DELCO-REMY ELECTRONIC SPARK TIMING IGNITION SYSTEM

Buick
Cadillac
Chevrolet
Oldsmobile
Pontiac

DESCRIPTION

Electronic Spark Timing is used on California Buick, Chevrolet, Oldsmobile and Pontiac models with the 3.8L VIN A V6 engines (also Oldsmobile 4.3L V8 VIN F) that use the C4 emission system. It is also used on Federal Cadillac (Eldorado & Seville) models with the 6.0L V8 that uses the Digital Electronic Fuel Injection system. System consists of a modified HEI distributor (no vacuum or mechanical advance), a seven pin module in distributor, and a Electronic Control Module (ECM). Ignition timing is determined by the ECM which receives signals from the special 7 pin HEI module and various other engine sensors.

OPERATION

Part of the ECM, Programmed Read Only Memory (PROM), carries basic engine timing based on engine speed only. The ECM uses this basic timing (from PROM) plus information from other engine sensors to advance or retard engine timing to suit driving conditions.

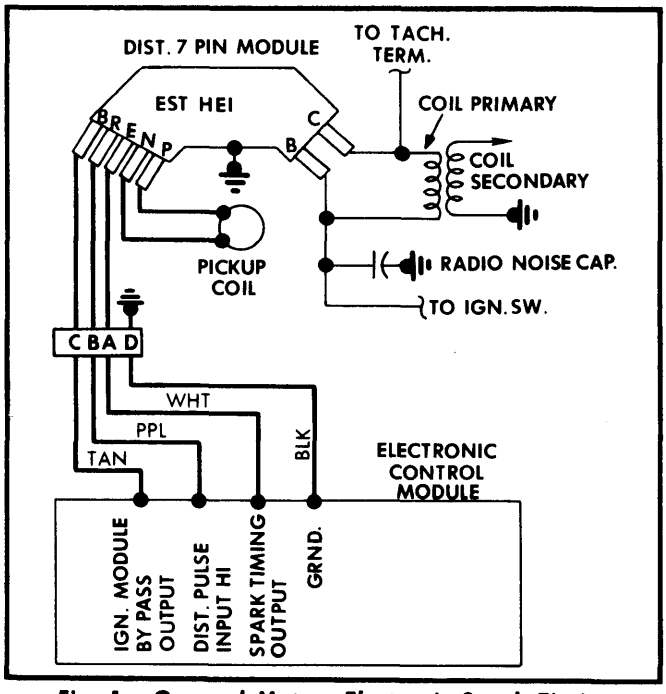

Fig. 1 General Motors Electronic Spark Timing Wiring Schematic

TESTING

NOTE – *For further information on diagnosing or testing this system, see DELCO-REMY HIGH ENERGY IGNITION (HEI) SYSTEM and GENERAL MOTORS IGNITION SYSTEMS WITH C-4 EMISSIONS in this section.*

1) With engine idling, check voltage at output of Manifold Absolute Pressure sensor, as vacuum hose is removed and reconnected. If there is no change in sensor output, proceed to step **8)**.

2) If sensor output changes, turn engine "OFF". Disconnect 4-wire EST connector at distributor. Do not ground test lead. Connect jumper between terminal "A" and terminal "B" on distributor side of EST connector.

NOTE – *The "test lead" refers to the black/white wire with green connector (under the instrument panel) for checking the self-diagnosis trouble codes on vehicles with C-4 System.*

3) Connect test light from battery positive terminal to terminal "C" of same connector. Start engine. If engine won't run, check for an open or grounded lead to terminal "A" in distributor side of EST connector. If lead is okay, replace HEI module.

4) If engine runs, and test light is "ON", check for ground in lead to terminal "C" on distributor side of EST connector. If engine runs, but light is "OFF", remove jumper between terminals "A" and "B".

5) If engine runs, check distributor leads for open to terminal "C" or a shorted condition between terminals "A" and "B". If leads are all okay, replace HEI module.

6) If engine dies when jumper wire is removed, distributor is okay. Check for opens, shorts and grounds on each of the leads from the electronic control module to the 4-wire EST connector (including lead to ESC control, if used).

7) If harness is okay, replace electronic control module.

8) If there was originally no sensor output change, when vacuum hose was removed from Manifold Absolute Pressure sensor, check condition of sensor, its wiring and its vacuum connections.