SUBARU

All Models

DESCRIPTION

The fuel evaporation system prevents fuel vapors from reaching the atmosphere. Major components of the system include a sealed fuel tank, pressure/vacuum relief tank cap, 2-way valve, carbon canister, purge control valve, thermal vacuum valve, solenoid valve, purge check valve and connecting lines and hoses.

OPERATION

When the engine is stopped, fuel vapors flow from the float bowl through the open solenoid valve down into the canister. Vapors from gas expanding in the fuel tank pass through the vapor separator, 2-way valve and into the canister. The purge line check valve is closed to prevent vapors from rising in the line and entering the intake manifold.

When the ignition is turned on, the solenoid valve closes, blocking off the float bowl-to-canister passage. The thermal vacuum valve vents control vacuum to the air cleaner until the engine reaches temperature above 95° F (35° C). Above the switching point, vacuum is applied to the purge control valve. Manifold vacuum pulls fresh air into the canister, through the purge line and into the intake manifold. This fresh air purges the fuel vapors from the canister.

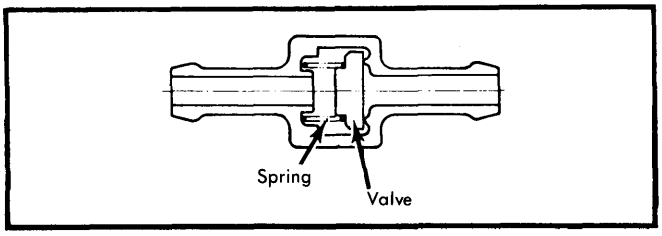

Fig. 1 Cross Section of Purge Line Check Valve

TESTING

System Test – 1) With gas cap removed, disconnect evaporative hose between carbon canister and fuel tank. Blow air toward carbon canister, no resistance should be felt. Blow air toward fuel tank, slight resistance should be felt because of the two-way valve.

2) Disconnect the vacuum hose from the pipe going to the carbon canister vacuum vent port. Blow air into the hose. If air can be blown into the canister, the diaphragm in the purge control valve is ruptured and the canister must be replaced.

3) Blow air into all other ports on the carbon canister. If air does not pass easily through all other hoses, replace canister.

Check Valve – Disconnect check valve and blow air from manifold side toward canister side. No air should pass. Blow in the other direction air should pass freely. If not, replace valve.

Solenoid Valve – Air should pass through valve when no power is applied to terminals. No air should pass when 12 volts are applied across terminals.

MAINTENANCE

Check evaporative emission system for damage or clogged lines, defective valves or carbon canister every 30 months or 30,000 miles. Repair or replace components as necessary.

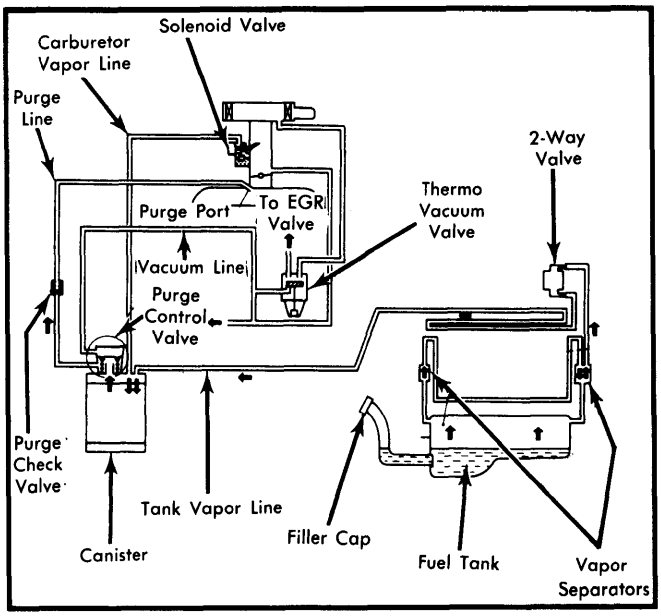

Fig. 2 Subaru Evaporative Emission Control System

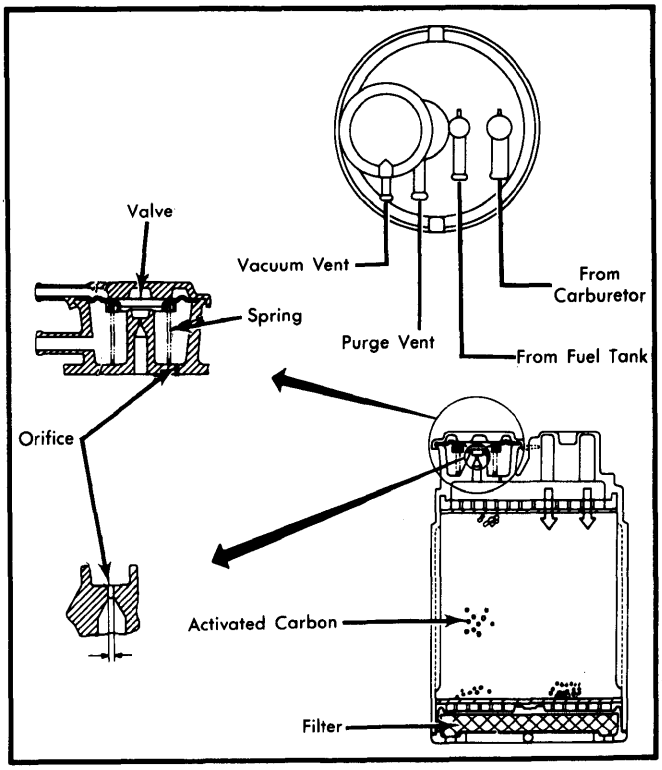

Fig. 3 Carbon Canister