

# 1982 Fuel Evaporation Systems

## 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.

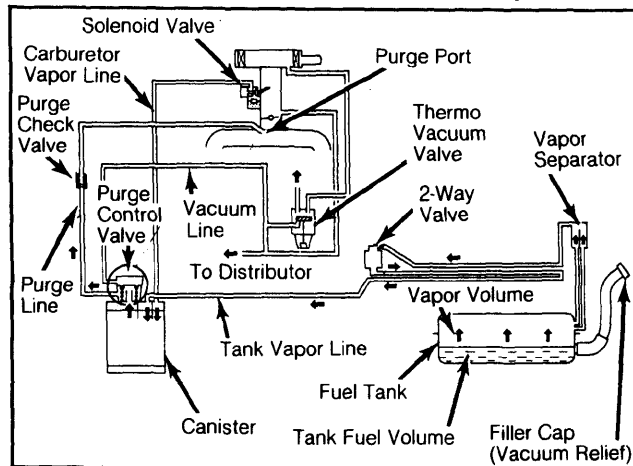
### OPERATION

When engine is stopped, fuel vapors flow from float bowl through open solenoid valve down into canister. Vapors from gas expanding in fuel tank pass through vapor separator, 2-way valve and into canister.

The purge line check valve is closed to prevent vapors from rising in the line and entering intake manifold. When ignition is turned on, solenoid valve closes, blocking off float bowl-to-canister passage. The thermal vacuum valve vents control vacuum to air cleaner until engine reaches temperature above 95°F (35°C).

Above the switching point, vacuum is applied to purge control valve. Manifold vacuum pulls fresh air into canister, through the purge line and into intake manifold. This fresh air purges fuel vapors from canister.

**Fig. 1: Subaru Evaporative Emission Control System**



Note direction of flow.

### TESTING

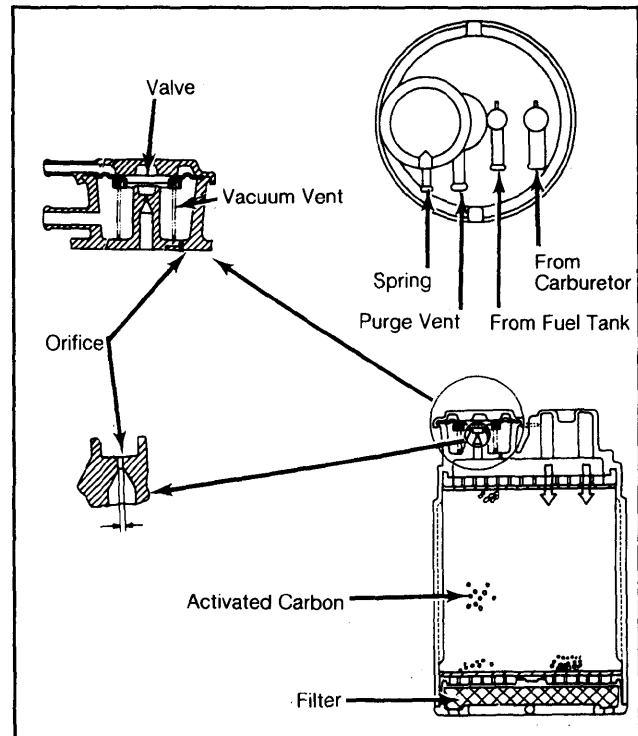
#### SYSTEM TEST

1) With filler 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 2-way valve.

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

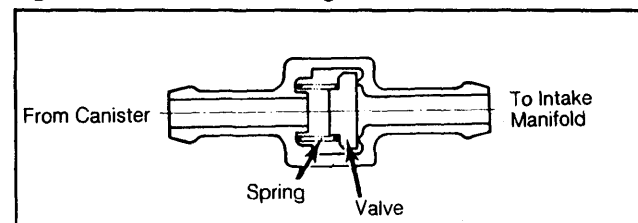
**Fig. 2: Subaru Carbon Canister**



### 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.

**Fig. 3: Sectional View of Purge Line Check 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.