1974-79 EXHAUST EMISSION SYSTEMS
Toyota Mixture Control System

1974 & 1977-79 Models

DESCRIPTION

The 1974 mixture control system consists of a mixture control valve connected to intake manifold and to Vacuum Switching Valve (VSV). Mixture control valve is controlled by VSV, computer, and speed sensor. Valve allows fresh air to enter intake manifold during deceleration from high or intermediate speeds.

The 1977-79 system controls hydrocarbon (HC) and carbon monoxide (CO) emissions during sudden deceleration. This is accomplished through a mixture control valve which allows additional fresh air to enter intake manifold when sudden deceleration (closed throttle) occurs.

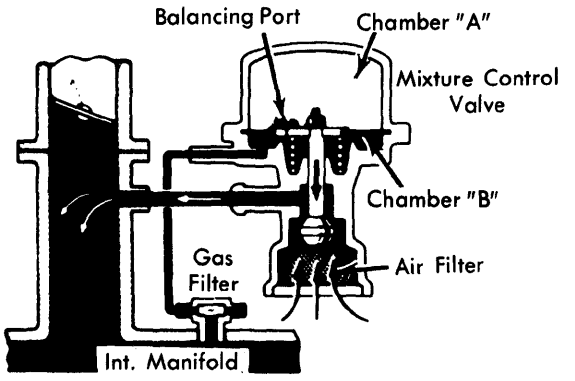

Fig. 1: 1978-79 Mixture Control System (2T-C Engine)

OPERATION

On 1974 mixture control system, when engine is at idle or running at low speeds, the speed sensor signals computer to cut off current to vacuum switching valve. No vacuum is allowed to reach mixture control valve. During intermediate and high speeds, vacuum switching valve permits vacuum to reach mixture control valve diaphragm. Vacuum, however, is not high enough to activate valve. When throttle is released suddenly, additional vacuum is created, causing mixture control valve open momentarily and allow fresh air to be drawn into intake manifold.

On 1977-79 system, when sudden deceleration occurs, high manifold vacuum acts on the lower chamber ("B") of the mixture control valve. The valve opens and fresh air is drawn in through lower side of valve, through filter. This air is transmitted to the intake manifold where it helps maintain a balanced air/fuel mixture.

After a few seconds, the vacuum in the upper chamber ("A") will balance vacuum in the lower chamber. The mixture control valve closes and no additional air is brought into the intake manifold (deceleration fuel control is then maintained by the throttle positioner or deceleration fuel cut system).

TESTING

MIXTURE CONTROL SYSTEM

1974 Models - **1)** Disconnect vacuum hose between mixture control valve and vacuum switching valve (at vacuum switching valve). Start engine, place hand over mixture control valve inlet port, and check for vacuum.

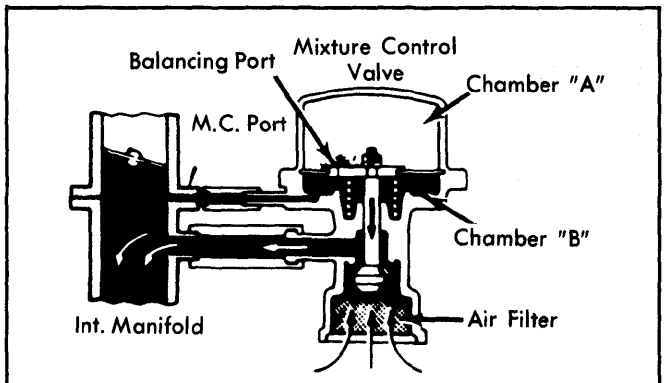

Fig. 2: 1978-79 Mixture Control System (3K-C Engine)

2) If vacuum is felt, mixture control valve is defective. Apply vacuum to disconnected vacuum hose, air should momentarily flow through mixture control valve. *See Fig. 3.*

3) With vacuum hose still disconnected, connect a vacuum gauge to vacuum switching valve and position gauge so it may be seen while driving vehicle. Road test vehicle.

4) Increase vehicle speed to at least 45 MPH. At 39-43 MPH, vacuum should be indicated on vacuum gauge. Slowly allow vehicle to decelerate. At 26-36 MPH, vacuum gauge reading should drop to zero (0).

1977-79 Models - Start engine. Disconnect vacuum sensing hose from mixture control valve and block hose. Place hand over air inlet of mixture control valve. Vacuum should not be felt. Check that vacuum is felt momentarily when hose is connected. Engine should run rough or stall.

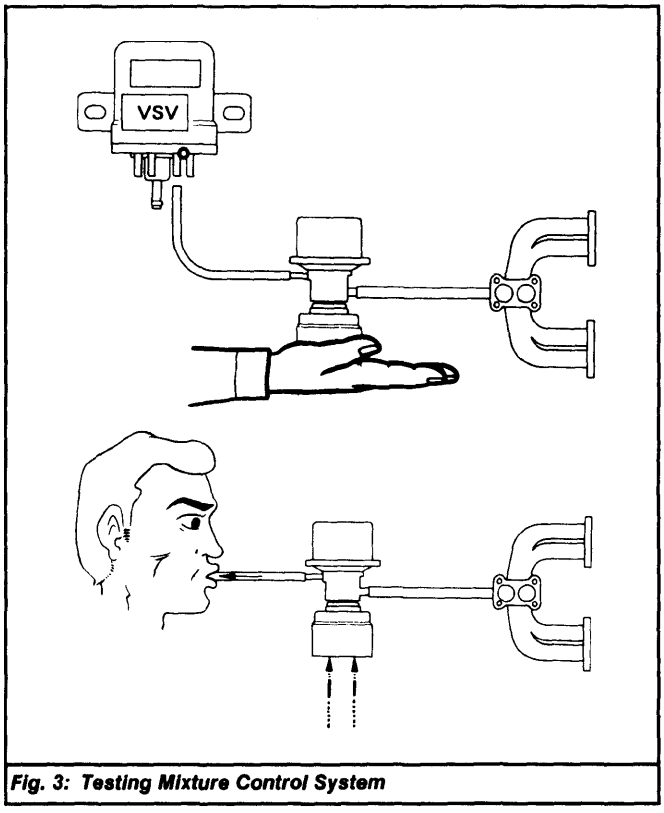

Fig. 3: Testing Mixture Control System