

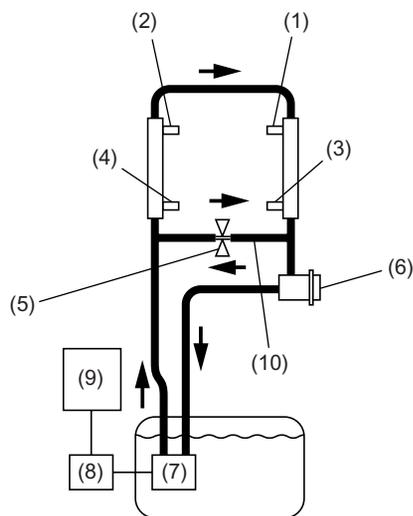
FUEL SYSTEM

FUEL INJECTION (FUEL SYSTEM)

3. Fuel System

A: GENERAL

- The fuel pressurized by the fuel tank inside pump is delivered to each fuel injector by way of the fuel pipe and fuel filter. Fuel injection pressure is regulated to an optimum level by the pressure regulator.
- Each injector injects fuel into the intake port of the corresponding cylinder where the fuel is mixed with air. The mixture then enters the cylinder. Fuel injection amount and timing are regulated by the ECM.
- On some models, the fuel bypass return passage connected between the fuel pump and engine prevents excessive fuel to be supplied to the engine and lowers the fuel temperature after return, to reduce the generation of evaporative gas.



FU-02027

- | | |
|----------------------|----------------------------|
| (1) #1 fuel injector | (6) Pressure regulator |
| (2) #2 fuel injector | (7) Fuel pump |
| (3) #3 fuel injector | (8) Fuel pump control unit |
| (4) #4 fuel injector | (9) ECM |
| (5) Orifice | (10) Fuel return passage |

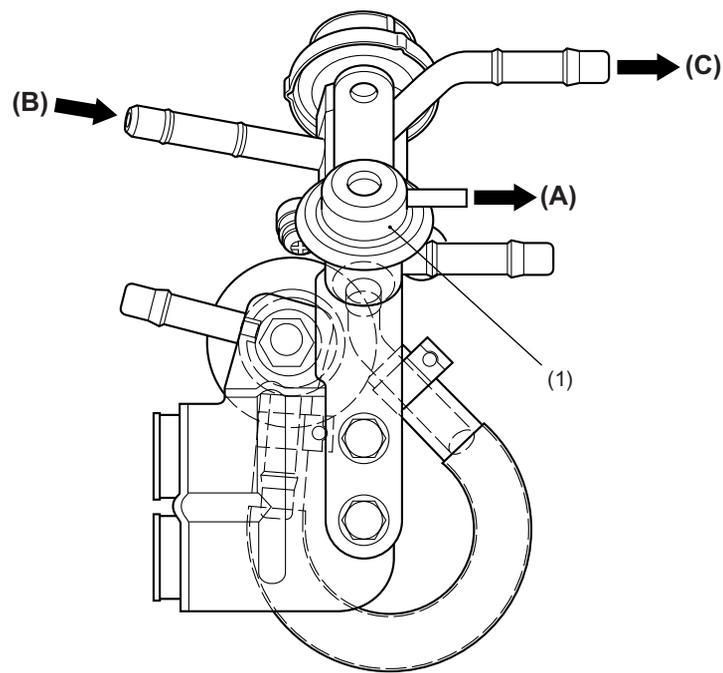
FU(H4DOTC)-7

FUEL SYSTEM

FUEL INJECTION (FUEL SYSTEM)

B: PRESSURE REGULATOR

The pressure regulator is installed in the fuel supply line. It has a fuel chamber and spring chamber separated by a diaphragm. The fuel chamber is connected to the fuel supply line and the spring chamber is connected to the intake manifold. Fuel chamber also has a relief valve connected to the fuel return line through which fuel returns to the fuel tank. When the intake manifold vacuum increases, the diaphragm is pulled and the relief valve opens to decrease the fuel supply line pressure (or fuel injection pressure). When the intake manifold vacuum decreases, the diaphragm is pushed by the spring to increase the fuel supply line pressure. Thus, the difference between the fuel injection pressure and the intake manifold vacuum is kept at a constant level to precisely control the amount of injected fuel.



FU-02028

- (1) Pressure regulator
- (A) To intake manifold
- (B) Fuel IN
- (C) Fuel OUT

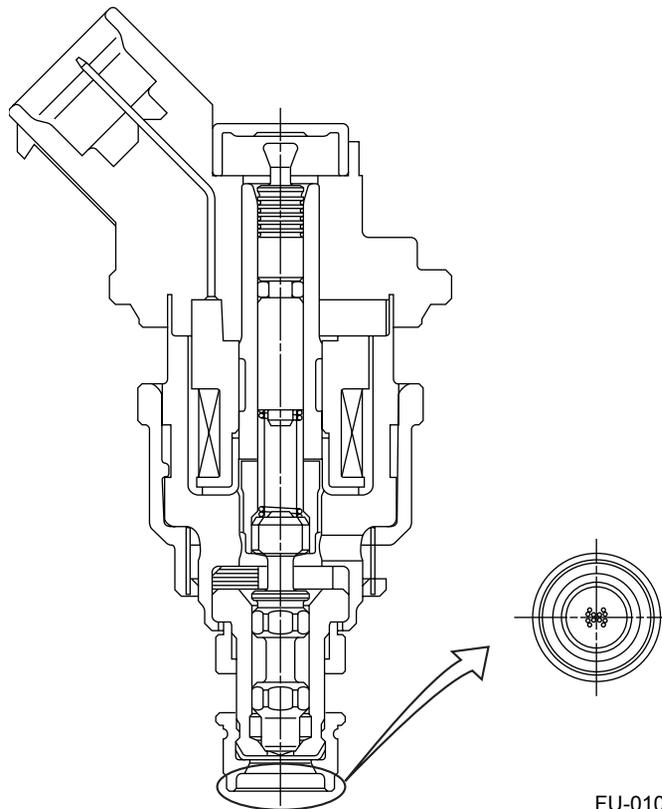
FU(H4DOTC)-8

FUEL SYSTEM

FUEL INJECTION (FUEL SYSTEM)

C: FUEL INJECTOR

- The MFI system employs side feed type fuel injectors.
- Each injector is installed in the fuel pipe in such a way that the injector is cooled by fuel.
- The features of this type of fuel injector are as follows:
 - 1) High heat resistance
 - 2) Low driving noise
 - 3) Easy to service
 - 4) Small size
- The injector injects fuel according to the valve open signal from the ECM. The needle valve is lifted by the solenoid which is energized on arrival of the valve open signal.
- Since the injector's nozzle hole area, the lift of valve and the fuel pressure are kept constant, the amount of fuel injected is controlled only by varying the duration of the valve open signal from the ECM.
- The multi-hole nozzle makes it possible for the injector to produce fine fuel particles, which enhances the combustion efficiency and output performance of the engine.



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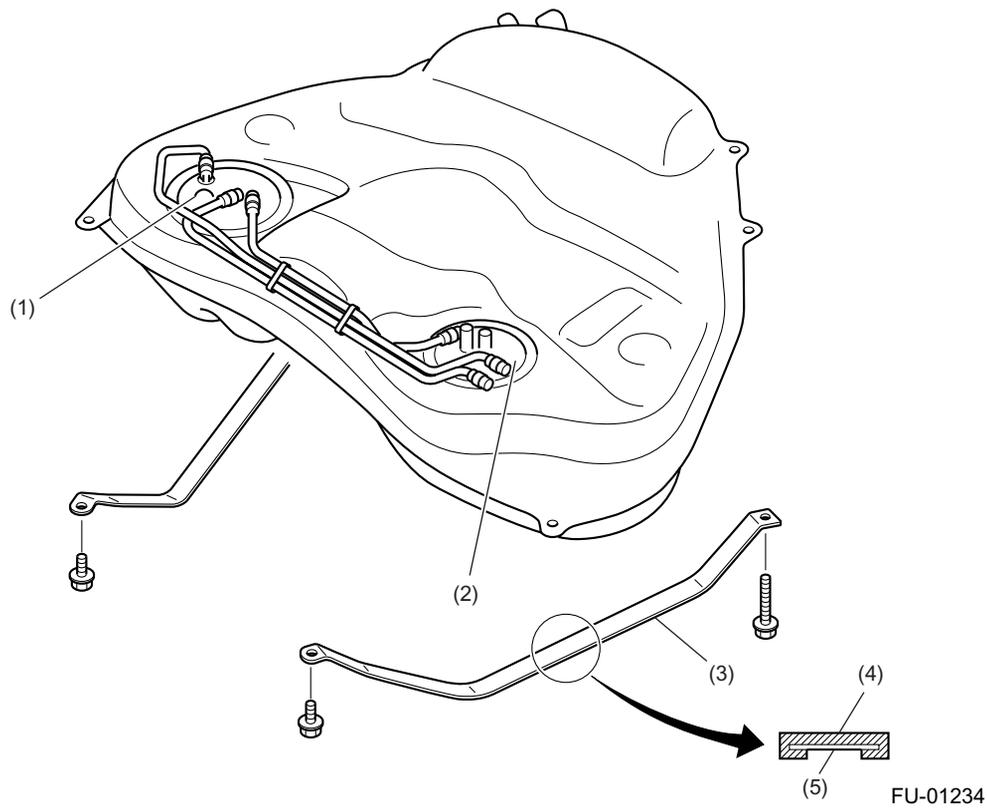
FUEL SYSTEM

FUEL INJECTION (FUEL SYSTEM)

D: FUEL TANK

The fuel tank utilizes a two-compartment design to ensure sufficient capacity without interfering with the rear differential. It is provided with a suction jet pump (included in the fuel pump and fuel level sensor assembly) which transfers fuel from one compartment to the other.

Each compartment has an individual fuel level sensor. The fuel tank is located under the rear seat and secured with hold-down bands.



- (1) Fuel pump and fuel level sensor assembly
- (2) Fuel sub level sensor
- (3) Band

- (4) Cushion
- (5) Steel

FUEL SYSTEM

FUEL INJECTION (FUEL SYSTEM)

E: FUEL PUMP AND FUEL LEVEL SENSOR ASSEMBLY

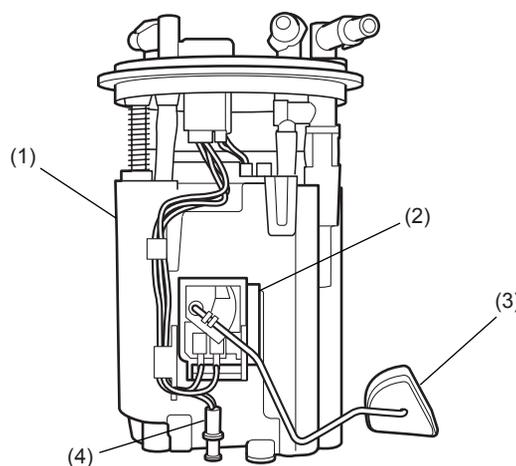
1. FUEL PUMP

The fuel pump consists of a motor, impeller, pump casing, pump cover, check valve and filter. It is located in the fuel tank and combined with the fuel level sensor into a single unit. The operation of this impeller type pump is very quiet.

- When the ignition switch is turned ON, fuel pump relay is activated. Then the motor operates to rotate the impeller.
- As the impeller rotates, fuel in a vane groove of the impeller flows along the fuel passage into the next vane groove by centrifugal force. When fuel flows from one groove to the next, a pressure difference occurs due to friction. This creates a pumping effect.
- The fuel pushed up by rotation of the impeller then passes through the clearance between the armature and the magnet of the motor and is discharged through the check valve.
- When the fuel discharge pressure reaches the specified level, the relief valve opens and excess fuel is released into the fuel tank. In this manner, the relief valve prevents an abnormal increase in fuel pressure.
- When the engine and the fuel pump stop, the check valve closes the discharge port, so that the fuel pressure in the fuel delivery line is retained.

2. FUEL LEVEL SENSOR

The fuel level sensor is integrated with the fuel pump which is located in the fuel tank. The sensor outputs an electric resistance signal that varies with movement of its float to indicate the level of the fuel remaining in the tank.



FU-02519

- (1) Fuel pump assembly
- (2) Fuel level sensor
- (3) Float
- (4) Fuel temperature sensor

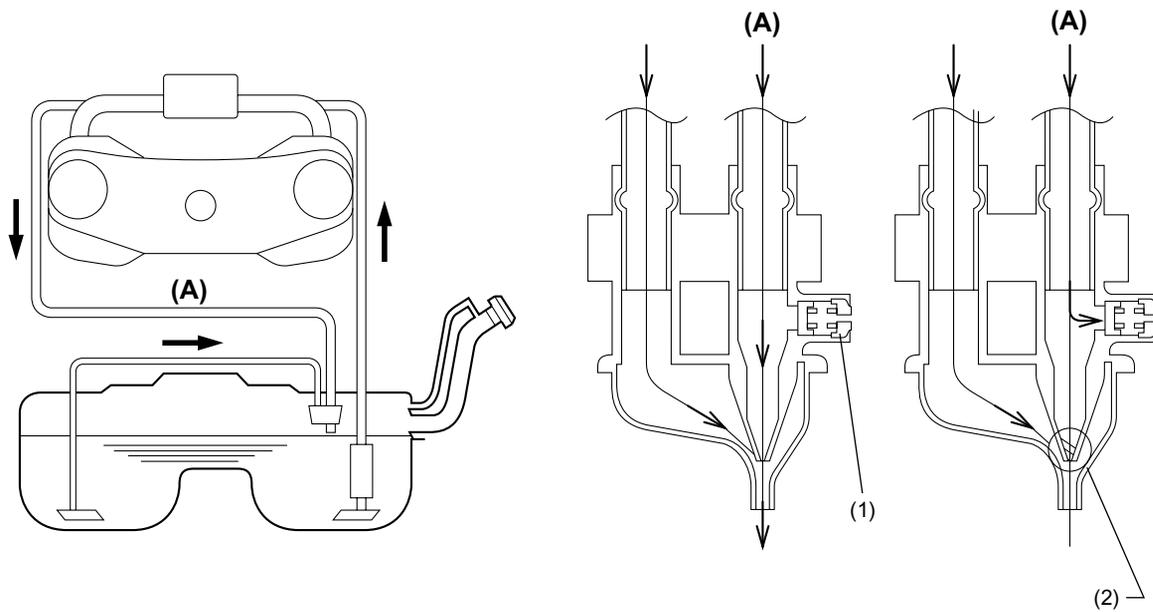
FU(H4DOTC)-11

FUEL SYSTEM

FUEL INJECTION (FUEL SYSTEM)

3. JET PUMP

- The jet pump utilizes the velocity of fuel returning from the engine to produce vacuum in it.
- Using the pumping effect produced by the vacuum, the jet pump transfers fuel from the sub side and main side of the fuel tank to the fuel pump.
- When the return line nozzle is clogged, the fuel sent back through the return line flows back into the fuel tank via the relief valve.



FU-00226

- (1) Relief valve
- (2) Nozzle

(A) Return line

4. FUEL FILTER

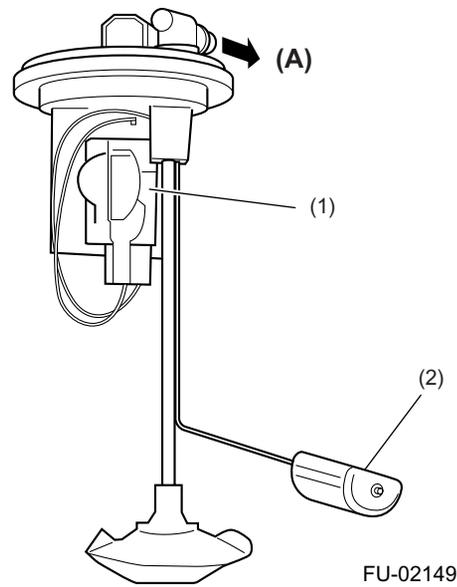
The fuel filter is integrated with the fuel pump assembly which is located in the fuel tank.

FUEL SYSTEM

FUEL INJECTION (FUEL SYSTEM)

F: SUB-COMPARTMENT FUEL LEVEL SENSOR

This sensor detects the level of the fuel in the sub side (the side in which the fuel pump is not located) of the fuel tank. Also, when the jet pump is operating, fuel in the sub side is drawn up and transferred to the fuel pump.



- (1) Fuel level sensor
- (2) Float

(A) To jet pump