1974-79 EXHAUST EMISSION SYSTEMS
Toyota Power Valve Control System

1975-77 Models

DESCRIPTION

The power valve control system is used on 2F engine only. The power valve control system provides vacuum assistance to power valve in carburetor. System components include power valve, vacuum solenoid valve, throttle switch, temperature sensor, computer, and vacuum surge tank.

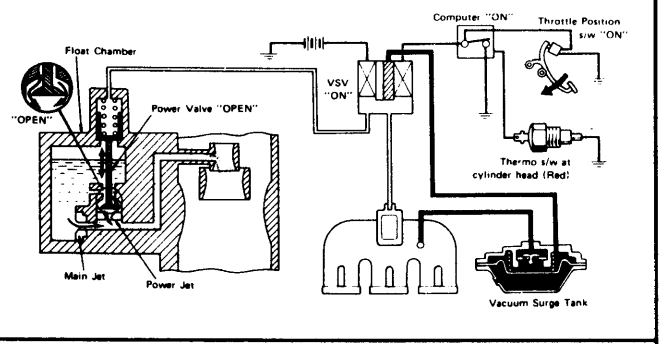

Fig. 1: 1976 Power Valve Control System (2F Engine)

OPERATION

POWER VALVE CONTROL SYSTEM

With accelerator pedal at full throttle, throttle position switch will be turned on. Switch will turn on vacuum solenoid valve. This allows intake manifold vacuum to act on power valve. Since vacuum at wide open throttle will be almost zero, power valve will be open due to spring tension.

If coolant temperature is below 122°F (50°C), vacuum solenoid valve will again be turned on and manifold vacuum will act on power valve. Power valve will open or close in accordance with changes in intake manifold vacuum.

When coolant temperature rises above 122°F (50°C), solenoid valve is turned off. This allows vacuum from surge tank to act upon power valve. This will keep power valve closed except at full throttle operation.

TESTING

THROTTLE POSITION SWITCH

Check that switch has continuity when switch knob is pressed and that no continuity exists when knob is released.

VACUUM SURGE TANK

Connect vacuum gauge to tank pipe at vacuum solenoid valve outlet. Connect other hose to intake manifold vacuum source. When vacuum reaches 12 in. Hg, disconnect hose from intake manifold. Vacuum loss in one minute should not exceed 0.4 in. Hg.

POWER VALVE CONTROL SYSTEM

See applicable power valve control system diagnostic chart and perform test as outlined. *See Figs. 2 and 3.*

1974-79 EXHAUST EMISSION SYSTEMS
Toyota Power Valve Control System (Cont.)

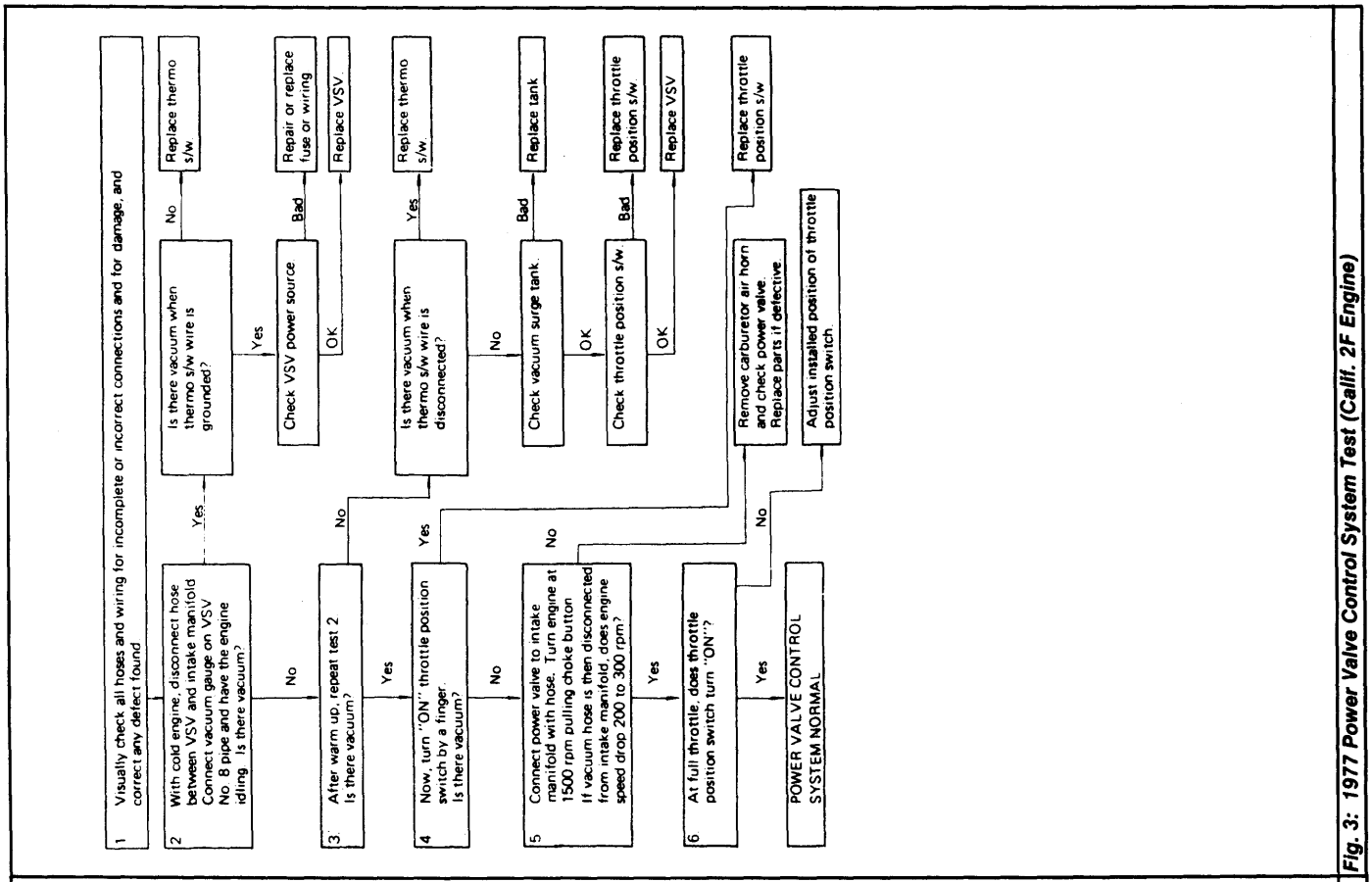

Fig. 3: 1977 Power Valve Control System Test (Calif. 2F Engine)

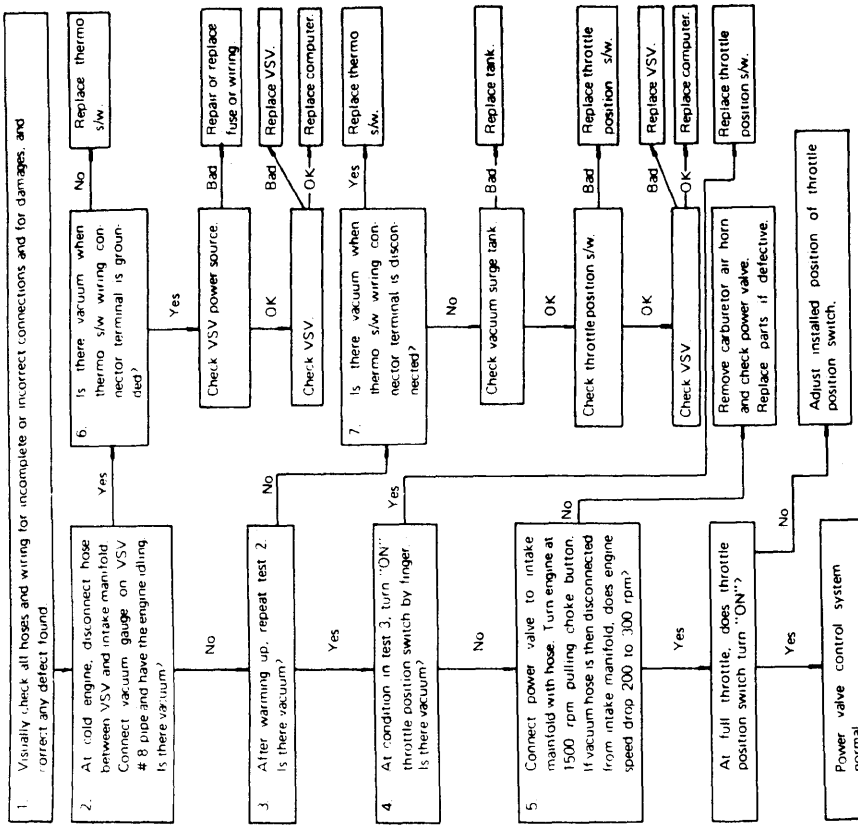

Fig. 2: 1975-76 Power Valve Control System Test (2F Engine)