DATSUN SPARK TIMING CONTROL SYSTEM

200SX **510**
210 **810**
280ZX **Pickup**
310

DESCRIPTION

The spark timing control system is designed to control distributor vacuum advance under varying driving conditions to reduce HC and NOx emissions. This is accomplished by the use of thermal vacuum valves (TVV) on all models except 200SX. In addition to thermal vacuum valves, a vacuum delay valve (one-way valve) is used on all models except 200SX, 510, and Pickup. On 200SX models, a vacuum switching valve, a water temperature switch (mounted in the radiator tank), a neutral switch (Man. Trans.), and an inhibitor switch (Auto. Trans.) are used in place of thermal vacuum valves and a vacuum delay valve.

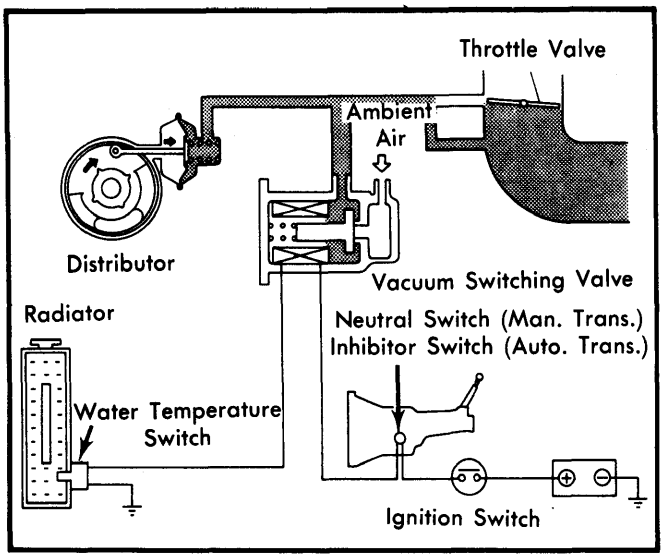

Fig. 1 Datsun 200SX Timing Control System

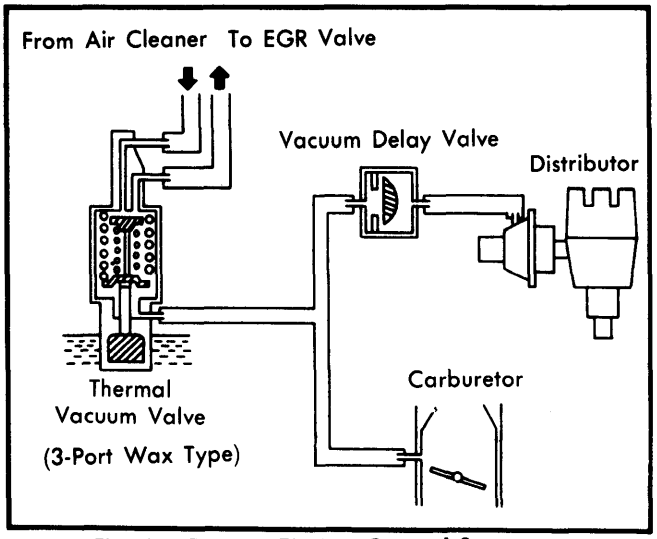

Fig. 2 Datsun Timing Control System (210, 310, 510, Pickup)

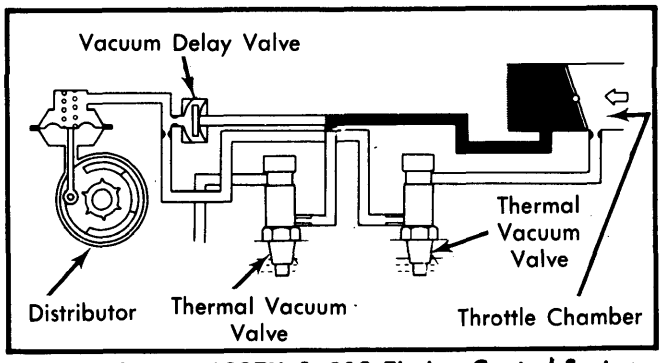

Fig. 3 Datsun 280ZX & 810 Timing Control System

OPERATION

The thermal vacuum valves and the water temperature switch monitor engine coolant temperature. The vacuum delay valve (if equipped) prevents rapid vacuum changes in the vacuum advance line. The delay valve is constructed for one-way operation and when vacuum source decreases, the vacuum advance responds normally. When water temperature switch and neutral or inhibitor switch are on, the vacuum switching valve allows ambient air to enter the vacuum diaphragm and returns spark timing to normal.

TESTING

SPARK TIMING CONTROL SYSTEM

1) Ensure all vacuum hoses are in good condition and properly connected. Place transmission in neutral or "Park".

2) With engine cold, connect timing light. Start engine and note timing.

3) Continue to operate engine and note temperature gauge and timing. As needle of temperature gauge reaches middle position, timing should advance from former position.

4) If timing does not perform as described, replace thermal vacuum valve(s).

THERMAL VACUUM VALVE

Thermal vacuum valve is a major component of EGR system. Test procedures for various thermal vacuum valves are contained in *"Datsun Exhaust Gas Recirculation System" article.*

NOTE – *Application of thermal vacuum valves between models varies greatly. The 2-port and 3-port valves may be used in any combination to comply with emission standards. Ensure proper valve and connections are used for applicable model.*

VACUUM DELAY VALVE

1) Remove vacuum delay valve from engine. Blow air into valve from distributor side of valve. Air should pass through valve without resistance. If not, replace valve.

2) Next, blow air through carburetor or throttle chamber side of valve. Air should not pass through valve without resistance. If no resistance is encountered, replace vacuum delay valve.