COURIER SPARK TIMING CONTROL SYSTEM

All Models (2.0L Only)

DESCRIPTION

Spark timing control system is used on all models with 2.0L engines. This system aids in reduction of exhaust emissions by delaying spark port vacuum to distributor vacuum advance unit during acceleration. System is operated by a spark delay valve, which is located in line between carburetor and distributor (Federal) or between water thermo valve and distributor (Calif.).

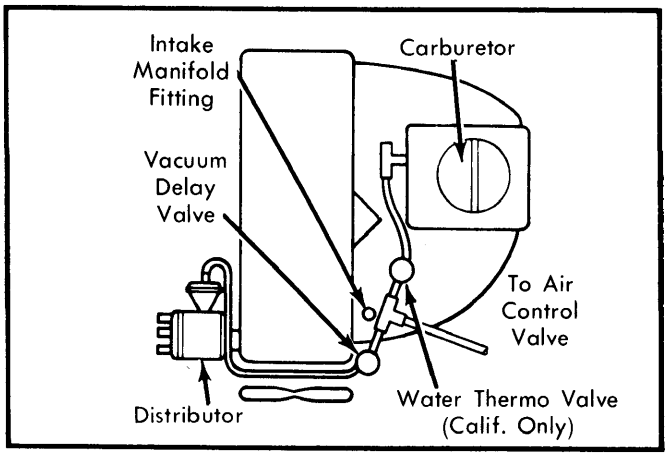

Fig. 1 Schematic of Spark Timing Control System

OPERATION

The spark delay valve has an internal restrictor to slow air flow in one direction and a check valve which allows free air flow in the opposite direction. During normal acceleration, spark port vacuum to distributor vacuum advance is delayed by the restrictor. This results in a delayed spark advance. Upon rapid acceleration, the pressure difference at the restrictor allows the check valve to open so the decreasing port vacuum is not delayed by restrictor. On California vehicles, thermo valve restricts vacuum advance until engine warm up is accomplished. This helps speed warm up of catalytic converter.

TESTING

SYSTEM OPERATION TEST

1) Remove air cleaner. Detach vacuum line from distributor. Disconnect air by-pass valve line (Calif. only) or anti-afterburn valve (Federal) at intake manifold fitting. Install vacuum line removed from distributor to intake manifold fitting.

2) Remove vacuum line from carburetor side of spark delay valve, plug line and attach vacuum gauge to vacuum delay valve.

3) Start engine and run at idle speed. Detach vacuum line from intake manifold fitting. Note time required for vacuum reading to drop to 11.8 in. (300 mm) Hg. This should take 4-6 seconds. If system does not respond as indicated, replace spark delay valve. Reconnect all vacuum lines.

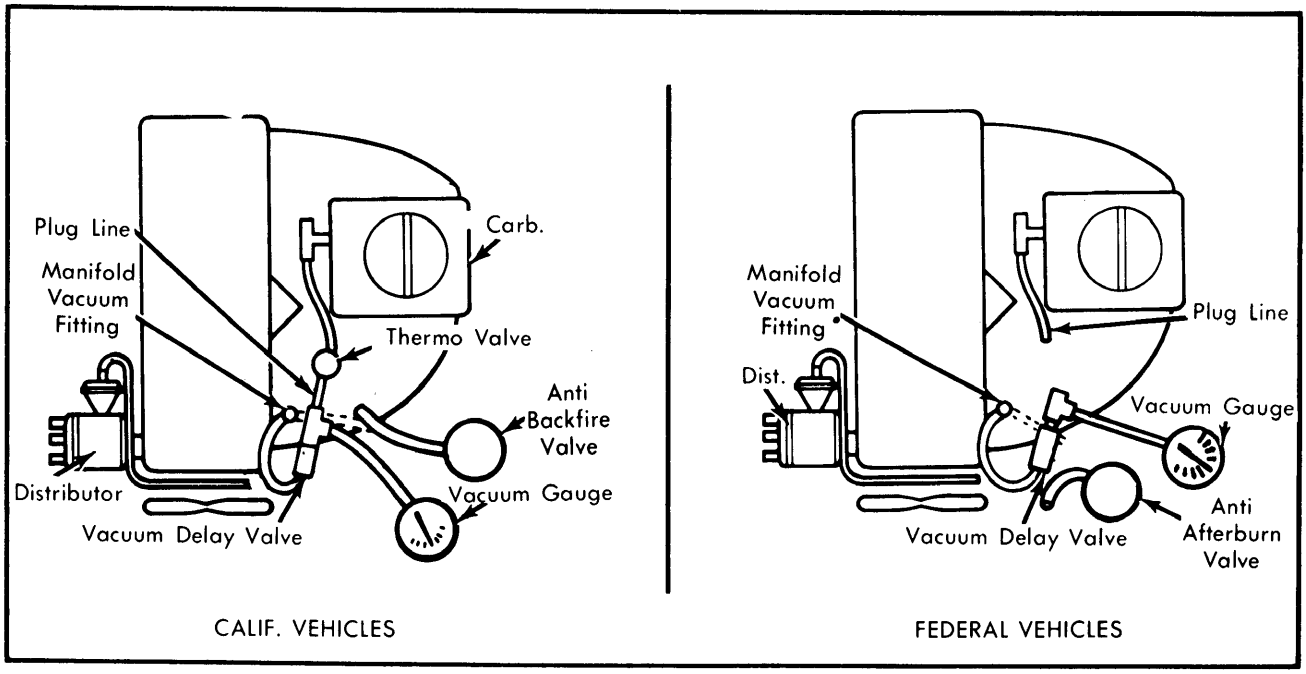

Fig. 2 Spark Timing Control System Test Connections