Fuel Evaporation

FIAT

Fiat 850 (1970-73)
Fiat 124 (1970-73)
Fiat 128 (1972-73)

DESCRIPTION & OPERATION

Fuel Evaporative Emission Control System is designed to prevent fuel vapors being emitted to the atmosphere. Fuel supply system is closed with a sealed fuel tank filler cap and a vent system through which fuel vapors are conducted through a vent line to the engine compartment where they enter combustion system and are burned. The following components are used:

Fuel tank & Filler Cap – A sealed fuel tank filler cap is used on all models. Fuel tanks differ as follows:

850 Models – Due to position of fuel tank, two float actuated valves are incorporated. This prevents liquid fuel from passing to carbon canister. Valves are located at opposite ends of fuel tank (where vent lines connect) and are closed when fuel in tank rises due to vehicle tilting from side to side.

124 & 128 Models – Due to fuel tank design, an air space remains in tank to allow for thermal expansion. This prevents tank from being completely filled with fuel.

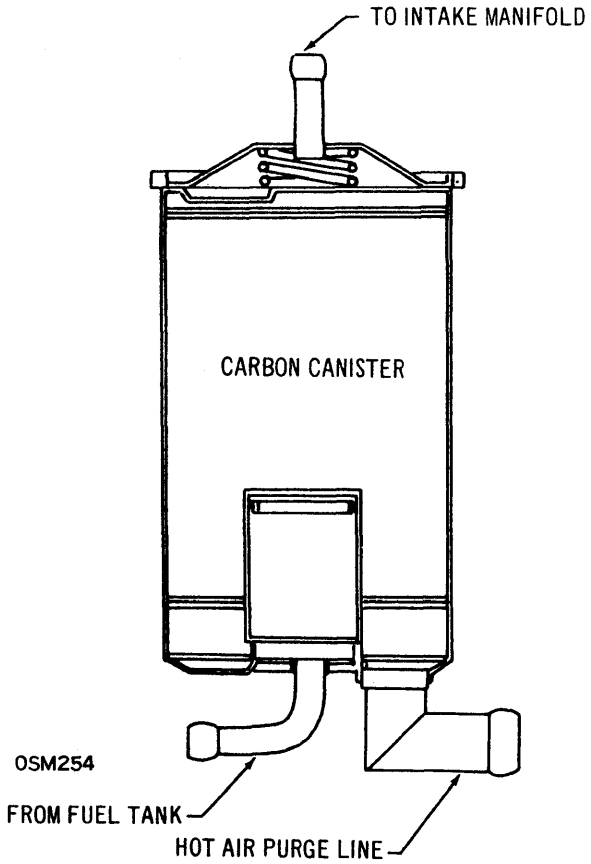
Carbon Canister – Fuel tank vent line (from three-way control valve) is connected to a canister filled with activated carbon and is located in engine compartment. When engine is not running, fuel vapors are stored in this canister. Canister is also connected to intake manifold by a hose and to hot air intake on air cleaner by a second hose. When engine is running, vacuum draws warm air into canister, purges carbon and fuel vapors pass into intake manifold where they enter combustion system and are burned.

Three-Way Control Valve – Valve is located in vent line between fuel tank and carbon canister. It controls venting of fuel system under all conditions as follows:

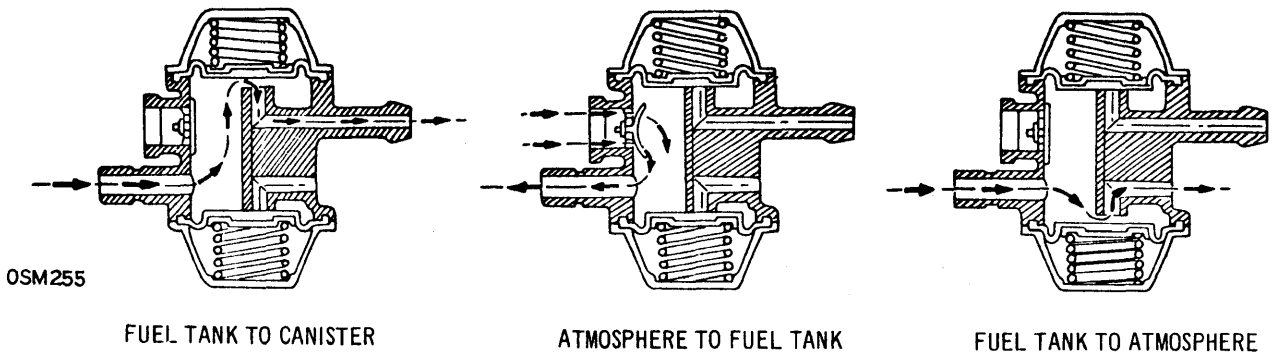
1) When engine is stopped and heat causes thermal expansion of fuel in tank, valve opens allowing fuel vapors to pass to carbon canister where they are stored.

2) In normal operation, valve admits air to fuel tank to compensate for fuel consumption. It will also admit air to relieve any vacuum caused by decrease in fuel and air volume due to decrease in temperature.

3) Valve also acts as a safety valve, allowing vapors to pass from fuel tank to atmosphere in case vent line to canister becomes plugged.



ACTIVATED CARBON CANISTER



OPERATION OF THREE-WAY VALVE