1974-79 EXHAUST EMISSION SYSTEMS
Datsun Early Fuel Evaporation

1977-79 Carbureted Models

DESCRIPTION

The Early Fuel Evaporative (EFE) system is designed to improve the atomization of fuel entering the engine during engine warm-up. This aids in the reduction of hydrocarbon (HC) emissions during cold engine operation. The EFE system is provided with a chamber located above a manifold "stove" which is mounted between the intake and exhaust manifolds. During engine warm-up, a heat control valve in the exhaust manifold closes, routing the exhaust gases below the manifold stove to heat the air/fuel mixture before it enters the engine.

OPERATION

The heat control valve operation is controlled by a counterweight and a thermostatic spring which is sensitive to the ambient temperature around the exhaust manifold.

When engine temperature is low, the heat control valve counterweight rotates counterclockwise until it is stopped by a stopper pin mounted in the exhaust manifold. In this position the heat control valve is closed and exhaust gases are routed below the manifold stove to heat the air/fuel mixture.

As the engine temperature rises and the ambient temperature becomes high enough to actuate the thermostatic spring, the counterweight rotates clockwise until it is again stopped by the stopper pin. In this position the valve is fully open and the exhaust gases pass through the exhaust manifold without heating the manifold stove.

TESTING

NOTE: Testing information for 1977-78 models, not available at time of publication.

EARLY FUEL EVAPORATION SYSTEM

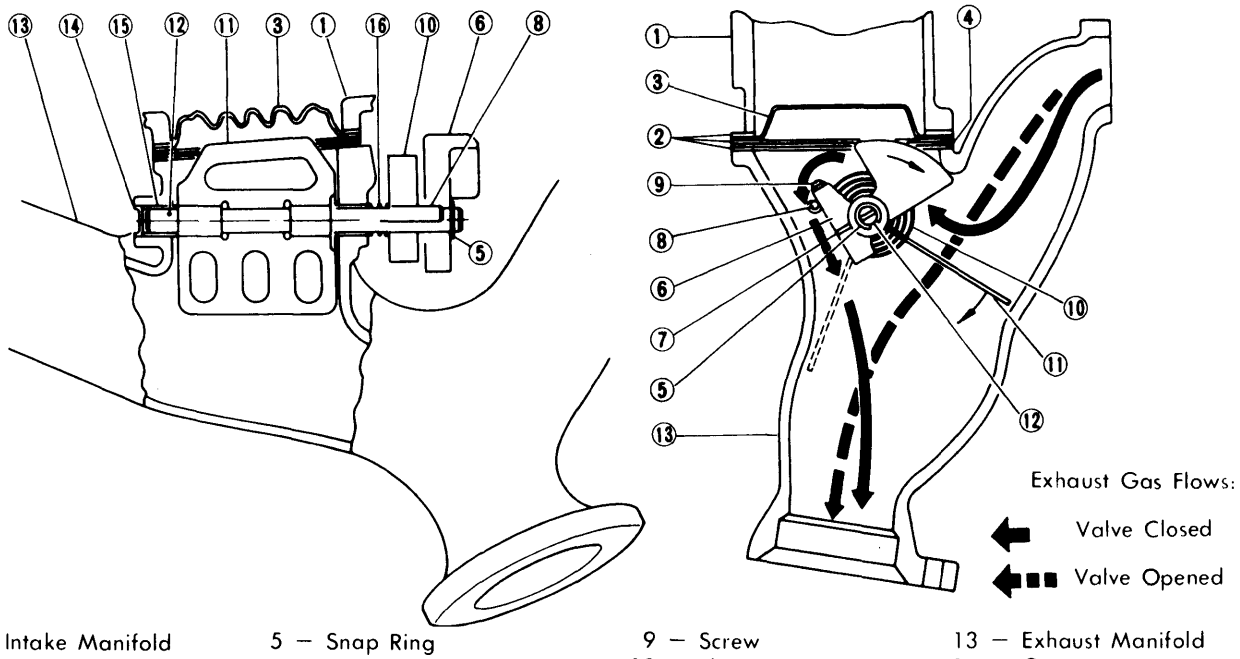
1) With engine stopped, visually inspect heat control valve for damage. Rotate heat control valve by hand, and check for binding between shaft and bushing.

2) If any binding is felt, rotate valve shaft several times. If this fails to correct binding, it is due to seizure between shaft and bushing. Exhaust manifold should be replaced as an assembly.

3) Start engine and visually inspect counterweight to ensure it operates properly. When engine speed is increased, discharge pressure of exhaust gases should cause counterweight to rotate clockwise.

4) With engine cold and at idle, counterweight should rotate counterclockwise until it is stopped by stopper pin. *See Fig. 1.*

5) As engine warms, counterweight should begin to rotate clockwise until it is again stopped by stopper pin. If counterweight does not move at all, check and/or replace thermostatic spring.



1 – Intake Manifold
2 – Stove Gasket
3 – Manifold Stove
4 – Heat Shield Plate
5 – Snap Ring
6 – Counterweight
7 – Key
8 – Stopper Pin
9 – Screw
10 – Thermostatic Spring
11 – Heat Control Valve
12 – Control Valve Shaft
13 – Exhaust Manifold
14 – Cap
15 – Bushing
16 – Coil Spring

Fig. 1: 1979 Early Fuel Evaporative (EFE) System

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