VOLVO

Volvo (1970-73)

DESCRIPTION & OPERATION

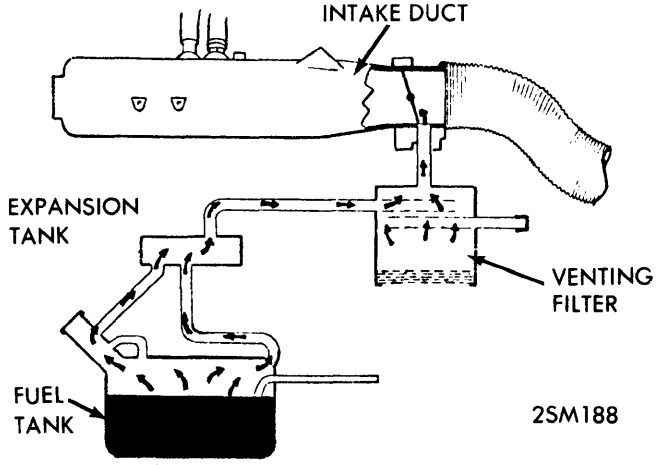
The Evaporite Control System is designed to prevent fuel vapor emission from the fuel system being discharged into the atmosphere. Fuel system is completely sealed and vented only through a carbon canister which adsorbs fuel vapors. There are two variations of the system. The carburetor version includes an Air Valve and a Hot Start Valve; while the version for fuel injection does not include these devices.

Fuel Tank & Filler Cap – Tank is fitted with a sealed filler cap and is vented by two vent lines, one from filler neck and the other from top of tank to an expansion tank.

Expansion Tank – Expansion tank is located behind protective wall board in luggage compartment (sedans), or on right hand side of cargo space (station wagons). Expansion tank provides storage for any overflow from main tank caused by fuel expansion or parking at a steep angle with full tank on fuel. This fuel will be returned to main tank. Expansion tank is connected to a carbon canister by a vent line.

Carbon Canister – Canister is filled with activated carbon and has a replaceable foam filter in bottom of canister. Vent line from expansion tank is connected to canister and fuel vapors from tank are adsorbed by the carbon when engine is not running. On carburetor models, a second vent line on canister connects (after passing through Hot Start Valve) to carburetor float bowl. This collects float bowl vapors. Another vent line on canister connects to the air intake of the carburetor or fuel injection. On carburetor models, an Air Valve is provided on top of canister. This valve is connected also to the base of the carburetor. When engine is running faster than idle, fuel vapors and air drawn in through bottom of canister will be drawn into engine and burned. This purging action renews adsorbing capacity of the carbon. At idle, Air Valve is closed (carburetor models) to prevent purging of canister which could cause an overrich idle mixture.

Air Valve (Carburetor Models) – Controls connection between canister and carburetor. Space above diaphragm is connected by a line to carburetor venturi on engine side at throttle. At high vacuum (engine idling), the vacuum valve is closed. When vacuum drops, the valve opens and air is drawn through canister and valve to carburetor. Fuel vapors stored in carbon are purged by air and drawn into engine and burned.

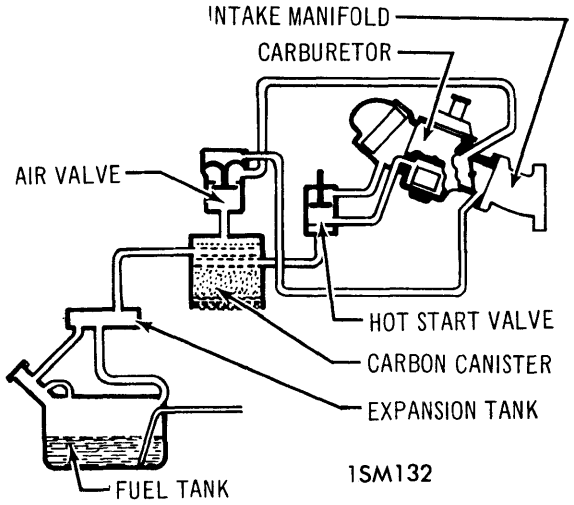


EVAPORATION CONTROL SYSTEM (FUEL INJECTION MODELS)

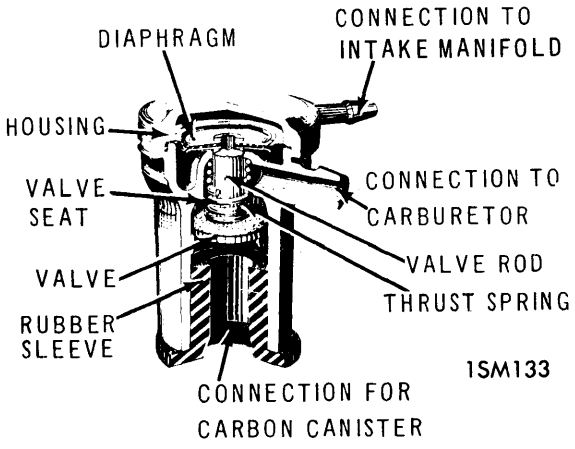
Hot Start Valve (Carburetor Models) – When engine is stopped or idling, piston in valve is lifted, allowing fuel vapors in float chamber to pass through valve into vent line to carbon canister. Here it is adsorbed by carbon. During normal driving, piston in valve is seated, closing vent line to canister. Fuel vapors in float chamber then pass through Hot Start Valve and enter air cleaner where they are drawn into engine and burned.

MAINTENANCE

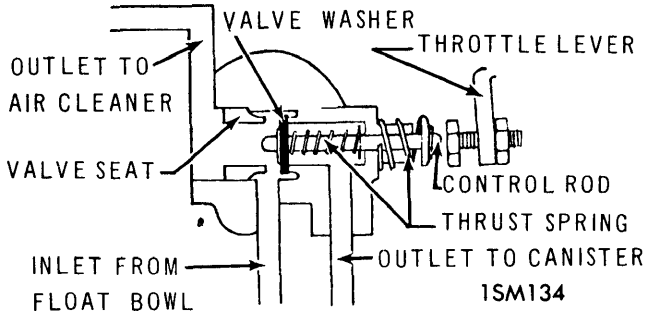
Foam plastic filter in bottom of carbon canister should be replaced every 24,000 miles.



EVAPORITE CONTROL SYSTEM (CARBURETOR MODELS)



AIR VALVE (CARBURETOR MODELS)



HOT START VALVE (CARBURETOR MODELS)

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