1974-79 EXHAUST EMISSION SYSTEMS
Toyota Deceleration Fuel Cut System

1977-79 Models

DESCRIPTION

This system aids in emission control and engine performance during prolonged periods of deceleration. The system will cut off part of the fuel to the carburetor slow circuit, thus leaning the mixture and preventing afterburning and overheating which results from a rich mixture. System typically consists of fuel cut solenoid, vacuum switch, computer, and connecting tubing and wiring.

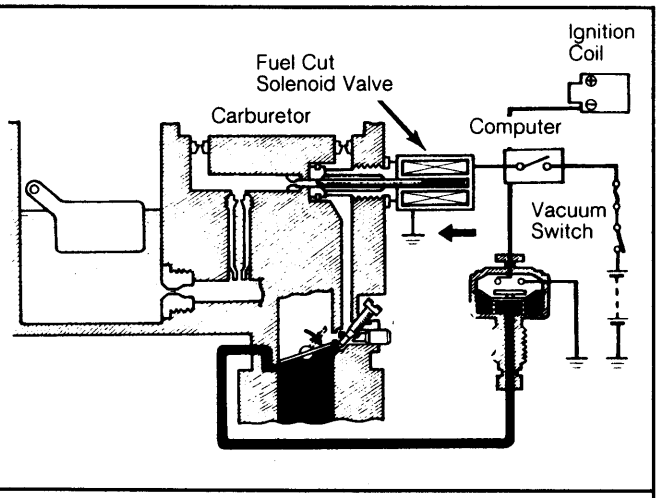

Fig. 1: 1977-78 Deceleration Fuel Cut System

OPERATION

On 1977 3K-C engine, when engine speed is below 2100 RPM and carburetor vacuum is below 13 in. Hg, the computer is activated by a signal from ignition system and/or vacuum switch. *See Fig. 1.* Current flows to fuel cut solenoid and valve is pulled back. Valve is now in open position, opening slow fuel cut circuit in carburetor.

Under continuous deceleration, engine speed above 2100 RPM, and vacuum above 13 in. Hg, the computer cuts off current to solenoid switch. Spring tension pushes solenoid and closes slow circuit in carburetor. A delay of 1 1/2 seconds is built into the computer to hold off operation of solenoid valve for a short period of time.

On 1978-79 models, when engine speed is below 2400 RPM (2000 RPM on 2T-C and 4M engines) and carburetor vacuum is low, the computer is activated and sends current to the fuel cut solenoid. *See Fig. 2.* The valve cuts fuel flow rate in carburetor slow circuit. When engine speed and vacuum are high, the solenoid valve will not affect fuel flow.

TESTING

DECELERATION FUEL CUT SYSTEM

1976-77 Models - See applicable throttle positioner system diagnostic chart and perform throttle positioner system test as outlined. *See Fig. 3.*

NOTE: On 1978-79 models, perform step 1) quickly to avoid overheating catalytic converter.

1978-79 Models - **1)** Start engine and pinch vacuum hose from carburetor to vacuum switch. Increase engine speed to 2800-3000 RPM. Engine should misfire slightly at this level.
2) Release hose and raise engine speed. Engine should run smoothly. Unplug solenoid valve connector. Engine should run rough. If engine responds as indicated, system is operating normally.
3) If not, remove solenoid valve and apply 12 volts to connector. As source voltage is applied, solenoid will "click" if it is operating properly.
4) Disconnect vacuum switch. Check continuity between switch terminal and body. With engine off, there should be continuity. With engine on, there should be no continuity.

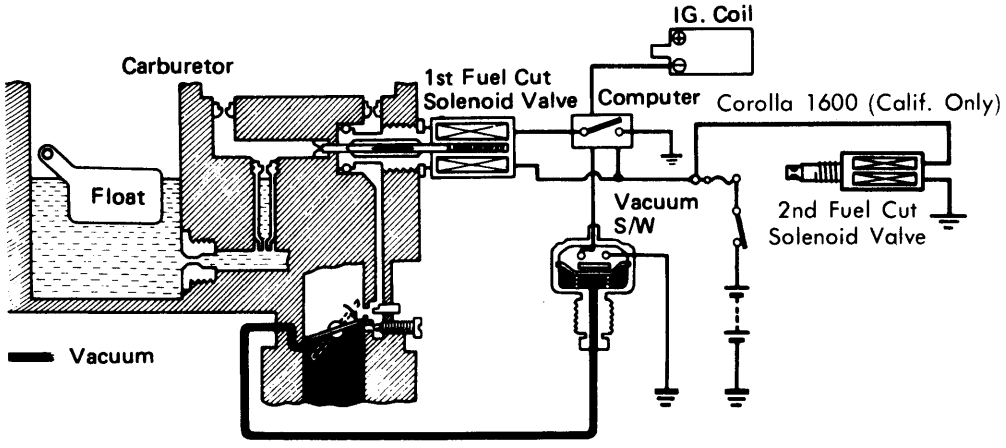

Fig. 2: 1979 Deceleration Fuel Cut System

1974-79 EXHAUST EMISSION SYSTEMS
Toyota Deceleration Fuel Cut System (Cont.)

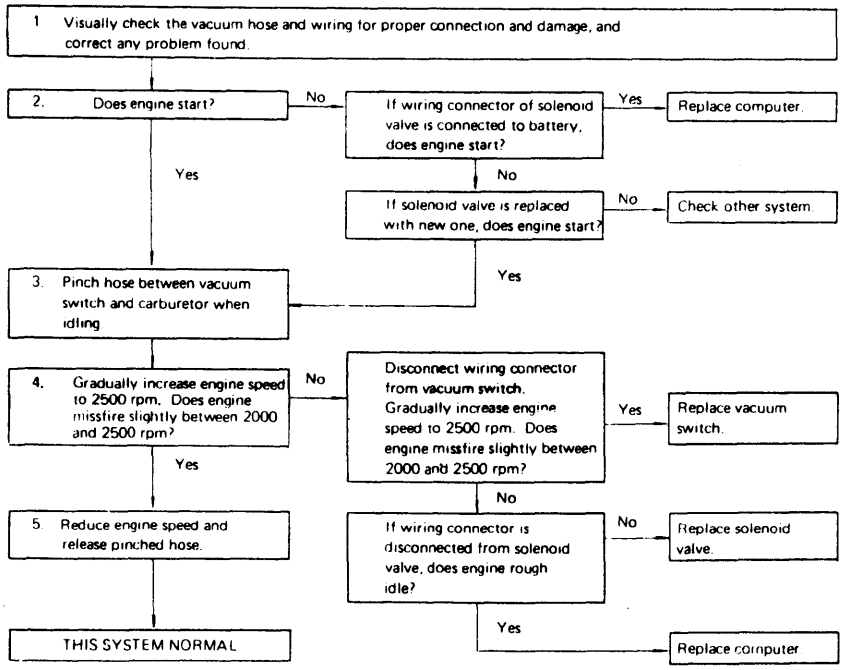

Fig. 3: 1977 Deceleration Fuel Cut System Test