FORD MOTOR CO. COLD START SPARK ADVANCE SYSTEM

DESCRIPTION

Some engines use a Cold Start Spark Advance System which is added to the distributor spark advance system. System consists of a Cold Start Spark Advance Ported Vacuum Switch (CSSA PVS), a 235°F Coolant PVS, a Distributor Retard Control Valve (DRCV), intake manifold vacuum tap, a carburetor spark port vacuum tap, and on some engines, a Spark Delay Valve (SDV).

OPERATION

System provides carburetor vacuum to the distributor from the carburetor vacuum tap, through the DRCV, CSSA PVS, and the cooling PVS. When the coolant temperature is between 125°F and 235°F, vacuum reaches the distributor from the carburetor spark port through the SDV, CSSA PVS, and cooling PVS. When the engine coolant is above 235°F, manifold vacuum is applied to the distributor advance through the PVS.

TESTING

1) Remove SDV from vacuum hose and reconnect hose. Connect a "T" and vacuum gauge at distributor vacuum hose. Remove vacuum hose from bottom port of CSSA PVS and plug port.

2) With engine at normal operating temperature and idle, vacuum reading should be zero; if not, replace CSSA PVS. Reconnect hose to CSSA PVS. Remove vacuum hose to top port on CSSA PVS and plug port.

3) Check vacuum reading at distributor. If vacuum reading is 2 in. Hg or less, the cooling PVS is good. If vacuum reading is more than 2 in. Hg, remove the top vacuum hose (hose going to carburetor) from cooling PVS and plug port. If vacuum reading is still greater than 2 in. Hg, cooling PVS is defective and should be replaced.

4) With engine running at idle and transmission in neutral, momentarily open throttle (½ open). Observe vacuum gauge for a quick rise and fall as the throttle is opened and closed. If vacuum is noted, CSSA system is good. If no vacuum is observed, check vacuum hoses, PVS's, SDV's, and carburetor port for plugging and correct as necessary.

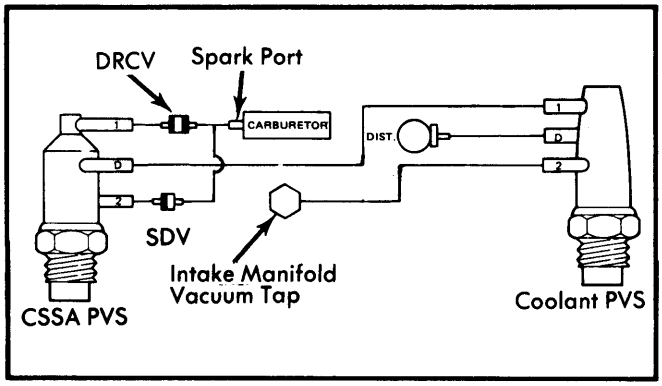

Fig. 1 Cold Start Spark Advance (CSSA) System

FORD MOTOR CO. COLD START SPARK HOLD SYSTEM

DESCRIPTION

Used on some engines, the Cold Start Spark Hold System provides momentary spark advance hold during acceleration when engine is cold, and is used to provide improved cold engine acceleration. System consists of a Cold Start Spark Hold Ported Vacuum Switch (CSSH PVS), a restrictor, an intake manifold vacuum tap, and on some models, a Spark Delay Valve (SDV).

OPERATION

When engine coolant is less than 128°F, the CSSH PVS is closed and the distributor vacuum signal travels through the restrictor.

At cold start, high vacuum acts on the distributor diaphragm, giving maximum spark advance. During cold acceleration, the high vacuum already in the distributor diaphragm is slowly bled down through the restrictor, providing a modified vacuum advance during the initial stage of acceleration.

TESTING

1) Remove air cleaner and spark delay valve (if equipped). Install a connector in place of spark delay valve. Install a "T" fitting and vacuum gauge in distributor vacuum hose.

2) With engine at normal operating temperature and transmission in Neutral, momentarily open throttle (½ open). Check vacuum gauge. Vacuum should quickly rise and fall as throttle is opened and closed.

3) If vacuum is evident, the CSSH system is operating properly. If no vacuum is evident, check vacuum lines, evaporative canister purge hose, CSSH PVS and carburetor vacuum port for plugging. Correct if necessary.