

SECTION 7F — ENGINE EMISSION CONTROLS

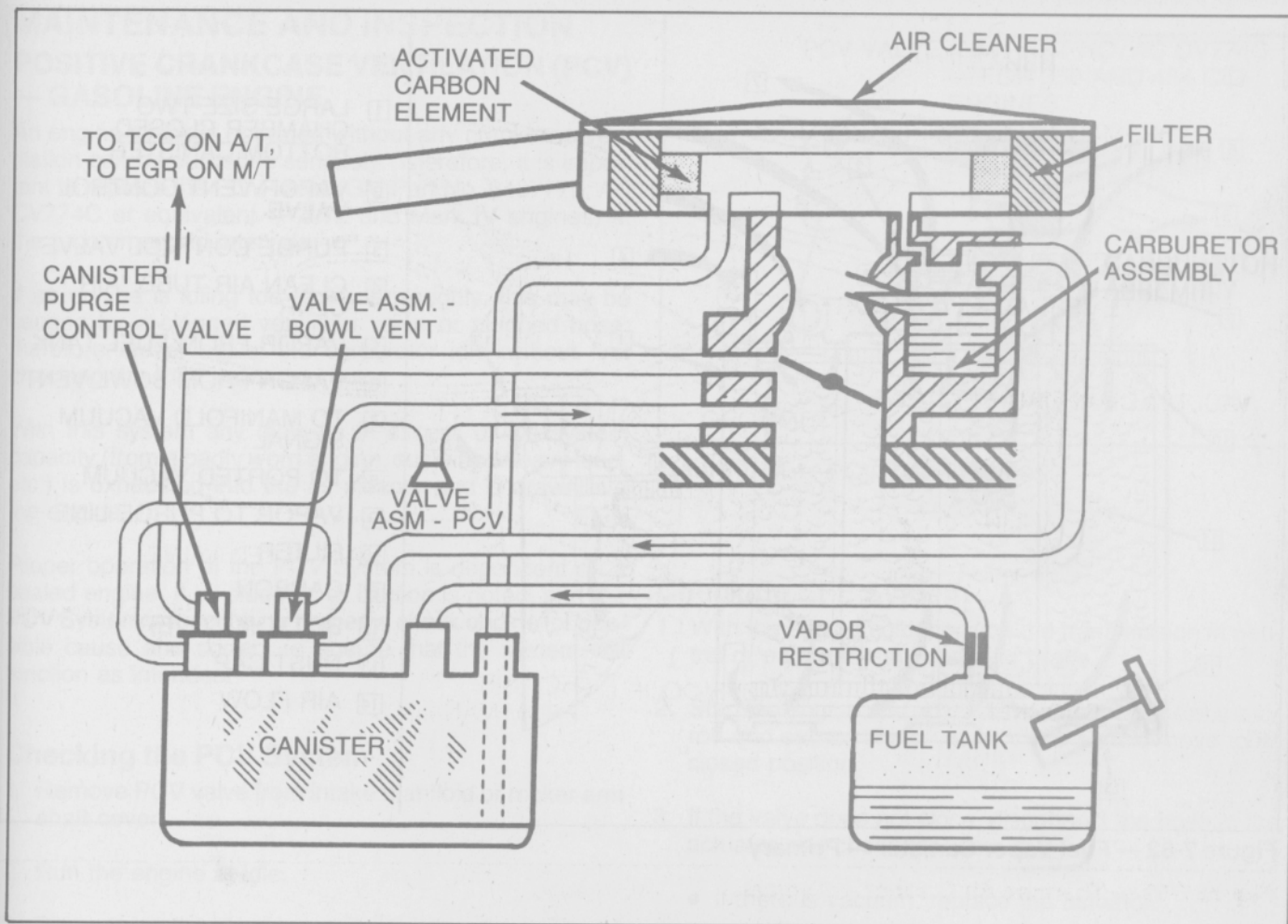


Figure 7-61 — Evaporative Emission Control System (EECS)

The Evaporative Emission Control System uses the following control valves:

- Purge control valve mounted on the canister.
- Vapor vent valve mounted on the canister.
- A thermal bowl vent valve (some applications).
- A thermostatic vacuum switch (TVS) installed in the intake manifold to sense engine coolant temperature.

When the engine is shut off, manifold vacuum is lost at the vapor vent valve. The spring-loaded valve in the vapor vent valve now connects the carburetor bowl vent to the canister. Carburetor float chamber vapors now pass into the canister for storage. When the engine is restarted, manifold vacuum draws the vapor vent controlling valve against spring pressure, closing off the bowl vent. Ported vacuum from the carburetor is connected to the TVS. When the TVS opens, ported vacuum opens the purge control valve. When the valve opens, manifold vacuum draws vapors from the canister into the intake manifold.

The thermal bowl vent valve (TBVV) is located in the section of hose that connects the carburetor bowl vent fitting to the canister control valve.

The TBVV will close and prevent vapor movement at 32°C (90°F) and below. The TBVV will open at 49°C (120°F) to permit vapor flow to the canister control valve.

FUEL VAPOR CANISTER — PRIMARY

The basic large-size, two-chamber, closed bottom primary fuel vapor canister is shown in Figure 7-62. This canister is used on all systems.

Gasoline vapors from the fuel tank flow into the tube labeled "FUEL TANK," and vapors from the carburetor float bowl flow into the tube labeled "CARB BOWL," and are absorbed by the carbon. The canister is purged when the engine is running above idle speed. The closed bottom design keeps water from entering the bottom of the canister, freezing, and restricting purge air flow. During purge, air is drawn from the clean side of the air cleaner, to the

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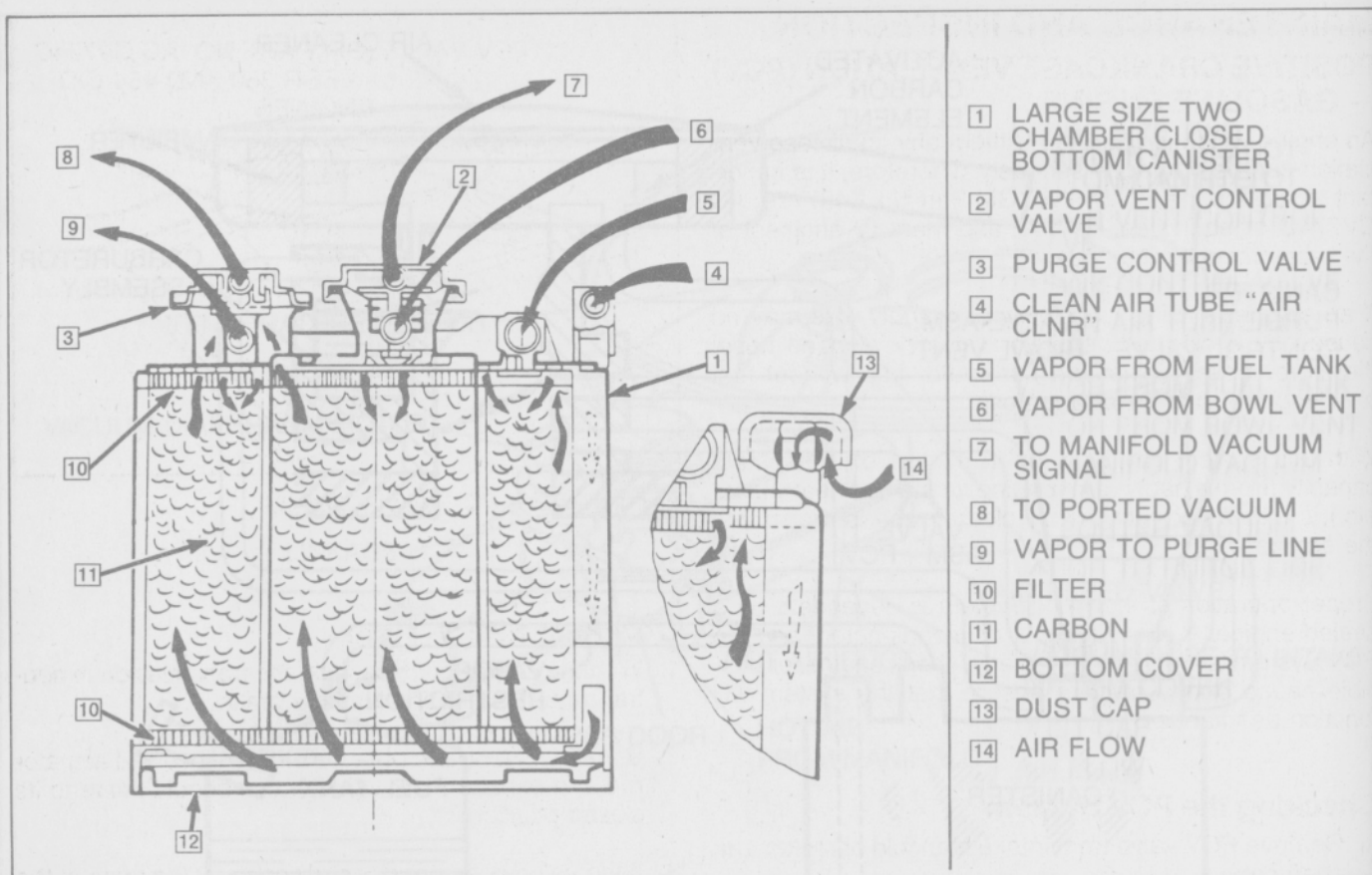


Figure 7-62 — Fuel Vapor Canister — Primary

tube on the canister labeled "AIR CLNR," through the carbon and into the intake manifold to be burned. Some closed bottom canisters draw purge air directly from the atmosphere.

Canister Purge Control Valve

The canister purge control valve shown in Figure 7-62 is a spring-biased diaphragm valve, normally closed, which allows or prevents purging of the canister. When the engine is off or idling, the spring holds the valve closed preventing canister purge. When the engine is off idle, however, timed manifold vacuum pulls the diaphragm upward and opens the valve allowing the canister to be purged.

Vapor Vent Control Valve

The vapor vent control valve shown in Figure 7-62 prevents venting of the carburetor float bowl during engine operation. A spring-biased diaphragm valve, normally open, allows (or prevents) fuel vapors from the float bowl to enter the canister. When the engine is off, spring tension holds the valve open, allowing normal venting.

When the engine is turned on, however, manifold vacuum pulls the diaphragm up to the valve.

FUEL VAPOR CANISTER — AUXILIARY

An Auxiliary Fuel Vapor Canister shown in Figure 7-63 is added to a primary closed bottom canister to increase capacity when a dual (auxiliary) fuel tank is used. On the bottom is a hose which connects to the primary canister's purge air inlet. On top is a purge air inlet. Vapor overflowing from the primary canister is stored in the auxiliary canister. During purge, vapor flows through the auxiliary canister, the primary canister and into the intake manifold for burning during combustion.

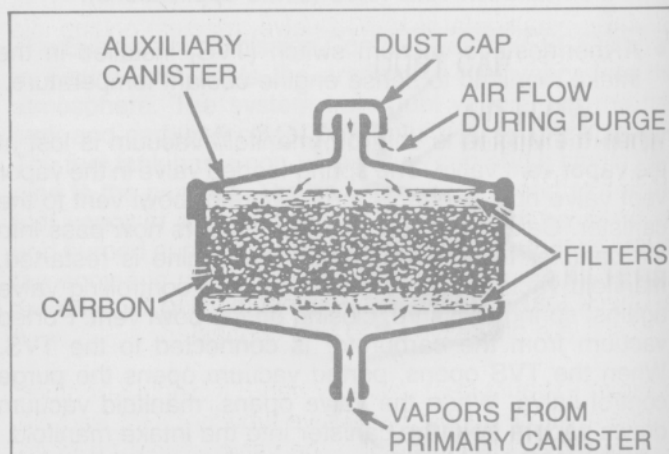


Figure 7-63 — Fuel Vapor Canister — Auxiliary