CAPRI ELECTRONIC SPARK CONTROL SYSTEM

2000 cc Engine (California Only) (1972-73)
2600 cc Engine (All States) (1972-73)

DESCRIPTION

The Electronic Spark Control System (ESC) reduces exhaust emissions by delaying distributor vacuum advance under certain conditions. System consists of; a speed sensor, ambient air temperature switch, distributor modulator valve (solenoid), and an electronic amplifier.

OPERATION

Vacuum is retarded by distributor modulator valve inserted in vacuum line between distributor and carburetor vacuum advance port. Valve is normally open, when electrically energized it closes, cutting off vacuum to distributor, thereby preventing vacuum advance. The ambient air temperature switch, located in right door pillar post, senses outside air temperature. A temperature of 49°F will cause the switch contacts to open breaking the electrical circuit, allowing normal advance at all speeds. A temperature of 65°F will close switch contacts. This will cut off vacuum to distributor and retard ignition timing. The speed sensor located in the speedometer cable will generate a voltage frequency proportional to vehicle speed. This voltage is transmitted to the electronic amplifier, which opens or closes distributor modulator valve. When vehicle speed reaches 37 or 40 MPH, depending on engine application, a signal from the speed sensor triggers the electronic amplifier and the distributor modulator valve opens permitting normal vacuum advance. When speed is decreased to 18 MPH, electronic amplifier energizes distributor modulator valve, which retards ignition timing. The electronic amplifier is mounted on a printed circuit board located in control module.

TESTING

System should be checked when loss of engine performance and excessive fuel consumption are reported. Road test symptoms will be those of retarded ignition timing. To check the system:

1) Raise rear wheels.

2) Disconnect vacuum hose at distributor primary advance (outer) diaphragm and connect it to a vacuum gauge.

3) Ensure that temperature switch is above 65°F. Warm with hot wet sponge if necessary.

4) Start engine, engage transmission in drive.

5) Vacuum gauge should register zero until 37 or 40 MPH speed is reached, at which point it should register at least 6 inches of Hg. In any event, some vacuum should be indicated at 37 MPH unless trouble exists.

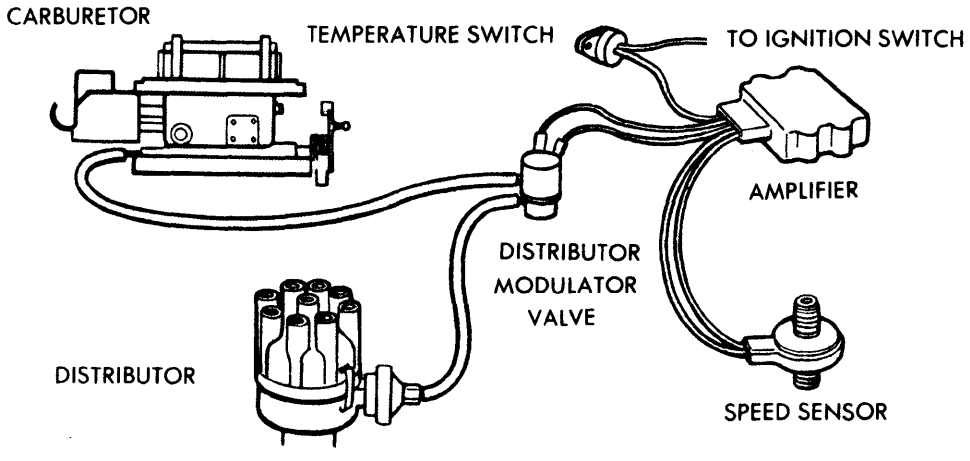
6) If no vacuum, there are three possible causes, no vacuum from carburetor, pinched, blocked, mis-routed or disconnected hoses or inoperative ESC System. If there is no vacuum below cut-in speeds, trouble is in ESC system.

7) Check temperature switch by disconnecting the multiple plug and connect ohmmeter to both terminals on switch. At temperature of 49°F or lower ohmmeter should not register. At temperature of 65°F or higher ohmmeter should register. If either check fails switch is bad.

8) Disconnect speed sensor at multiple plug and check sensor for continuity. Using an ohmmeter a reading of 40-60 ohms at room temperature is correct. Also, check from winding to case, it should read an open circuit. Replace if resistance readings are incorrect.

ADJUSTMENT

No adjustments to this system are possible. Replace damaged components as necessary.



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