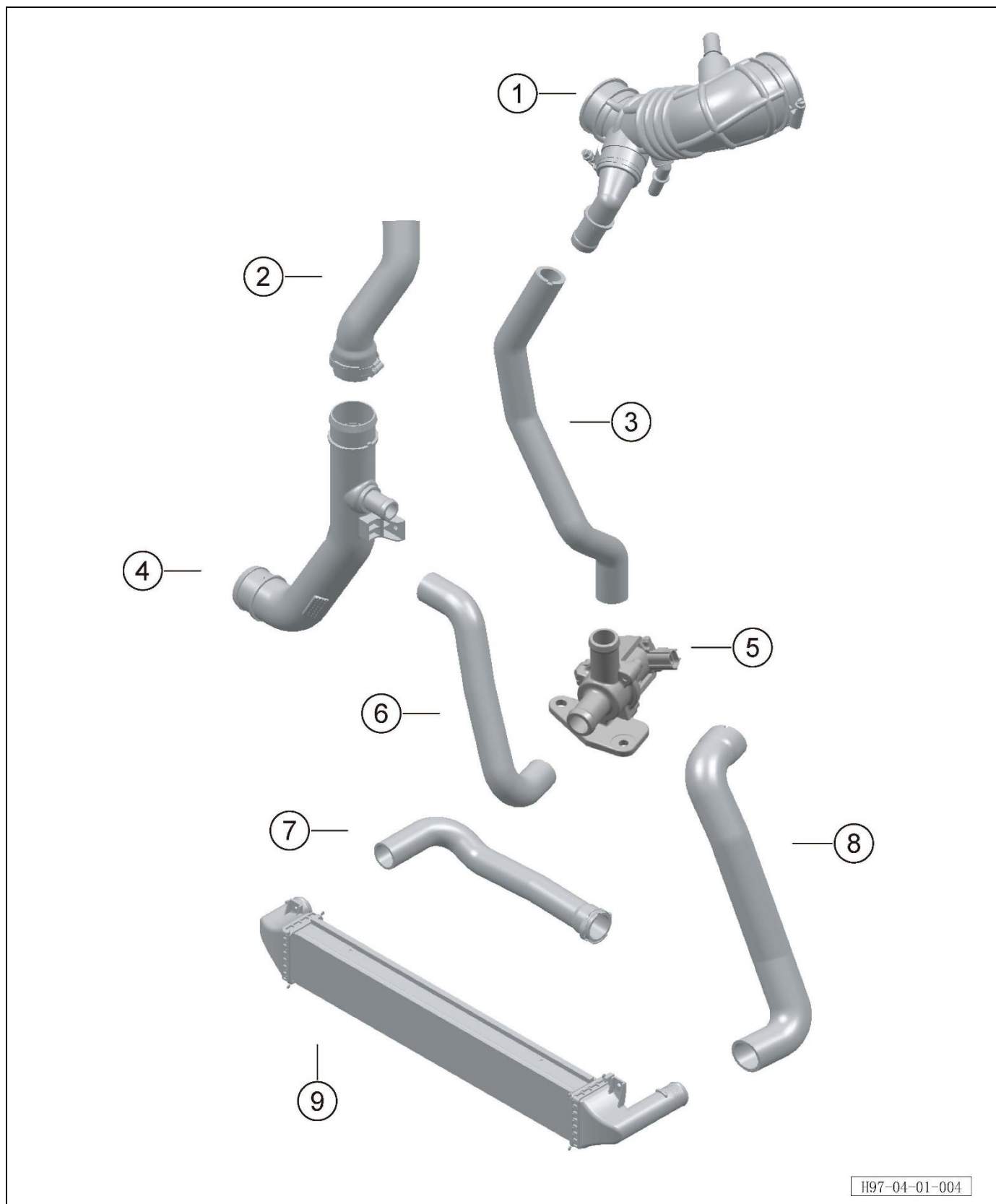
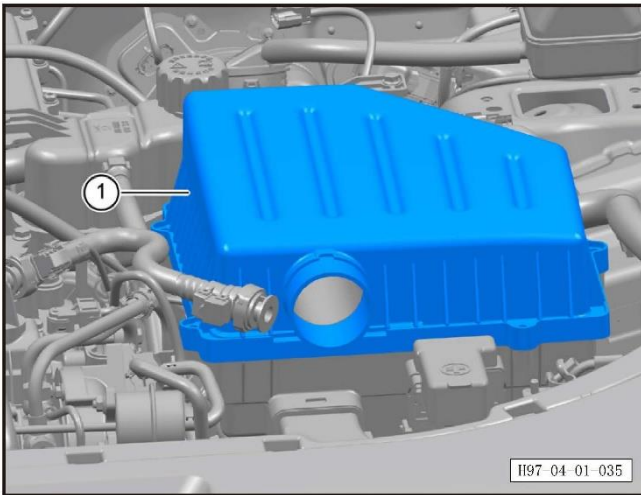


### 4.1.3 Location diagram of range extender assembly

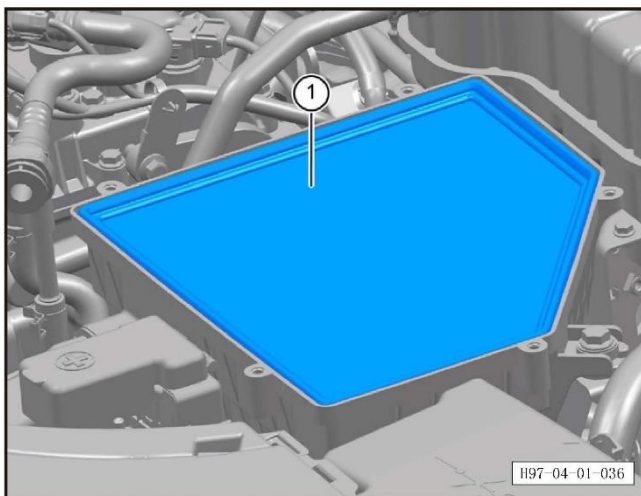


4.1.4.3 Intercooler assembly





c. Remove the air filter upper housing ①.



d. Take out the air filter element ①.

Refitting procedure

The refitting procedure is performed in reverse order.

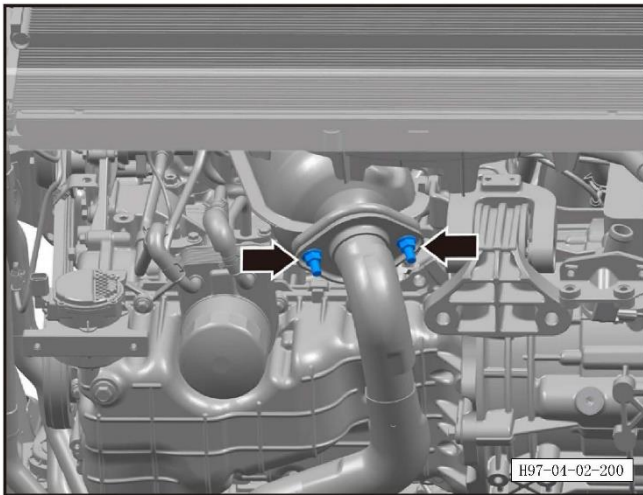
#### 4.2.9.2 Removal and refitting of bellows assembly

##### Removal procedure

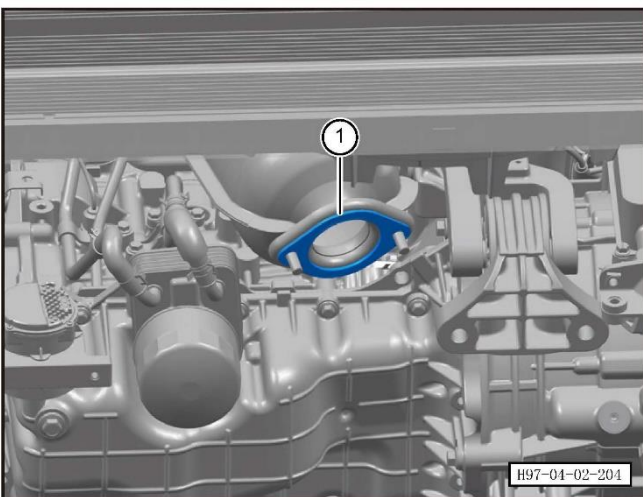
1. Turn off all electrical appliances and turn off the start switch.
2. Open the engine hood.
3. Remove the engine compartment trim panel.
4. Disconnect the battery negative terminal.
5. Lift the vehicle.
6. Remove the front lower protective plate (refer to [8.6.4.3 Removal and refitting of front lower protective plate \(REV\)](#))
7. Remove the range extender assembly (refer to [4.5.8.1 Removal and refitting of range extender assembly](#))
8. Remove the bellows assembly.

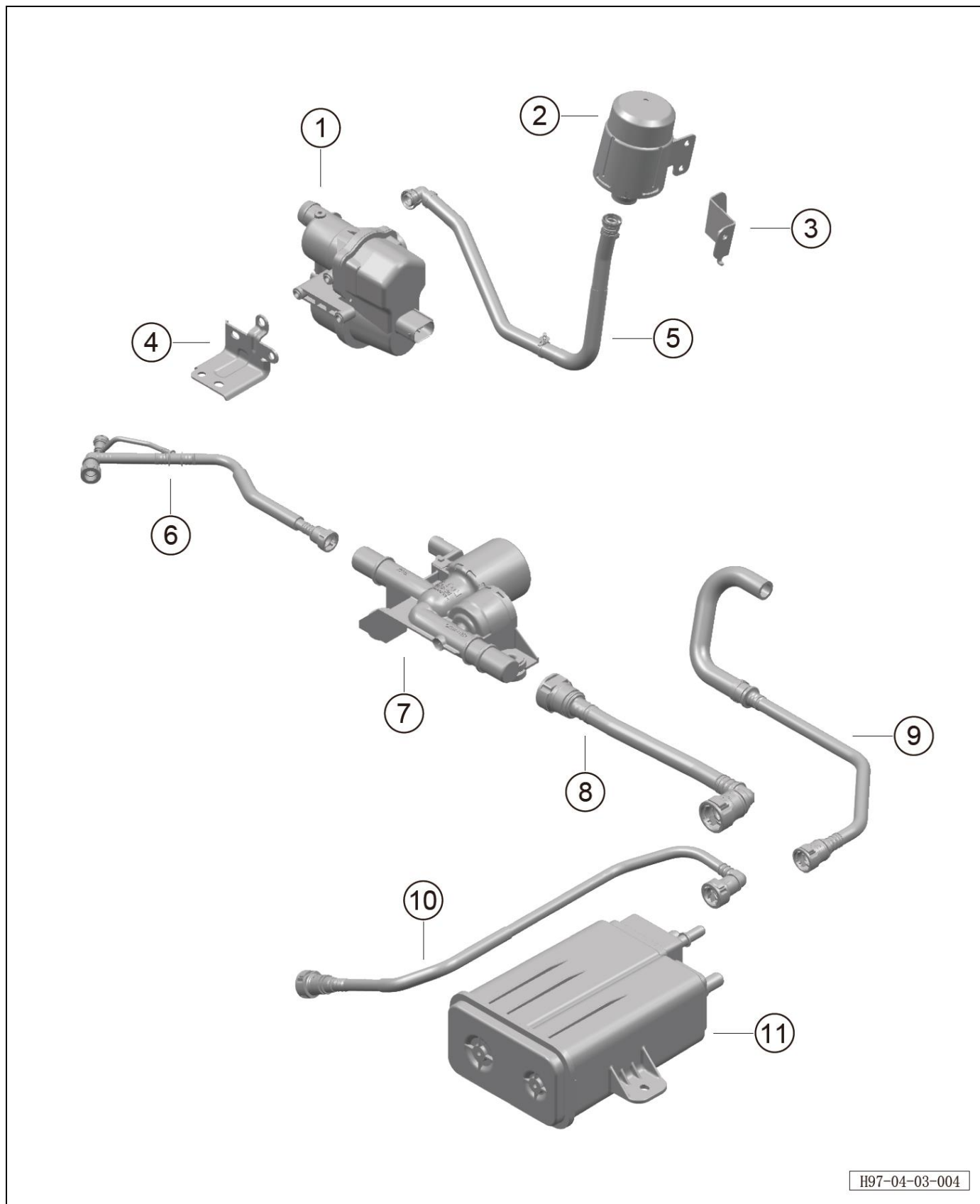
- a. Unscrew the 2 nuts connecting the three-way catalytic converter assembly and the exhaust bellows assembly.

Tightening torque of nut:  $20\pm 2\text{Nm}$ .



- b. Take out the bellows gasket ① and discard it.





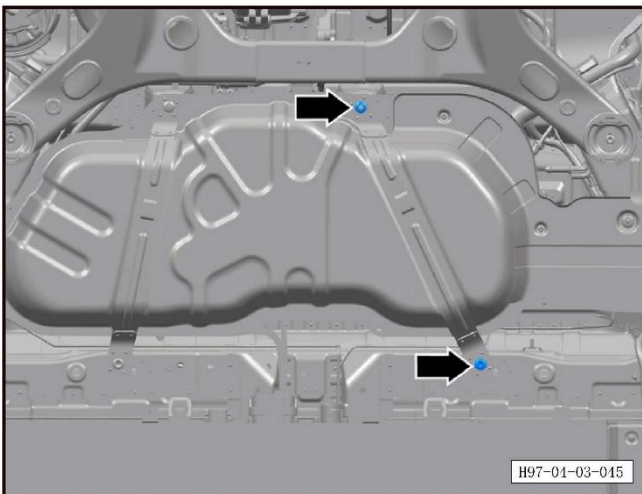
#### 4.3.9.5 Removal and refitting of fuel tank mounting strap I

##### Removal procedure

1. Turn off all electrical appliances and turn off the start switch.
2. Open the engine hood.
3. Remove the engine compartment trim panel.
4. Disconnect the battery negative terminal.
5. Remove the fuel tank mounting strap I.

- a. Unscrew the 2 bolts on the fuel tank mounting strap I.

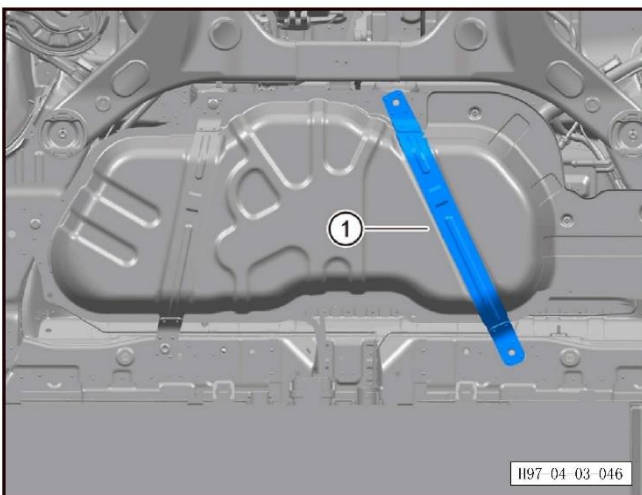
Tightening torque of bolt/nut:  $22\pm 2\text{Nm}$ .



- b. Take down the fuel tank mounting strap I ①.

##### CAUTION:

- When removing the fuel tank mounting strap, a lifting device is required to hold the bottom of the fuel tank.



##### Refitting procedure

Refit in reverse order of removal.

##### CAUTION:

- For the fuel pressure relief of VOYAH FREE REV, please follow the steps in 4.3.1 Precautions at the beginning of this chapter.

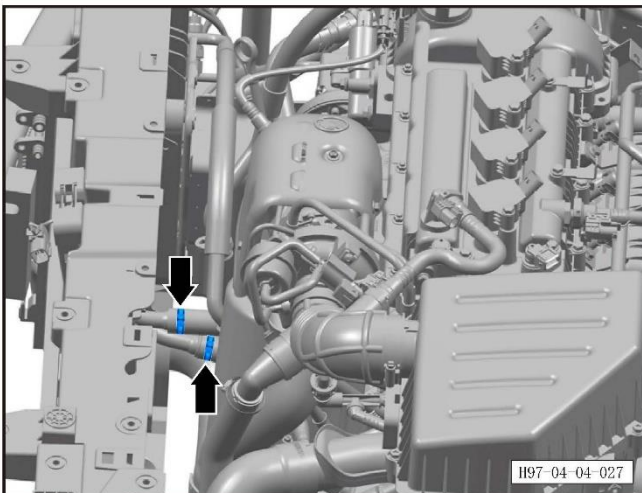
#### 4.4.8.5 Removal and refitting of low temperature radiator assembly (REV)

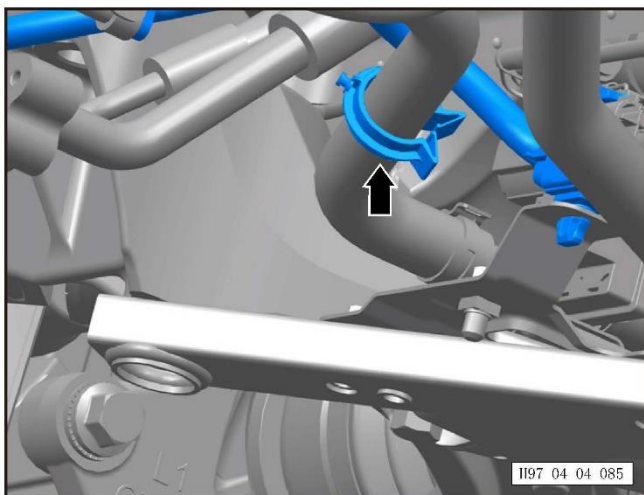
##### Removal procedure

1. Turn off all electrical appliances and turn off the start switch.
2. Open the engine hood.
3. Remove the engine compartment trim panel.
4. Disconnect the battery negative terminal.
5. Remove the radiator fan motor assembly (refer to [4.4.8.4 Removal and refitting of radiator fan motor assembly](#))
6. Remove the front bumper assembly (refer to [8.6.3.3 Removal and refitting of front bumper assembly](#))
7. Remove the radiator guide frame (refer to [8.6.3.14 Removal and refitting of radiator guide frame \(REV\)](#))
8. Remove the radiator water inlet hose (refer to [4.4.8.69 Removal and refitting of radiator water inlet hose](#))
9. Remove the radiator water outlet hose (refer to [4.4.8.70 Removal and refitting of radiator water outlet hose](#))
10. Remove the low temperature radiator assembly.
  - a. Loosen the clamps of the low temperature radiator water inlet and outlet pipe assembly.

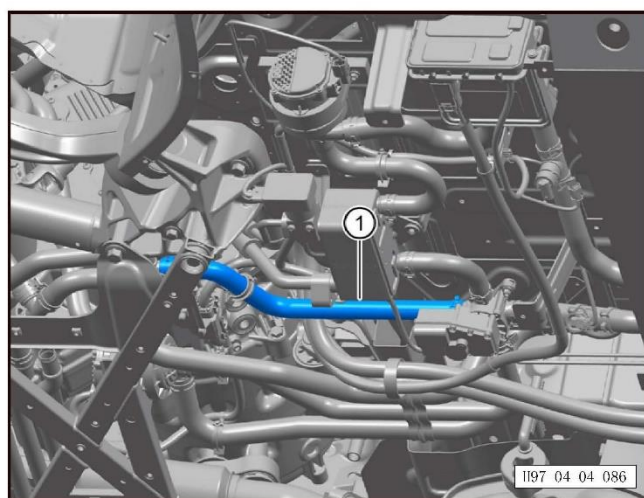
##### CAUTION:

- Drain the coolant from the corresponding pipelines before removing them.
- After refitting, coolant must be added as required.





c. Disconnect the clip in the middle of the four-way control valve water pipe I.

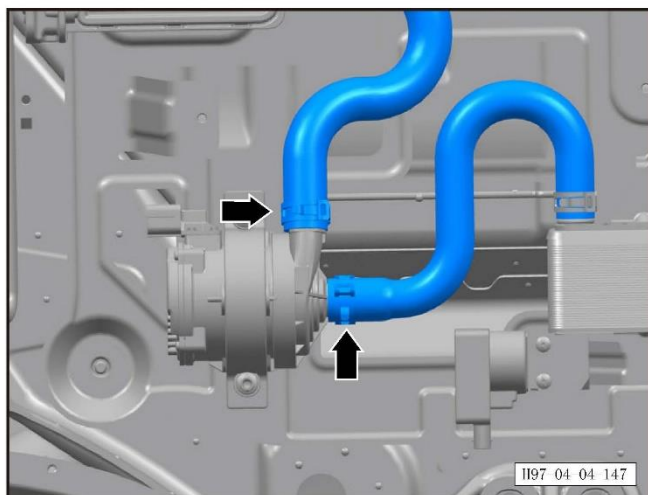


d. Take out the four-way control valve water pipe I ①.

Refitting procedure

The refitting procedure is performed in reverse order.

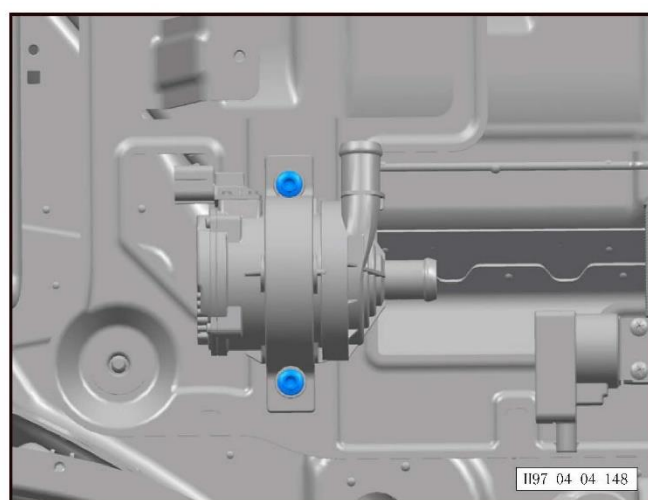




c. Disconnect 2 hoses connecting the water pump assembly.

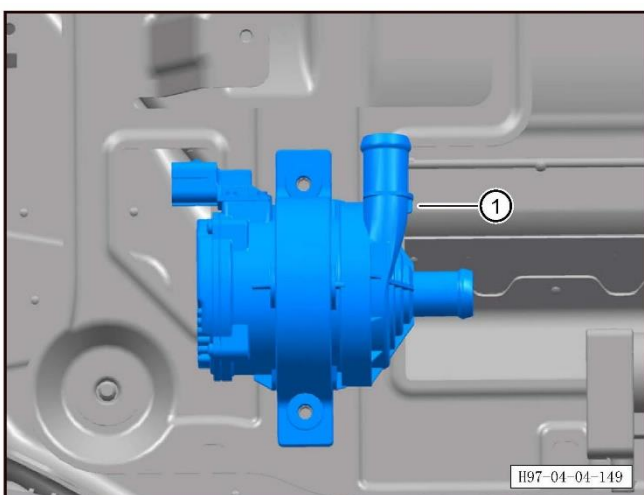
CAUTION:

- Drain the coolant from the corresponding pipelines before removing them.
- After refitting, coolant must be added as required.



d. Unscrew 2 bolts on the water pump assembly.

Tightening torque of bolt:  $8\pm 1$ Nm.



e. Take out the water pump assembly ①.

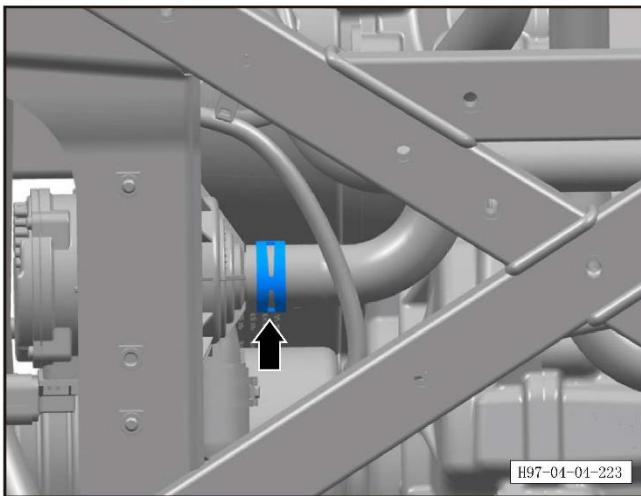
Refitting procedure

The refitting procedure is performed in reverse order.

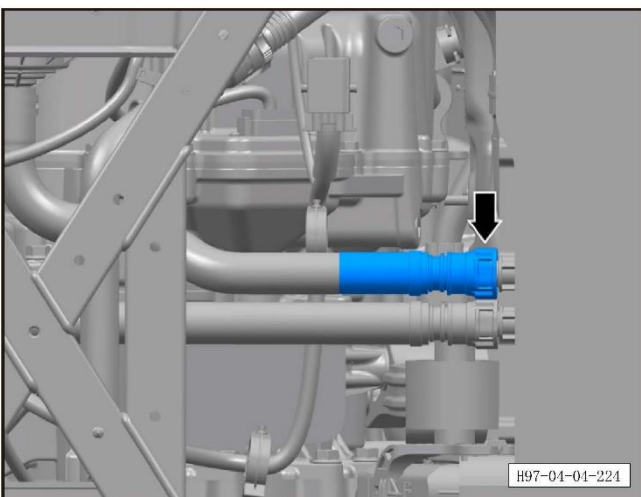
#### 4.4.8.63 Removal and refitting of battery pack water outlet pipe assembly

##### Removal procedure

1. Turn off all electrical appliances and turn off the start switch.
2. Open the engine hood.
3. Remove the engine compartment trim panel.
4. Disconnect the battery negative terminal.
5. Remove the battery pack water outlet pipe assembly.



- a. Disconnect 1 clamp on the battery pack water outlet pipe assembly.

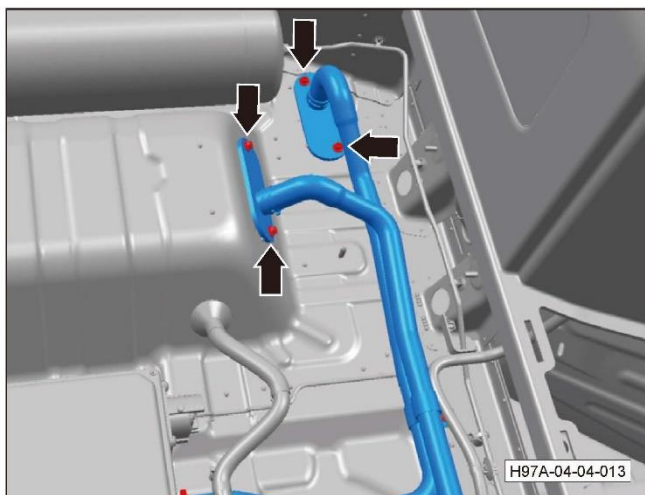


- b. Disconnect 1 pipe clamp connecting the battery pack water outlet pipe assembly to the battery pack.

#### 4.4.8.44 Removal and refitting of charger water pipe assembly (REV Facelift)

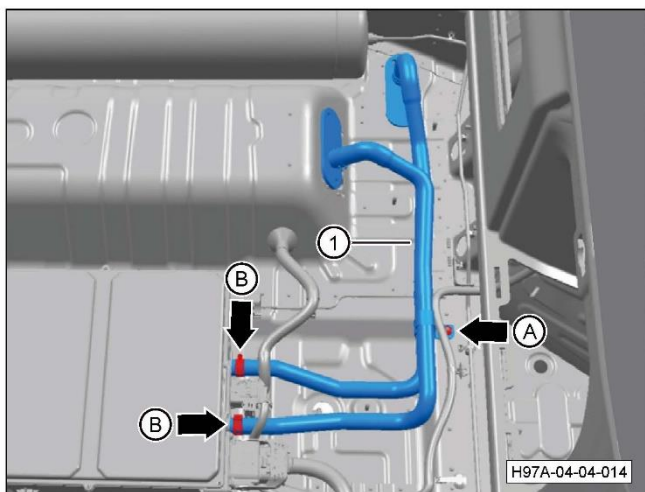
##### Removal procedure

1. Turn off all electrical appliances and turn off the start switch.
2. Open the engine hood.
3. Remove the engine compartment trim panel.
4. Disconnect the battery negative terminal.
5. Remove the rear motor water inlet hose (refer to [X Removal and refitting of rear motor water inlet hose](#))
6. Remove the rear motor water outlet pipe 2 (refer to [X Removal and refitting of rear motor water outlet pipe 2](#))
7. Remove the charger water pipe assembly.



- a. Unscrew the 4 fixing bolts of the charger water pipe assembly.

Tightening torque of bolt:  $11 \pm 2 \text{ Nm}$ .



- b. Unscrew one fixing nut A of the charger water pipe assembly, disconnect the two clamps B of the charger water pipe assembly, and remove the charger water pipe assembly ①.

Tightening torque of nut:  $11 \pm 2 \text{ Nm}$ .

##### Refitting procedure

The refitting procedure is performed in reverse order.

**4.5.5.2 Type and main parameters of range extender**

Type	In-line four-cylinder four-stroke, water-cooled, double overhead camshaft, 16-valve, digital multi-point sequential EFI, silent chain drive, DVVT, turbocharged, range extender generator
Number of cylinder	4
Compression ratio	9.2: 1
Maximum net torque/speed	191±9.55/1800~4000
Minimum fuel consumption rate	2000r/min 25Nm: ≤ 430; 4000r/min 120Nm: ≤ 280
Air inlet	Exhaust turbocharger
Ignition method	Multi-point electronic ignition
Firing order	1 -3 -4 -2
Rotation direction	Clockwise
Starting mode	Range extender motor starting
Cooling method	Compulsory cooling
Coolant	Ethylene glycol coolant in accordance with GB 29743, freezing point ≤ -40 °C
Lubricating mode	Combination of splash and force feed system
Oil pressure	750r/min: ≥ 90; 4000r/min: ≥ 300
Oil filling amount	4L
Oil grade	SAE 5W-30 API quality grade: SN and above

#### 4.5.9.9 Removal and refitting of turbocharger oil return pipe assembly

Removal procedure

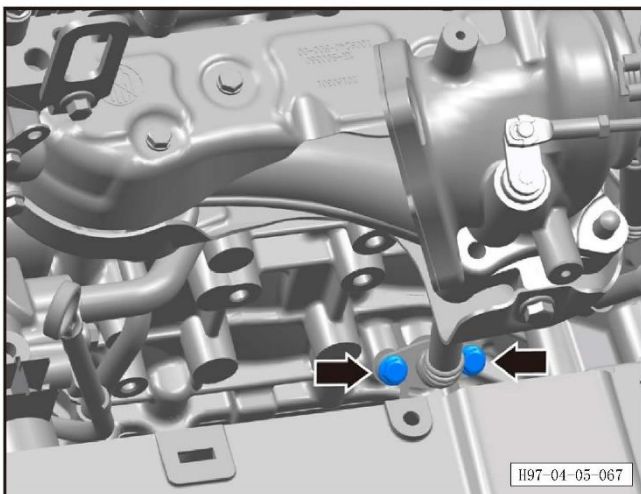
##### CAUTION:

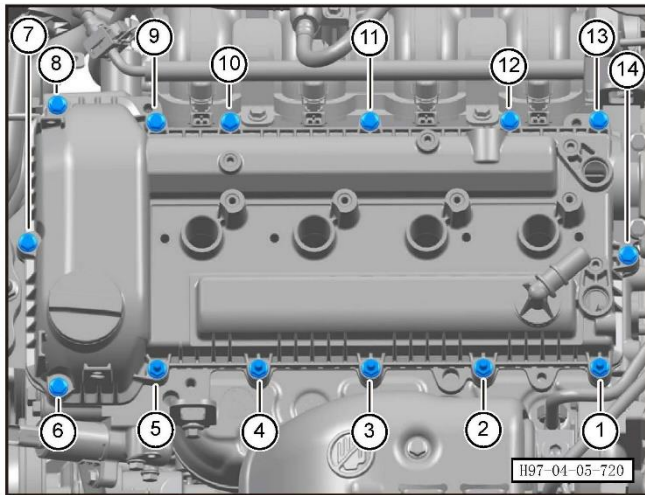
- When refitting the turbocharger oil return pipe assembly, replace the seal rings and gaskets with new ones.

1. Turn off all electrical appliances and turn off the start switch.
2. Open the engine hood.
3. Remove the engine compartment trim panel.
4. Disconnect the negative terminal of the battery.
5. Remove the turbocharger upper heat shield assembly (refer to [4.5.9.1 Removal and refitting of turbocharger upper heat shield assembly](#))
6. Remove the three-way catalytic converter assembly (refer to [4.2.9.1 Removal and refitting of three-way catalytic converter assembly](#))
7. Remove the air filter assembly (refer to [4.1.8.1 Removal and refitting of air filter assembly](#))
8. Remove the PCV vent pipe 1 (refer to [4.5.18.1 Removal and refitting of PCV vent pipe 1](#))
9. Remove the turbocharger assembly (refer to [4.5.9.10 Removal and refitting of turbocharger assembly](#))
10. Remove the turbocharger oil return pipe assembly.

a. Unscrew the 2 bolts connecting the lower part of the turbocharger oil return pipe assembly to the cylinder block assembly.

Tightening torque of bolt:  $10\pm 1\text{Nm}$ .





a. Refit the 14 bolts on the cylinder head cover.

Tightening torque of bolt:  $12 \pm 1 \text{ Nm}$ .

Note:

- Tightening sequence of bolts: (11) - (3) - (10) - (4) - (12) - (5) - (2) - (9) - (14) - (7) - (13) - (6) - (8) - (1).

- The refitting of bolts is carried out in 3 steps:

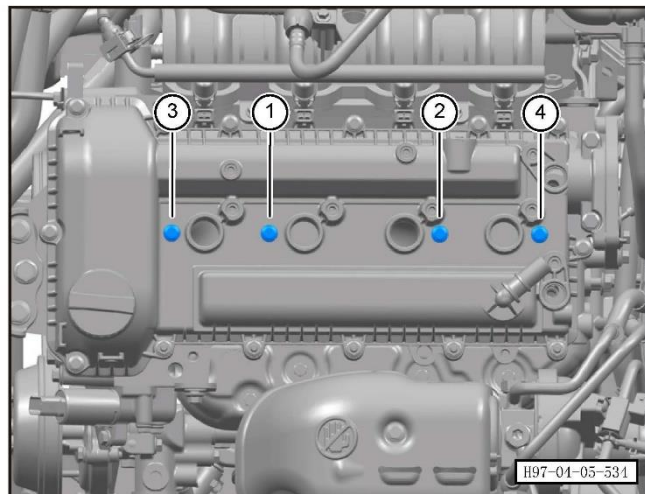
The first step is installation, the second step is pre-tightening, and the third step is tightening.

- Pay attention to the distinction of bolts:

(1) - (5) are studs;

(6) - (14) are bolts.

- When removing the bolt (8), take down the harness bracket, which should be restored at the time of refitting.



b. Refit the 4 bolts on the cylinder head cover in the order marked.

Tightening torque of bolt:  $12 \pm 1 \text{ Nm}$ .

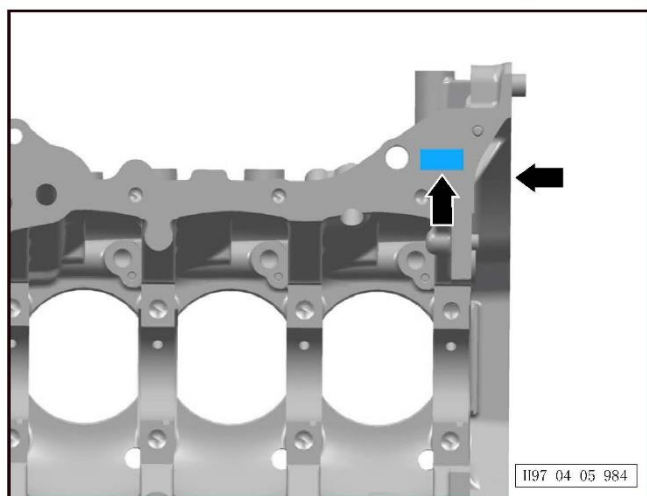
## Refitting procedure

The refitting procedure is performed in reverse order.

**CAUTION:**

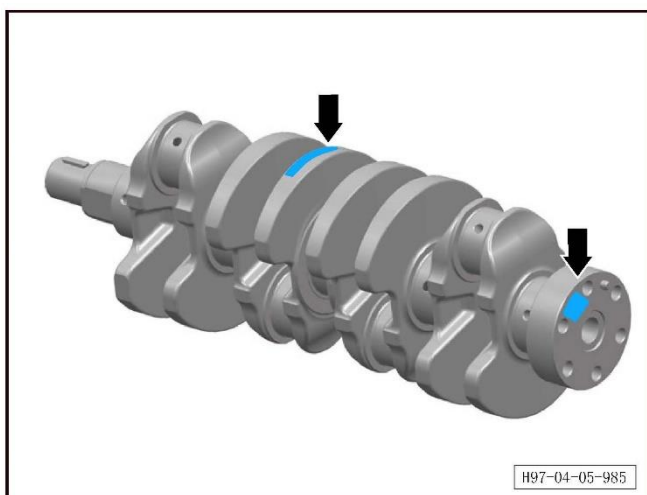
## Selection of main bearing bush:

- The inner diameters of the main bearing holes are divided into three groups, marked as: A, B, C, which are printed on the specified plane on the exhaust side of the cylinder block near the range extender generator or marked on the rear end of the cylinder block in the order of the 1st to 5th main bearing holes (5 letters: XXXXX)



Main bearing hole diameter grouping	
Grouping identification	Dimensions (mm)
A	53.000 ~ 53.006
B	>53.0061 ~ 53.012
C	>53.0121 ~ 53.018

- The diameter of the crankshaft main journal is also divided into three groups, marked as: 1, 2, 3, which are printed on the outer edge surface of the fourth balance weight of the crankshaft or marked on the rear end of the crankshaft in the order of the 1st to 5th main journals (5-digit main bearing journal diameter grouping number and 4-digit connecting rod bearing diameter grouping letter).



Spindle main journal diameter grouping	
Grouping identification	Dimensions (mm)
1	>48.994 ~ 49.000
2	>48.988 ~ 48.9939
3	>48.982 ~ 48.9879

- Standard main bearing bushes are divided into five groups, marked as: 1, 2, 3, 4, 5, which are printed on the back of the bearing bushes.

- Match the main bearing bush according to the requirements in the table below to ensure the correct fit clearance.