

AMERICAN MOTORS FUEL VAPOR CONTROL SYSTEM

DESCRIPTION & OPERATION

The Fuel Vapor Control system prevents raw fuel vapors from escaping into the atmosphere. Fuel vapors from the fuel tank and carburetor bowl are collected in a charcoal filled canister and are metered into the intake manifold for combustion. The system incorporates the following:

Fuel Tank Filler Cap — Filler cap incorporates a two-way relief valve which is closed to atmosphere under normal operating conditions. Relief valve is calibrated to open only when a pressure of more than .8 psi or vacuum of more than .2 in. Hg occurs. When pressure or vacuum is relieved, valve returns to normally closed position.

NOTE — It is normal to occasionally encounter an air pressure release when removing the filler cap.

Charcoal Canister — The charcoal canister is filled with granules of activated charcoal. Vapors entering the canister are adsorbed onto the surface of the granules.

All models use canisters with a staged dual purge feature. Two inlets are provided, one for tank vapor and one for carburetor fuel bowl vapor. The outlet is connected to intake manifold vacuum. The fourth nipple is connected to carburetor spark port.

When engine is running, manifold vacuum draws fresh air through inlet filter in canister and purges stored vapors. When ported vacuum reaches 12 in. Hg, secondary purge circuit is opened, and canister is purged at a much greater rate. A replaceable air filter is installed in bottom of canister.

Liquid Check Valve — The liquid check valve permits free passage of vapors from the fuel tank, but prevents liquid fuel from reaching the canister. If liquid enters check valve, the float rises, forcing the needle into its seat.

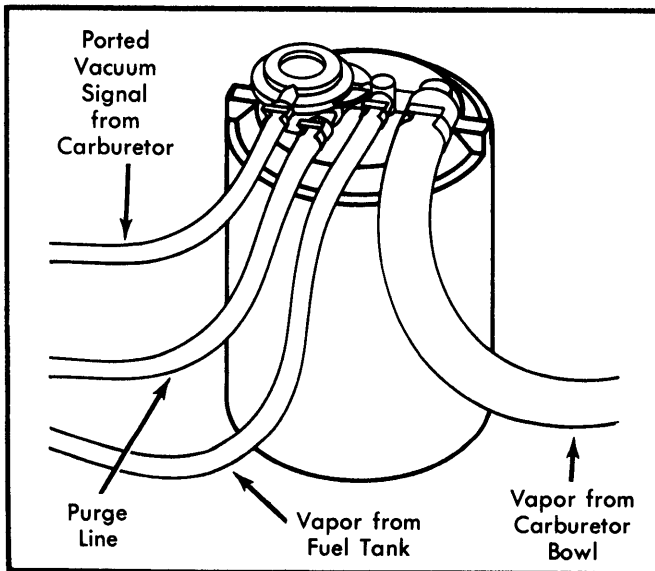


Fig. 1 View of Charcoal Canister and Hoses

Spirit and AMX models do not require a liquid check valve. The fuel tank on these models includes a large air space at the top which prevents liquid fuel from entering the vapor system. Concord and Eagle models use a liquid check valve mounted in the vent line.

Carburetor External Bowl Vent — The carburetor external bowl vent provides an outlet for fuel vapors when engine is not running. If vent were not provided, raw fuel vapors would enter the atmosphere. Some vapors would also enter the intake manifold, making hot restarts difficult.

When the engine is running, the fuel bowl must be vented to the inside of the air cleaner for proper fuel flow. This is accomplished by automatically closing the bowl vent with manifold vacuum.

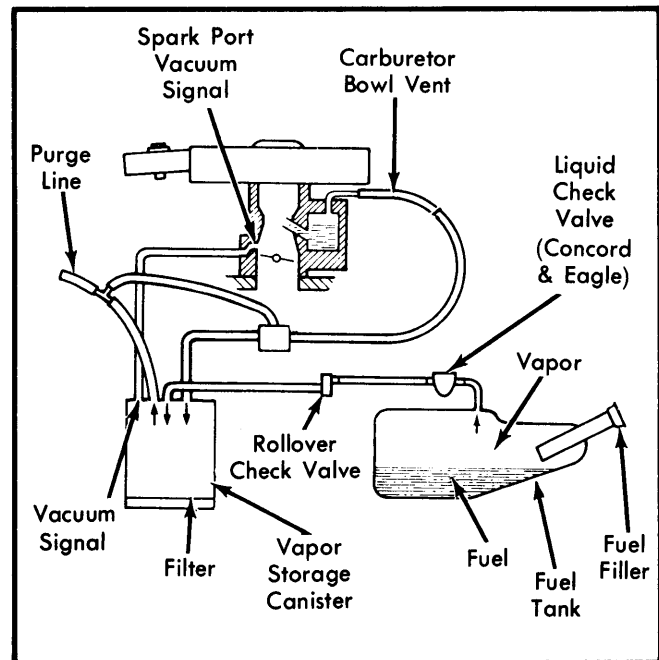


Fig. 2 View of Typical Fuel Vapor Control System

Fuel Return System — All AMC vehicles with 6 cylinder engines use a fuel return system. This system reduces the possibility of high temperature fuel vapor problems. System consists of a line connecting extra nipple on fuel filter to extra nipple on fuel tank sending unit. During normal operation, a small amount of fuel is returned to fuel tank. When underhood temperatures are high, vaporized fuel is returned to tank and does not pass through carburetor.

MAINTENANCE

Fuel Vapor Control System — Inspect check valve, hoses, connections and canister every 30,000 miles (replace as necessary). Replace fuel filter every 15,000 miles and canister filter every 30,000 miles.