BRITISH LEYLAND – AUSTIN/MG DIVISION

MG Midget (1970-73)
MGB & MGB/GT (1970-73)
Austin America (1970-71)
Austin Marina (1973)

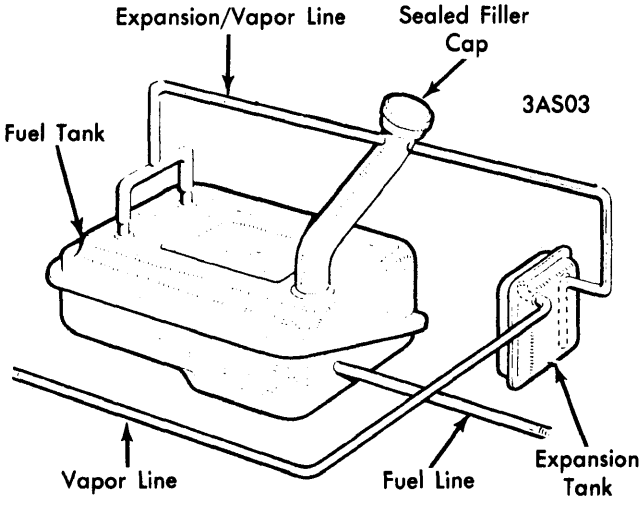
DESCRIPTION & OPERATION

The Evaporative Loss Control System is designed to prevent vapor emissions from fuel system being discharged into the atmosphere. The fuel system is completely sealed and the fuel tank, and carburetors on some models, are vented through a charcoal canister which adsorbs fuel vapors until they are drawn into the engine and burned in the combustion system.

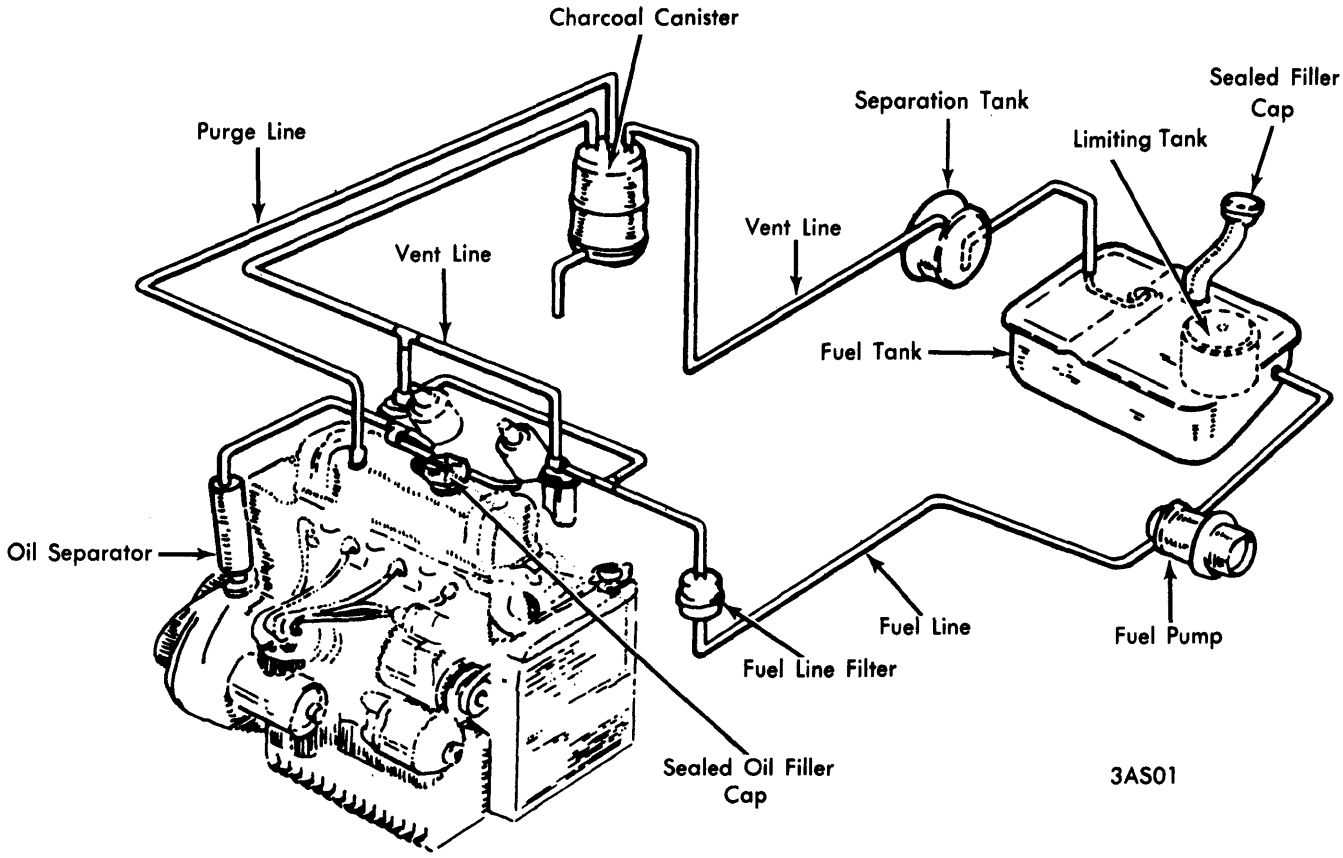
Fuel Tank (MG Models) – Fuel tank is fitted with an internal capacity limiting tank which provides an air chamber within tank to ensure space for fuel expansion when tank is completely full. Limiting tank is open at bottom and has a control bleed at top which prevents it from being completely filled when main tank is filled. Main fuel tank is vented by a line extending to a low point in the separation tank which is used in this system.

Fuel Tank (Austin America) – Fuel tank is fitted with a sealed filler cap and is vented by a line extending from the opposite end of tank to filler neck and from this point to a low point in the expansion tank which is used with this system.

Fuel Tank (Austin Marina) – Fuel tank is fitted with two capacity limiting tubes extending from filler neck to main portion of tank. These tubes ensure that sufficient space is available for fuel displaced due to high ambient temperatures. An air lock is created in filler tube to prevent tank from being completely filled.



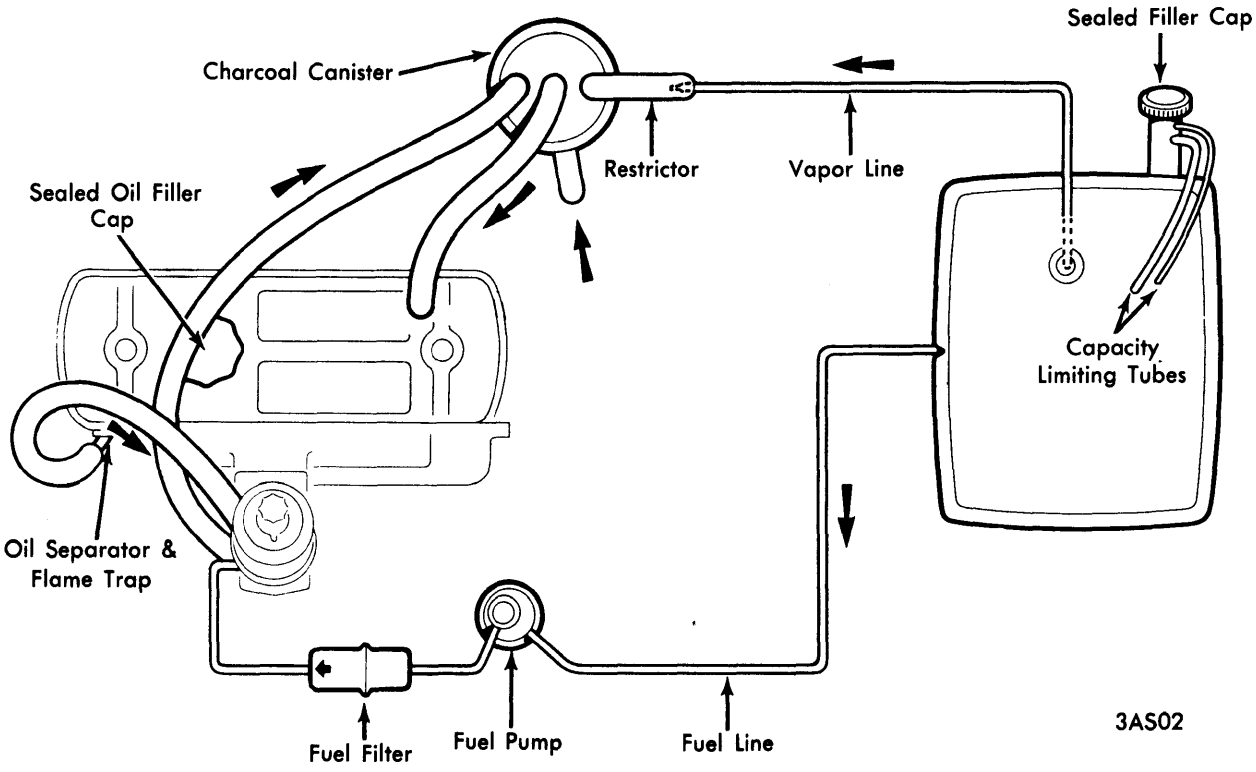
EVAPORATIVE LOSS CONTROL SYSTEM COMPONENTS (AUSTIN AMERICA)



EVAPORATIVE LOSS CONTROL SYSTEM COMPONENTS (MG Models)

Fuel Evaporation

BRITISH LEYLAND – AUSTIN/MG DIVISION (Cont.)



EVAPORATIVE LOSS CONTROL SYSTEM COMPONENTS (Austin Marina)

Separation Tank – This tank is located adjacent to main fuel tank and will prevent any liquid fuel from flowing through the vent line to the carbon canister. Liquid fuel and condensate in the separation tank will be returned to the main tank by venting action as fuel is used from the main tank. Separation tank is connected to carbon canister (located in engine compartment) by a vent line.

Expansion Tank (Austin America Only) – This tank is located adjacent to main fuel tank to provide storage for any overflow from main tank caused by fuel expansion or parking at a steep angle with a full tank of fuel. This fuel will be returned to the main tank by the venting action as fuel is used from the tank. Expansion tank is connected to a carbon canister at the front of the vehicle by a vent line and fuel vapors are adsorbed by the activated carbon in the canister. Vent line also acts to maintain atmospheric pressure in the fuel tank by admission of air through a filter pad in the bottom of the canister. Location of expansion tank (above main tank level) will prevent any liquid fuel flow to the canister.

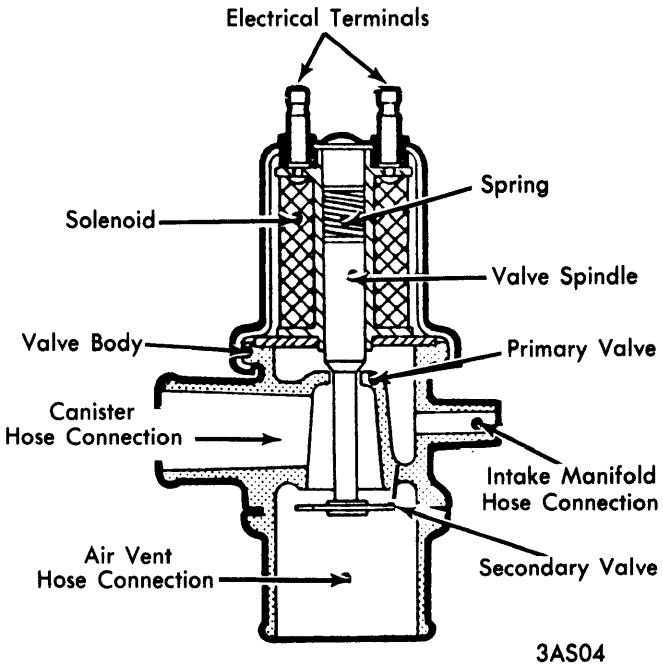
Carbon Canister – Canister is mounted in engine compartment and consists of a container filled with activated carbon with a replaceable filter pad at the atmospheric air vent in the bottom of the canister. Vent line from separation tank is connected to top of canister and fuel vapors from the tank are adsorbed by the activated carbon when the engine is not running. A second vent line on canister is connected to carburetor float bowls (some models only) to collect fuel vapor from the carburetor bowls. Center connection on top of canister is purge line connected to engine valve cover. When engine is running, fuel vapors and air drawn in through bottom of canister will be drawn into the engine and then emitted through the regular crankcase ventilation system to the intake manifold and burned in the combustion system. This purging action will renew the adsorbing capacity of the activated carbon.

Fuel Line Filter (Some Models) – Additional renewable inline fuel filter installed in main fuel line as a safeguard to prevent foreign material causing float level to be exceeded.

Mixture Temperature Compensator (Some Models) – Consists of a temperature sensitive valve controlling an air by-pass extending from the air cleaner to the controlled vacuum area in the carburetor. Under conditions where fuel is at a high temperature (prolonged idling in high ambient temperatures), valve will open to supply additional air which will lean out the mixture enriched by fuel vapors from evaporative loss control system and increased fuel flow due to high fuel temperature.

Run On Control Valve – A solenoid operated valve is connected in system between adsorbtion canister ventilation connection and intake manifold. A third hose is connected to valve, which is vented to atmosphere for canister ventilation while engine is running. The electrical circuit of solenoid is connected through ignition switch and an oil pressure operated switch. When ignition is switched off, solenoid is energized through an oil pressure switch and valve closes, shutting off ventilation connection and opening connection to intake manifold. Intake manifold vacuum then acts on fuel in carburetor float chamber(s) to prevent fuel flow when engine is stopped preventing engine run-on. When oil pressure drops to zero, valve will be de-energized.

BRITISH LEYLAND – AUSTIN/MG DIVISION (Cont.)



RUN ON CONTROL VALVE

TROUBLE SHOOTING

The following causes are peculiar to the evaporative emission control system and are in addition to those due to other parts of the car:

FUEL LEAKAGE

1) Broken or leaking fuel line or leaks in fuel vapor system.

2) Fuel tank filler cap not seating properly and not sealing tank.

3) Fuel filler tube or fuel tank leaking.

ENGINE STOPS (AFTER SHORT RUNNING PERIOD)

1) Kinked or clogged vent line between fuel tank and canister.

2) Restricted air flow through canister (defective canister, clogged filter pad, kinked or clogged vent line).

ENGINE SURGES

1) Check canister, air filter pad, and vent lines for obstructions.

TESTING

LEAK TEST

If system components (other than filter or canister) have been replaced, or if system is not operating correctly, system can be pressure tested for leaks as follows:

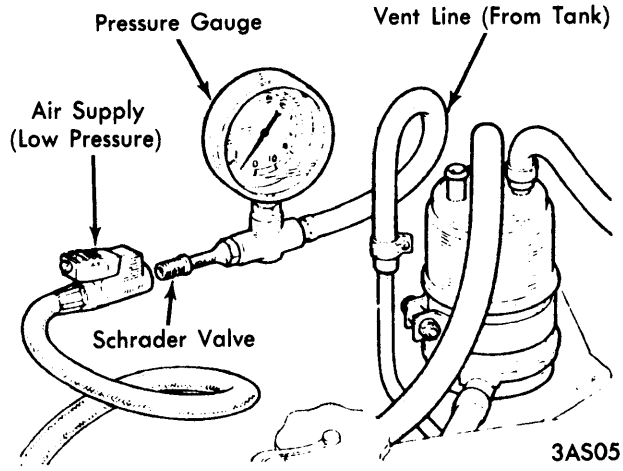
1) Make sure there is fuel in fuel tank (one gallon minimum), run engine for at least one minute to prime system, then turn engine off.

2) Disconnect fuel tank vent line at canister connection, connect 0-10 lb. pressure gauge, Schrader valve, and low pressure air supply (use hand tire pump) to this line as indicated on illustration.

3) Use hand pump to pressurize system to 1 psi. *CAUTION – This pressure must not be exceeded at any time to avoid damage to fuel tank.* Hold pressure at this figure and note gauge reading.

4) Pressure reading on gauge should be maintained for 10 seconds without falling more than 0.5 psi. If this reading not maintained, check visually for leaks from fuel tank and connections, check filler cap for positive sealing.

5) If gauge reading satisfactory after 10 seconds, remove fuel tank filler cap. Pressure should fall to zero.



EVAPORATIVE LOSS CONTROL SYSTEM LEAK TEST SET-UP

RUN ON CONTROL VALVE TEST

Check control valve line fuse. Turn ignition switch OFF. Disconnect control valve electrical lead at oil pressure switch and touch lead to a good ground. If system is operating satisfactory, valve will be heard to operate when lead is grounded.

MAINTENANCE

Fuel Lines & Connections – Check every 6,000 miles or 6 months for condition, tightness, chafing, leads or corrosion.

Fuel Line Filter – Replace every 12,000 miles or 12 months. With ignition off, disconnect and discard filter, install new unit. Turn ignition on and check connections for fuel leakage, recheck connections with engine running.

Carbon Canister – Replace canister air filter element every 12,000 miles or 12 months. Replace canister every 48,000 miles or 48 months. Disconnect vent and purge lines at top, and air tube at bottom of canister. Loosen mounting clip and remove canister from bracket. Unscrew lower end cap from canister, remove and discard filter pad, clean cap. Install new filter pad in lower end of canister, reinstall cap. Install canister on engine and reconnect lines. *NOTE – Purge line must be connected to large center fitting on canister.*

Crankcase Ventilating System – This system is tied into the evaporative emission control system and must be serviced periodically. See Crankcase Ventilation data for these cars.