1982 Fuel Evaporation Systems

COURIER

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 and a vapor control valve, a pressure/vacuum relief fuel cap, charcoal canister, purge control valve, purge valve (high altitude models only), evaporative shutter valve and vapor 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 opens at pressures below 1.5 psi (.086 kg/cm^2). The pressure relief valve prevents excessive fuel tank pressure during heavy engine load or high ambient temperature. It begins to open at 2.2 psi (.154 kg/cm^2).

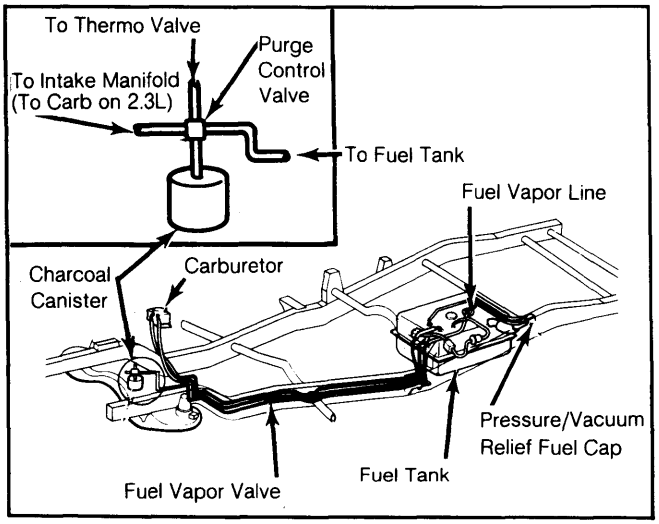
FUEL VAPOR VALVE

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 at 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.

Fig. 1: Ford Courier Fuel Evaporation System



PURGE CONTROL & THERMO VALVES

The thermo valve opens intake manifold vacuum after engine reaches normal operating temperature. Intake manifold vacuum then opens purge control valve, which draws air through bottom of canister and directs fuel vapors to manifold. A purge valve is used on all 2.0L High Altitude models to maintain fuel tank vapor pressure.

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 valve open.

TESTING

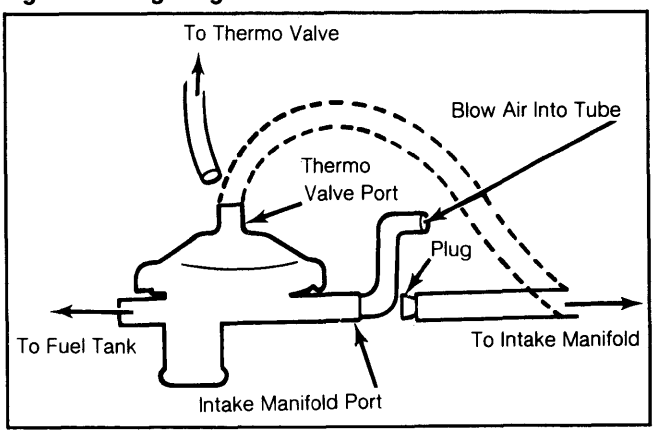
PURGE CONTROL VALVE

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 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 models equipped with 2.0L engine, or 150°F (65°C) for models with 2.3L engine. 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 diaphragm and make sure valve closes fully.

MAINTENANCE

System should be checked for proper operation and 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.

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