# 1982 Fuel Evaporation Systems

## AUDI

**Quattro, 4000, 5000**

### DESCRIPTION

The sealed Audi fuel evaporation system prevents gasoline vapors from escaping to the atmosphere. The system consists of a non-vented fuel tank filler cap, an expansion chamber built into fuel tank, an activated charcoal canister, safety valves, a restrictor and a series of connecting lines which interconnect the components between fuel tank and air cleaner.

### OPERATION

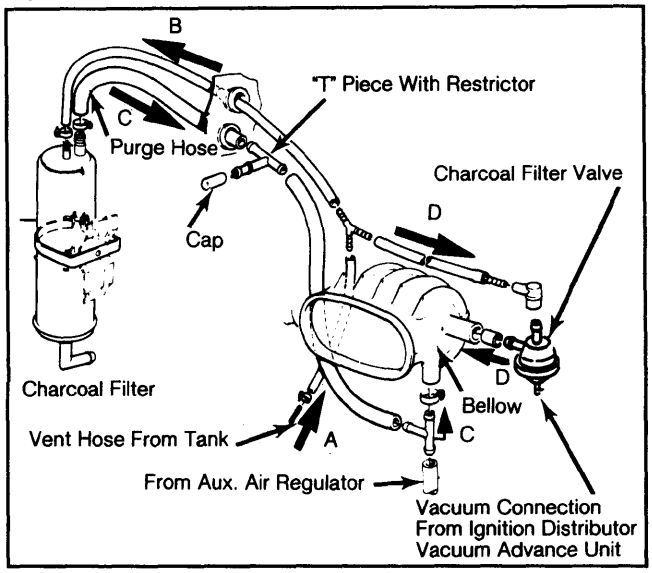
Expanded fuel caused by high temperatures is collected in expansion chamber of fuel tank. Fuel is returned to main tank by venting action as fuel is used from main tank. When engine is stopped, fuel vapors tank flow through a vent line to charcoal canister, where they are stored.

When engine is running above idle speed, intake vacuum draws fresh air through charcoal canister and pulls stored vapors into the intake system through the air cleaner.

When engine is at idle, fuel vapors flow from the charcoal canister through a restrictor to the intake manifold to be burned. A safety valve, located between charcoal canister and fuel tank, closes to prevent fuel leakage if vehicle turns over.

An on/off valve, located between charcoal canister and air cleaner, reduces hydrocarbon emissions by closing at idle to prevent vaporized fuel from entering air cleaner. Throttle housing vacuum opens valve as engine speed increases.

***Fig. 1: Charcoal Canister-to-Intake Manifold Vapor Flow***




### MAINTENANCE

Every 15,000 miles check all components for leakage, damage or deterioration. Replace as required.

## BMW

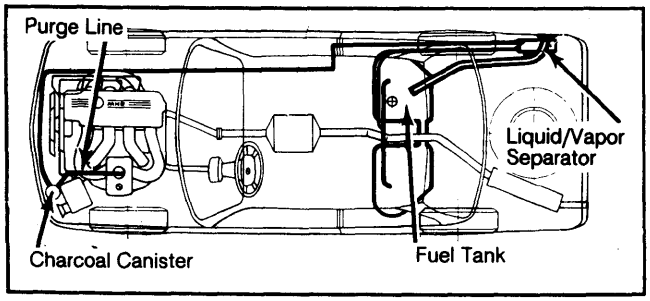
**320i, 528e, 633CSi, 733i**

### DESCRIPTION

BMW evaporative control system consists of a purge system leading from fuel tank to hose of crankcase ventilation system. Located between fuel tank and crankcase ventilation system is a vapor storage tank and an activated charcoal canister.

Fuel evaporation emissions are prevented from entering atmosphere by means of a sealed filler cap on fuel tank. Fuel tank has no direct vent to atmosphere. An excess fuel return valve is also used and is located in fuel supply line. A fuel return line connects this valve to fuel tank.

***Fig. 1: 320I Fuel Evaporation System***

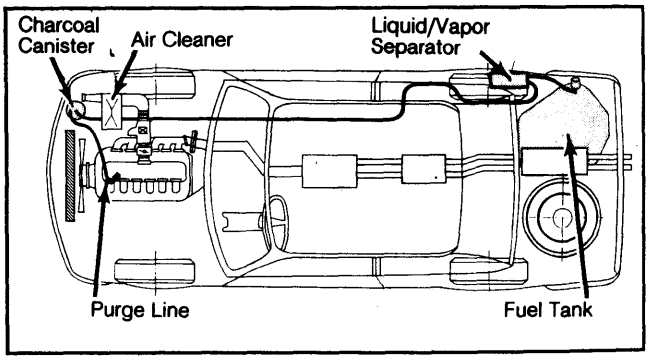



### OPERATION

When the vehicle is stopped and engine is off, or while standing on a non-level position, the gas vapors are collected in the liquid-vapor separator where part of them condense and flow back to the fuel tank. The vapor continues to the charcoal canister where it is adsorbed and retained until the engine is started again.

After starting, a suction effect causes a flow into the intake manifold and the gas vapor is burned by the engine. The liquid-vapor separator is also capable of compensating for fuel expansion of a completely filled gas tank when ambient temperatures are about 80°F (27°C).

***Fig. 2: 528e & 633CSi Fuel Evaporation System***



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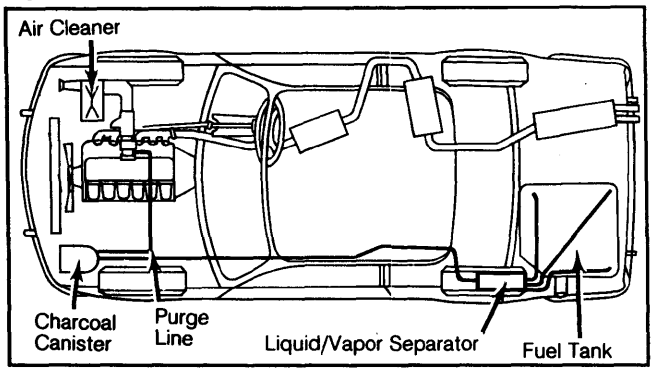
## BMW (Cont.)

*Fig. 3: 733i Fuel Evaporation System*




### MAINTENANCE

The fuel evaporation system is maintenance free, but hose connections and fuel cap should be checked every 15,000 miles.

## CHRYSLER CORP. IMPORTS

**Arrow Pickup, Challenger, Champ, Colt, Ram-50 Pickup, Sapporo**

### DESCRIPTION

The fuel evaporation system is used to prevent the escape of evaporative gases into the atmosphere. The system consists of a special fuel tank, vacuum relief filler cap, vapor separator, 2-way valve, fuel check valve, charcoal canister(s), purge control valve, carburetor bowl vent valve, carbon element and tubes and hoses to connect the system.

### OPERATION

#### WHEN ENGINE IS RUNNING

Fuel vapors adsorbed in the canister(s) are drawn into the intake manifold through the purge control valve and an orifice. Fuel vapors adsorbed in the carbon element are led into the carburetor and carburetor bowl vapors flow into the carburetor through bowl vent valve.

#### WHEN ENGINE IS NOT RUNNING

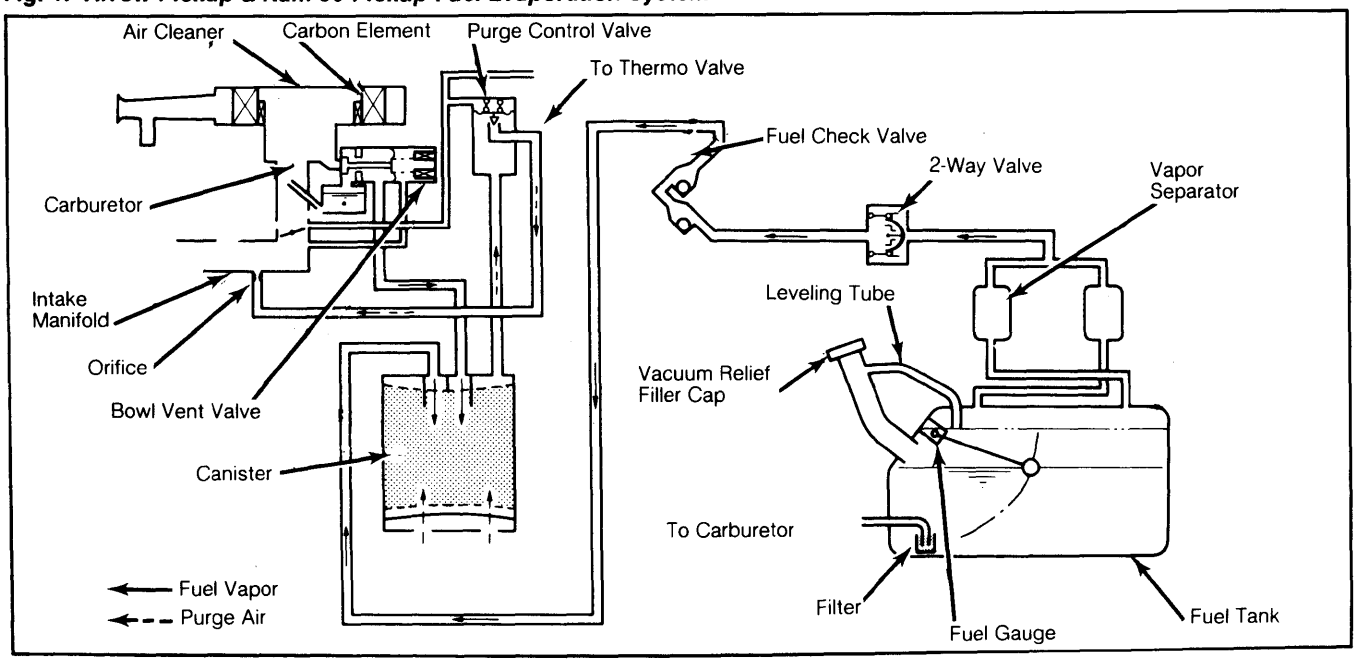
Fuel vapors generated inside the fuel tank and the carburetor float chamber flow into the charcoal canister(s) and are stored there. Fuel vapors generated inside the carburetor and intake manifold are adsorbed into the carbon element of the air cleaner.

### TESTING

#### PURGE CONTROL VALVE

With engine stopped, remove purge hose from air cleaner and blow air into it. No air should pass through purge valve. Start engine and hold at 2000 RPM. Air should pass freely through purge valve. Replace valve if it does not respond as specified.

*Fig. 1: Arrow Pickup & Ram-50 Pickup Fuel Evaporation System*




*Note direction of fuel vapor and purge air flow.*