MERCEDES-BENZ

280 Series
380 Series

DESCRIPTION

The fuel evaporation system is designed to prevent fuel vapors from leaving the fuel tank and entering the atmosphere. The system includes a fuel tank with vapor separator, thermal valve, purge valve, canister and vent valve.

OPERATION

EVAPORATION SYSTEM (ENGINE NOT RUNNING)

Fuel tank pressure is maintained by the vent valve: a pressure/vacuum relief valve. When engine is off and vapors expand (heated by sun), the pressure relief valve in vent valve opens, allowing fuel vapors to escape to the charcoal canister.

As fuel cools down, volume is reduced, creating a vacuum in fuel tank. Below a preset value, the vacuum portion of vent valve opens, allowing air and/or fuel vapors from the canister to travel to the fuel tank and reduce the vacuum.

If system malfunction causes fuel tank pressure to increase above 1.5-4.5 psi (.1-.3 kg/cm^2), relief valve portion of filler cap opens to vent excess pressure.

PURGE SYSTEM (ENGINE RUNNING)

The purge valve is installed in the vacuum line between the charcoal canister and the throttle valve housing. A vacuum control line is routed from the throttle valve housing through a thermal vacuum valve and on to the purge valve. When the engine is running, throttle valve position is above idle, and engine coolant is above 122° F (50° C), canister purging takes place. As the throttle is opened further, more vacuum is applied to the canister and purge rate increases.

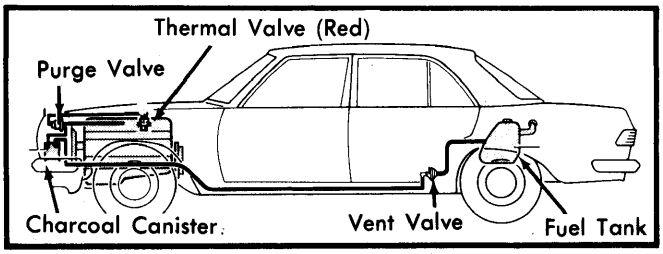

Fig. 1 Fuel Evaporation Components (All Models)

TESTING

SYSTEM CHECK

1) Disconnect hose between purge valve and canister at canister. Place finger over hose end. Slowly increase engine speed to 2000 RPM. No vacuum should be present at idle, then vacuum should gradually increase with engine speed.

2) If no vacuum was present at hose, trace hose back to throttle valve housing. Blow through connection on housing and ensure hose is clear.

3) If vacuum is still not present, remove White/Black/Purple hose from purge valve. If vacuum is now present, replace purge valve. If vacuum is not present, replace thermal valve.

PEUGEOT

505 Gasoline

DESCRIPTION

The fuel evaporation system used on Peugeot models is designed to prevent fuel vapors from entering atmosphere. The system consists of a sealed fuel tank cap, relief valve, purge valve, thermovalve, charcoal canister, and connecting hoses.

OPERATION

When engine is off, vapors from tank are vented through relief valve to canister. When engine is running and cold, a small amount of air is drawn through canister orifice and into intake manifold. When coolant temperature rises over 140°F (60°C), thermovalve opens and vacuum flows to purge valve, which opens and allows air to be drawn through canister. All vapors are then drawn into engine and burned. When engine is operated at full throttle, vacuum drops and purging stops until load is reduced.

MAINTENANCE

Check all components for leakage and deterioration. Replace as necessary.

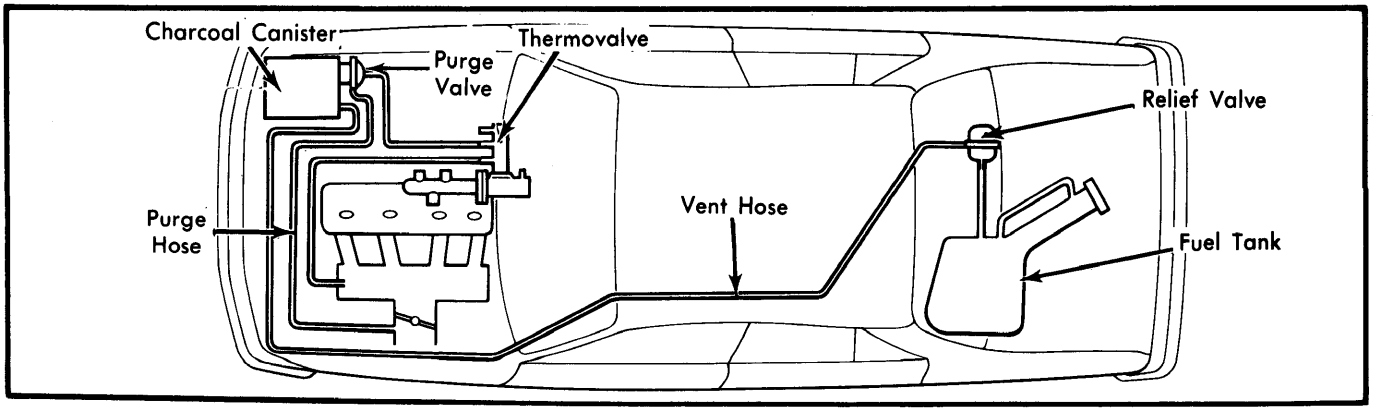

Fig. 1 Peugeot 505 Fuel Evaporation System

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