1982 Fuel Evaporation Systems

DATSUN

Maxima, Pickup, Sentra, Stanza, 200SX, 210, 280ZX, 310

DESCRIPTION

The Fuel Evaporation system is used to reduce hydrocarbons (HC) emitted to the atmosphere from the fuel system. This is accomplished by activated charcoals in the carbon canister.

The system consists of a fuel tank with a positive sealing filler cap, carbon canister with purge control valve, fuel check valve, canister purge and vacuum signal, and vapor vent lines. A vent switching valve is used on High Altitude Pickup, Sentra, High Altitude Stanza, and 210 models.

A thermal vacuum valve is used on Sentra, 210 and 310 models. A vapor/liquid separator is used on 200SX Hatchback models. 310 models use a combined check valve with vacuum relief valve.

NOTE: Diesel models do not use a fuel evaporation system.

OPERATION

Fuel vapors from the sealed fuel tank are led into the carbon canister. Canister is filled with activated charcoal to absorb fuel vapors when engine is stopped or idling. As the throttle valve opens and vehicle speed increases, vacuum opens the purge control valve and fuel vapors are drawn from canister into the intake manifold.

TESTING

FUEL TANK & VAPOR VENT LINE

1) Check all hoses and fuel tank filler cap. Disconnect vapor hose from carbon canister to fuel tank.

2) Connect a "T" fitting, manometer and shut-off valve to end of vent line. Supply air pressure to shut-off valve until manometer indicates 15.75 in. (400 mm) water.

3) Close shut-off valve. Fuel tank and hoses should hold this pressure within .98 in. (25 mm) water for 2½ minutes. If pressure does not hold, repair or replace components as necessary.

PURGE CONTROL VALVE

Disconnect vapor hose from carbon canister at "T". Draw vacuum on vapor hose, there should be no leak. If valve does leak, remove purge valve and check for a damaged or cracked diaphragm. Replace as necessary.

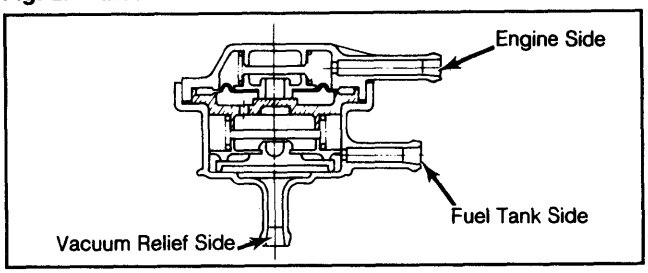
CHECK VALVE

310 Models

1) Remove luggage compartment board. Disconnect vapor line from check valve and remove check valve. Blow through valve at fuel tank inlet side.

2) There should be significant resistance. Repeat on engine inlet side of valve. Air should flow freely through valve. Replace valve if it fails this test.

Fig. 2: Datsun 310 Check Valve with Vacuum Relief Valve



All Other Models

Disconnect hoses and blow through valve at fuel tank inlet side. There should be significant resistance. Repeat on engine inlet side of valve. Air should flow freely through valve. Replace valve if it fails this test.

MAINTENANCE

Inspect vapor hoses and purge hoses every 30,000 miles or 24 months. Replace carbon canister every 30,000 miles or 24 months.

Fig. 1: Typical Datsun Fuel Evaporation System