

# Fuel Evaporation

## DATSUN

1200 Sedan & Coupe  
 510 Sedan & Station Wagon (1600)  
 610 Sedan & Station Wagon (1800)  
 Pickup  
 240Z

### DESCRIPTION & OPERATION

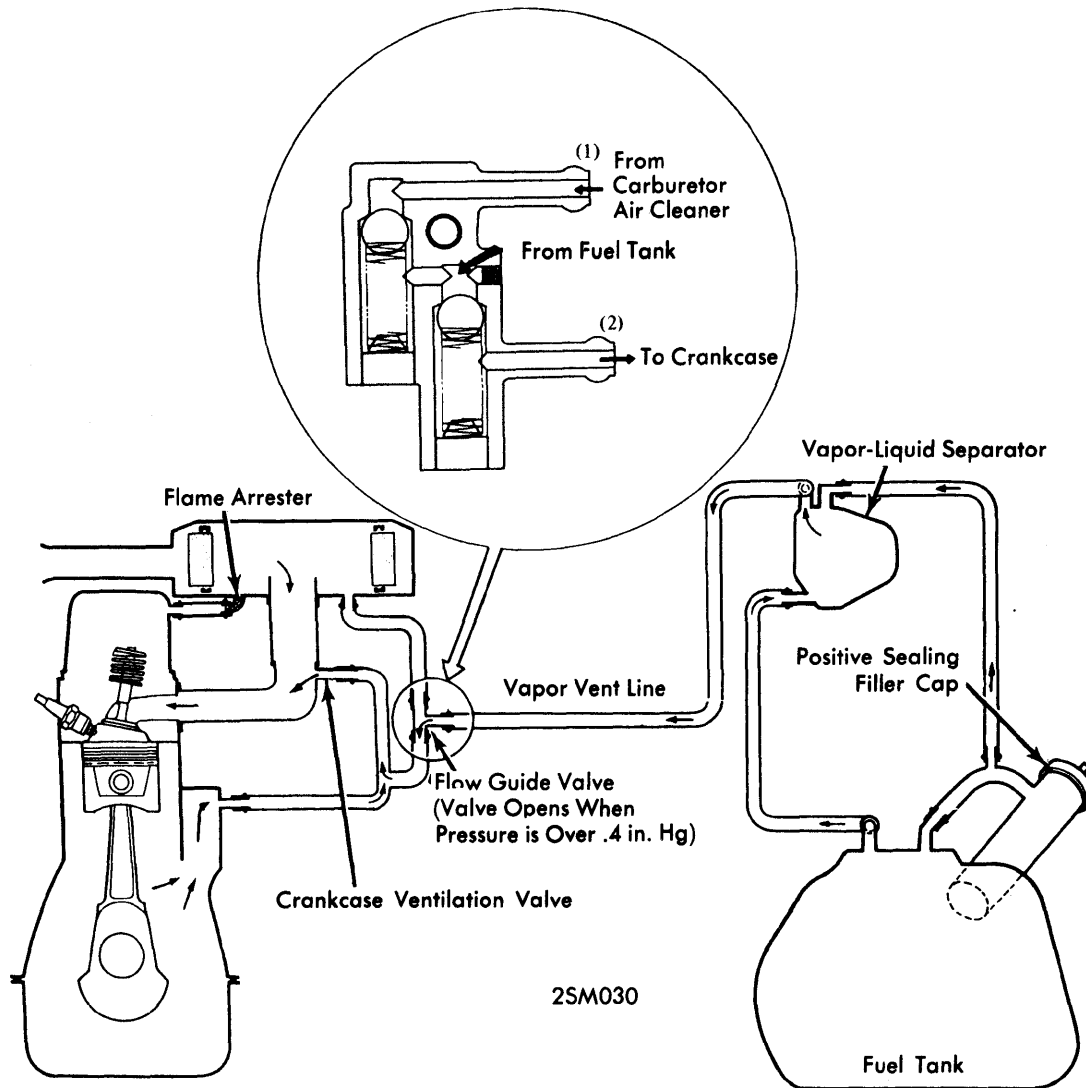
System incorporates four basic components; Fuel tank with positive sealing filler cap, vapor-liquid separator, flow guide valve and three vapor vent lines. In addition, sport car models also incorporate a carburetor float chamber venting system. Individual components operate as follows:

**Fuel Tank & Filler Cap** – Tank is fitted with a sealed filler cap and connects to a vapor-liquid separator through two vent lines.

**Vapor-Liquid Separator** – Vapor-liquid separator provides storage for any overflow from the main tank caused by fuel expansion or parking at a steep angle with a full tank of fuel. This fuel will be returned to main tank by venting action as fuel is used from the main tank. Vapor-liquid separator is connected to a flow guide valve, located in engine compartment, by a vent line.

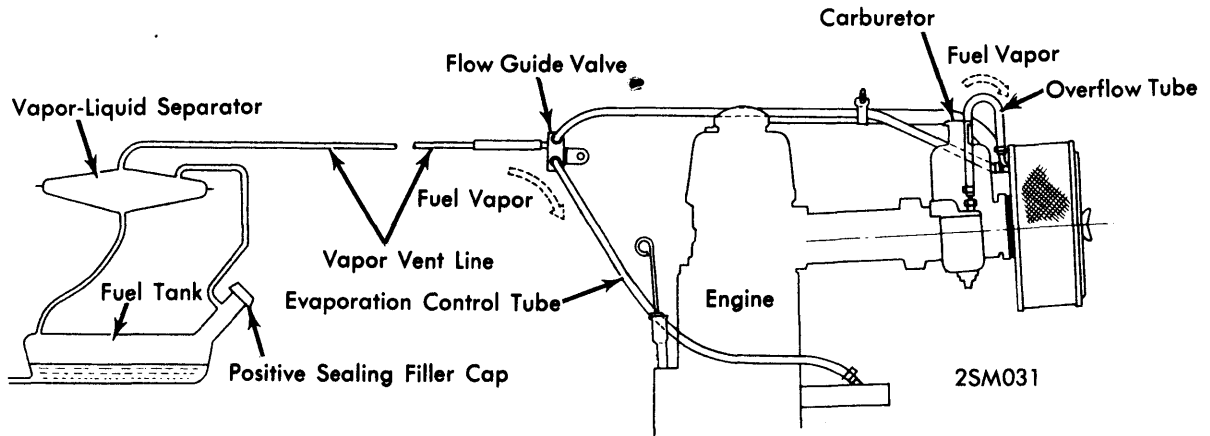
**Flow Guide Valve** – Flow guide valve is a two-way valve, located in engine compartment, and is connected by one vent line to the air cleaner and by a second vent line to the crankcase ventilation system (engine crankcase on 240 Z models). When pressure of fuel vapors from main tank and vapor-liquid separator exceed .4 inches of mercury, flow guide valve opens allowing vapors to enter into crankcase where they are stored. When engine is running, these vapors (in crankcase) are drawn into combustion system through the crankcase ventilation system. With engine running, fuel drawn from main tank creates a vacuum in vent line. Vacuum in line closes crankcase connection in flow guide valve and opens carburetor air cleaner side of valve allowing fresh air to enter fuel system.

**Carburetor Float Chamber Venting (240Z & Sports Car Models Only)** – When engine is not running, fuel vapors caused by expansion of fuel in carburetor float chamber, pass through a vent line to carburetor air cleaner where they are stored. When engine is running, these vapors are drawn into combustion chamber.



**DATSUN EVAPORATIVE EMISSION SYSTEM  
 (ALL EXC. 240Z AND SPORTS CAR MODELS)**

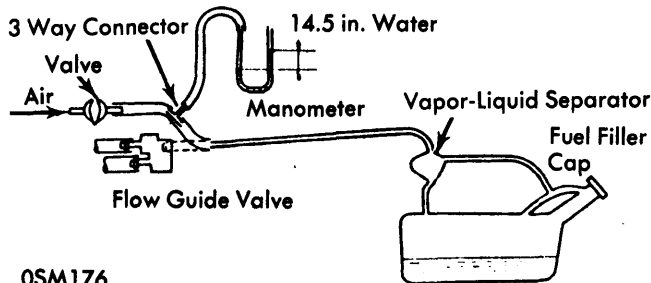
## DATSUN (Cont.)



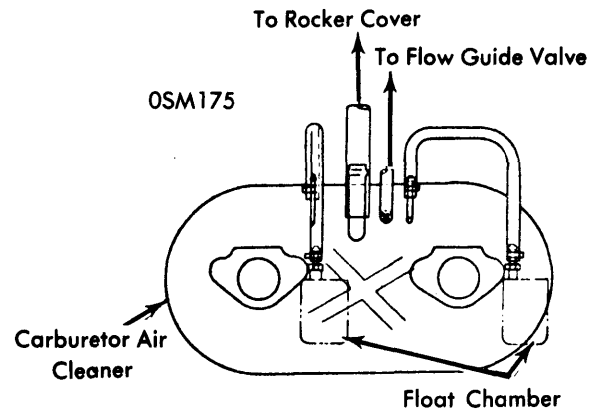
**DATSUN EVAPORATIVE EMISSION SYSTEM  
(240Z & SPORTS CAR MODELS)**

### MAINTENANCE

**Checking Fuel Tank, Vapor-Liquid Separator & Vapor Vent Line** – Check all hoses and fuel tank filler cap. Disconnect vapor vent line connecting flow guide valve to vapor-liquid separator. Install a 3-way connector, a water manometer and a shut-off valve (or equivalent 3-way valve) to end of vent line. Slowly supply fresh air into vapor vent line through shut-off valve until pressure becomes 14.5 inches of water (on manometer), close valve. After 2 1/2 minutes measure height of water in manometer. Variation should remain within 1.0 inch. If filler cap does not seal completely, water height should drop to zero in a short time. If height does not drop to zero when filler cap is removed, vent line is clogged. **NOTE** – If line clogged, it must be repaired or replaced.



**CHECKING EVAPORATIVE EMISSION SYSTEM**



**CARBURETOR FLOAT CHAMBER VENTING  
(240Z & SPORTS CAR MODELS)**

**Checking Flow Guide Valve** – Disconnect all hoses connected to flow guide valve. When low pressure air is supplied to fuel tank connection on flow guide valve, it should pass through valve and exit at crankcase connection. If not valve should be replaced. When air is supplied into crankcase connection, it should never flow to other connections. When air is supplied into carburetor air cleaner connection, it should flow to fuel tank and/or crankcase connection. Valve opens when inner pressure becomes .4 inches of mercury. In case of improper operation or breakage, replace flow guide valve.