INTERNATIONAL HARVESTER CO.

DESCRIPTION

A fuel evaporation emission system is installed on gasoline models to control amount of gasoline vapors entering atmosphere from vehicle's fuel tank and carburetor. During periods of gasoline expansion and vaporization, fuel vapors from fuel tank and carburetor float bowl are routed to a charcoal canister where they are absorbed by the charcoal. When engine is operating, stored fuel vapors are drawn from canister into intake manifold and burned in engine. System consists of a fuel tank with multiple vapor vent outlets, a fuel cap with vacuum and pressure relief valve, an expansion tank (liquid/vapor separator), a charcoal canister, an air flow control orifice, and connecting lines and fittings. On California vehicles, a ring of activated charcoal is attached to the air cleaner on the clean air side of the filter element.

OPERATION

Fuel Tank – Tanks are designed to provide space to allow for expansion of gasoline without overflowing out of filler opening. Multiple vapor vent outlets permit passage of gasoline vapors and expanding gasoline from tank. Vent outlets are so positioned in tank that at least one vent will be above fuel level no matter what attitude of vehicle.

Liquid/Vapor Separator – An externally-mounted expansion tank is used on some models as a liquid/vapor separator. Any liquid fuel which enters this separator is isolated from the fuel vapors and drained back into the main fuel tank. Fuel vapors are then passed on to the charcoal storage canister.

Vapor Canister – Canister is used to collect and store fuel vapors in activated charcoal particles. When engine is running, vacuum draws fresh air through filter in bottom of canister, through charcoal and into intake manifold. Fresh air purges charcoal canister and fuel vapors are burned in engine. Air flow through canister is limited by a .025" diameter orifice located in intake manifold vacuum fitting. California vehicles have a sealed bottom on the canister and an additional port on top for venting.

Fuel Tank Cap – Cap is designed to prevent passing gasoline vapors to atmosphere. Cap incorporates a vacuum relief valve set to open at approximately .25-.50 psi and a pressure relief valve set to open at approximately .75-1.25 psi.

NOTE – *Replace fuel tank cap with same type only.*

California Air Cleaner – California vehicles use an air cleaner with a ring of activated charcoal on the clean side of the filter element. This ring controls vapors from the carburetor internal vents and intake manifold which occur after engine is shut-off when hot. The charcoal adsorbs the vapors until engine is operated, when they are drawn from the charcoal and into the engine and burned. The charcoal ring is not removable and should not be cleaned with solvents.

MAINTENANCE

Operation of the evaporative control system is automatic and no adjustment is required. Every 15,000 miles, inspect all lines and components and replace charcoal canister filter on Federal models. California vehicles require no canister filter replacement.

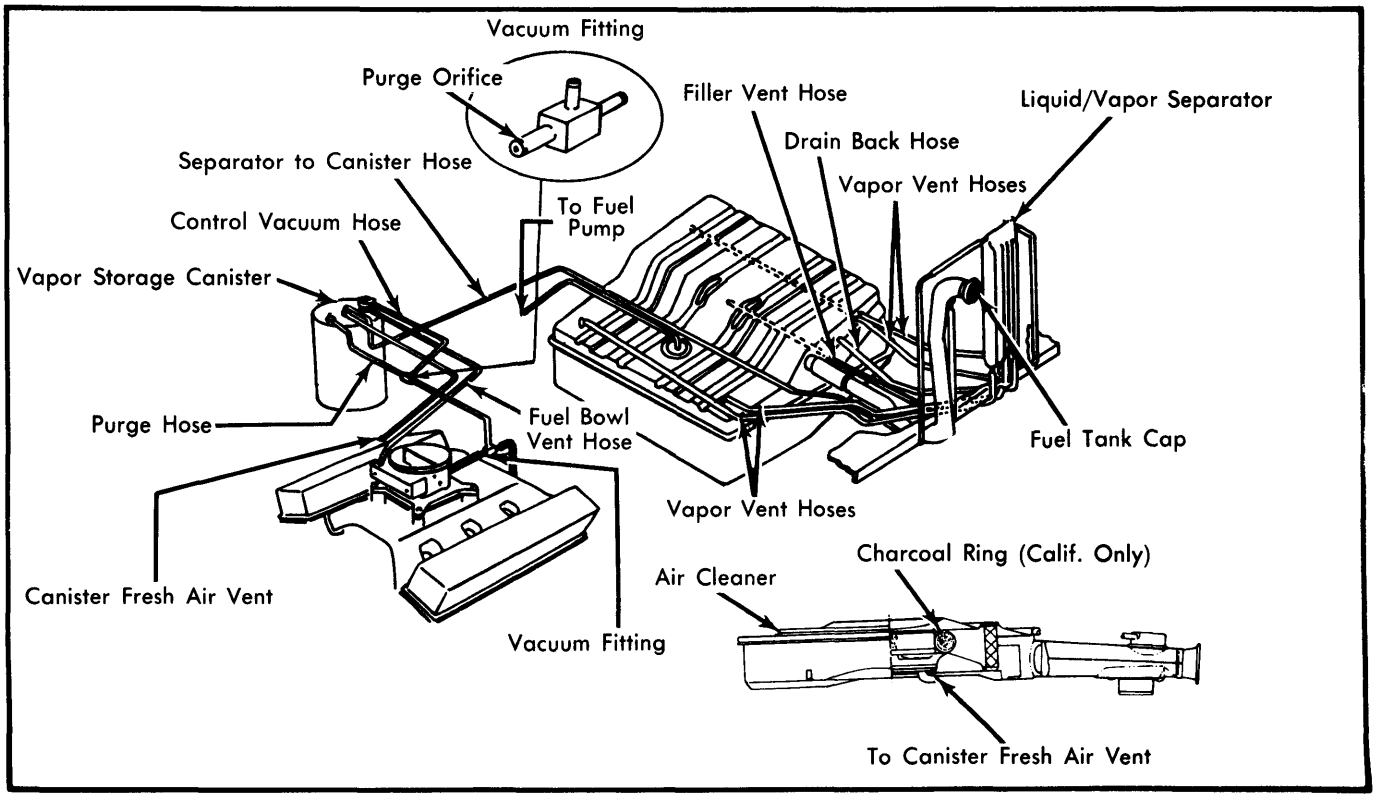

Fig. 1 Typical Scout Evaporation Control System (California Shown, Federal Similar)