1982 Fuel Evaporation Systems

GENERAL MOTORS

DESCRIPTION

All Light and some Heavy Duty Emissions models are equipped with an Evaporative Control System (ECS), designed to prevent raw fuel vapors from escaping to the atmosphere. System consists of a special fuel tank with an expansion section, a venting system which allows only vaporous fuel to be drawn into the system, a pressure-vacuum relief valve in the gas cap to control tank pressure, and a vapor-storing charcoal canister.

OPERATION

During periods of engine operation, vapors are drawn through the system vent lines and into the intake manifold of the engine for burning. When engine is off, fuel vapors are stored in the charcoal of the vapor storage canister. Vapors are then drawn into the intake manifold when engine is running again.

TESTING

PURGE VALVE (ON CANISTER)

1) Remove purge valve control vacuum line. Check for vacuum at line with engine running at approximately 1500 RPM. If there is no vacuum present, check EGR system.

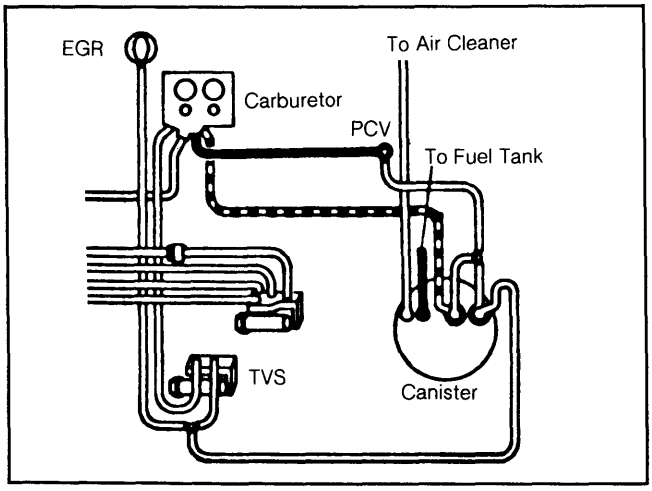
2) Apply external vacuum to the valve. Vacuum should hold. If not, replace the canister assembly. If vacuum holds, remove purge line, and check for vacuum. If no vacuum, check PCV system.

BOWL VENT VALVE

1) Remove bowl vent vapor hose from carburetor. Check open condition of valve by connecting to a manual vacuum pump. It should not be possible to draw more than 0.5 in. Hg if valve is open (as when engine is off).

2) If high resistance or plugged system is found, check for plugged or restricted hose. Hose may be cleared with compressed air. If hose is clear, remove canister filter. If restriction persists, replace canister.

Fig. 1: Vacuum Hose Routing for Single-Canister General Motors Evaporative Control System



Canister must be lowest point in system.

3) To check valve closed position, run engine at idle. Manifold vacuum will be applied to valve through control line. Bowl vent line should exhibit a plugged condition.

4) If valve is not closed, remove control vacuum line, and check for vacuum. If no vacuum, check for hose restriction or leak. Replace hose if required. If vacuum is present, replace canister assembly.

MAINTENANCE

The charcoal canister is the only serviceable item. It should be replaced every 24 months or 30,000 miles on Light Duty Emission models and every 24 months or 24,000 miles on Heavy Duty Emission models. If operated in severe conditions, more frequent replacement may be required.