# VII. Fuel System Workshop Manual (for Euro-V)

## FL Fuel system

### Cautions

**Warning:**

Must comply with the following rules when replace or disassemble the spare parts of fuel system.

■Put “No firework”signal in operating workstation

■Working at the environment with good ventilation, and the operating workstation should equpped with carbon dioxide fire extinguisher.

■The exhasuted fuel should be put into container and cover it, and put he container in safe sone.

■Disassemble the fuel pipeline spare parts, please operate the following procedures:

——Release the fuel pressure in the fuel pipe.

——Disconnect the battery negative connecting wire

■Do not twist the oilpipe when assembling.

■Please operate at the flat place.

■ After connecting the tubing fittings, verify that the fittings are secure and that the fittings and resin tubing are not in contact with any adjacent components.

■ Do not overtighten the hose retainer to avoid damaging the hose.

■ After assembling the oil pipe, please make sure that if the each connecting part has oil leakage through the following procedure:

——Turn the ignition switch to “ON” to apply fuel pressure to the fuel line (do not start), and then check for fuel leaks at each connection.

——Start engine and increase the rotating speed, inspect if each connecting part has oil leakage.

■ Please prepare the container and rag in advance because the fuel will leak.

■ Avoid open fire and spark.

■ The disassembled parts should keep away from fire source.

■ To keep the joints clean and to avoid damage and foreign objects, please cover them completely with plastic bags or similar items.

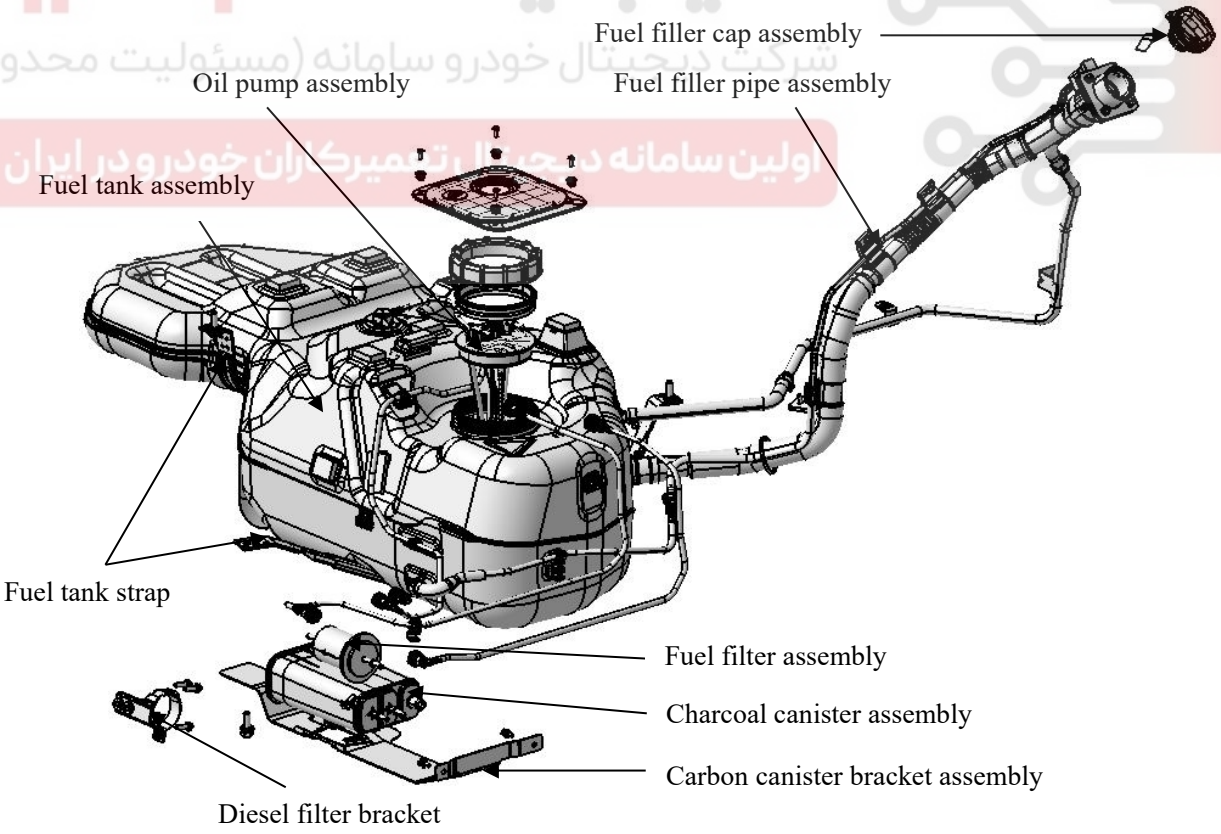
■Only use the pure fuel system spare parts provided by JAC.

## Preparation

### Special tools:

### Fuel system composition



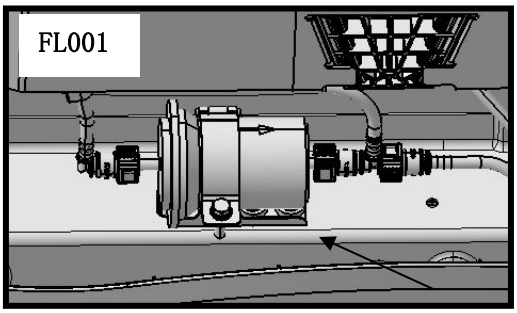

 

## Fuel filter

Disassembly:

Attention:

■ Fuel filter should be replaced periodically according to the maintenance guide in the “Warranty and Maintenance Manual”

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**Attention:**

■ Use towel or other similar goods to wrap the filter to avoid the residual fuel injecting out.

3) Hold the side of the connector, and press the protruded part of the connector to pull out the fuel pipe.

4) If the connector is attached on the fuel filter connecting pipe, push and pull the connector several times until start moving, and then pull out the connector.

5) Loosen the fixing bolt on the filter bracket;

6) Take down the fuel filter from the fuel filter fixing bracket.

**Inspection after disassembly:**

■ Inspect if there is scratch or serious deformation on fuel filter surface.

■ Check if there is thread damage on the filter fixing bolt

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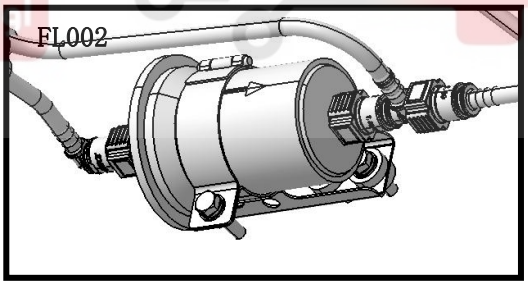
**Installation**

Please note the following items and install in the reverse order of disassembly.

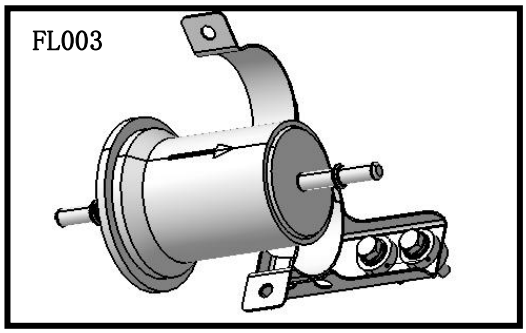



1) Fuel filter

■ Pay attention to the installation direction of the fuel filter.

2) Connect the connector

Connect the connector of fuel pipe as the following method:




① Inspect if there is foreign matter or damage in connecting part.

② When installing the plug-in connector, after hearing clear “click” sound,

pull the connector outward and it doesn’t loosen, that means the connector is installed in place.

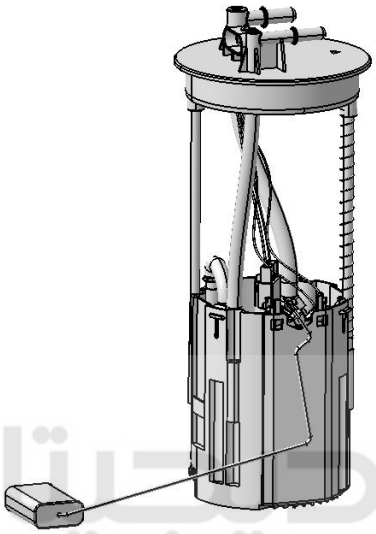
**Inspection After Installation:**

After installing, check if there is fuel leakage according to the following steps below:

1) Lift the vehicle up, turn the ignition switch to “ON” (the engine is off), and then check for fuel leakage at each fuel filter pipeline connection.

2) Start the engine and increase the speed, and check for fuel leakage at each fuel filter connection again.

**Fuel supply pump**

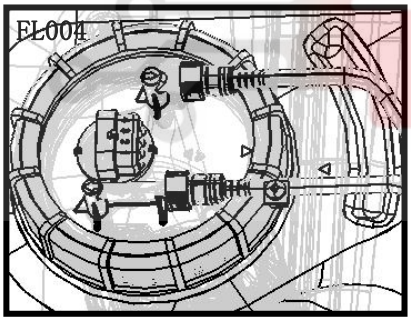


Fuel supply pump assembly



**Disassembly**

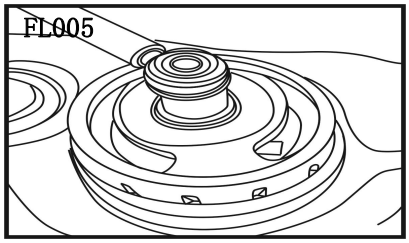
1) Check the fuel level height on the fuel gauge. If the fuel gauge indicator is full or almost full position, drain the fuel in the fuel tank until the level height of the fuel gauge indicator is lower than “E”.



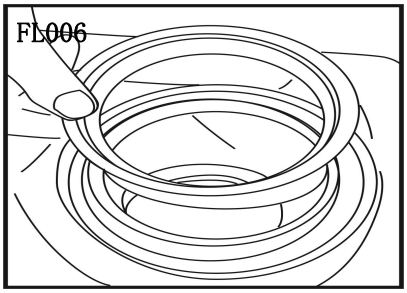

2) Remove the fuel tank assembly

3) Remove all the connecting pipe, if there is pitch tube on the connector,

push and pull the connector several times until start moving, and then pull out the connector.




4) Keep the connecting place clean and avoid damage and foreign matter getting in, please use plastic bag or similar items to cover them completely

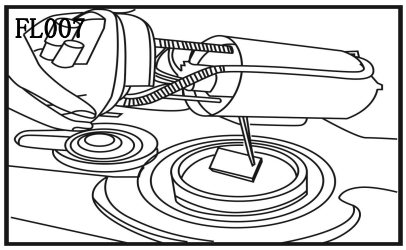



5) Use special tool to loosen the locking nut, and then take down.

6) Take down the “Y” type sealing ring.

7) Take down the fuel supply pump.




Attention：

■ The fuel supply pump should be tilted when removing, to avoid injury to the fuel level sensor.

■ Avoid residual fuel contamination and wrap it straight out with cloth.

**Inspection after disassembly:**

1. Fuel supply pump:

■ Check for damage and fuel impurities. Replace or clean if it has any damage or fuel impurities.

■ Resistance inspection. Measure the resistance between the two terminals of the fuel supply pump, its resistance is about 2～30Ω.

■ Fuel supply pressure inspection. Connect 12V power supply, test run in gasoline, observe whether there is oil output in the oil delivery pipe, check whether the oil pressure can be established.

■ Do not operate for a long time to avoid damage to the pump core.

2. “Y” type sealing ring

■ Check for missing material or damage.

3. Locking nut

■ Check for deformation, cracks, material shortage, damage, and damage to the mounting thread.

4. Fuel level sensor

■ Check the oil float for interference and whether the surface is oxidized.

■ Check that the resistance between the sensor terminals is within the standard value when the float of the sensor assembly is in the F (highest) position and the E (lowest) position.

Fuel gauge sensor resistance value and instrument indication table

| Scale line | Reference resistance (Ω) |
|---|---|
| E | 200~3 |
| 1/2 | 95~2 |
| F | 25~2 |

■ Check if the resistance value changes smoothly when the float slowly moves between F (highest) and E (lowest).

**Installation**

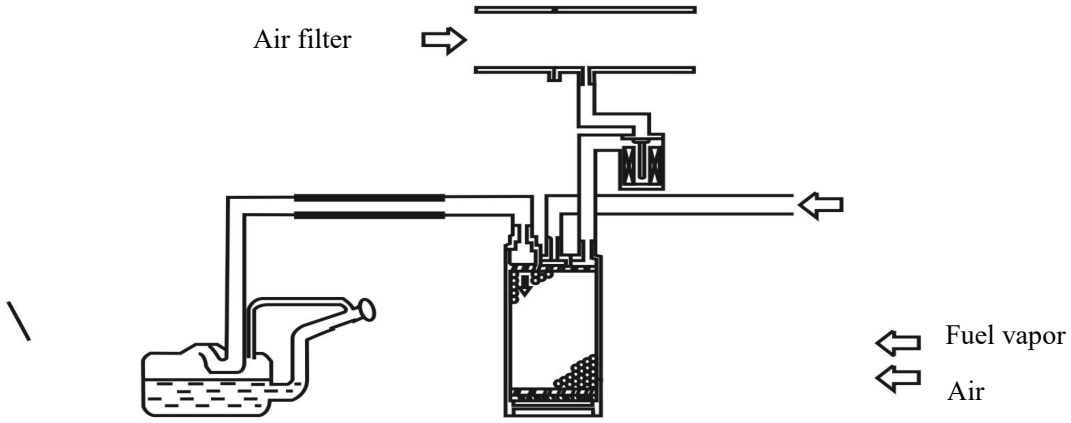
Follow the opposite sequence of the disassembly procedures.

**Inspection After Installation:**

Check if there is fuel leakage, refer to “fuel leakage inspection step”.

**EVAP system**




Fuel evaporation system theory map

1-Fuel tank 2-EVAP charcoal canister 3-EVAP charcoal canister solenoid valve 4-Air inlet manifold

**System Instruction:**

① The fuel evaporation system is used to reduce hydrocarbon emissions from the fuel system into the atmosphere. The use of activated carbon in carbon canisters can effectively reduce hydrocarbon emissions.

② Steam from the fuel tank is temporarily stored in the carbon canister through the fuel tank steam control valve and steam pipe/hose.

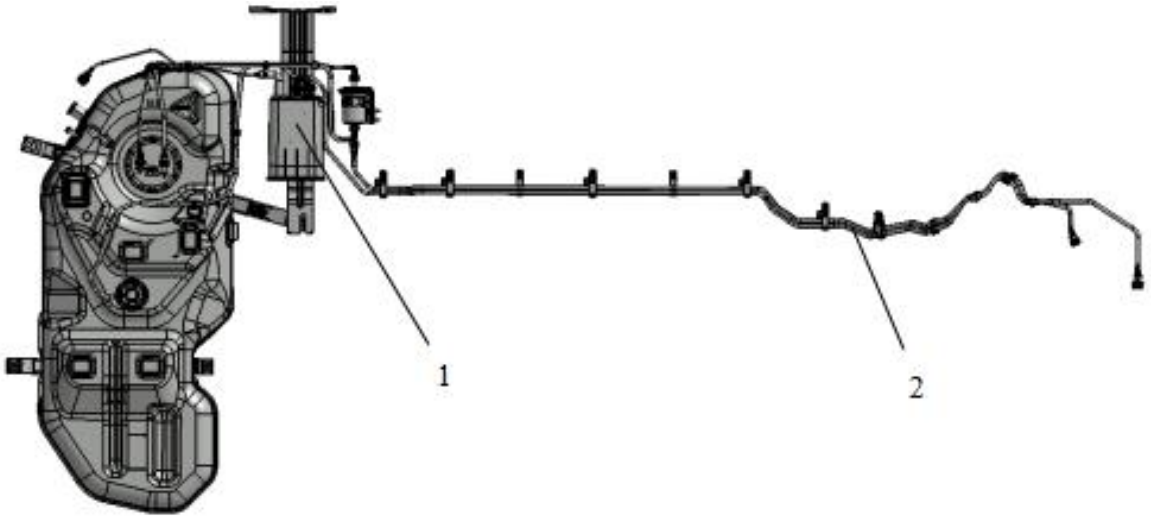
③ When the engine is not running or when fueling the tank, the fuel vapor evaporated from the sealed tank is introduced into a carbon can containing activated carbon and stored there.

④ When the engine is running, the fuel vapor in the canister is brought into the intake manifold through the cleaning line. The canister cleaning amount control solenoid valve is controlled by the ECU. When the engine is working, the vapor flow rate controlled by the canister cleaning amount control solenoid valve is proportional to the increase in air flow.

⑤ When engine is decelerating and idling, the canister cleaning control solenoid valve will close the vapor cleaning pipeline.

**Fuel evaporation exhaust pipeline map:**




Fuel evaporation system map

1-Charcoal canister assembly 2-Fuel pipe line assembly

**Attention:**

■ Do not use soapy water or any cleaner when installing vacuum tubes or cleaning tubing.

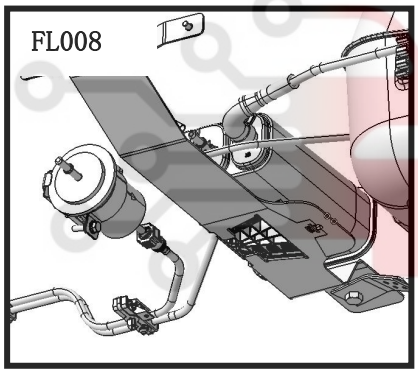
Component inspection:

1) Charcoal canister:

① Charcoal canister position:

——Install to the chassis through the bracket.

② Removal of carbon canister:




Remove the three fixing bolts (nuts) of the charcoal canister bracket

, and take down the charcoal canister bracket.

3) Plastic fuel tank cover:

There is two-way valve installed on the plastic fuel tank cover. When the pressure in the fuel tank is high (more fuel vapor), the two-way valve is open to prevent the fuel tank deformed. When the pressure in the fuel tank is low (negative pressure), the vacuum relief valve opens to allow the outside air to enter the fuel tank.

**Repair Data and Specification**

Fuel system technical parameters

| Item | Description |
|---|---|
| Fuel tank capacity | 64L |
| Fuel supply pump | |
| Working voltage | 6～15 V |
| Rated voltage | 12 V |
| System pressure | 550 kPa |
| Working temperature | -30℃ ～ 70℃ |
| Radio disturbance characteristics | Level 2 limit value (GB18655-2002) |

