1982 Exhaust Emission System

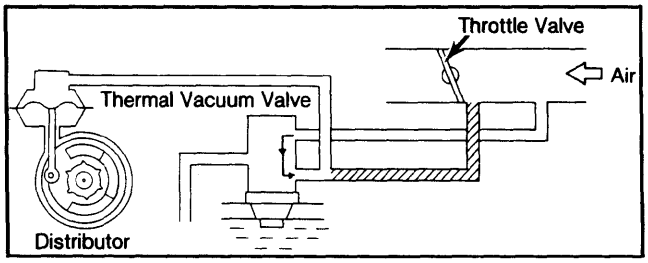
DATSUN SPARK TIMING CONTROL SYSTEM

All Gasoline Models

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 a thermal vacuum valve (TVV). In addition, a vacuum delay valve (one-way valve) is used on Sentra, 210 and 310. A vacuum control valve is used on Stanza. A water temperature switch (mounted in the radiator tank), is used on Maxima, 200SX and 280ZX. A vacuum switching (VSV), neutral switch (Man. Trans.), and inhibitor switch (Auto. Trans.) are used on 200SX.

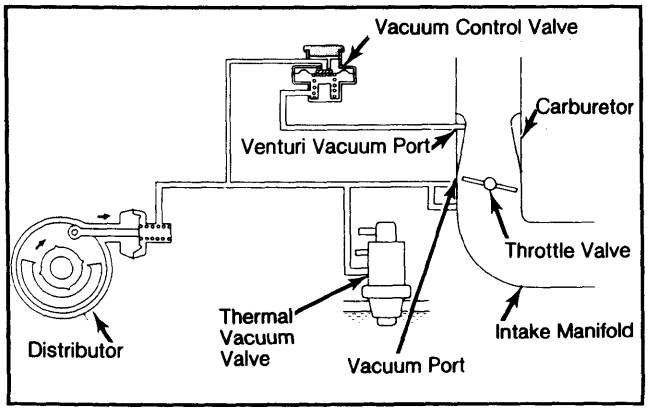
Fig. 1: Maxima & 280ZX Spark Timing Control System



OPERATION

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

Fig. 2: Stanza Spark Timing Control System



TESTING

SPARK TIMING CONTROL SYSTEM

1) On Maxima and 280ZX, disconnect Gray harness connector from distributor. On all others, ensure all vacuum hoses are in good condition and properly connected.

Fig. 3: Sentra, 210 & 310 Spark Timing Control System

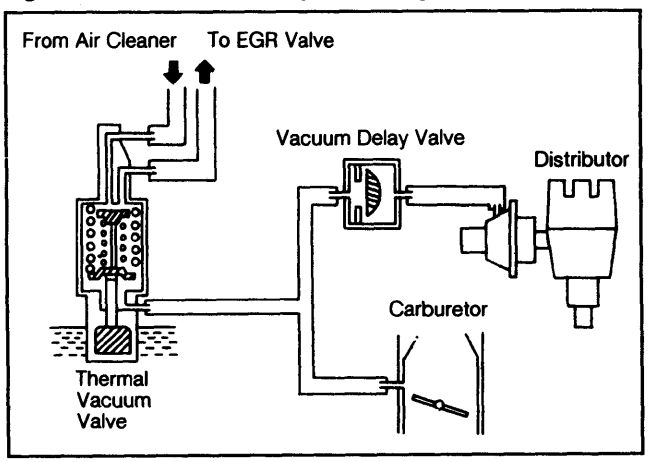
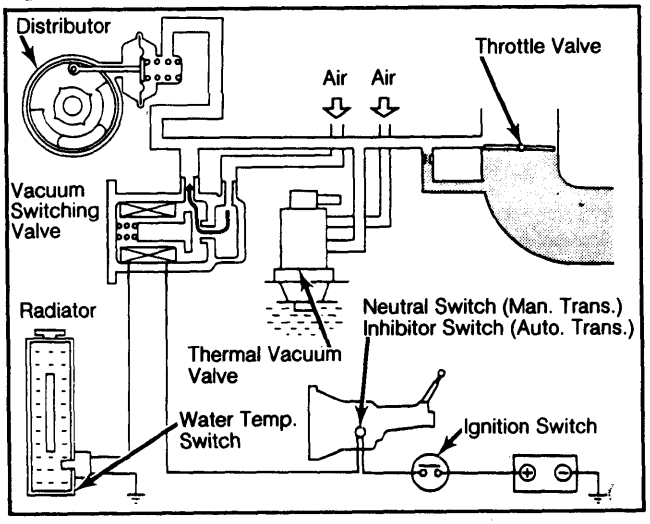


Fig. 4: 200SX Spark Timing Control System



2) Place transmission in neutral or "Park". With engine cold, connect timing light. Start engine and note timing. Continue to operate engine and note temperature gauge and timing.

3) As needle of temperature gauge reaches middle position, timing should advance from former position. If timing does not perform as described, replace thermal vacuum valve.

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.*

VACUUM DELAY VALVE

1) Remove vacuum delay valve from engine. Blow air into valve from carburetor or intake manifold side of valve. Air should pass through valve without resistance.

2) Blow air through distributor side of valve. Air should not pass through valve without resistance. If vacuum delay valve does not perform as described, replace it.