

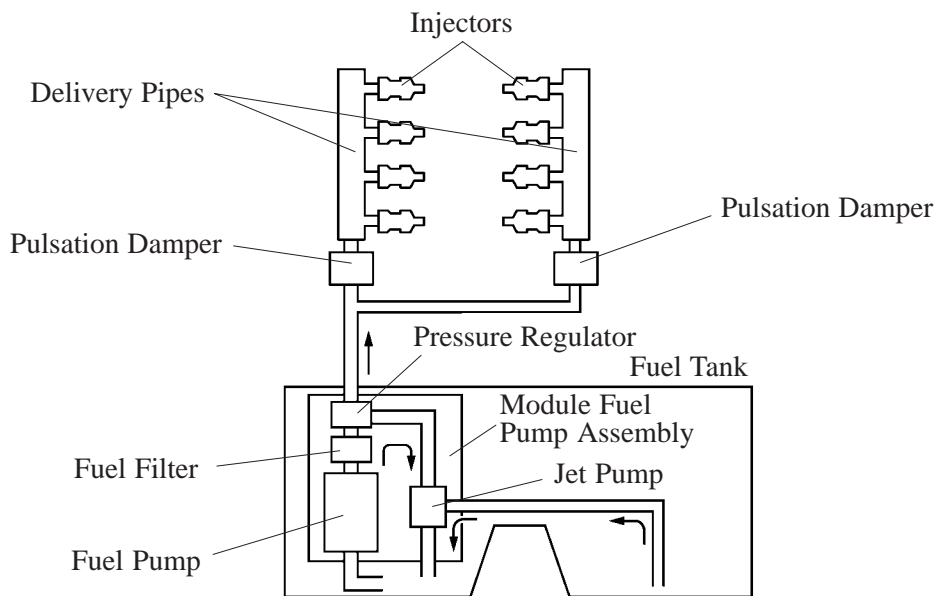
■ FUEL SYSTEM

1. General

- A saddle-shaped fuel tank has been adopted.
- A compact fuel pump in which a fuel filter, pressure regulator and jet pump are integrated in the module fuel pump assembly has been adopted.
- The charcoal canister, which was provided in the luggage compartment of the previous LS400, has been relocated outside, underneath the luggage compartment on the new LS430.
- A fuel returnless system has been used to reduce evaporative emissions.
- An air-assist system has been adopted to improve the atomization of fuel, thus improving the performance of the evaporative emissions.
- A compact 4-hole type fuel injector has been used.

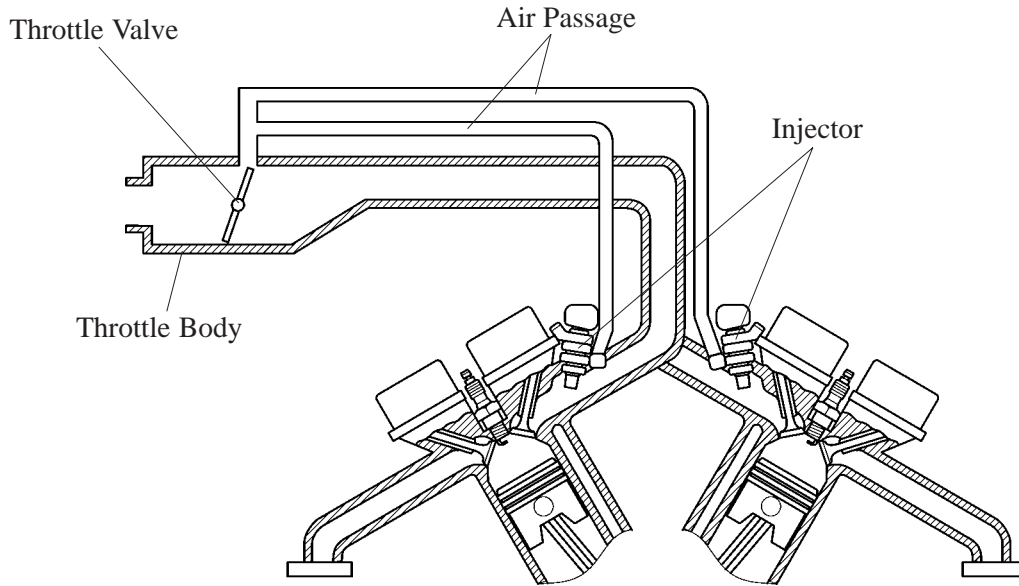
2. Fuel Returnless System

- The fuel returnless system has been used to reduce evaporative emissions. With the pressure regulator and the fuel filter-integrated fuel pump are housed inside the fuel tank, this system eliminates the return of fuel from the engine area. This helps prevent the internal temperature of the fuel tank from rising, and reduces evaporative emissions.
- 2 pulsation dampers are used to realize a quieter operation.



3. Air-Assist System

This system is designed to regulate air intake (atmospheric side) using the throttle valve, and direct it to the nozzle of the fuel injector inside the intake manifold (negative pressure side). This promotes atomization of the fuel while reducing emissions and improving fuel economy and idle stability.

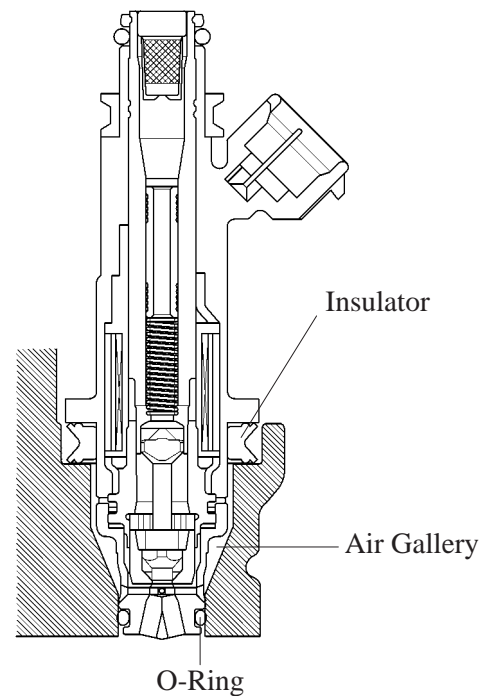


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4. Fuel Injector

- A compact 4-hole type fuel injector has been used.
- Air introduced from the throttle body and air gallery flows through the air chamber formed by the O-ring and insulator under the fuel injector and then is mixed with the fuel. This design promotes atomization of the fuel.



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5. Fuel Tank

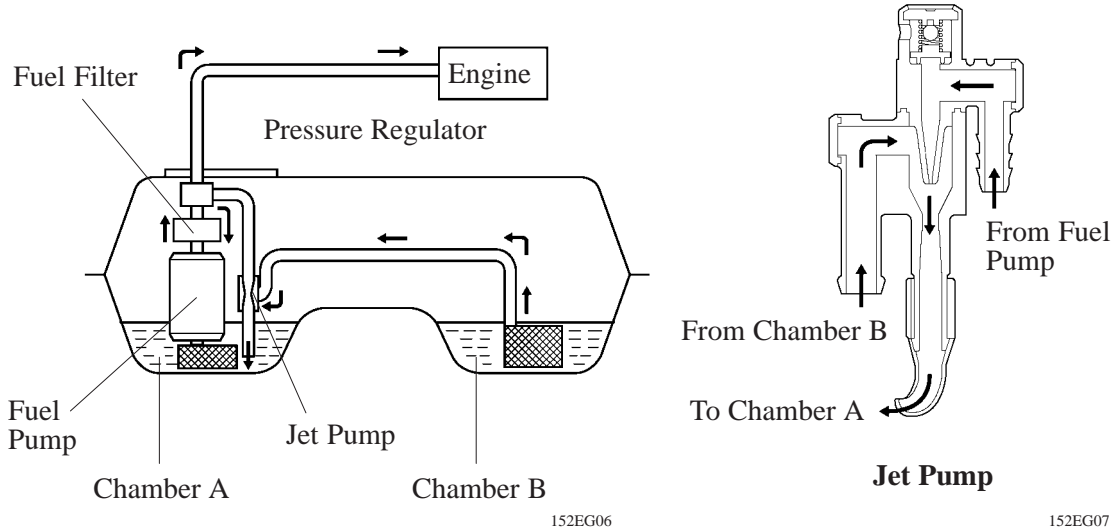
- The fuel tank adopts a saddle shape to allow the propeller shaft to pass through its center portion. Also, a jet pump is provided to transfer the fuel from the side of the tank without the fuel pump to the side with the fuel pump.
- Two sender gauges, the main and sub sender gauges, are provided to improve the accuracy of the fuel gauge.

Jet Pump

A jet pump is adopted in the fuel tank. Since the propeller shaft is located below its center bottom, the fuel tank of the new LS430 is shaped as indicated below.

A fuel tank with such a shape tends to cause the fuel to be dispersed into both chamber A and chamber B when the fuel level is low, stopping the fuel in chamber B from being pumped out. To prevent this from occurring, a jet pump has been provided to transfer the fuel from chamber B to chamber A.

This is accomplished by utilizing the flow of the fuel, so that the vacuum created by the fuel, as it passes through the venturi is used to suck the fuel out of chamber B and send it to chamber A.



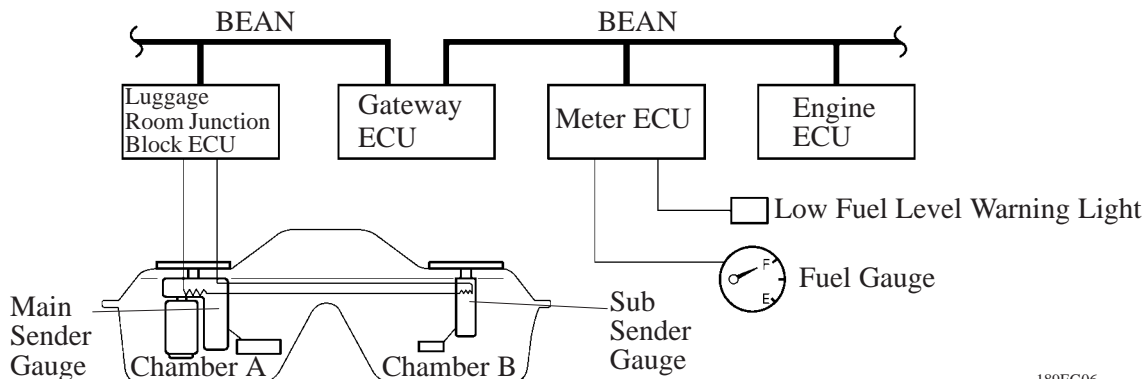
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Fuel Sender Gauge

Two sender gauges, the main and sub, are provided to improve the accuracy of the fuel gauge. These sender gauges, which are provided inline in chambers A and B, send the signals representing the residual volume of fuel in both chambers via the luggage room junction block ECU to the meter ECU. Based on the signals from the 2 sender gauges and the fuel injection volume data from the engine ECU, the meter ECU calculates the residual volume of fuel and actuates the fuel gauge in the combination meter.

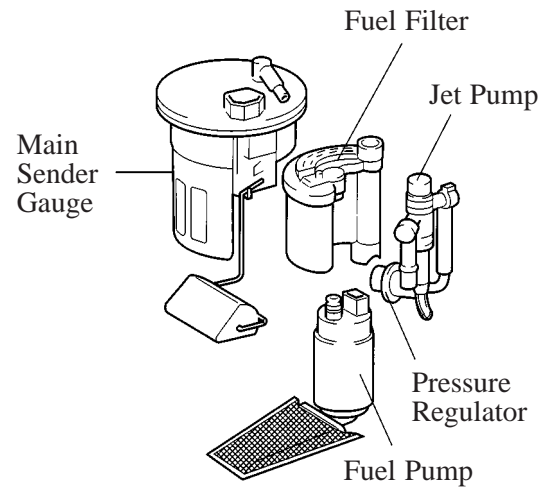
► System Diagram ◀



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6. Module Fuel Pump Assembly

The main sender gauge, fuel pump, fuel filter, pressure regulator and jet pump have been integrated.



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