COURIER

Pickup

DESCRIPTION

The evaporative emission control system is designed to prevent raw fuel vapors from being emitted into the atmosphere. The system consists of a sealed fuel tank, fuel vapor valve, a vacuum controlling orifice, a pressure/vacuum relief fuel cap, a charcoal canister, purge control valve, evaporative shutter valve and lines to connect the components.

OPERATION

Fuel Tank & Filler Cap – The sealed fuel filler cap contains a vacuum and a pressure relief valve. The vacuum valve relieves tank vacuum caused by a high rate of fuel consumption or cooling of the fuel or fuel vapors. It begins to open at .5 psi. (.035 kg/cm^2). The pressure valve prevents excessive fuel tank pressure during heavy engine load or high ambient temperature. It opens at 1.8 psi. (.126 kg/cm^2).

Fuel Vapor Valve – The fuel vapor valve, located on top of the fuel tank, controls the flow of fuel vapors from the tank to the charcoal canister for storage. During normal vehicle operation, fuel vapors are drawn from the charcoal canister by fresh air moving through the inlet hole at the bottom of the canister and into the engine through a hose connected to the air cleaner.

Float Valve – The float valve, designed into the fuel vapor valve, prevents liquid fuel from entering the vapor delivery line during severe vehicle operation.

Purge Control & Thermo Valves – The thermo valve opens the intake manifold vacuum after engine reaches normal operating temperature. Intake manifold vacuum then opens the purge control valve, which draws air through bottom of canister and directs fuel vapors to manifold.

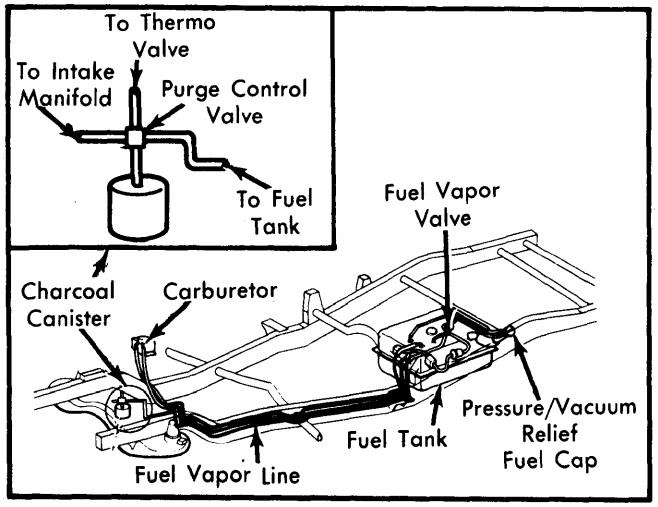

Fig. 1 Courier Fuel Evaporation System

Shutter Valve – The shutter valve, located in the air cleaner inlet pipe, prevents carburetor fuel vapors from escaping into the atmosphere by closing the air cleaner inlet pipe when the engine is not running. During engine operation, intake manifold vacuum holds the shutter open to purge the canister.

TESTING

Purge Control Valve – 1) Disconnect vacuum tubes from thermo valve and intake manifold at purge control valve. See *Fig. 2*. Plug vacuum tube to intake manifold. Start engine and run at idle.

2) Connect tube to intake manifold port on purge control valve and lightly blow air into tube. No air should pass through valve.

3) Unplug vacuum tube from intake manifold and connect tube to thermo valve port of purge control valve. Again, lightly blow air into tube connected to intake manifold port. Air should now pass through valve.

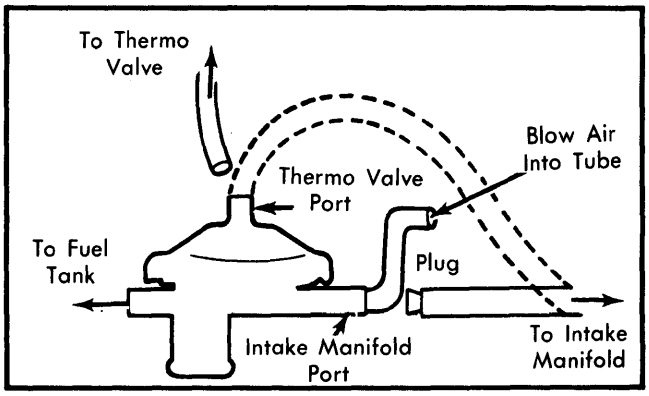

Fig. 2 Testing Purge Control Valve

Thermo Valve – 1) Remove thermo valve and attach sections of hose to inlet and outlet ports of valve. Submerge valve in water-filled container leaving hose ends out of container.

2) Heat water gradually to 140°F (60°C) for California models or 131°F (55°C) for Federal models. Blow air into inlet hose. If air flows from outlet hose, valve is functioning properly.

Shutter Valve – Start engine and run at idle. Remove air cleaner element and make sure shutter valve opens fully. Disconnect vacuum sensing tube from vacuum diaphram and make sure valve closes fully.

MAINTENANCE

System should be checked for proper operation and all hoses and connections checked for leaks and deterioration every 15,000 miles or 15 months. Canister should be checked and replaced if necessary every 30,000 miles or 30 months.